



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

**NOTICE OF MUNICIPAL PLANNING
TRIBUNAL MEETING
OF STELLENBOSCH MUNICIPALITY
FRIDAY, 2024-03-01 FROM 10:00-15:00**



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

**NOTICE OF MUNICIPAL PLANNING TRIBUNAL MEETING
OF STELLENBOSCH MUNICIPALITY
FRIDAY, 2024-03-01 FROM 10:00-15:00**

Ref. no. 3/4/5/2/40

2024-03-01

Chairperson

Mrs H Crooijmans-Lemmer

Deputy-Chairperson

Mr Van Zyl

External Members

Mrs Christine Havenga

Mr Dane Leo

Mr Stephen Boshoff

Internal Members

Mr A Barnes: Director - Planning and Economic Development

Mr M Williams: Senior Legal Advisor

Mr A van der Merwe: Senior Manager - Community Services

Mrs M Francis: Senior Manager - Infrastructure Planning, Development and Implementation, Directorate Infrastructure Services

Technical Advisor

Mr K Munro - Director Environmental & Spatial Planning: Department of Environmental Affairs and Development Planning

*Notice is hereby given in terms of Section 75(1) of the Stellenbosch Municipality Land Use Planning By-Law (2015), of the Municipal Planning Tribunal Meeting which will be via **MS TEAMS (Virtual Meeting)** on **FRIDAY, 2024-03-01 from 10h00-15:00** to consider the items on the Agenda.*

Mrs H Crooijmans-Lemmer

CHAIRPERSON: MUNICIPAL PLANNING TRIBUNAL



TABLE OF CONTENT

ITEM	SUBJECT	PAGE NR.
1.	OPENING AND WELCOME	I N D E X P A G E S
2.	LEAVE OF ABSENCE	
3.	DISCLOSURE OF INTERESTS	
4.	MINUTES OF THE PREVIOUS MEETING DATED 26 JANUARY 2024	

5.	MATTERS FOR CONSIDERATION	
	CONTENT INDEX- ERF 2183, KLAPMUTS (LU/14679)	13
5.1	APPLICATION FOR SUBDIVISION, REZONING AND DEPARTURE: ERF 2183, KLAPMUTS (LU/14679)	14-104
	CONTENT INDEX- FARM 527/7 STELLENBOSCH (LU/15064)	105
5.2	APPLICATION FOR REZONING AND SUBDIVISION ON FARM 527/7 STELLENBOSCH FARMS	106-566
6.	OTHER MATTERS	
6.1	PLANNING POLICIES (REVIEWED OR APPROVED BY COUNCIL)	
6.2	APPEALS RECEIVED AGAINST MPT DECISIONS	

MINUTES: STELLENBOSCH MUNICIPAL PLANNING TRIBUNAL 26 JANUARY 2024**MINUTES OF THE STELLENBOSCH MUNICIPAL PLANNING TRIBUNAL MEETING
HELD ON FRIDAY, 26TH OF JANUARY 2024 AT THE PARADYSKLOOF CLUBHOUSE,
PARADYSKLOOF, STELLENBOSCH FROM 10H00-15H00****Ref. no. 3/4/5/2/40****2024-01-26**Chairperson

Mrs H Crooijmans-Lemmer

Deputy Chairperson

Mr P van Zyl

External Members

Mrs C Havenga

Mr Dane Leo

Mr Stephen Boshoff

Internal Members

Mr A Barnes: Director - Planning and Economic Development

Mr A van der Merwe: Senior Manager: Community Services

Mr M Williams: Senior Legal Advisor

Officials

Mr S Carstens: Senior Manager: Development Management

Mrs C Kriel: Manager: Land Use Management

Ms B Zondo: Senior Town Planner

Mr P April: Senior Town Planner

Mr R Fooy: Senior Town Planner

Mr G Goosen: Senior Town Planner

Mrs C Hauptfleisch: Senior Spatial Planner

Mr G De Vries: Land Use Inspector

Ms M Fikeni: Land Use Inspector

Ms O Sims: Administrative Officer: MPT

Ms L Davids: Senior Administrative Officer: MPT

MINUTES: STELLENBOSCH MUNICIPAL PLANNING TRIBUNAL 26 JANUARY 2024

ITEM	SUBJECT
SMPT 01/01/24	OPENING AND WELCOME
	Chairperson Crooijmans-Lemmer welcomed all present at the first meeting for 2024 with, a special welcome to Mrs Hauptfleisch who will do the presentation on the Inclusionary Zoning Policy.
SMPT 02/01/24	LEAVE OF ABSENCE
	Mr Munro Mrs Francis Mr Alexander
SMPT 03/01/24	DISCLOSURE OF INTERESTS
	None received
SMPT 04/01/24	MINUTES OF THE PREVIOUS MEETING DATED 29 SEPTEMBER 2023
	The minutes of the previous meeting was noted.
	MATTERS FOR CONSIDERATION
SMPT 05/01/24	APPLICATION FOR SUBDIVISION, CONSOLIDATION AND REZONING OF FARM 1041/27 AND FARM 1041/3, LA MOTTE (LU/14341) Discussion: <ul style="list-style-type: none"> a. Chairperson Crooijmans-Lemmer handed over to Mr Fooy to give a brief introduction of the application that served before the Tribunal. b. The members had a discussion with regard to the access road to the property. c. Further discussions followed amongst the members with regard to the subdivision of the property.

d. All members were in support of the application.

UNANIMOUSLY RESOLVED:

1. That the following application(s) in terms of Section 15(2) of the Stellenbosch Municipal Land Use Planning Bylaw namely:

1.1. **Subdivision** in terms of Section 15(2)(d) of the said bylaw, of Portion 7 of Farm 1041, into two portions, Portion 27 of Farm 1041, and Remainder Portion 7 of Farm 1041.

1.2. **Subdivision** in terms of Section 15(2)(d) of the said bylaw, of Portion 3 of Farm 1041, into two portions, Portion 28 of Farm 1041, and Remainder Portion 3 of Farm 1041.

1.3. **Consolidation** in terms of Section 15(2)(e) of the said bylaw, of the unregistered subdivided Portion 27 of Farm 1041 and Portion 28 of Farm 1041, La Motte, Stellenbosch.

1.4. **Rezoning** in terms of Section 15(2)(a) of the said bylaw, of the unregistered consolidated Portion 27 of Farm 1041 and Portion 28 of Farm 1041, La Motte, Stellenbosch, from Agriculture and Rural Zone to Subdivisional Area to create:

- a) 16 Conventional Residential Zone erven (±3.49 ha)
- b) 2 Public Open Space Zone erven (±0.52ha)
- c) 1 Public Road and Parking Zone erf (±0.59ha)

1.5. **Subdivision** in terms of Section 15(2)(d) of the said bylaw, of the unregistered consolidated Portion 27 of Farm 1041 and Portion 28 of Farm 1041, La Motte, Stellenbosch as indicated on Subdivision Plan, Drawing No: 3.018.01.05, Dated 04 July 2022, drawn by Sustainable Planning Solutions, and attached as Annexure B, into the following:

- a) 16 Conventional Residential Zone erven (±3.49 ha)
- b) 2 Public Open Space Zone erven (±0.52ha)
- c) 1 Public Road and Parking Zone erf (±0.59ha)

BE APPROVED in terms of Section 60 of the said By-law and subject to conditions of approval.

2. The approval is subject to the following conditions imposed in terms of Section 66 of the said By-law:
 - 2.1 The approval applies only to the application in question and shall not be construed as authority to depart from any other legal prescriptions or requirements from Council.
 - 2.2 The development be undertaken in accordance with the subdivision and consolidation plans referenced as Plan 1, Drawing No: 3.018.01.01 and Plan 2, Drawing No: 3.018.01.02, and Plan 3, Drawing No: 3.018.01.03, Dated 17 June 2022, drawn by Sustainable Planning Solutions, and attached as **Annexure B**.
 - 2.3 All land designated for the provision of municipal service infrastructure and amenities on the subdivision plan be transferred to the Municipality upon transfer of the first residential unit/erf in the subdivision, of which the cost for the surveying and transfer of such public land will be for the account of the applicant/developer.
 - 2.4 A Street Naming and Numbering plan be submitted for approval prior to the issuing of Section 28 Certification.
 - 2.5 The applicant submits an electronic copy (shp,dwg,dxf) of the Subdivision Plan which was preliminary approved by the SG. The following information must be indicated:
 - 2.5.1 Newly allocated Erf Numbers
 - 2.5.2 Co-ordinates
 - 2.5.3 Survey Dimensions
 - 2.5.4 Street names (if approved by Council)
 - 2.6 Development charges are payable in accordance with the prevailing and applicable Council Tariffs at the time of payment prior to the transfer of the first residential property or approval of any building plans, whichever occurs first, or as may be agreed on in writing with the Director Infrastructure Services.

2.7 Should the full extent of permissible development rights, as approved herein-above, not be implemented initially or development is phased, a pro rata Development Charge will be levied in accordance with the extent to which the development rights will be implemented, provided that the remaining development charges will be levied for the remaining permissible development rights when implemented in future. Remaining Development Charges will be levied in accordance with the prevailing and applicable Council Tariffs at the time of payment prior to the transfer of the first property or approval of any building plans, whichever occurs first.

2.8 Compliance with the conditions relating to Directorate Infrastructure Services contained in memorandum, dated 2 June 2023 and attached as **Annexure E**.

2.9 All engineering services and infrastructure as required in terms of the conditions and services agreement be complied with to the satisfaction of the Municipality prior to the issuing of a Section 28 Certification.

3. The reasons for the above decision are as follows:

3.1 The application is seen to be desirable from a town planning point of view as it is an existing development node located within the urban edge and to formalize the existing residential use of the property.

3.2 The application under consideration is to facilitate the transfer of the 16 newly created portions / erven with existing structures / house to the beneficiaries as identified by the Department of Public Works.

3.3 The approval of the proposal will have no impact on the character of the existing surrounding area as the existing houses with outbuildings were constructed during the construction of the Bergriver Dam in 2008.

	<p>4. Matters to be noted:</p> <p>4.1 Compliance with the conditions relating to Department of Environmental Affairs and Development Planning as contained in the memorandum, Dated: 13 March 2023 and attached as Annexure F.</p> <p>4.2 Compliance with the conditions relating to Department Heritage Western Cape as contained in the memorandum, Dated: 9 May 2019 and attached as Annexure F.</p> <p>4.3 The subdivision only comes into effect once all suspensive conditions or relevant legislative provisions have been complied with.</p> <p>4.4 The approval granted shall not exempt the applicant from complying with any other legal prescriptions or requirements that might have a bearing on the proposed use.</p> <p>4.5 Building plans be submitted for approval by the Municipality for all existing buildings should no building plans be on record with the Municipality.</p>
<p>SMPT 06/01/24</p>	<p>APPLICATION FOR SUBDIVISION, CLOSURE OF PUBLIC SPACE AND CONSOLIDATION: ERVEN 2175,2183, 1832, KAYAMANDI AND FARMS NO. 175/5, 175/33, FARM NO. 181 AND REMAINDER FARM NO. 183, STELLENBOSCH DIVISION (LU/15991)</p> <p>Discussion:</p> <p>a. Chairperson Crooijmans-Lemmer handed over to Mr Carstens to give a brief introduction of the application that served before the Tribunal.</p> <p>b. A discussion followed with regard to the extension of the validity period and the fact that the applicant requested an extension of time on the validity period.</p> <p>c. Mr Carstens provided clarity to members in respect of the validity period.</p> <p>d. All members were in support of the application.</p>

UNANIMOUSLY RESOLVED:

1. That the following application(s) made in terms of the Stellenbosch Municipal Land Use Planning By-Law, 2023, on **Farm No. 175/5**, Farm No. 175/33, **Farm No. 181**, **Remainder Farm No. 183**, Stellenbosch and **Erven 1832**, 2175 and 2183, Kayamandi, for the following – the underlined text/conditions below relate to additional approvals to be added to the original MPT approval of this item on 27 November 2022:

- 1.1 The **subdivision** in terms of Section 15(2)(d) of the said By-law of the following properties:

- a) Erf 1832 into Portion A ($\pm 0.14\text{ha}$) and Remainder ($\pm 1.49\text{ha}$);
- b) Farm No. 183 into Portion B ($\pm 4.49\text{ha}$), Portion C ($\pm 2.94\text{ha}$), and the Remainder ($\pm 119.54\text{ha}$);
- c) Farm No. 181 into Portion D ($\pm 14.44\text{ha}$) and the Remainder ($\pm 36.33\text{ha}$);
- d) Farm No. 175/5 into Portion E ($\pm 0.90\text{ha}$) and Remainder (0.13ha);
- e) Remainder of Portion 33 of Farm No. 175/33 into Portion F ($\pm 7.86\text{ha}$) and Remainder ($\pm 14.84\text{ha}$).
- f) Erf 2183, Kayamandi in two portions, namely Portion G (Unregistered Erf 1810, a portion of Erf 2183, Kayamandi) ($\pm 1,845\text{m}^2$ in extent) and the Remainder of Erf 2183, Kayamandi

- 1.2 **Closure of a public place** in terms of section 15(2)(n) of the said bylaw of the proposed "Portion G (Unregistered Erf 1810, a Portion of Erf 2183, Kayamandi) ($\pm 1,845\text{m}^2$ in extent).

- 1.3 **Closure of a public place** in terms of section 15(2)(n) of the said bylaw of Portion A (Unregistered Erf 5098, a Portion of Erf 1832, Kayamandi) ($\pm 1,436\text{m}^2$ in extent).

1.4 The **consolidation** in terms of Section 15(2)(e) of the said Bylaw of Portions A, B, C,D, E, F, G, in order to form one erf, namely proposed Portion H (Unregistered Erf 5104) (±32,1189ha in extent), known as Enkanini Development Area.

1.5 The **rezoning** in terms of Section 15(2)(a) of the said Bylaw of the consolidated Area H as the development area from Agricultural Zone to Subdivisional Area in order to accommodate the following development of the subject land as indicated on the Plan Nr. 9 attached as **ANNEXURE "B"** and as compiled by Urban Dynamics URP, dated September 2018:

a) 1 x **Public Roads and Parking Zone** measuring ±7.3ha in extent (Road Network: 14m & 8m Reserves);

b) 18 x **Public Open Space Zone** erven measuring ±10.59ha in extent (Public Open Space);

c) 18 x **Conventional Residential Zone** erven measuring ±9.36ha in extent (Subdivided Erven);

d) 5 x **Multi-Unit Residential Zone** erven measuring ±3.18ha in extent (Flats);

e) 10 x **Community Zone** erven ±1.04ha in extent (Place of Worship/Educational institution);

f) 8 x **Local Business Zone** erven measuring ±0.72ha in extent (Mixed use incl. retail).

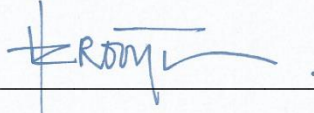
1.6 The **extension of the validity period** of the MPT decision (LU/8597) taken on 27 November 2020 in terms of Section 15(2)(i) of the Stellenbosch Municipal Land Use Planning By-Law.

BE APPROVED in terms of Section 60 of the said By-law and subject to conditions of approval.

2. The approval is subject to the following conditions imposed in terms of Section 66 of the said By-law:

- 2.1 The approval only applies to the proposed development under consideration and shall not be construed as authority to depart from any other legal prescriptions or requirements from Council or other legislation or Bylaws or Regulations that may be applicable.
- 2.2 The approval granted shall not exempt the applicant from complying with any other legal prescriptions or requirements that might have a bearing on the proposed use.
- 2.3 The development be implemented in accordance with the Subdivisional Plan/s and Consolidation Plan attached as **ANNEXURE B.**
- 2.4 New erf diagrams or general plans for the newly created land units be submitted to this municipality for clearance and record purposes.
- 2.5 The applicant submits an electronic copy (shp,dwg,dxf) of the General Plan which was preliminary approved by the SG. The following information must be indicated:
 - a) Newly allocated Erf Numbers
 - b) Co-ordinates
 - c) Survey Dimensions
- 2.6 A phasing plan be submitted together with the first application for subdivision.
- 2.7 All other conditions as imposed in Council's approval letter dated 02 December 2022, be complied with.

	<p>3. The reasons for the above decision are as follows:</p> <p>3.1 The proposal will allow the Municipality to proceed with the registration of the relevant Subdivision and Consolidation Diagrams with the Surveyor-General.</p> <p>3.2 The desirability of the development was already confirmed by the Municipality and the current application is basically to address the omissions of the previous land use application (LU/8597).</p> <p>3.3 The proposed development will formalise an existing informal settlement.</p> <p>4. Matters to be noted:</p> <p>4.1 Building plans be approved by the Municipality.</p> <p>4.2 A Street Name and Numbering Plan to be submitted for approval by the delegated authority.</p>
SMPT 07/01/24	OTHER MATTERS
7.1	PLANNING POLICIES (REVIEWED OR APPROVED BY COUNCIL) - PRESENTATION: INCLUSIONARY ZONING POLICY- Mrs. C Hauptfleisch
7.2	APPEALS RECEIVED AGAINST MPT DECISIONS


 Mrs H Crooijmans-Lemmer
 CHAIRPERSON: MUNICIPAL PLANNING TRIBUNAL


 Mr P van Zyl
 DEPUTY CHAIRPERSON: MUNICIPAL PLANNING TRIBUNAL



APPLICATION FOR SUBDIVISION, REZONING AND DEPARTURE ERF 2183, KLAPMUTS.

CONTENT	
ANNEXURES	PAGE NUMBER
ANNEXURE A: Locality Plan	28-29
ANNEXURE B: Subdivision & Zoning Plan	30-31
ANNEXURE C: Applicant's Motivation	32-59
ANNEXURE D: Proof of Evidence (Public Participation & Affidavit)	60-64
ANNEXURE E: Comments from Internal Departments	65-89
ANNEXURE F: Comments from External Departments	90-97
ANNEXURE G: Previous Approval	98-104



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

THE STELLENBOSCH MUNICIPALITY			
PLANNING REPORT: LAND USE AND LAND DEVELOPMENT APPLICATION: SUBDIVISION, REZONING AND DEPARTURE ERF 2183, KLAPMUTS.			
Application Reference	File Ref: LU/14679	Application Date	2022/10/07
		Last day for comments or additional information	2024/01/15

PART A: APPLICANT DETAILS			
First name(s) & Surname	Zanelle Nortje		
Company name	C K Rumble and Partners		
Registered owner(s)	Stellenbosch Municipality	Is the applicant properly authorised to submit the application	Yes

PART B: PROPERTY DETAILS			
Property description	Erf 2183, Klapmuts	Administrative District	Klapmuts
Physical address	The subject property is located off Groenfontein Road to the south of Klapmuts.		
Extent (m ² /ha)	1.1903ha	Nearest Town	Klapmuts
Existing Development and Current land use	The subject property is undeveloped, but several informal dwelling units have been erected on the property.		
Any unauthorised land use/building work	None		
Title Deed Nr.	9882/2002		
Current zoning and approved land use rights as per Zoning Scheme Bylaw 2019	Agriculture and Rural Zone		

PART C: APPLICATION DETAILS

Applications(s)	<p>Application in terms of Section 15(2)(a) of the Stellenbosch Municipal Land Use Planning By-Law (2015), for the Rezoning of Erf 2183 Klapmuts, from Agriculture and Rural Zone to Subdivisional Area to allow for the following uses:</p> <ul style="list-style-type: none"> – 109 Less Formal Residential Zone erven – 1 Public Open Space Zone – 1 Public Road and Parking Zone <p>Application in terms of Section 15(2)(d) of the Stellenbosch Municipal Land Use Planning By-Law (2015), for the Subdivision of Erf 2183, Klapmuts, into the following erven:</p> <ul style="list-style-type: none"> – 109 Less Formal Residential Zone erven – 1 Public Open Space Zone – 1 Public Road and Parking Zone <p>Application in terms of Section 15(2)(b) of the Stellenbosch Municipal Land Use Planning By-Law (2015), to relax the 1m street building line of all the resulting subdivided residential erven that are located on the internal roads only to 0m. Excluding the street building line applicable on Groenfontein Road.</p>
Purpose of Application	The application under consideration is to rezone and subdivide the subject property for low cost housing purposes.
Pre-consultation	A Pre-Application consultation took place and essential information was communicated to applicant during this meeting. (Attached Pre-Consultation Minutes)

PART D: APPLICATION BACKGROUND

In 2006, Farm 744/3 was rezoned and subdivided to develop low cost housing on it. The subject property, Erf 2183, Klapmuts, is located on Groenfontein Road a main collector road within Klapmuts and was a phase of this development which was never developed. As a result the zoning of the subject property was never exercised / lapsed and thus it is currently zoned Agricultural and Rural Zone.

A number of informal structures are currently located on the property and these residents will be relocated by Council to facilitate the development of the property. The subject property is located within the urban edge of Klapmuts and has been identified for residential purposes.



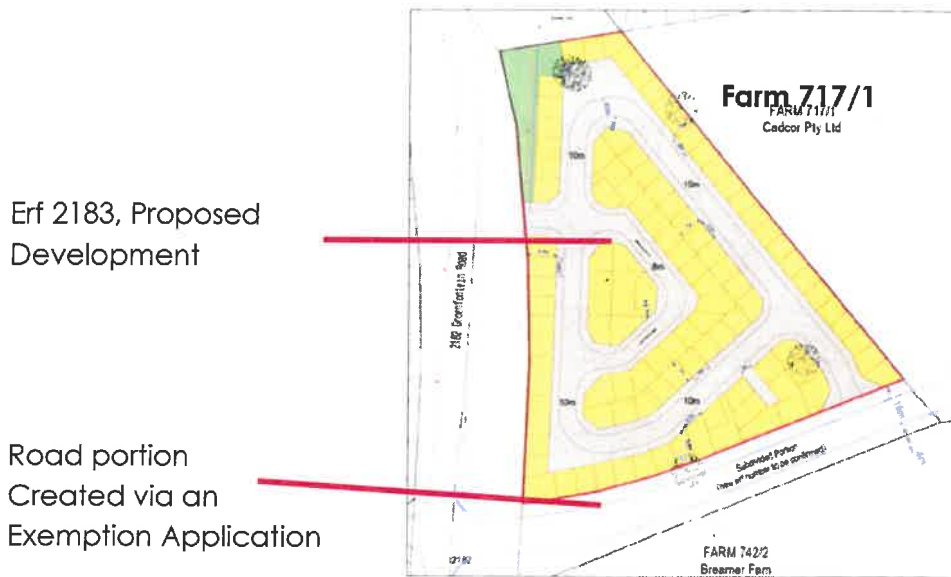
Location of subject property in relation to the Urban Edge

The surrounding land uses consist of the La Rochelle residential area to the west, Pinotage Villas is located north of the subject property and agricultural land to the south and east of the site. The adjoining agricultural properties are in the process of obtaining land use rights for residential, educational and industrial uses. The subject property is relatively flat, having an average fall of 1m for every 100m travelled.

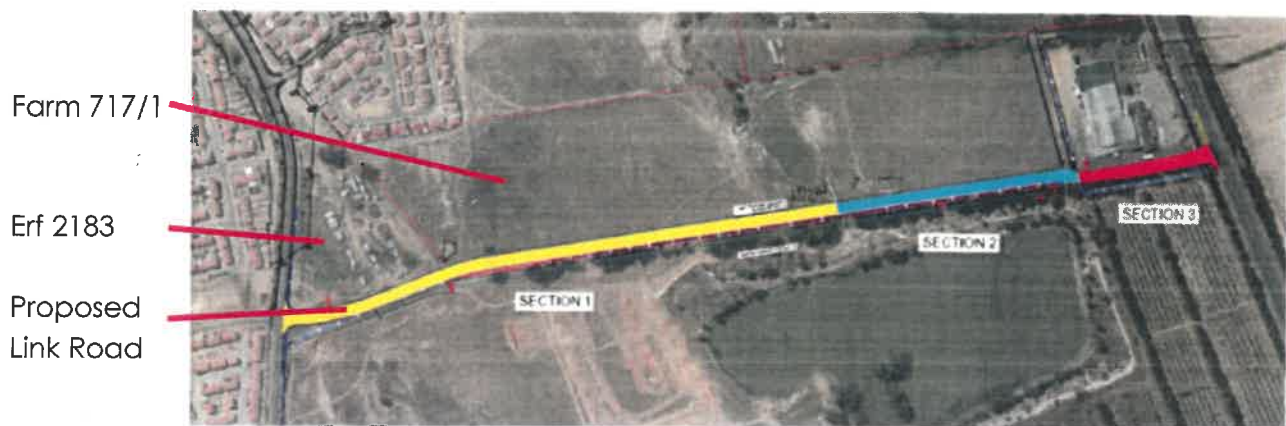


View of Erf 2183 currently

To ensure that Farm 717/1, the adjoining property is not land locked the road portion located on the southern boundary of the subject property proposed development was created via an exemption application. The newly created road forms part of the Municipalities Roads Masterplan and will facilitate access to the R44 as it will extend over Farm 717/1 when it is developed and will connect the Groenfontein Road with R44,



Layout Plan / Proposed Subdivision



View of proposed Link road between the Groenfontein Road and the R44

The proposal also includes an application for a building line departure to relax the 1.0m street building line to 0m for the internal streets of the development only. (Excluding Groentontein Road). The building line departure application was submitted as the proposed residential erven are small and should the building lines applicable to the property be implemented only a dwelling unit with a footprint of 25m could be developed on the property.

The departure from the street building line will allow more developable area on the property, without affecting the neighbouring properties, as the 1m side and rear building line will still provide sufficient space between neighbouring properties.

The approval of the street building line departure will allow a dwelling unit with a footprint of 30m² and a coverage of 61% to be constructed on the property. (Below is an extract of the development parameters applicable to a Less Formal Residential Zoned property.)

- (1) The following building lines, coverage and height shall apply to all buildings and shelters within this zone:

Building type	Street boundary building lines (m)	Common boundary building lines (m)	Coverage	Height
Shelters	1m	1m	80%	2 storeys
All other buildings	1m	0m on one boundary 1m on all other boundaries	80%	3 storeys

PART E: APPLICATION OVERVIEW AND MOTIVATION

The purpose of this application is to obtain approval for a low cost housing development on erf 2183, Klapmuts. The application under consideration is for the following.

- Rezoning of Erf 2183 Klapmuts from Agriculture and Rural Zone to Subdivisional Area in terms of Section 15(2)(a) of the Stellenbosch Municipal Land Use Planning By-Law 2015 to allow for the following land uses:
 - 109 Less Formal Residential Zone erven
 - 1 Public Open Space Zone erf
 - 1 Public Road and Parking Zone.

- Subdivision of Erf 2183, Klapmuts, in terms of Section 15(2)(d) of the Stellenbosch Municipal Land Use Planning By-Law 2015, in accordance with the sub-divisional zone above into the following erven:
 - 109 Less Formal Residential Zone erven
 - 1 Public Open Space Zone erf
 - 1 Public Road and Parking Zone erf

Application in terms of Section 15(2)(b) of the Stellenbosch Municipal Land Use Planning By-Law (2015), to relax the 1m street building line applicable to internal roads only to 0m. (Excluding the street building line applicable on Groenfontein Road.)

PART F: PUBLIC PARTICIPATION, COMMENTS AND RESPONSE

The application was advertised in the press and to surrounding affected property owners and no comments or objections were received.

The following Internal departments and sections of Stellenbosch Municipality supported the proposal with conditions.

- The **Manager: Spatial Planning** support the proposal (see **Annexure E.**)
- The **Director: Engineering Services** supported the proposal subject to conditions (see **Annexure E.**)

The following External Departments that were requested to provide comment supported the proposal with conditions.

- The **Heritage Western Cape** supported the proposal (see **Annexure F.**)
- The **Department of Environmental Affairs and Development Planning** has provided comment which is self-explanatory (see **Annexure F.**)

PART G: ASSESSMENT OF LAND USE AND LAND DEVELOPMENT APPLICATION

1. Legislative and Policy Context of land use and land development application

The land development application was submitted and processed in accordance with and in compliance with the prescripts of the said Bylaw.

The proposal is compliant with the MSDF of Stellenbosch as it is located within the urban edge and is identified for urban development.

2. Assessment of grounds of the land use and land development application

The land use application under consideration is to facilitate a low-cost housing development with 109 erven with the associated infrastructure and open space. The development is not out of character with its surroundings as it formed a phase of the La Rochelle housing development that was not developed and thus the approval granted lapsed.

The proposal was circulated to the relevant internal and external departments for comment as part of the assessment process and the proposal is supported with standard conditions. (Refer to **Annexures D & E**)

2.1 Applicable spatial development frameworks, guidelines, policies

The subject property and resulting portion are located within the urban edge and thus the proposal is in line with the Stellenbosch Spatial Development Framework as approved in 2023. (relevant extract of MSDf inserted above in the report.)

2.2 Service infrastructure capacity and sustainability

The application was circulated to the Directorate Infrastructure: Engineering Services and the proposal is supported as the newly created properties can connect to the existing civil infrastructure. As access to the development is obtained via the Groenfontein Road.

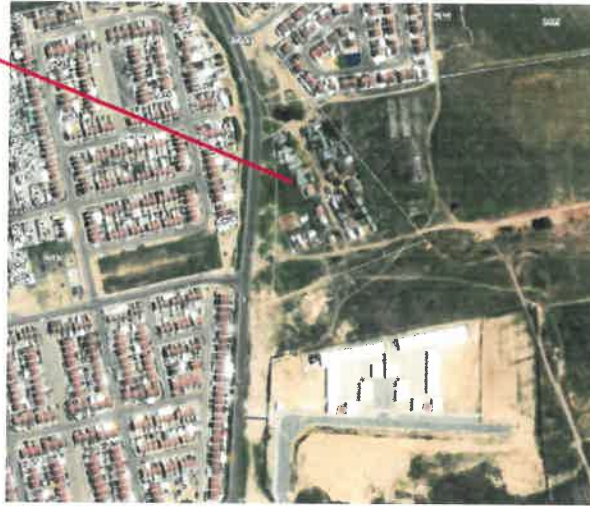
2.3 Applicable provisions of the zoning scheme

The proposal complies with the provisions of the 2023 Stellenbosch Zoning Scheme By-Law.

2.4 General desirability

The application is seen as desirable from a town planning point of view as the proposal is not out of character with its surroundings as can be seen by the aerial photo inserted below

Subject property



Photos of Maasdorp as currently developed.

PART H: SUMMARY OF KEY FINDINGS OF ASSESSMENT

After having independently considered and weighted all the relevant information the evaluation of the subject land use and land development application concludes that:

- The land use application under consideration is to facilitate a low cost housing development with 109 erven with the associated infrastructure and open space.
- The development is not out of character with its surroundings as it formed a phase of the La Rochelle housing development that was not developed and thus the approval granted lapsed.
- The land development application was submitted and processed in accordance with and in compliance with the prescripts of the said Bylaw.
- The proposal is compliant with the MSDP of Stellenbosch as it is located within the urban edge and is identified for urban development.
- No comments or objections were received on the application during the public participation process.

- The residents located in the informal structures on the subject property will be relocated by the municipality.
- The proposal was circulated to the relevant internal and external departments for comment as part of the assessment process and the proposal is supported with standard conditions.
- The approval of the proposal will help a number of household in accessing housing with secure tenure.

PART I: RECOMMENDATION

1. That the following application(s) in terms of Section 15(2) of the Stellenbosch Municipal Land Use Planning Bylaw namely:
 - 1.1. **Rezoning** in terms of Section 15(2)(a) of the said bylaw, of Erf 2183, Klapmuts, from Agriculture and Rural Zone to Subdivisional Area indicated on Development Proposal Plan, Drawing No: KL/11996/ZN_ZA, Dated: February 2024, drawn by CK Rumboll & Associates, and attached as **Annexure B**, to create:
 - a) 109 Less Formal Residential Zone erven (5174m²)
 - b) 1 Public Open Space Zone (342m²)
 - c) 1 Public Road and Parking Zone (4157m²)
 - 1.2. **Subdivision** in terms of Section 15(2)(d) of the said bylaw, of Erf 2183, Klapmuts, as indicated on Subdivision Plan, Drawing No: KL/11996/ZN_ZA, Dated: February 2024, drawn by CK Rumboll & Associates, and attached as **Annexure B**, into the following:
 - d) 109 Less Formal Residential Zone erven (5174m²)
 - e) 1 Public Open Space Zone (342m²)
 - f) 1 Public Road and Parking Zone (4157m²)
 - 1.3. **Departure** in terms of Section 15(2)(a) of the said bylaw, to relax the 1m street building line of all the resulting subdivided residential erven that are located on the internal roads to 0m, but excluding the street building line applicable on Groenfontein Road.

BE APPROVED in terms of Section 60 of the said Bylaw and subject to conditions of approval.

2. The approval is subject to the following conditions imposed in terms of Section 66 of the said Bylaw:
 - 2.1 The approval applies only to the application in question and shall not be construed as authority to depart from any other legal prescriptions or requirements from Council.
 - 2.2 The development be undertaken in accordance with the Subdivision Plan, Drawing No: KL/11996/ZN_ZA, Dated: February 2024, drawn by CK Rumboll & Associates, and attached as **Annexure B**.
 - 2.3 All land designated for the provision of municipal service infrastructure and amenities on the subdivision plan be transferred to the Municipality upon transfer of the first residential unit/erf in the subdivision, of which the cost for the surveying and transfer of such public land will be for the account of the applicant/developer.
 - 2.4 The applicant submits an electronic copy (shp,dwg,dxf) of the Subdivision Plan which was preliminary approved by the SG. The following information must be indicated:
 - 2.4.1 Newly allocated Erf Numbers
 - 2.4.2 Co-ordinates
 - 2.4.3 Survey Dimensions
 - 2.4.4 Street names (if approved by Council)
 - 2.5 A Street Naming and Numbering plan be submitted for approval prior to the issuing of the Section 28 Certification.
 - 2.6 Development charges are payable in accordance with the prevailing and applicable Council Tariffs at the time of payment prior to the transfer of the first residential property or approval of any building plans, whichever occurs first, or as may be agreed on in writing with the Director Infrastructure Services.
 - 2.7 Should the full extent of permissible development rights, as approved herein-above, not be implemented initially or development is phased, a pro rata Development Charge will be levied in accordance with the extent to which the development rights will be implemented, provided that the remaining development charges will be levied for the remaining permissible development rights when implemented in future. Remaining Development Charges will be levied in accordance with the prevailing and applicable Council Tariffs at the

time of payment prior to the transfer of the first property or approval of any building plans, whichever occurs first.

- 2.8 Compliance with the conditions relating to Directorate Infrastructure Services contained in memorandum, dated 8 December 2023 and attached as **Annexure E**.
- 2.9 All engineering services and infrastructure as required in terms of the conditions and services agreement be complied with to the satisfaction of the Municipality prior to the issuing of a Section 28 Certification.
3. The reasons for the above decision are as follows:
 - 3.1 The proposed development is regarded as being consistent with the MSDP and desirable in terms of its locational context
 - 3.2 The proposed development will have no impact on the character of the existing surrounding area as the development is seen as an infill development.
 - 3.3 The development will provide much needed housing opportunities for vulnerable households of Stellenbosch.
4. Matters to be noted:
 - 4.1 The subdivision only comes into effect once all suspensive conditions or relevant legislative provisions have been complied with.
 - 4.2 That Environmental Authorization be obtained from the Department of Environmental Affairs and Development Planning as noted in the letter of comment dated 29 November 2023, attached as **Annexure F** and that the conditions of approval contained in the Environmental Authorization be complied with prior to the approval above being acted on.
 - 4.3 The approval granted shall not exempt the applicant from complying with any other legal prescriptions or requirements that might have a bearing on the proposed use.
 - 4.4 Building plans be submitted for approval by the Municipality.

PART J: ANNEXURES

- ANNEXURE A:** Locality Plan
ANNEXURE B: Subdivision & Zoning Plan
ANNEXURE C: Applicant's Motivation
ANNEXURE D: Proof of Evidence (Public Participation & Affidavit)
ANNEXURE E: Comments from Internal Departments
ANNEXURE F: Comments from External Departments
ANNEXURE G: Previous Approval

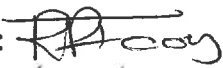
PART K: COMPILATION OF PLANNING APPLICATION ASSESSMENT REPORT**SUBDIVISION, REZONING AND DEPARTURE ERF 2183, KLAPMUTS.****Author of Planning Assessment Report:**

Recommended Categorisation of the Application for Authorised Decision Maker:

Name: R Fooy

Capacity: Senior Town Planner

SACPLAN Registration:

Signature: 

Date: 08/02/2024

PART L: REVIEW OF PLANNING APPLICATION ASSESSMENT REPORT**SUBDIVISION, REZONING AND DEPARTURE ERF 2183, KLAPMUTS.****Review of Planning Assessment Report:**

Name: Chrizelle Kriel

Capacity: MLCM

SACPLAN Registration: A212110

Signature: 

Date: 08.02.2024

PART M: SUBMISSION OF PLANNING APPLICATION ASSESSMENT REPORT**SUBDIVISION, REZONING AND DEPARTURE ON ERF 2183, KLAPMUTS.****Authorised Employee to assess and make a recommendation on a land use and land development application for consideration by the authorised decision maker:**

As the duly authorised official in terms of Section 56 of the Stellenbosch Municipal Land Use Planning Bylaw (2023) to assess and make a recommendation on the above planning application, the subject planning report is hereby submitted for consideration to the duly authorised decision maker in accordance with the Categorisation Model for Land Use and Land Development Applications as approved by the Stellenbosch Municipality in accordance with Section 69(1) of the said Bylaw.

In terms of the Categorisation Model duly approved in terms of Section 69(1) of the said Bylaw vide Item 11.8.1 and dated 24 May 2023, the subject application is categorised as follows:

Category: A.c.2; D.c.2; E.b.2

Decision Making Authority: SMPT

Rational: The proposal is not inconsistent with Council's policies applicable to the application but is contested.

Name:

Capacity:

SACPLAN Registration:

Signature:

Date:

Stiaan Carstens
SMPT
A/ISSI
8/2/2024

PART N: ADMINISTRATION OF PLANNING APPLICATION ASSESSMENT REPORT**SUBDIVISION, REZONING AND DEPARTURE ON ERF 2183, KLAPMUTS.****Administrator to Stellenbosch Municipal Planning Tribunal:**

It is hereby confirmed that proper notice was served of the Municipal Planning Tribunal meeting at which this land use and land development application will serve for consideration.

The land use and land development application will serve at the scheduled meeting of the Stellenbosch Municipal Planning Tribunal on:

Date: 23 FEBRUARY 2024

Name: LENACIA DAVIES

Capacity: SENIOR ADMINISTRATIVE OFFICER

Signature: [Signature]

Date: 08.02.2024



ANNEXURE A



LOCALITY PLAN



ANNEXURE B

DEVELOPMENT PROPOSAL: ERF 2183 KLAPMUTS LA ROCHELLE

DRAFT 8A



NOTE:
ALL AREAS AND DISTANCES ARE SUBJECT TO SURVEYING

COMPILED BY:
G.K. RUMBOLD & ASSOCIATES
REGISTERED PLANNERS
PROFESSIONAL ENGINEERS
16 PLANNING STREET, WILMERSBURG
TEL: 021-4873446
FAX: 021-4873461
GPR@rumbold.co.za

DATE:
February 2024

REF:
KL/11996/Z/L/BA

LEGEND

DEVELOPMENT AREA
Total area: $\pm 9673\text{m}^2$
52m² to 50m² average sized erven

INFRASTRUCTURE
Sewer pipeline
Water Pipeline

SCALE:
0 10 20 30m

109 UNITS

UNITS	SUBDIVISIONAL AREA - ZONING	COLOUR	TOTAL AREA	% OF AREA
1 - 109	LESS FORMAL RESIDENTIAL ZONE		5174m ²	53 %
110	PUBLIC OPEN SPACE ZONE		342m ²	3 %
111	PUBLIC ROADS AND PARKING ZONE		4157m ²	44 %
TOTAL			9673m ²	100 %



ANNEXURE C

1. INTRODUCTION

CK Rumboll and Partners has been appointed by Stellenbosch Municipality (SM) to assemble a Multi-disciplinary team of professionals to undertake an application for the rezoning, subdivision, amendment of existing approval conditions and departure from building lines and approval of the diagrams in the Surveyor General's office for Erf 2183, Klapmuts, to provide serviced sites in the La Rochelle housing development. Power of Attorney attached as **Annexure A**.

2. BACKGROUND

An application was submitted for the development of a low cost housing development on Farm 744/3, Paarl, in 2006. The application was approved in 2008 and then amended in 2011 and 2013. Farm 744/3, was registered as Erf 342, Klapmuts, and further subdivided to create the La Rochelle housing area in Klapmuts. Erf 2183, Klapmuts, was created in 2011 as a phase of the development with the rights for Less Formal Residential, Public open space and Public road and parking. The purpose of this application is to rezone and subdivide the land to create serviced erven. The previous approvals are further discussed in Section 7 below.

3. PURPOSE

The purpose of this document is to apply for the following:

- The **amendment of conditions of an existing approval** in terms of *Section 15(2)(h) of the Stellenbosch Municipal Land Use Planning By-Law 2015*, from the approval dated 7 November 2011, Ref Erf 342, Klapmuts;
- **Rezoning** of Erf 2183 Klapmuts from Agriculture and Rural Zone to Subdivisional Area in terms of *Section 15(2)(a) of the Stellenbosch Municipal Land Use Planning By-Law 2015* to allow for the following uses:
 - 109 Less Formal Residential Zone erven
 - 1 Public Open Space Zone erf
 - 1 Public Road and Parking Zone.
- **Subdivision of Erf 2183, Klapmuts**, in terms of *Section 15(2)(d) of the Stellenbosch Municipal Land Use Planning By-Law 2015*, in accordance with the sub-divisional zone above into the following erven:
 - 109 Less Formal Residential Zone erven
 - 1 Public Open Space Zone erf
 - 1 Public Road and Parking Zone erf

- The **Departure from street building line** in terms of *Section 15(2)(b) of the Stellenbosch Municipal Land Use Planning By-Law 2015*, to allow 0m street building line;

A copy of the application form is attached as **Annexure B**.

4. PROPERTY DESCRIPTION

	Erf 2183, Klapmuts
Extent	1.1903 ha (the remainder will be $\pm 9673\text{m}^2$ if previously submitted subdivision is approved, refer to Section 7)
Registered Owner	Municipality of Stellenbosch
Local Authority	Stellenbosch Local Municipality
Servitudes	None
Current Zoning	Agriculture and Rural Zone
Current Land Use	Illegal structures
Coordinates	33°48'51.55"S 18°52'09.06"E
Title Deed	T9882/2012
Title Deed Restrictions	None
SG number	4471/2011
Applicable Zoning Scheme	<i>Stellenbosch Municipality Zoning Scheme By-Law 2019 (PG 8153)</i>
Borders: North	Pinotage Village – residential erven
East	Portion 1 of the Farm 717
South	Portion 2 of the Farm 742
West	Groenfontein Road

Diagram, Conveyancer Certificate and Title Deed are attached as **Annexure C**.

5. LOCALITY

Klapmuts is a small hamlet on the most northern boundary of the Stellenbosch Municipal area. It is centrally located between the towns of Paarl, Stellenbosch and Kraaifontein. It has experienced slow growth as a residential area considering its proximity to Cape Town and other towns in the Winelands. Klapmuts is divided by the N1 with the consequence that Klapmuts North is located in the Drankenstein Local Municipality and Klapmuts South in the Stellenbosch Local Municipality.

On a Regional level Klapmuts is located in the Stellenbosch Local Municipal area in the Cape Winelands District. On a Local level the proposed developable area is located south-east of the existing built environment of Klapmuts, known as La Rochelle. The Groenfontein Road, being an arterial route through the town, gives access to Erf 2183, Klapmuts, herein hereafter will be referred to as the site. There are existing informal structures on site, which is also identified as one of the major site constraints. Locality Map attached as **Annexure D**.



Figure 1: Locality of Erf 2183 Klapmuts – La Rochelle

6. SITE DETAILS

6.1. ZONING AND SURROUNDING LAND USES

Erf 2183, Klapmuts, is zoned as Agriculture and Rural Zone and was previously zoned for Subdivisional Area for the following uses: Less Formal Residential Zone, Public Open Space Zone, Public Road and Parking Zone. The site was part of a larger housing development application approved in 2008 and amended in 2011 and 2013, more information about the existing approvals are discussed in Section 7 below. The zoning certificate is attached as **Annexure E**.

The surrounding uses consist of the La Rochelle residential area to the west, the residential Pinotage Villas to the north and agricultural land to the south and east of the site. The owners of Farm 717/1, bordering the site east, aims to obtain land use rights for conventional residential and industrial uses. Further the owners of Farm 742/2, bordering the site to the south, aims to obtain rights for residential, educational and industrial uses. The proposed uses and related applications on Farms 717/1 and 742/2 will further be discussed in Section 7 below.

6.2. PHYSICAL FEATURES

A topographical study was conducted by the surveyors of CK Rumboll & Partners and 0.5m contours were plotted. A drone flight was also undertaken to gather high quality graphic data. The data gathered and compiled, which includes the contour plan and cadastral map, can be found attached as **Annexure F**. The drone image can be electronically accessed requesting a *WeTransfer* link from zanelle@rumboll.co.za.

The site is relatively flat, falling on average 1m every 100m. Structures on site include 2 formal dwellings, which are dilapidated, and several informal structures/dwellings. A basic service point was given to the residence in the middle of the site. All the structures on site, formal and informal, will be demolished for the proposed development to ensure that the land is used to its full potential. The residents will be relocated by Stellenbosch Municipality when construction starts.



Figure 2: 0.5 metre Contour map of Erf 2183, Klapmuts

6.3. REAL RIGHTS

A Conveyancers Certificate was obtained for Erf 2183 to ensure there are no real rights on the property that will affect the proposed development. The conveyancer confirmed that there are no restrictive title conditions in the Title Deed that will affect the proposed development. There are also no servitudes

registered against the property. Conveyancer certificates, Title Deeds and Diagrams attached as **Annexure C**.

7. PREVIOUS / CURRENT LAND USE APPLICATION

7.1. Previous approvals

An application was submitted for the development of a low cost housing development on Farm 744/3, Paarl, in 2006. The application was approved in 2008 and then amended in 2011 and 2013. Farm 744/3, was registered as Erf 342, Klapmuts, and further subdivided to create the La Rochelle housing area in Klapmuts. Erf 2183, Klapmuts, was created in 2011 as a phase of the development. The following Land Use approvals and Environmental Authorisation, below, relates to Erf 2183, Klapmuts. The Zoning Certificate with approvals are attached as **Annexure E**.

- 4 May 2007 - Environmental Authorisation for a low cost housing development on Farm no. 744/3, Klapmuts, comprising of 550 subsidy residential erven, with average erf sizes of 110m² each.
- 29 February 2008 – Land Use Approval for Application for subdivision of remainder Farm 744/3 and approval of Site Development Plan for low cost housing development.
- 7 November 2011 – Land Use Approval for Application for the amendment of layout plan, dated 20 October 2011, for portion of erf 342, Klapmuts.

The following conditions imposed are applicable to Erf 2183, Klapmuts:

- The zoning is Informal Residential Zone in accordance with Scheme regulations promulgated in terms of Section 7(2) of Ordinance 15 of 1985
- All building lines abutting Groenfontein Road shall be erected at least five metres from the combined erf and Groenfontein Road reserve boundary and no erf access to Groenfontein Road will be permitted. (To be amended in this application.)
- All dwelling houses (formal buildings) shall be erected at least one metre but no further than two metres from the rear boundary of the erf. Side building lines of less than one metre shall be permitted, on condition that no window or door openings are provided in the walls on the side boundaries.
- Subdivisional Area Zoning shall apply to all subdivided erven and the Remainder.
- Each erf shall be connected to a separate municipal service connection.
- 5 August 2013 – A Land Use Approval for Application for the amendment of the approved subdivision on erf 342, Klapmuts. Allowing a reservoir on the amended Subdivision Plan dated 26 October 2011 by BKS Management Services.

7.2. Current applications affecting Erf 2183

Rezoning and subdivision of Portion 1 of Farm 717, Paarl

The client is Cadcor (Pty) Ltd and the applicant is Dupre Lombaard from Viridus Works (Pty) Ltd.

A land development application for the development of Portion 1 of Farm 717, Klipmuts (rezoning to sub-divisional area) was submitted to Stellenbosch Municipality by Viridus Work (Pty) Ltd. The application is for the rezoning of Portion 1 of farm 717, to sub-divisional area, for the purpose of establishing a mixed-use industrial estate and residential dwellings along the western edge of the property, located on the eastern boundary of Erf 2183, Klipmuts. The land use table and Site Development Plan below was extracted from the latest Land Use application amendment for the development:

Land use table:

Portion 1 of Farm Groenfontein No. 717, Paarl RD at Klipmuts

Designation	Zoning	Use	Future erven	Area (m ²)	Percentage area (%)
	Utility Services	Public and private road and transport facilities	4	10 866	15%
	Industrial	Warehousing, Industry, Business premises, Employee housing and internal roads	15	45 296	62%
	Conventional Residential	Group housing and internal roads	30	5 750	8%
	Private Open Space	Private open space	1	11 298	15%
Total area				73 210	100%

KM/11996/ZN

La Rochelle – Rezoning and Subdivision of Erf 2183, Klipmuts

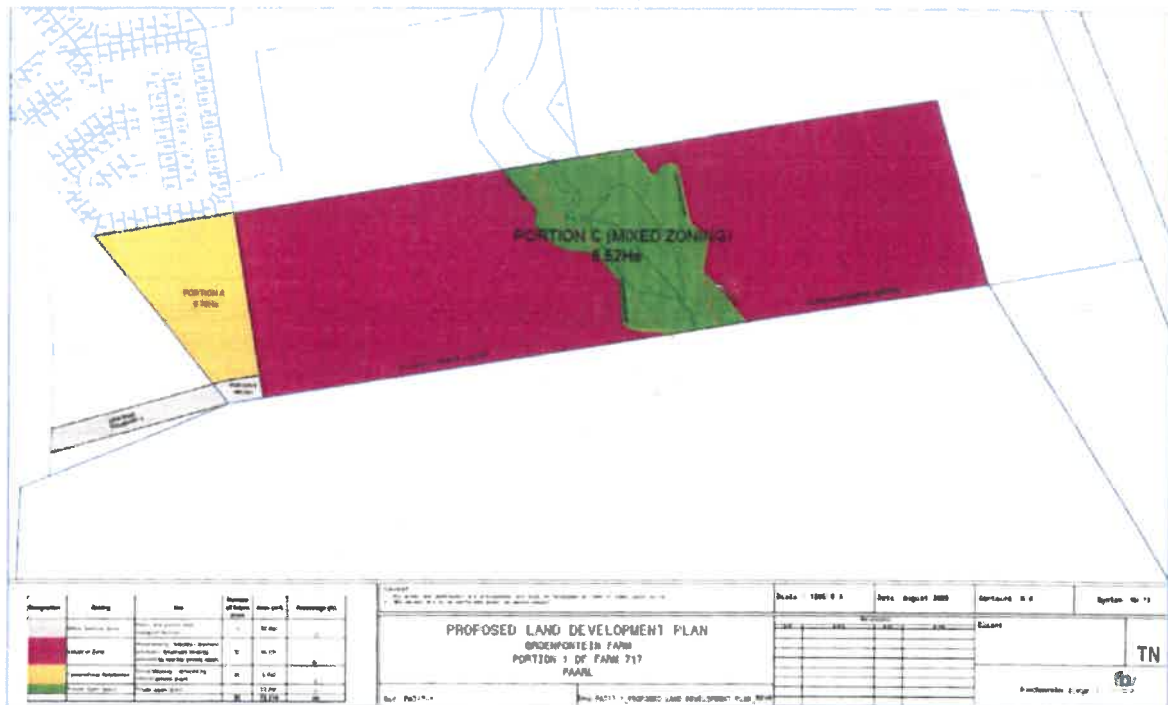


Figure 3: Proposed development of Farm 717/1

Following the submission of the rezoning application, the Applicant was requested to submit a sub-division application for the creation of a road over erf 2183, Klipmuts, being municipal property, to be able to give access to Portion 1 of Farm 717, seeing that the property is landlocked for development purposes, and the only access thereto for the time being is a 10m wide servitude from the R44 over the Potbelly property (Portion 6 of Farm 748). This narrow servitude is not feasible for development purposes, hence the request by the Planning Department to submit an application to use the access over erf 2183, which gives access to the Groenfontein Road.

Access from the Groenfontein Road for a mixed-use development has already been authorised by the Provincial Government, inclusive of the access road over Erf 2183. The access is aligned to the approved Roads Master Plan for Klipmuts. They will also allow for a road reserve along the southern boundary of their property to cater for the proposed future link road between the Groenfontein Road and the R44. See illustration below.

This application has not been approved on date of this report.

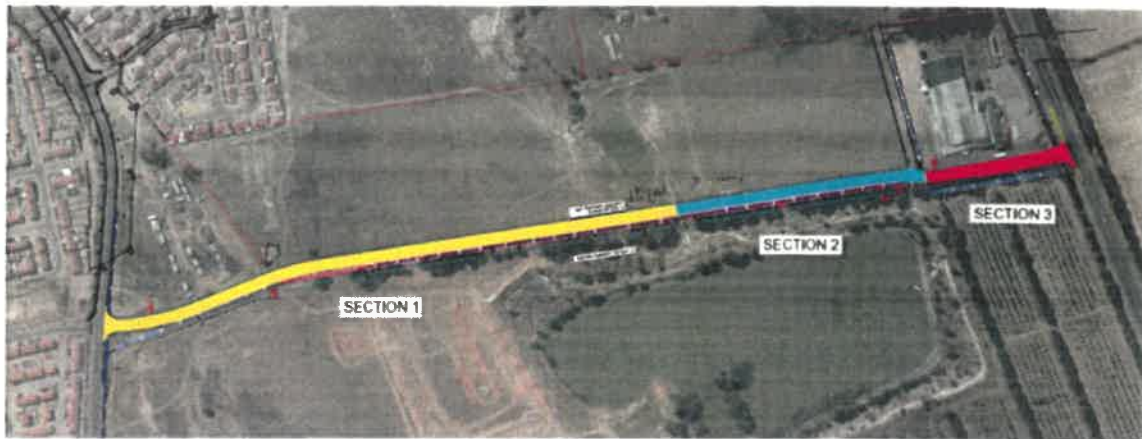


Figure 4: Proposed Link road between Groenfontein Road and R44

Proposed subdivision of Public road over Erf 2183, Klapmuts

The client is Cadcor (Pty) Ltd and Stellenbosch Municipality and the applicant is Dupre Lombaard from Viridus Works (Pty) Ltd

A Traffic Impact assessment was done for the development on Portion 1 of Farm 717 which identified the access point over Erf 2183, Klapmuts, to Groenfontein Road as the most feasible access point for the development. According to the master planning of the intersection with Groenfontein road a possible roundabout will be constructed in the future and sufficient space and splays should be left for this expansion. A minimum road reserve of 16m width is required for the development, whereas indications are that 20m road reserve would be required and the existing authorisation is for a 25m wide reserve.

The subdivision proposal was for a 20m wide road with a 32m wide splayed intersection on Groenfontein Road as illustrated below. A proposed rezoning has also been applied for to rezone the portion of road to Transport Zone II, although Erf 2183, Klapmuts, has an existing zoning of subdivisional area to accommodate the road:

The subdivision application has not been approved to date of this report and confirmation was received to only allow 16m road reserve over Erf 2183 and 4m over Farm 742/2 south. The portion of road will not be included in the application for the further subdivision, seeing that approval will be received for the road portion in due course.



Figure 5: proposed subdivision of 20m wide road

Subdivision and rezoning of Portion 2 of Farm 742

The client is Breamer Farm Development (Pty) Ltd and the applicant is Thys Walters from TV3 Architects and Town Planners.

An Environmental Approval was received on the 24th of April 2017 for a mixed use development on Portion 2 of farm 742, Paarl RD. The proposed development included:

- Approximately 317 housing units.
- 2 School – one a primary school and one a secondary school
- A light industrial area
- Public and private roads
- Associated bulk infrastructure upgrades
- Access from Groenfontein Road, of which a portion (25m road reserve) of Erf 2183, Klapmuts, is included

The proposed site development plan can be seen below.

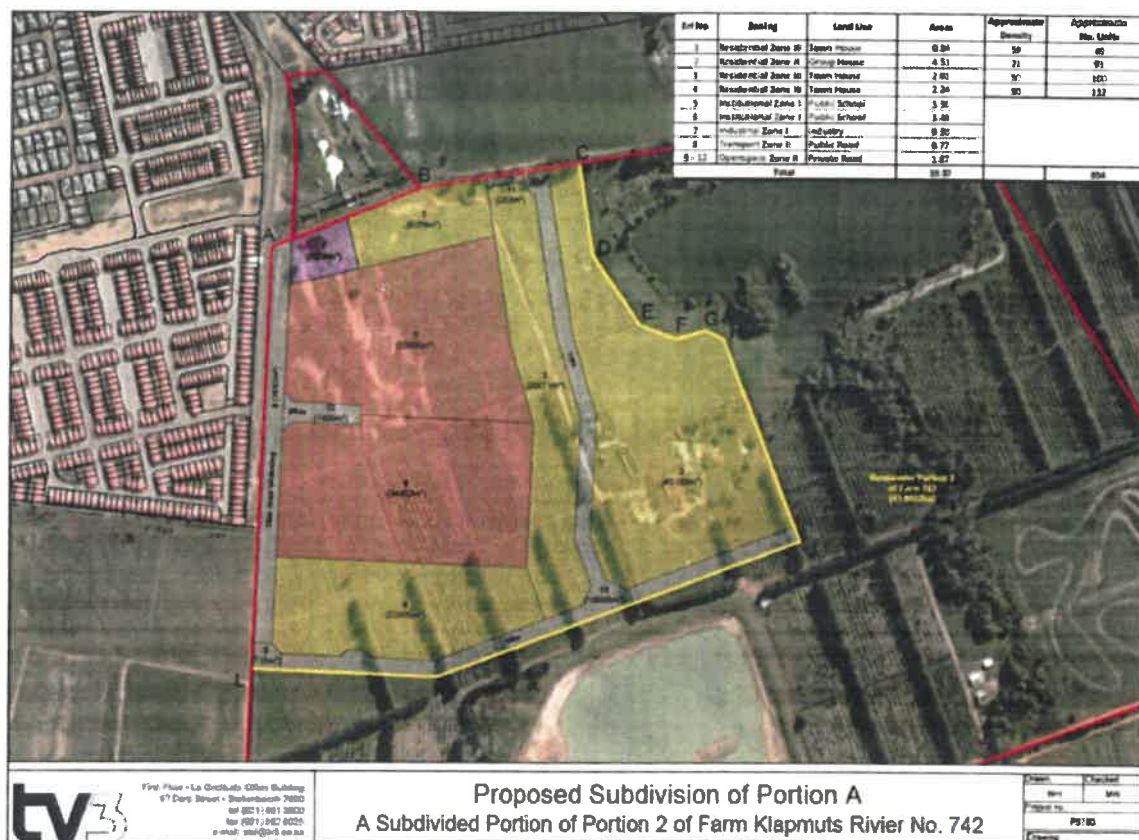


Figure 6: Proposed development on Farm 742/2

A land use application was submitted for the rezoning and subdivision of the 2 school erven and the extension of Groenfontein Road and was approved the 19th of October 2020. The new farm numbers are allocated as follow:

- Portion 7 of Farm 742 – School site north
- Portion 8 of Farm 742 – School site south
- Portion 9 of Farm 742 - Public road extension of Groenfontein Road

The remainder of the farm has not been rezoned or subdivided and is still zoned for agricultural purposes.

8. OPPORTUNITIES AND CONSTRAINTS

The table below summarises the key opportunities and constraints on the site and was derived from the desktop studies and site analysis done.

Topic	Opportunities	Constraints
Real rights	No restrictive title conditions will restrict development.	None.
Topographical	The site is relatively flat and will be easy to develop.	Gravitational storm water pipes will need to be angled to ensure sufficient flow due to the flat topography.
Stellenbosch Draft SDF 2019	The site is identified for residential infill.	None.
Physical features	There are no natural features that will hinder the development.	The existing informal settlers will need to be relocated and all structures to be removed/demolished.
Environmental	An Environmental Authorisation exists and there are no indigenous vegetation on site.	None.
Access	Groenfontein Road is in a good condition to carry additional traffic.	The construction of the link road between Groenfontein Road and R44 needs to be confirmed.
Services	There is existing electrical and civil service capacity for the proposed development.	Existing pipelines on site needs to be accommodated within public open spaces.
Visual / Heritage	No heritage indicators on or near the development area. HWC confirmed no heritage assessment will be needed.	None

9. THE DEVELOPMENT

9.1. OVERVIEW

The La Rochelle Housing project is an Upgrading of Informal Settlements Programme (UISP) housing development to provide serviced sites on Erf 2183, Klapmuts. As mentioned, the erf is part of a larger phased housing development and does not consist of the correct zoning to accommodate the proposed uses. This application will allow obtaining the necessary zoning to create cadastral subdivided serviced erven to accommodate people from the housing waiting list of Stellenbosch.

The design principle of the development represents a neighbourhood concept where erven are clustered together to create small neighbourhood pockets. The streets are accessible creating an inclusive community and low speed road networks. The **Western Cape Development Parameters** document together with the community needs determined the amount of erven needed for the community and the location within the existing urban fabric. There are illegal structures on the property and Stellenbosch Municipality will relocate the families to allow the proposed development. The ultimate purpose is to create a sustainable human settlement to satisfy the current and future need in Klapmuts.

The application was assessed at a Pre-scrutiny meeting and the comments received are attached in **Annexure G** and will be addressed in this motivation.

9.2. PROPOSED REZONING

Application is made for the rezoning of the said property *in terms of Section 15(2)(d) of the Stellenbosch Land Use Planning By-Law 2015*, from Agriculture and Rural Zone to Subdivisional Area to allow for the following uses: 109 less formal residential erven, 1 open space and 1 public roads and parking erf. As previous approvals were never implemented, all rights have lapsed and a new application is needed to get the zoning and subdivision in place.

The proposed development will create an opportunity to cater for the growing need of informal settlers with the intention of a better living environment. The development also address the inclusion of persons and areas that was previously excluded, by creating erven for people in informal settlements it will give families a chance to own a property and rise above poverty and deprivation. The erven created by this housing project will be distributed by the Stellenbosch Municipality accordingly, taking into account the housing waiting list of the area.

9.3 PROPOSED SUBDIVISION

To allow for the development of the La Rochelle housing project it is proposed to subdivide Erf 2183 in terms of *Section 15(2)(d) of the Stellenbosch Land Use Planning By-Law 2015* into the following erven with their respective zonings under Subdivisional area:

- 109 Less Formal Residential Zone erven
- 1 Public Open Space Zone erf
- 1 Public Roads and Parking Zone erf

The Site Development Plan is attached in **Annexure H** and can be seen in the figure below. The layout design took the site restrictions into account and created a human settlement that is integrated, accessible, walkable, liveable and efficient. All the residential erven is within walking distance of economic and community erven and also green areas to gather and play. The infill layout and place making node concepts was used to create efficient friendly streets and neighbourhood blocks.

Less Formal Residential Zone makes allowance for shelters, accommodating the low income and unemployed community members to have access to erven and services without the means to build a permanent structure. The layout provides erven with an average of 49m² size as per the recommendations from Stellenbosch Municipality and the community. These erven can accommodate a shelter or formal

structure for a single family and makes optimal use of the site. It further restrict the opportunity for backyard dwellers.



Figure 7: Subdivision and Site Development Plan

9.4. PROPOSED AMENDMENT OF APPROVAL CONDITION

As mentioned the erf sizes are on average 49m², which only allows enough space for a single family home. In the approval for the amendment of layout plan for portion of Erf 342, Klapmuts, dated 7 November 2011, reference Erf 342, Klapmuts, condition 2 reads as follows:

"2. Building lines. All buildings abutting Groenfontein Road shall be erected at least five metres from the combined erf and Groenfontein Road reserve boundary and no erf access to Groenfontein Road will be permitted."

If this building line is accommodated the erven next to Groenfontein Road will only have 12m² of developable area remaining. It is thus the purpose to apply for the **amendment of conditions of an existing approval** in terms of Section 15(2)(h) of the Stellenbosch Municipal Land Use Planning By-Law 2015, from Condition 2 of the approval dated 7 November 2011, reference number Erf 342, Klapmuts.

A closer look to the surrounding buildings and erven next to Groenfontein Road, motivates and supports the proposed amendment. As can be seen in the figure below, inset 1, the houses in Pinotage Villas, to the north, is also located next to Groenfontein Road and all these erven are $\pm 1.2\text{m}$ from the road reserve erf boundary. Further, if the 5m building line is accommodated, as per the erven directly west in the La Rochelle development, see inset 2, the amount of backyard dwellers and informal shelters increase, which has a negative effect on the visual aesthetics of Groenfontein Road. The road reserve is 32m wide and allows for sufficient space for doubling of the road in future as well as sufficient space for sidewalks.



Figure 8: Surrounding erven and structures next to Groenfontein Road

The following amendment is thus proposed:

Existing condition	Proposed amendment of condition
"2. Building lines. All buildings abutting Groenfontein Road shall be erected at least <u>five</u> metres from the combined erf and Groenfontein Road reserve boundary and no erf access to Groenfontein Road will be permitted."	"2. Building lines. All buildings abutting Groenfontein Road shall be erected at least <u>ONE</u> metre from the combined erf and Groenfontein Road reserve boundary and no erf access to Groenfontein Road will be permitted."

This is the last portion of land proposed for development which is covered under the approval dated 7 November 2011 and any further applications next to Groenfontein Road will need to be assessed on its own merit.

9.5. PROPOSED BUILDING LINE DEPARTURE

Further application includes the **Departure from street building lines** in terms of *Section 15(2)(b) of the Stellenbosch Municipal Land Use Planning By-Law 2015*, to allow the departure from 1m to 0m street building line on all erven next to internal roads (excluding Groenfontein Road).

As mentioned the erven are small and with a 1m building line on the rear building line, 1m building line on one common boundary and 1m street building line it only allows for a developable area of 25m². By allowing the departure from the street building line it allows for more developable area, without affecting the neighbouring properties. The 1m rear and one common boundary building lines will provide sufficient space between neighbouring erven and allowing one common boundary of 0m. By allowing the departure a total of 30m² of an erf is developable and will only be 61% of the erf coverage.

9.6. COMMUNITY FACILITIES

The Western Cape Development Parameters Guideline was used to determine the need for community facilities within the development. Community services includes Crèche, Church and educational erven to provide in the social and recreational needs of the community. The locality of these erven near open spaces are desirable to create areas for gathering of the community when using the formalised community facilities.

There are sufficient social and community facilities in the vicinity to be used by the residents of the proposed development. Crèches and Churches are provided within walking distance to the west in the La Rochelle neighbourhood and the Klapmuts. A mixed-use community centre and school is located 600m to the north. The amount of erven provided does not warrant new facilities as summarised below:

Early Childhood Development Centres (ECD)

The following sets out the number of people / dwelling units that will justify the need for an ECD:

- 2400 people (600 dwelling units) for low income areas.

Schools

The following sets out the number of people / dwelling units that will justify the need for a school:

- 3000-4000 people (1000 dwelling units) for a primary school
- 6000 people (1500 dwelling units) for a secondary school

Place of Worship

The following sets out the number of people / dwelling units that will justify the need for a place of worship:

- 2000 people (500 dwelling units)

Community centres

The following sets out the number of people / dwelling units that will justify the need for a community centre:

- 10 000 people (2500 dwelling units) in no-metropolitan areas

9.7. PUBLIC OPEN SPACES

The Western Cape Development Parameters Guideline was used to determine the need for open space even within the development. The following sets out the number of people / dwelling units which will justify the need for a small neighbourhood play plot:

- Minimum 400 m² sized plots for every 1000 people or 250 dwelling units

There are sufficient public open spaces and sports facilities in the vicinity to accommodate the proposed development. A small public open space erf is allocated north east of the site, which is ±380m², in size. Although it accommodates the existing pipelines, it can still accommodate a small play lot if formalised.

9.8. ROAD SYSTEM AND ACCESS

Access to the site is gained via the Groenfontein Road which connects with Merchant Street, then Pickering Street, ultimately connecting with Stellengate Road which gains direct access from the R44. The Groenfontein Road is formalised on the western edge of the site. A future link road between Groenfontein Road and the R44 is proposed on the southern boundary of the site. Access to the proposed development will be taken of the new proposed link road, of which the subdivision has been submitted to council (refer to Section 7 above). The link road between Groenfontein Road and the R44 was identified in the Stellenbosch Roads Master Plan in 2019, refer to extract below. Further a second access is proposed directly from Groenfontein Road.

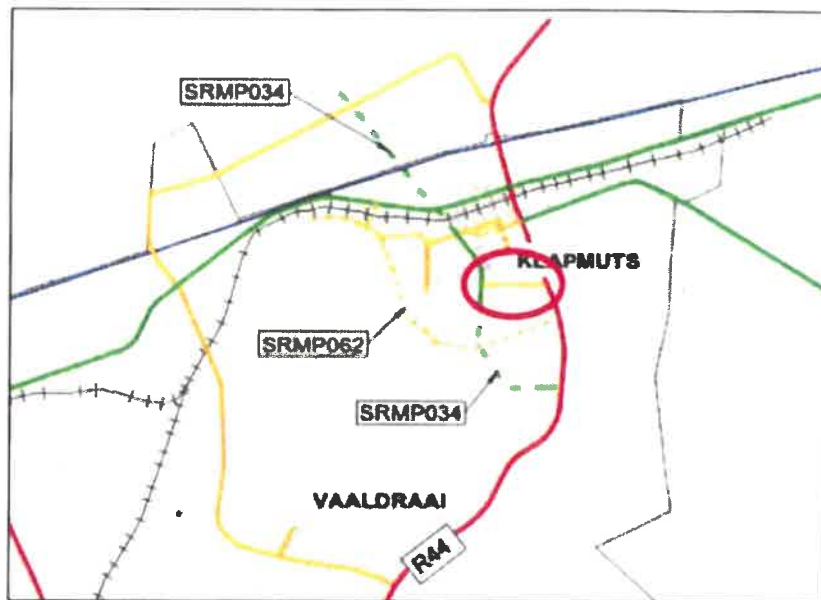


Figure 9: Roads Master Plan 2019

A Traffic Impact Statement (TIS) was done by UDS Africa Pty Ltd and is attached as Annexure I. The TIS assessed the impact of the development on traffic flow, road infrastructure and suitable access points. The following points are summarised from the TIS:

- It is not expected that the proposed less formal residential erven will have such an impact on the surrounding road network that significant upgrades will be required.
- The two access positions are considered acceptable from a spacing point of view.
- No access controls are proposed on Groenfontein Road and thus no staking will occur.
- The internal streets will consist of ± 5 to 5.5m blacktop widths and a 10m road reserve.
- A one way is also proposed with a ± 4 m blacktop width and an 8m road reserve.
- Refuse removal will be kerbside collection by the Municipality and no issues in terms of access for the refuse vehicles are expected.
- A formal embayment for taxis are not warranted seeing that the railway station and taxi rank is within an 800m walking distance from the development.
- The parking requirement will be available on site if needed.
- Recommendation: that the proposed less formal residential development be considered for approval from a traffic point of view.

9.9. STREET NAMES

Street names for the development were chosen by the La Rochelle Ward Committee and the list with alternatives is as follows:

- Protea Street

- Fynbos Street
- Varkblom Street

The proposed street names above comply with the Stellenbosch Municipal Policy on Place Naming and Street naming and Renaming and numbering of November 2010 as follows:

- ✓ There are no duplicate or similar names within the suburb or within a 2km radius, also not within a 5km radius.
- ✓ There are no similarly spelled names in the same suburb within a 2km radius.
- ✓ There are no phonetically similar names within a 5km radius.
- ✓ The names are within the theme of the surrounding area which is plant names. It also has some individuality with regards to the Afrikaans spelling.
- ✓ No suffices or abbreviations are proposed.
- ✓ The street names are no more than 20 characters including spaces.
- ✓ It is not foreseen that the names are offensive to anyone.

The relevant street numbers are proposed on the Site Development Plan attached in **Annexure H**, as prescribed in the policy, and the street number plan is attached as **Annexure M**.

10. OTHER LEGISLATIVE REQUIREMENTS

10.1. ENVIRONMENTAL

An Environmental Authorisation exists, which includes Erf 2183, Klappmuts, and dated 4 May 2007 (attached as **Annexure E**). The site is highly disturbed, seeing that there are informal structures on site, however an Environmental Screening report was generated for the site. It should be noted that the Screening Report is auto generated by Department of Environmental, Forestry and Fisheries and the areas identified as high sensitivity can be confirmed as not applicable, see table below.

The following sensitive areas were identified in the screening report:

Theme	Very High sensitivity	High sensitivity	Medium sensitivity	Low sensitivity	Response
Agricultural Theme		X			This theme was only identified due to the farming activities to the east and south of the site. Both these farms have ever been earmarked for development and will not be affected.
Animal Species Theme			X		There are no endangered or indigenous animals on site, due to urban development.
Aquatic Biodiversity Theme	X				The site is not close to any river or dam.
Archaeological and Cultural				X	The urban environment is newly built.

Heritage Theme					within the last 20 years and there are no heritage structures on site.
Civil Aviation Theme			X		No building or structures will be suggested to impact civil aviation in the area.
Defence Theme				X	The area is located within the urban edge of Klapmuts.
Palaeontology Theme			X		The site is not within a significant palaeontological area. If any remains are found during construction the site process will be followed.
Plant Species Theme				X	There are no indigenous vegetation on site, only a few gumtrees.
Terrestrial Biodiversity Theme	X				The site is highly disturbed due to informal settlement on site and no terrestrial biodiversity will be found on site.

It is not foreseen that the proposed development of Erf 2183, Klapmuts, will trigger any listing notices published in accordance with the National Environmental Management Act, Act 107 of 1998. The existing Environmental Authorisation has also vested in which Erf 2183, Klapmuts, is included.

10.2. HERITAGE IMPACT ASSESSMENT

The hill known as 'Klapmuts' was named by Abraham Gabbema, who explored the Berg River Valley with seven officers in 1657. This series of early Dutch East India Company reconnaissance missions resulted in much of the localised language still used today. 'De Clapmuts' (later known as 'Klapmuts') resembled a style of sailor's cap with flaps, although Jan van Riebeeck makes reference in his journal to the hill resembling a farm maiden's hat. A "muts" in Dutch refers to a beanie-type cap.

Historically, the freehold land grants around Klapmutskop primarily focused on grain production and stock farming. Citizen inventories (Opgaaf rolle) also indicate an emphasis on wine production in the greater Klapmuts area which continued for almost 200 hundred years until the end of the 19th century when vines across the region were devastated by the outbreak of Phylloxera, and many farmers were bankrupted. Fortunately, unaffected vines and new technology allowed the wine industry to recover.

Oude Weltevreden farm, now Klapmuts town, was originally part of the neighbouring 'Natte Valleij' farm. After owner Abraham de Villiers' death in 1814, various deductions were made and a portion passed to his ninth child, Jacob Izaak, who named it Weltevreden. The homestead and wine farm was renamed 'Le Bonheur' in 1994 to avoid confusion. With the three other farms of the same name in the area. A portion of the original Weltevreden farm is included in the proposed development, but the land itself does not have any heritage resources or structures of significance on it.

Apart from the Klapmuts Hotel and a few rail way related houses, there are very few buildings of architectural significance in Klapmuts. Most of the buildings were built after 1960. Slow growth of the town can be linked to the lack of service infrastructure. Bore holes, for example were the only source of water until 1996. In 1998, two phases of low-cost housing were built and 850 units absorbed a large proportion of shack dwellers from La Rochelle and Mandela Park. Informal settlement continues to exist along the periphery of the low-income housing schemes, some of them located on Erf 2813, Klapmuts

On site there is no remanence of any historical indicators. The land is highly disturbed by informal dwellers, no structures on site are older than 60 years and no historical worthy landmarks can be found in the surrounding area. A Heritage Notice of Intend to Develop was submitted to Heritage Western Cape (HWC) and a Record of Decision was received confirming that the development will not warrant a Heritage Impact Assessment. The letter from HWC is attached as **Annexure J**.

11. SERVICES

CIVIL ENGINEERING

A civil services report was drafted by UDS Africa Pty Ltd and is attached as **Annexure K**. The following points are summarised from the said service report:

Water

The internal water reticulation network will comply with the "Red Book Guidelines" and the municipal standards from Stellenbosch Municipality. The internal network will be constructed using 110mm Class 12uPVC pipes, with 20mm HDPE PE PN12.5 water connections to each erf.

The water reticulation network in Klapmuts is in the proses of being upgraded and will be completed in 2022/23. There is sufficient capacity available for the proposed development.

Sewage

The internal sewer reticulation network will comply with the "Red Book Guidelines" and the municipal standards from Stellenbosch Municipality. The internal network will be constructed using 160mm Class 34uPVC pipes, with 110mm Class 34uPVC sewer connection to each erf.

There is currently an application for the overall upgrade of the sewer reticulation system for the greater Klapmuts, although there is sufficient capacity from the 160mm pipeline located in the Groenfontein Road for the proposed development.

Stormwater

It is proposed that storm water is linked to the open channel on the western side of Groenfontein Road.

Solid waste

The solid waste generated on site will be removed by Stellenbosch Municipality on a weekly basis.

Conclusion

From the abovementioned information, it is concluded that the site can be serviced from an engineering perspective.

ELECTRICAL ENGINEERING

An electrical services report was drafted by De Villiers and Moore Consulting Engineers Pty Ltd and is attached as **Annexure L**. The following points are summarised from the said service report:

- Eskom is the electrical supply authority in Klipmuts. Confirmation has been received that there is sufficient capacity for the proposed development without any external upgrades.
- There is no recorded existing Eskom infrastructure on the erf.
- An Eskom mini-substation is to be installed as part of the project.
- The municipality has indicated that they would prefer the installation of an overhead LV network.
- Stellenbosch municipality approved street lighting infrastructure is to be installed.

12. PLANNING POLICY**PROVINCIAL POLICY CONTEXT**

The **Western Cape Provincial Spatial Development Framework (PSDF)** was approved and published in March 2014. The main guiding principle on which the PSDF is based is spatial justice, sustainability and resilience, spatial efficiency, accessibility, quality and liveability.

The PSDF supports and contributes to the National Development Plan (NDP) of 2012 which strives to eliminate poverty and reduce inequality by creating jobs and livelihoods, transform urban spaces, expand infrastructure and provide capable public services. The PSDF further supports the OneCape 2040 initiative on the following key transition areas of the OneCape vision:

- Integrated neighbourhoods and upgrading the built environment
- Integrated services planning and provision
- Design and produce settlements that addresses resource scarcity
- Healthy, accessible, liveable, multi-opportunity communities

The proposed development at La Rochelle should focus on the integration with the surrounding areas to create integrated sustainable settlements. The design of the development must incorporate the use of the natural fall of the land and incorporate service-effective blocks to ensure the sustainable use of service resources.

The following PSDF's key transitions are relevant to the proposed development of La Rochelle:

- Develop mixed-use and compact settlements through competitiveness, social inclusion, quality of life, efficient delivery of affordable services and resilience to environmental hazards and human safety.
- Increase densities in appropriate locations aligned with resources and space economy.
- Integration of complementary land uses.
- Public transport orientation and walkable neighbourhoods.
- Cluster activities and promote urban settlements rather than suburban settlements.
- Settlements that include sense of place, accessible settlement patterns, mixed land uses and densities, facilities and social services.

The following aims of the PSDF are relevant to the development of the relevant properties in La Rochelle and should comply with these policies:

- Policy E1: Use regional infrastructure investment to leverage economic growth:
 - Promote denser settlement patterns to support the transition to public transport, and mixed land use patterns to reduce the need for travel and create walkable neighbourhoods
 - Designing human settlements to accommodate infrastructural smart grids
- Policy S1: Protect, manage and enhance the sense of place, cultural and scenic landscape:
 - Prevent settlement encroachment into viable agricultural areas, scenic landscapes and biodiversity areas
- Policy S2: Improve provincial, Inter and Intra-regional accessibility:
 - Built environment projects should focus on compacting and connecting urban development and clustering public facilities along these connections
 - Develop human settlement patterns that are compact and accessible so that all can access the opportunities of urban environments
- Policy S3: Promote compact, mixed use and integrated settlements:
 - In order to secure a more sustainable future settlement planning and development should achieve higher densities – compact settlements save people time and money, as travel distances are shorter and cheaper
 - Promote functional integration and mixed use as a key component of achieving improved levels of settlement liveability and counter apartheid spatial patterns and decentralization through densification
- Policy S5. Promote sustainable, integrated and inclusive housing in formal and informal markets:

- Investment in housing must ensure optimal and sustainable use of all resources, including financial, land, social and infrastructure components
- Increase densities of settlement and dwelling units in new housing projects

The proposed development of La Rochelle incorporates all said transitions and policies within the layout design which focus on higher density, efficient societies that are walkable and provide in the needs of the beneficiary group.

LOCAL POLICY CONTEXT

The Stellenbosch Spatial Development Framework (SDF) was approved in 2019 and guides all future development in the municipal area. Klipmuts is identified as a potentially significant centre for economic activity and residence within the metropolitan region and SM (as identified in the GCM RSIF). Erf 2183, Klipmuts, is located within the urban edge of Klipmuts. On the Klipmuts land use proposal map, Erf 2183 is earmarked for residential infill, promoting the proposed development of Less Formal Residential erven. Refer to the extract of the SDF Land Use map below.



Figure 10: SDF Land Use Proposal of Klapmuts

The overarching concept of the Stellenbosch SDF is as follows:

"We must actively manage all the settlements that make up Stellenbosch Municipality. Each settlement has a role to play in offering housing, work and other opportunities, and can accommodate people across socio-economic sectors....."

Even though the small rural settlement of Klapmuts is identified with lower growth potential as Stellenbosch, the town has an important role to play in the provision of housing opportunities for the community with accompanying socio-economic benefits, supporting the local agricultural community.

The Stellenbosch Integrated Development Plan's (IDP) goals include the improvement of quality of life for citizens, inclusive economic growth, quality and sustainable living environment, sufficient, affordable and well-run services. The Stellenbosch IDP and SDF inform the future development in Stellenbosch and both documents support the same development objective. The Klapmuts La Rochelle IRDP project is listed as a pipe line project for the Stellenbosch Municipality. The housing backlog in 2018 was 14 607 households in the Stellenbosch area and the proposed project will decrease this number. The IDP also states that sufficient zoned land should be provided for residential development in Klapmuts

Stellenbosch Human Settlement Plan (HSP) is a sector plan of the IDP and assists in the projected and needed strategic housing priorities for the Municipality. Klapmuts is identified as one of the towns that should be prioritised for future settlement development and in particular subsidised housing. According to the HSP 6033 subsidised houses were needed for Klapmuts in 2014. The proposed development will decrease this number and the additional housing backlog growth since 2014. The provision of both subsidised and GAP housing is supported, although the development does not make provision for GAP housing.

The proposed residential development is therefore consistent with the PSDF and the Stellenbosch SDF, HSP and IDP in terms of the policy goals, strategies and objectives.

13. PRINCIPLES FOR LAND USE PLANNING

The criteria for the assessment of application as per Chapter VI Section 59 of the Land use Planning Act, 2014 (Act 3 of 2014) and Chapter 2 Section 7 of the Spatial Planning Land Use Management Act, 2013 (Act 16 of 2013) are addressed as follows:

- **Spatial Justice**

The proposed development is justified through its alignment with the municipal need for housing and the municipal plan for the provision of housing (settlements). The proposed development will redress past apartheid spatial development imbalances by aiming for equity through the provision of access to different housing typologies and opportunities as well as overall access to land. The

development is aligned with the proposals and guidelines of the Stellenbosch Spatial Development Framework to expand the existing residential area through infill development.

The proposed development will create an opportunity to cater for the growing need of informal settlers with the intention of a better living environment. The development also address the inclusion of persons and areas that was previously excluded, by creating erven for people in informal settlements it will give families a chance to own a property and rise above poverty and deprivation. The erven created by this housing project will be distributed by the Stellenbosch Municipality accordingly, taking into account the housing waiting list of the area. A socially just society is based on the principles of equality, solidarity and inclusion, the proposed development targets the marginalised and disadvantaged groups in the society, providing them with opportunities to own properties and houses. The past spatial and other imbalances is being redressed by this development and its design by creating access to an integrated development for the previously disadvantaged communities.

- **Spatial Sustainability**

The proposed development promotes spatial compactness and sustainable resource use. The development footprint is located within the existing urban edge of Klapmuts and has been identified in the Stellenbosch SDF as land for future residential expansion. The development will cater for subsidy serviced erven to address the immediate need in Klapmuts. The development is designed to ensure that the basic needs of the residents will be met and the development will be viable and sustainable in the future.

The development will not have a negative effect on the environment and viable agricultural land, on the contrary the development is on land already disturbed by informal structures. The land was also not cultivated in the preceding 10 years. The project provide a solution to the housing need by providing residential erven within the town where people from informal settlements can relocate and can be assured of social, economic and environmental benefits on a long-term basis.

The development will support the medium and long term financial sustainability of the settlement. The land is ideally located for this housing development next to the existing La Rochelle neighbourhood to the west. The land cannot be used for any better purpose. The development will also make use of the existing infrastructure which will increase the quality of life of the residents of the present and future generations. The long term sustainability of this projects lies in the integrated design and provision of uses to satisfy every need for the highest quality of life for previously disadvantaged communities.

- **Efficiency**

The development also supports integrated development with the provision of mixed uses that include various residential typologies, economic and community uses. Employment opportunities within the residential area is promoted under the zoning and residents are motivated to create their own employment opportunities at home by means of day-care centres, residential education centres, home occupations etc. The development will be integrated with the existing residential area by means of social services and economic opportunities in the area. The compact design of the development supports viable public transport, reduce overall energy use, and lower user costs as travel distances are shorter and cheaper.

- **Principles of good Administration**

The proposed development will be subject to a public participation process whereby all interested and affected individuals and departments will be approached to comment. The decision making process will be guided by statutory land use planning systems.

- **Spatial resilience**

By creating additional erven for informal dwellers it promotes sustainable livelihoods in the community and long-term resilience for the previously disadvantage communities. The proposed development is a complex, diverse and resilient spatial system that are sustainable in all contexts.

14.CONCLUSION

This application for the implementation of the La Rochelle Housing Project Phase in Klapmuts, complies with the goals of the Local and Provincial Planning Policies with regards to housing provision as follows:

- It offers an integrated housing solution with a strong emphasis on the needs of the local community with regards to ownership and the development of a secure and socially cohesive neighbourhood in both form and desirability.
- The implementation of this proposed development will effectively integrate with the existing and future residential areas to ensure the sustainability of the proposal and contribute to the viability of the town.
- The development supports and complies with the Western Cape Provincial Spatial Development Framework and the Stellenbosch SDF, IDP and HSP.
- The development also supports and comply with the criteria for the assessment of an application as per the Land Use Planning Act, 2014 (Act 3 of 2014) and the Spatial Planning Land Use Management Act, 2013 (Act 16 of 2013).

- The development is accessible and there will be no major negative effects on the surrounding built environment, natural environment or economic environment.
- The development improves access to services, facilities, housing and opportunity to create a sustainable human settlement.
- The proposed development represents a spatially compact development that fully considered the opportunities provided by the site and addressed the potential impacts and restrictions that was identified by various specialist studies with the required mitigation measures to ensure sustainable development.
- The development supports a good enrolment that is liveable, legible, diverse, varied and unique.
- The proposed development constitutes infill development within the urban edge close to adjoining existing urban development and existing infrastructure.
- This development will promote smart growth by ensuring the efficient use of land and infrastructure by containing urban sprawl and prioritising infill development.

This office supports the proposed development of the La Rochelle Housing Project, providing for better and more effective utilisation of land, infrastructure and services within the designated urban edge with a design concept to effectively address the spatial imbalances of the area. In light of the above, we herewith respectfully request the application to be considered favourably.



Zanelle Nortjé

For CK Rumboll and Partners



ANNEXURE D



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

July 2021v2

DIRECTORATE: PLANNING & ECONOMIC DEVELOPMENT

www.stellenbosch.gov.za/planning-portal/

SUBMIT COMPLETED FORM TO RELEVANT LAND USE MANAGEMENT ADMINISTRATOR

LAND USE PLANNING APPLICATION: PUBLIC PARTICIPATION PROCESS					
PORTFOLIO OF EVIDENCE (POE) CHECKLIST AND DECLARATION					
Sections 45, 46 and 55 of the Stellenbosch Municipal Land Use Planning By-Law (2015)					
Erf / Farm no	2183	Portion(s) if farm	0	Allotment Area	Klapmuts
Owner/ Applicant	Stellenbosch Municipality			LU/#	TP102/2022
Notice Period	From:	16 October 2023		To:	16 October 2023/ 13 November 2023
CONFIRMATION OR DOCUMENTATION SUBMITTED				OWNER/APPLICANT	
				YES	NO
				N/A	ADMIN VERIFY
1. The declaration is duly signed				X	
2. Applicant confirms that the public participation process was duly undertaken as instructed and attached				X	
3. Municipality informed of the start date and closure date				X	
4. The advertisement period complies with the required 30 days (60 days for municipal departments and organs of state)				X	
5. If applicable, confirms that the site notice was placed and kept on site for the full duration of the public participation process				X	
6. All communications (other than notices) in respect of the public participation process attached				X	
Proof of notices published					
7. If applicable, photo evidence to confirm site notice (one close up and one from across the street)				X	
8. Wording of the advertisement accurate and copy attached				X	
9. Proof of notices published (publication date visible)				X	
Proof of notices served					
10. Wording of notice accurate and example attached				X	
11. Proof of all notices served to neighbouring properties attached				X	
12. Proof of all notices served to interest and community groups attached				X	
13. Proof of all notices served to municipal departments and organs of state (government dept's and entities) attached				X	
Comments received					
14. All objections and comments received attached, including amended comments if relevant				X	
15. All comments from municipal departments and organs of state received (must also be attached to POE)				X	
16. Consent from abutting property owners obtained and attached					X
17. Applicant's written reply / responding comments on all the objections attached				X	

KINDLY NOTE:

1. The POE may only be submitted once all relevant municipal departments and organs of state have submitted their comment, inclusive of the applicant's written reply thereto.
2. When any comments have been discussed or amended terms negotiated with the relevant commenting entity, the amended comments and the applicant's written reply thereto must be attached to the POE.
3. The decision-making period will only commence after receipt and confirmation of a complete POE in accordance with section 57 of the Bylaw.

COMPLETE AND SIGN THE FOLLOWING DECLARATION**DECLARATION**

I, (full names & surname) Zanelle Nortje

and ID No: 9101110077085, as the Applicant for the above application, hereby confirms:

- 1) the public participation process for the subject application was duly undertaken in accordance with the instruction for such process and the associated requirements stipulated in the Stellenbosch Municipal Land Use Planning Bylaw;
- 2) the information contained in the above checklist and the accompanied information and documentation in the Portfolio of Evidence for the concluded public participation process, are accurate and complete; and
- 3) the personal information (e.g. name, address, contact details) of interested and affected parties as supplied by the Municipality was only used for official municipal communication matters with reference to the Protection of Personal Information Act 4 of 2013 (POPI).

Duly signed on 5 February 2024 at Stellenbosch
Date Place



Signature

<i>For office use only</i>	
CHECKED BY ADMINISTRATIVE OFFICER	
CHECKED BY TOWN PLANNER	
DATE VERIFIED	

NOTES TO BE RECORDED:

SWORN AFFIDAVIT

I, the undersigned [Full Name (s) and Surname]:
ZANELLE NORTJE

Identity Number.....**9101110077085**.....

in my capacity as (owner or authorised person through power of attorney):
REGISTERED TOWN AND REGIONAL PLANNER

do hereby declare under oath that:

1. The application for:

.....
REZONING, SUBDIVISION, AMENDMENT AND DEPARTURE

on Erf/ Farm Number:.....**2183, KLAPMUTS**.....

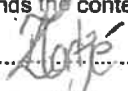
Was advertised in at least two of the official languages of the Province in the following newspaper(s)ⁱ:

(a).....**PAARL POST**.....(b).....

From**14 SEPTEMBER**.....20.23...to...**16 OCTOBER**.....20.23....

2. The public notices were prominently displayed and maintained in a legible condition for a continuous period of thirty (30) days from the date of the advertisement as indicated in Section (2) aboveⁱⁱ;
3. A notice containing the requirements as set out in the Stellenbosch Land Use Planning By-Law (2015), was posted per registered mailⁱⁱⁱ to all adjoining property owners/occupants/ interested and affected parties, during the same date of the advertising period as specified in Section (2) above;
4. Furthermore, a notice of the application was sent to the relevant Intergovernmental State Departments, per registered mail^{iv}, commencing the same date as in Section (2) above with an **additional 30 days (minimum 60 days)** for comment;
5. That all comments and objections to the application concerned were forwarded to Stellenbosch Municipality as contemplated in sections 1 – 4 above.

The Deponent acknowledges that he / she knows and understands the contents of this Affidavit.

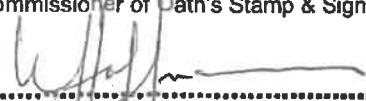
Signature:..........

Signed at.....**RAITHBY**.....

On this.....**5**.....day of.....**FEB**.....20.**24**....

At: **ANWILKA VINEYARDS, RAITHBY**.....

Commissioner of Oath's Stamp & Signature

..........
COMMISSIONER OF OATHS
WILLEM ADRIAAN HOFFMAN
 Registration number: **PLS 1223 - D**
Professional Land Surveyor
16 Rainier Street, Malmesbury, 7300

ⁱ Must conform to Section 47 of the Stellenbosch Municipality Land Use Planning By-law (2015) [THE BY-LAW]– attach copy of advert (s)

ⁱⁱ Site Displays must conform to Section 48 (2)(a) of the By-law – **attach photos**

ⁱⁱⁱ Attach original registration post slips and copies of letters that were distributed containing the required information as per Section 47 of the By-law

^{iv} Attach original registration post slips and copies of letters that were distributed containing the required information as per Section 47 of the By-law

Hugenote staan agter hul Ben

Engela Duvenage

Vir die volgende paar Vrydae trek leerders van Hugenote Hoërskool in Wellington nie net groen en goud vir #BokFridays aan om die Springbokke te ondersteun nie, maar ook as deel van die #Spring(BUCKS) for Ben-veldtog. Daarvoor word geld ingesamel vir 'n gr. 8-leerder, Ben Klopper, wat aan sistiese fibrose ly. Dit is vir Ben weens dié lewensbedreigende toestand 'n stryd net om asem haal en sy lyf sukkel om gemaklik kos te verteer.

Alle geld wat danksy #Spring(BUCKS) for Ben ingesamel word, word aan 'n groter fonds geskenk, wat onlangs gestig is sodat Ben lewewegende medisyne kan kry. Die medisyne, Trixicar, kos minstens R400 000 per jaar, en is tans nog nie in Suid-Afrika beskikbaar nie.

Leerders word aangemoedig om elke #BokFriday R5 (of meer) saam te bring wanneer hulle in hul Bokkleure skool toe kom.

"#Spring(BUCKS) is ons skool se manier om te wys dat ons net die beste vir Ben toewens," verduidelik Nicolene Human, 'n onderwyser wat die veldtog by Hugenote Hoërskool help koördineer.

Sy sê die Hugenote-ondersteuningsbond (HOB) vir oudleerders en ondersteuners verkoop tans ook lootjies as deel van 'n

verdere insamelingspoging.

Hierdie inisiatiewe volg nadat Ben se ouers, Bennie en Nicolene Klopper, einde Augustus 'n BackaBuddy-geldinsamelingsblad begin het.

Trixicar word net in Argentinië vervaardig, en die gebruik daarvan word slegs gedeeltelik deur een Suid-Afrikaanse siekefonds gedek, afhangend van die voorgeskrewe dosis. Tans kan dit Suid-Afrikaners wat aan sistiese fibrose ly, tussen R400 000 en R800 000 per jaar kos, afhangend van die wisselkoers en hoe hul behandelingsplanne lyk.

Oor Trixicar sê Bennie: "Dis 'n soort 'wondermiddel' en sal Ben help om 'n byna normale lewe te geniet. Dit sal help keer dat sy longfunksie bly agteruitgaan en sy organe verder verswak, wat 'n groot probleem is by mense wat sistiese fibrose het. Dit sal ook sy liggaam help om kos beter te verteer en voedingstowwe op te neem sodat hy beter kan groei."

Trixicar is die genetiese weergawe van die selfs duurder Trikafta, en werk net so goed. Trikafta is egter ook weens lisensievoorwaardes nie in Suid-Afrika beskikbaar nie. Dis selfs meer onbekostigbaar vir die oorgrote meerderheid sistiese fibrose-lyers, want dit kan tot



Hugenote Hoërskool-leerders dra vir die volgende paar Vrydae groen en goud of gewone klere om die Springbokke en 'n gr. 8-leerder, Ben Klopper, te ondersteun. Van die gr. 8's wat verlede Vrydag hul ondersteuning gewys het, was (van links) Lucé Basson, Hermien Conradie, Joné du Toit, Wilmien van Zyl, Isak Smuts en Daniel Carstens. Foto: Hugenote Hoërskool

R6 miljoen per jaar kos.

Sistiese fibrose is 'n skaars genetiese siekte. Volgens die register van die Suid-Afrikaanse

Sistiese fibrose-vereniging ly 523 mense in die land daaraan.

Die opbou van dik slym in die longe en lugweë is van die siekte se tipiese simptome. Dit voel asof 'n mens heeldag deur 'n strooitjie asem haal.

Tans moet Ben tussen twee en drie keer per dag 'n

nebuliseerder en 'n natriumchloried-oplossing gebruik om hom beter te help asem haal, en 'n middel gebruik wat die slym help opbreek. Dit is die roetine waarmee hy 'n gemiddelde skooldag aanpak.

Fisioterapie is al vandat hy 'n klein babatjie was ook 'n gereelde aspek van sy lewe. Ten spyte van al hierdie behandelings moet hy steeds dikwels noodbehandeling in die hospitaal kry sodat hy weer makliker kan asem haal.

'n Minder bekende impak van sistiese fibrose is dat die liggaam nie genoeg ensieme afskei om kos goed te kan verteer nie. Dus

neem die liggaam nie genoeg voedingstowwe op nie en groei lyers dikwels swak en het hulle min energie.

"My seun drink tot 600 pille per maand net sodat hy kos beter kan verteer," vertel Bennie.

Ten spyte van die impak op sy liggaam probeer Ben so normaal moontlik lewe. Op goeie dae hou hy daarvan om gimnasium toe te gaan om gewigte op te tel, en hy is 'n entrepreneur in sy hart.

Mediese prosedures is reeds van geboorte af deel van Ben se lewe. Hy het sy eerste drie maande in die hospitaal deurgebring omdat hy van geboorte af akute pyn ervaar het. Uiteindelik is hy as pap babatjie geopeer toe dokters besef het hy het 'n seldsame vorm van dermobstruksie, genaamd *meconium ileus*.

Hy was sowat drie maande oud toe sy ouers die nuus kry dat hy sistiese fibrose het en dat hy sonder behandeling binne 'n jaar sou kon sterf.

Sedertdien het verskillende vorms van behandeling deel van die Kloppers se daaglikse werklikheid geword.

"Ons wens al van dag een af net vir 'n gesonde kind," sê Bennie.

● Mense wat Ben wil help, kan die "Ben Klopper Lifesaving Drug"-blad op BackaBuddy of <https://www.backabuddy.co.za/champion/project/ben-klopper-5683801681116156774> besoek, of Bennie Klopper by 082 417 7976 of bnklopper@gmail.com kontak.

**"MY SEUN DRINK
TOT 600 PILLE PER
MAAND NET SODAT
HY KOS BETER KAN
VERTEER"**

NOTICE OF LAND DEVELOPMENT APPLICATION IN STELLENBOSCH MUNICIPAL AREA NOTICE NUMBER: 10/2023 APPLICATION FOR REZONING, SUBDIVISION AND DEPARTURE OF ERF 2183, KLAPMUTS

Application Address: Erf 2183, Groenfontein Road, Klapmuts

Applicant: CK Rumboll and Partners, 16 Rainier Street, Malmesbury, 7300

Owner: Stellenbosch Municipality, NPK Building, 1st Floor, c/o Ryneveld and Van Riebeeck Streets, Stellenbosch, 7600

Application Reference: LU/14679 (TP112/2022)

Description of land development application:

- The Rezoning of Erf 2183, Klapmuts, from Subdivisional Area Overlay Zone and Agriculture and Rural Zone to Subdivisional Area Overlay Zone in terms of Section 15(2)(a) of Stellenbosch Municipal Land Use Planning Bylaw, 2015, to create the following zonings:
 - 109 Less Formal Residential Zone erven;
 - 1 Public Open Space Zone erf;
 - 1 Public Road and Parking Zone erf
- Subdivision of Erf 2183, Klapmuts, in terms of Section 15(2)(d) of the Stellenbosch Municipal Land Use Planning Bylaw, 2015, into the following erven:
 - 109 Less Formal Residential Zone erven;
 - 1 Public Open Space Zone erf;
 - 1 Public Road and Parking Zone erf.
- The Departure from street building line in terms of Section 15(2)(b) of the Stellenbosch Municipal Land Use Planning Bylaw, 2015, to allow a 0m street building line in lieu of a 1.0m street building line.
- Application for the Naming of the Development and Street Naming and Numbering of the Streets are indicated on the Subdivision and Zoning Plans of Erf 2183, Klapmuts.

Notice is hereby given in terms of the said By-law that the above-mentioned application has been submitted to the Stellenbosch Municipality for consideration. The application is available for inspection on the planning portal of the Stellenbosch municipal website for the duration of the public participation process at the following address: <https://www.stellenbosch.gov.za/planning/documents/planning-notices/land-use-applications-advertisements>. If the website or documents cannot be accessed, an electronic copy of the application can be requested from the Applicant.

Written comments, which must include the reference to the application, the name, contact details and physical address of the person to submit the comments, the reasons for the comments, and the interest of the person in the application, may be submitted in terms of Section 50 of the said By-law to the Applicant by electronic e-mail as follows: CK Rumboll and Partners attention Zanelle Nortje at zanelle@rumboll.co.za. By lodging an objection, comment or representation, the person doing so acknowledges that information may be made available to the public and to the applicant.

The comments must be submitted within 30 days from the date of this notice to be received on or before the closing date of the 16 October 2023.

For any enquiries on the application or the above requirements, or if you are unable to write and/or submit your comments as provided for, you may contact the Applicant for assistance at the e-mail address provided or telephonically at 076 721 1725 / 022 482 1845 during normal office hours.

KENNISGEWING VAN GRONDONTWIKKELINGSAANSOEK IN DIE STELLENBOSCH MUNISIPALE AREA KENNISGEWING NUMMER: 10/2023 AANSOEK OM HERSONERING, ONDERVERDELING EN AFWYKING VAN ERF 2183, KLAPMUTS

Adres van eiendom: Erf 2183 Groenfontein Road, Klapmuts

Aansoeker: CK Rumboll en Vennote, Rainierstraat 16, Malmesbury, 7300

Eienaar: Stellenbosch Munisipaliteit, NPK Gebou, 1ste Vloer, h/v Ryneveld en Van Riebeeck strate, Stellenbosch,

Aansoek Verwysing: LU/14679 (TP112/2022)

Beskrywing van grondontwikkelingsaansoek:

- Hersonerings van Erf 2183, Klapmuts, vanaf Onderverdelingsgebied Oorlegsone en Landbou en Landelike Sone na Onderverdelingsgebied Oorlegsone, ingevolge Artikel 15(2)(a) van die Stellenbosch Munisipale Verordening op Grondgebruiksbeplanning 2015, vir die volgende sonerings:
 - 109 Minder Formeel Residensieel Sone;
 - 1 Publieke Oopruimte Sone;
 - 1 Publieke Pad en Parkering Sone.
- Onderverdeling van Erf 2183, Klapmuts, ingevolge Artikel 15(2)(d) van die Stellenbosch Munisipale Verordening op Grondgebruiksbeplanning 2015, in die volgende erwe:
 - 109 Minder Formeel Residensieel Sone;
 - 1 Publieke Oopruimte Sone;
 - 1 Publieke Pad en Parkering Sone.
- Afwyking van straatboulyne ingevolge Artikel 15(2)(b) van die Stellenbosch Munisipale Verordening op Grondgebruiksbeplanning 2015, om 0m straat boulyne toe te laat in die plek van 1.0m straatboulyne.
- Aansoek vir die benaming van 'n ontwikkeling, straat benaming en nommering soos aangedui in die Onderverdeling en Sonering Kaarte van Erf 2183, Klapmuts.

Kennis word hiermee gegee in terme van die genoemde Verordening dat bovermelde aansoek by die Stellenbosch Munisipaliteit ingedien is vir oorweging. Die aansoek is beskikbaar vir insae op die beplannings portaal van die Stellenbosch Munisipaliteit se webtuiste vir die tydskedule van die publieke deelname proses by die volgende adres: <https://www.stellenbosch.gov.za/planning/documents/planning-notices/land-use-applications-advertisements>. Indien die webtuiste of tersaaklike dokumente nie toeganklik is nie, kan die Aansoeker versoek word om 'n elektroniese kopie van die aansoek beskikbaar te stel.

Skriftelike kommentaar, wat besonderhede ten opsigte van die verwysingsnommer van die aansoek, die name, fisiese adres en kontak besonderhede van die persoon wat die kommentaar lewer, die redes vir die kommentaar, en die belang van die persoon wat die kommentaar lewer in die aansoek, kan ingedien word in terme van Artikel 50 van genoemde Verordening aan die Aansoeker by wyse van elektroniese e-pos as volg: CK Rumboll en Vennote vir aandag Zanelle Nortje by zanelle@rumboll.co.za. Deur 'n beswaar, kommentaar of vertoë te rig, erken die persoon wat dit doen dat inligting aan die publiek en aan die aansoeker beskikbaar gestel kan word.

Die kommentaar moet binne 30 dae vanaf die datum van hierdie kennisgewing gestuur word en moet ontvang word voor of op die laaste dag van die sluitingsdatum van 16 Oktober 2023.

Indien daar enige navrae op die aansoek of bovermelde vereistes vir die lewer van kommentaar is, of indien dit nie moontlik is om geskrewe kommentaar te lewer of die kommentaar op die wyse te lewer soos voorsiening gemaak is nie, kan die Aansoeker geskakel word vir bystand by die vermelde elektroniese pos adres of telefonies by 076 721 1725 / 022 482 1845 gedurende normale kantoor ure.



ANNEXURE E

POST
Erf 2183 KL
COLLABORATION



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNICIPALITY • UMASIPALA • MUNISIPALITEIT

Spatial Planning

STELLENBOSCH MUNICIPALITY
PLANNING AND DEVELOPMENT SERVICES

30 JUN 2021

RECEIVED

To : Manager: Land Use Management
From : Manager: Spatial Planning
Reference : Erf 2183, Klappmuts
LU No : LU/12469
Date : 28 June 2021
Re : Application for subdivision and rezoning of Erf 2183, Klappmuts

I refer to your request for comment on the above application.

Application is made for the following:

- Subdivision of Erf 2183 for the creation of a road with a reserve of 25m along the southern boundary of the property, approximately 2 600 m²; and
- Rezoning of the subdivided portion of Erf 2183 from Limited Use to Transport Zone II for a public road.

1) Opinion/reasoning:

The new approved Municipal Spatial Development Framework for the WC024 area was approved by Council in November 2019 and recognises that the spatial decisions and actions of many make what settlements are.

In terms of this approved document, seven principles need to be considered:

1. Maintain and grow the assets of Stellenbosch Municipality's natural environment and farming areas;
2. Respect and grow cultural heritage;
3. Direct growth to areas of lesser natural and cultural significance as well as movement opportunity;
4. Clarify and respect the different roles and potentials of existing settlements;
5. Clarify and respect the roles and functions of different elements of movement structure;
6. Ensure balanced, sustainable communities;
7. Focus collective energy on a few catalytic lead projects.

With the enactment of the Spatial Planning and Land Use Management Act 16 of 2013 (SPLUMA), a new planning regime was introduced in South Africa. It replaced disparate apartheid era laws with a coherent legislative system as the foundation for all spatial planning and land use management activities in South Africa. It seeks to promote consistency and uniformity in procedures and decision-making. Other objectives include addressing historical spatial imbalances and the integration of the

principles of sustainable development into land use and planning regulatory tools and legislative instruments.

Chapter 2 of SPLUMA sets out the development principles that must guide the preparation, adoption and implementation of any SDF, policy or by-law concerning spatial planning and the development or use of land. These principles are the following:

- Spatial Justice
- Spatial Efficiency
- Spatial Sustainability
- Spatial Resilience
- Good Administration

The subject property is located inside the urban edge of the Klapmuts node and in terms of the approved MSDF the following guidelines are applicable to this specific application:

- Klapmuts is identified as a spatial area for priority development over the MSDF planning period and the development of an "innovation precinct" or "smart city" in Klapmuts South should be supported.
- As a general principle, contain the footprint of Klapmuts as far as possible within the existing urban edge.
- Retain and actively support mixed use redevelopment and building within the town centre and surrounding areas, comprising living space above active street fronts.
- Ensure that housing in Klapmuts provides for a range of income groups.

2) Supported / not supported:

The application deals with the creation of an access road over Erf 2183, Klapmuts for the proposed development of a new mixed-use development.

The application for the subdivision and rezoning of the property is consistent with the SDF, aligned to the Klapmuts development vision and an essential service for the adjacent developments. The proposed road is as authorized by the relevant authorities and as indicated on the Klapmuts Roads Master Plan.

The department therefore supports the application.



BJG de la Bat
MANAGER: SPATIAL PLANNING



MEMO

**DIRECTORATE: INFRASTRUCTURE SERVICES
DIREKTORAAT: INFRASTRUKTUURDIENSTE**

CIVIL ENGINEERING SERVICES

To ▫ Aan:	Director: Planning + Economic Development
Att Aandag:	Salome Newman
From ▫ Van:	Manager: Development (Infrastructure Services)
Author ▫ Skrywer:	Tyrone King
Date ▫ Datum:	8 December 2023
Our Ref ▫ Ons Verw:	Civil LU 2570
Town Planning Ref:	LU/14679
Re ▫ Insake:	<p>Erf 2183, Klapmuts: The Rezoning of erf 2183, Klapmuts from Subdivisional Area Overlay Zone and Agriculture & Rural Zone to Subdivisional Area Overlay Zone in terms of Section 15(2)(a) of said By-law to create the following zonings: 109 Less Formal Residential Zone erven- 1 Public Open Space Zone erf- 1 Public Road and Parking Zone erf Subdivision of Erf 2183, Klapmuts, in terms of, Section 15(2)(d) of the Stellenbosch Municipal Land Use Planning By-Law 2015, into the following erven: - 109 Less Formal Residential Zone erven - 1 Public Open Space Zone erf - 1 Public Road and Parking Zone erf The Departure from street building line in terms of Section 15(2)(b) of the Stellenbosch Municipal Land Use Planning By-Law 2015, to allow a 0m street building line in lieu of a 1.0m street building line. Application for the Naming of the Development and Street Naming and Numbering of the Streets are indicated on the Subdivision and Zoning Plans of Erf 2183, Klapmuts</p>

Details, specifications and information reflected in the following documents refer:

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

- Subdivisional Plan Draft 8_SDP Ref KL/11996/ZN_8 dated Sept 2022;
- Engineering Services report by UDS dated April 2022 Rev 0;
- Traffic Impact Statement UDS dated 29 April 2022;

These comments and conditions are based on the following proposed development parameters:

- Total Units: 109 residential erven

Any development beyond these parameters would require a further approval and/or a recalculation of the Development Charges from this Directorate.

This document consists of the following sections:

A. Definitions

B. Recommendation to decision making authority

C. Specific conditions of approval: These conditions must be complied with before clearance certificate, building plan or occupation certificate approval; whichever is applicable to the development in question.

D. General conditions of approval: These conditions must be adhered to during implementation of the development to ensure responsible development takes place. If there is a contradiction between the specific and general conditions, the specific conditions will prevail:

A. Definitions

1. that the following words and expressions referred to in the development conditions, shall have the meanings hereby assigned to except where the context otherwise requires:

(a) "*Municipality*" means the STELLENBOSCH MUNICIPALITY, a Local Authority, duly established in terms of section 9 of the Local Government Municipal Structures act, Act 117 of 1998 and Provincial Notice (489/200), establishment of the Stellenbosch Municipality (WC024) promulgated in Provincial Gazette no. 5590 of 22 September 2000, as amended by Provincial Notice 675/2000 promulgated in Provincial Gazette;

(b) "*Developer*" means the developer and or applicant who applies for certain development rights by means of the above-mentioned land-use application and or his successor-in-title who wish to obtain development rights at any stage of the proposed development;

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

- (c) *"Engineer"* means an engineer employed by the *"Municipality"* or any person appointed by the *"Municipality"* from time to time, representing the Directorate: Infrastructure Services, to perform the duties envisaged in terms of this land-use approval;
- (d) Where it is stated that a condition must be complied with prior to "subdivision clearance" and where a subdivision is not applicable, that condition will then apply to the next applicable stage of development approval i.e. building plan approval;

B. Recommendation:

- 2. The development is recommended for approval, subject to the conditions as stated below:

C. Specific conditions of approval

- 3. that all previous relevant conditions of approval to this development application remain valid and be complied with in full unless specifically replaced or removed by the *"Engineer"*;
- 4. that the following conditions relating to the upgrades and arrangements for the effective provision of services are required to accommodate the development. No taking up of proposed rights including subdivision clearance / building plan approval / occupation certificates (whichever comes first) will be allowed until these conditions have been complied with;
- 5. **Klapmuts WWTW (Waste Water Treatment Works):** The proposed development falls within the catchment area of the existing Klapmuts WWTW (waste water treatment works). There is currently insufficient capacity at the Klapmuts WWTW for this development. It should be noted that there is available budget over the next 3 financial years to upgrade the WWTW from 2.4 Ml/day to 4.8 Ml/day. This upgrade will create spare capacity for proposed new developments in Klapmuts. The upgrade will have to be completed prior to new developments connecting to the municipal sewer network and prior to subdivision clearance of this development. The estimated construction period is from 1st June 2024 until Dec 2025 (this period/timeframes is subject to change).

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS**6. Water:**

- a. There is sufficient capacity in the bulk water reticulation network to accommodate the proposed development.
- b. The Developer will be responsible for any link pipelines to connect their development to the external network.

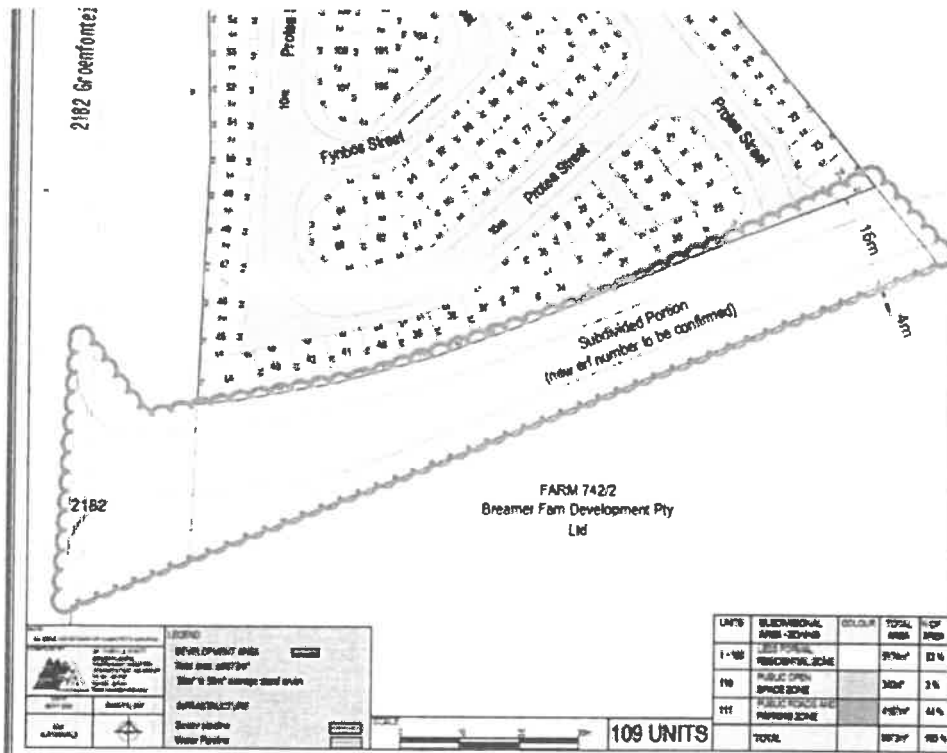
7. Sewer:

- a. There is sufficient capacity in the bulk sewer reticulation network to accommodate the proposed development.
- b. The Developer will be responsible for any link pipelines to connect their development to the external network.
- c. It is possible that some minor network upgrades will be identified at detail design stage, when more detail becomes available.

8. Roads:

- a. The following upgrades must be implemented:
 - i. The new 16 m road (indicated below with green cloud) from its intersection with Groenefontein Road up until at least the eastern boundary of erf 2183 must be constructed to municipal standards, prior to subdivision clearance.

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS



9. Stormwater Network:

- a. State anything specific to this development.
- b. that the consulting engineer, appointed by the "Developer", analyses the existing stormwater systems and determine the expected stormwater run-off for the proposed development, for both the minor and the major storm event. Should the existing municipal stormwater system not be able to accommodate the expected stormwater run-off, the difference between the pre- and post-development stormwater run-off must be accommodated on site, or the existing system must be upgraded to the required capacity at the cost of the "Developer" and to the standards and satisfaction of the Directorate: Infrastructure Services. The aforementioned stormwater analysis is to be submitted concurrent with the detail services plans for approval;

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

10. Solid Waste:

- a. The Municipality will provide a solid waste removal service, unless agreed otherwise in writing the Solid Waste Department;
- b. For large spoil volumes from excavations, to be generated during the construction of this development, will not be accepted at the Stellenbosch landfill site. The Developer will have to indicate and provide evidence of safe re-use or proper disposal at an alternative, licensed facility. This evidence must be presented to the Manager: Solid Waste (021 808 8241; clayton.hendricks@ Stellenbosch.gov.za), before building plan approval and before implementation of the development. Clean rubble can be utilized by the Municipality and will be accepted free of charge, providing it meets the required specification.

Site Development Plan

11. that the final road layout must accommodate continuous forward movement by service trucks and all cul-de-sacs have a minimum of 11 m radius turning circle, to ensure continuous forward movement;
12. that any amendments to cadastral layout and or site-development plan to accommodate the above requirements will be for the cost of the "Developer" as these configurations were not available at land-use application stage;

Internal- and Link Services

13. that all link services, internal services and erf connections must be complete and commissioned by the "Developer", at his/her cost, prior to subdivision clearance;
14. that any alterations to existing services necessitated by the new development will be for the Developer's cost;

Ownership and Responsibility of services

15. that it be noted that the roads are reflected as public roads. Therefor all internal services on the said erf will be regarded as public services and will be maintained by the "Municipality";

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

Development Charges (DCs)

16. that the "*Developer*" hereby acknowledges that Development Charges are payable towards the following bulk civil services: water, sewerage, roads, stormwater, solid waste and community facilities as per Council's Policy and approved tariffs;
17. that the following DC's are payable: See **Development Charge Calculation** attached. Please note that this calculation is indicative at this stage and will be amended based on the detail information provided on subsequent applications ie building plans;
18. that the "*Developer*" hereby acknowledges that the development charges as determined by the "*Municipality*" and or the applicable scheme tariffs will be paid by the "*Developer*" towards the provision of bulk municipal civil services in accordance with the relevant legislation and as determined by Council's Policy, should this land-use application be approved;
19. that the "*Developer*" accepts that the Development Charges will be subject to annual adjustment up to date of payment. The amount payable will therefore be the amount as calculated according to the approved tariff structure and according to the DCs Policy principles at the time that payment is made;
20. that the "*Developer*" may enter into an engineering services agreement with the "*Municipality*" to install or upgrade bulk municipal services at an agreed cost, to be off-set against Development Charges payable in respect of bulk civil engineering services;
21. that the Development Charges levy be paid by the "*Developer*" per phase –
 - prior to the approval of subdivision clearance;
22. that the development shall be substantially in conformance with the Site Development Plan submitted in terms of this application. Any amendments and/or additions to the Site Development Plan, once approved, which might lead to an increase in the number of units i.e. more than 109 units, will result in the recalculation of the Development Charges;
23. Bulk infrastructure Development Charges and repayments are subject to VAT and are further subject to the provisions and rates contained in the Act on Value Added Tax of 1991 (Act 89 of 1991) as amended;

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

24. The Municipality may approach the Developer at any stage, before completion of the Development, to implement any infrastructure / community facilities, in lieu of DCs payable, should the need for such infrastructure / facilities be identified;

Damage to municipal infrastructure and assets

25. that the "Developer" will be held liable for any damage to municipal infrastructure, caused as a direct result of the development of the subject property. The "Developer" will therefore be required to carry out the necessary rehabilitation work, at his/her cost, to the standards of the Directorate: Infrastructure Services, prior to any clearance (or occupation certificate where clearance is not applicable) being given;

D. General conditions of approval: The following general development conditions are applicable. If there is a contradiction between the specific and general development conditions, the specific conditions will prevail:

26. that should the "Developer" not take up his rights for whatever reason within **two years** from the date of this memo, a revised Engineering report addressing services capacities and reflecting infrastructure amendments during the two year period, must be submitted to the Directorate: Infrastructure Services by the "Developer" for further comment and conditions. Should this revised Engineering report confirm that available services capacities are not sufficient to accommodate this development, then the implementation of the development must be re-planned around the availability of bulk services or the necessary upgrades must be done, as any clearances for the development will not be supported by the Directorate: Infrastructure Services for this development if bulk services are not available;
27. that the "Developer" indemnifies and keep the "Municipality" indemnified against all actions, proceedings, costs, damages, expenses, claims and demands (including claims pertaining to consequential damages by third parties and whether as a result of the damage to or interruption of or interference with the municipalities' services or apparatus or otherwise) arising out of the establishment of the development, the provision of services to the development or the use of servitude areas or municipal property, for a period that shall commence on the date that the installation of services to the development are commenced with and shall expire after completion of the maintenance period.
28. that the "Developer" must ensure that he / she has an acceptable public liability insurance policy in place;

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

29. that, if applicable, the "*Developer*" approach the Provincial Administration: Western Cape (District Roads Engineer) for their input and that the conditions as set by the Provincial Administration: Western Cape be adhered to before subdivision clearance;
30. that the "*Developer*" informs the project team for the proposed development (i.e. engineers, architects, etc.) of all the relevant conditions contained in this approval;
31. that the General Conditions of Contract for Construction Works (GCC) applicable to all civil engineering services construction work related to this development, will be the SAICE 3rd Edition 2015 – as revised;
32. that the "*Developer*" takes cognizance and accepts the following:
 - a.) that no construction of any civil engineering services may commence before approval of internal – and external civil engineering services drawings;
 - b.) that no approval of internal – and external civil engineering services drawings will be given before land-use and/or SDP approval is obtained;
 - c.) that no approval of internal – and external civil engineering services drawings will be given before the "*Developer*" obtains the written approval of all affected owners where the route of a proposed service crosses the property of a third party;
 - d.) that no building plans will be recommended for approval by the Directorate: Infrastructure Services before land-use and or SDP approval is obtained;
 - e.) that no building plans will be recommended for approval by the Directorate: Infrastructure Services before the approval of internal – and external civil engineering services drawings;
 - f.) that no building plans will be recommended for approval by the Directorate: Infrastructure Services before a subdivision clearance is issued;

Site Development Plan

33. that it is recognized that the normal Site Development Plan, submitted as part of the land-use application, is compiled during a very early stage of the development and will lack engineering detail that may result in a later change of the Site Development Plan. Any later changes will be to the cost of the "*Developer*";
34. that even if a Site Development Plan is approved by this letter of approval, a further fully detailed site plan be submitted for approval prior to the approval of engineering services plans and or building- and/or services plans to allow for the setting of requirements, specifications

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

and conditions related to civil engineering services. Such Plan is to be substantially in accordance with the approved application and or subdivision plan and or precinct plan and or site plan, etc. and is to include a layout plan showing the position of all roads, road reserve widths, sidewalks, parking areas with dimensions, loading areas, access points, stacking distances at gates, refuse removal arrangements, allocation of uses, position and orientation of all buildings, the allocation of public and private open spaces, building development parameters, the required number of parking bays, stormwater detention facilities, connection points to municipal water- and sewer services, updated land-use diagram and possible servitudes;

35. that if the fully detailed Site Development Plan, as mentioned in the above item, contradicts the approved Site Development Plan, the "Developer" will be responsible for the amendment thereof and any costs associated therewith;
36. that an amended Site Development Plan be submitted for approval prior to the approval of building plans for new buildings not indicated on the Site Development Plan applicable to this application and or changes to existing buildings or re-development thereof;

Internal- and Link Services

37. that the "Developer", at his/her cost, construct the internal (on-site) civil engineering services for the development, as well as any link (service between internal and available bulk municipal service) municipal services that need to be provided;
38. that the Directorate: Infrastructure Services may require the "Developer" to construct internal municipal services and/or link services to a higher capacity than warranted by the project, for purposes of allowing other existing or future developments to also utilise such services. The costs of providing services to a higher capacity could be offset against the Development Charges payable in respect of bulk civil engineering services if approved by the Directorate: Infrastructure Services;
39. that the detailed design and location of access points, circulation, parking, loading - and pedestrian facilities, etc., shall be generally in accordance with the approved Site Development Plan and / or Subdivision Plan applicable to this application;

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

40. that plans of all the internal civil services and such municipal link services as required by the Directorate: Infrastructure Services be prepared and signed by a Registered Engineering Professional before being submitted to the aforementioned Directorate for approval;
41. that construction of services may only commence after municipal approval has been obtained;
42. that the construction of all civil engineering infrastructure shall be done by a registered civil engineering services construction company approved by the "Engineer";
43. that the "Developer" ensures that his/her design engineer is aware of the Stellenbosch Municipality Design Guidelines & Minimum Standards for Civil Engineering Services (as amended) and that the design and construction/alteration of all civil engineering infrastructure shall be generally in accordance with this document, unless otherwise agreed with the "Engineer". The said document is available in electronic format on request;
44. that a suitably qualified professional resident engineer be appointed to supervise the construction of all internal – and external services;
45. that all the internal civil services (water, sewer, roads and stormwater), be indicated on the necessary building plans for approval by the Directorate: Infrastructure Services;
46. that prior to the issuing of the Certificate of Practical Completion, in terms of GCC 2015 Clause 5.14.1, all internal – and link services be inspected for approval by the "Engineer" on request by the "Developer's" Consulting Engineer;
47. that a Certificate of Practical Completion, in terms of GCC 2015 Clause 5.14.1 be issued before subdivision clearance will be issued;
48. that a complete set of test results of all internal – and external services (i.e. pressure tests on water - and sewer pipelines as well as densities on road structure and all relevant tests on asphalt), approved and verified by a professional registered engineer be submitted to the "Engineer" on request;
49. that the "Developer" shall adhere to the specifications of Telkom (SA) and or any other telecommunications service provider;
50. that the "Developer" shall be responsible for the cost for any surveying and registration of servitudes regarding services on the property;

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

51. that the "Developer" be liable for all damages caused to existing civil and electrical services of the "Municipality" relevant to this development. It is the responsibility of the contractor and/or sub-contractor of the "Developer" to determine the location of existing civil and electrical services;
52. that all connections to the existing services be made by the "Developer" under direct supervision of the "Engineer" or as otherwise agreed and all cost will be for the account of the "Developer".
53. that the developer takes cognizance of applicable tariffs by Council in respect of availability of services and minimum tariffs payable;

Servitudes

54. that the "Developer" ensures that all main services including roads to be taken over by the Directorate: Infrastructure Services, all existing municipal – and or private services including roads, crossing private - and or other institutional property and any other services/roads crossing future private land/erven are protected by a registered servitude before subdivision clearance will be given;
55. The width of the registered servitude must be a minimum of 3 m or twice the depth of the pipe (measured to invert of pipe), whichever is the highest value. The "Developer" will be responsible for the registration of the required servitude(s), as well as the cost thereof;
56. that the "Developer" obtains the written approval of all affected owners where the route of a proposed service crosses the property of a third party before final approval of engineering drawings be obtained.

Stormwater Management

57. Taking into account the recent water crisis, and associated increase in borehole usage, it is important that the groundwater be recharged as much as possible. One way of achieving the above is to consider using Sustainable Drainage Systems (SuDS) approach wrt SW management. From Red Book: "SuDS constitute an approach towards managing stormwater runoff that aims to reduce downstream flooding, allow infiltration into the ground, minimise pollution, improve the quality of stormwater, reduce pollution in water bodies, and enhance biodiversity. Rather than merely collecting and discarding stormwater through a system of pipes and culverts, this approach recognises that stormwater could be a resource." The

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

Developer is encouraged to implement SuDS principles that are practical and easily implementable. Details of such systems can be discussed and agreed with the Municipality and must be indicated on the engineering drawings.

58. that the geometric design of the roads and/or parking areas ensure that no trapped low-points are created with regard to stormwater management. All stormwater to be routed to the nearest formalized municipal system;
59. that overland stormwater escape routes be provided in the cadastral layout at all low points in the road layout, or that the vertical alignment of the road design be adjusted in order for the roads to function as overland stormwater escape routes. If this necessitates an amendment of the cadastral layout, it must be done by the "*Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services;
60. that the design engineer needs to apply his/her mind to ensure a design that will promote a sustainable urban drainage system which will reduce the impacts of stormwater on receiving aquatic environments;
61. that no disturbance to the river channel or banks be made without the prior approval in accordance with the requirements of the National Water Act;
62. that the consulting engineer, appointed by the "*Developer*", analyses the existing stormwater systems and determine the expected stormwater run-off for the proposed development, for both the minor and the major storm event. Should the existing municipal stormwater system not be able to accommodate the expected stormwater run-off, the difference between the pre- and post-development stormwater run-off must be accommodated on site, or the existing system must be upgraded to the required capacity at the cost of the "*Developer*" and to the standards and satisfaction of the Directorate: Infrastructure Services. The aforementioned stormwater analysis is to be submitted concurrent with the detail services plans;
63. that for larger developments, industrial developments or developments near water courses a stormwater management plan for the proposed development area, for both the minor and major storm events, be compiled and submitted for approval to the Directorate: Infrastructure Services.

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

- 64. that the approved management plan be implemented by the "*Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services. The management plan, which is to include an attenuation facility, is to be submitted concurrent with the detail services plans;
- 65. that in the case of a sectional title development, the internal stormwater layout be indicated on the necessary building plans to be submitted for approval.
- 66. that no overland discharge of stormwater will be allowed into a public road for erven with catchment areas of more than 1500m² and for which it is agreed that no detention facilities are required. The "*Developer*" needs to connect to the nearest piped municipal stormwater system with a stormwater erf connection which may not exceed a diameter of 300mm.

Roads

- 67. that, where applicable, the application must be submitted to the District Roads Engineer for comment and conditions. Any conditions set by the District Roads Engineer will be applicable;
- 68. that no access control will be allowed in public roads;
- 69. that the layout must make provision for all deliveries to take place on-site. Movement of delivery vehicles may not have a negative impact on vehicular – and pedestrian movement on public roads and or public sidewalks;
- 70. The design and lay-out of the development must be such that emergency vehicles can easily drive through and turn around where necessary;
- 71. that, prior to commencement of any demolition / construction work, a traffic accommodation plan for the surrounding roads must be submitted to the Directorate: Infrastructure Services for approval, and that the approved plan be implemented by the "*Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services;
- 72. that visibility splays shall be provided and maintained on each side of the new access in accordance with the standard specifications as specified in the Red Book with regard to sight triangles at intersections;

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

73. that each erf has its own access (drive-way), *(the new access(es) (dropped kerb(s)) to the proposed parking bays be)* constructed to standards as set out by the the Directorate: Infrastructure Services and in line with the Road Access Guideline;
74. that the access road to the existing facility be kept in an acceptable condition, i.e. maintained to a standard which will result in a comfortable ride for a standard passenger vehicle and to a standard which will not endanger the lives or property of road users;
75. that no parking be allowed in the road reserve;

Wayleaves

76. that way-leaves / work permits be obtained from the Directorate: Infrastructure Services prior to any excavation / construction work on municipal land or within 3,0m from municipal services located on private property;
77. that wayleaves will only be issued after approval of relevant engineering design drawings;
78. that it is the Developer's responsibility to obtain wayleaves from any other authorities/service provider's who's services may be affected.

AS-BUILTs

79. The "Developer" shall provide the "Municipality" with:
 - a. a complete set of as-built paper plans, signed by a professional registered engineer;
 - b. a CD/DVD containing the signed as-built plans in an electronic DXF-file format, reflecting compatible layers and formats as will be requested by the "Engineer" and is reflected herewith as Annexure X;
 - c. a completed Asset Verification Sheet in Excell format, reflecting the componitization of municipal services installed as part of the development. The Asset Verification Sheet will have to be according to the IMQS format, as to be supplied by the "Engineer", and is to be verified as correct by a professional registered engineer;
 - d. a complete set of test results of all internal – and external services (i.e. pressure tests on water - and sewer pipelines as well as densities on road structure and all relevant tests on asphalt), approved and verified by a professional registered engineer;

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

- e. Written verification by the developer's consulting engineer that all professional fees in respect of the planning, design and supervision of any services to be taken over by the "Municipality" are fully paid;
- 80. All relevant as-built detail, as reflected in the item above, of civil engineering services constructed for the development, must be submitted to the "Engineer" and approved by the "Engineer" before any application for Certificate of Clearance will be supported by the "Engineer";
- 81. The Consulting Civil Engineer of the "Developer" shall certify that the location and position of the installed services are in accordance with the plans submitted for each of the services detailed below;
- 82. All As-built drawings are to be signed by a professional engineer who represents the consulting engineering company responsible for the design and or site supervision of civil engineering services;
- 83. Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law shall not be issued unless said services have been inspected by the "Engineer" and written clearance given, by the "Engineer";

Subdivision clearance in terms of the Stellenbosch Municipal Land Use Planning By-law

- 84. It is specifically agreed that the "Developer" undertakes to comply with all conditions of approval as laid down by the "Municipality" before clearance certificates shall be issued, unless otherwise agreed herein;
- 85. that the "Municipality" reserves the right to withhold any clearance certificate until such time as the "Developer" has complied with conditions set out in this document with which he/she is in default. Any failure to pay monies payable in terms of these conditions within 30 (thirty) days after an account has been rendered shall be regarded as a breach of these conditions and the "Municipality" reserves the right to withhold any clearance certificate until such time as the amount owing has been paid;
- 86. that clearance will only be given per phase and the onus is on the "Developer" to phase his development accordingly;

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

87. The onus will be on the "Developer" and or his professional team to ensure that all land-use conditions have been complied with before submitting an application for a subdivision clearance certificate. Verifying documentation (proof of payment in respect of Development Charges, services installation, etc.) must be submitted as part of the application before an application will be accepted by this Directorate;
88. that any application for Certificate of Clearance will only be supported by the "Engineer" once all relevant as-built detail, as reflected in the item "AS-BUILT's" of this document, is submitted to the "Engineer" and approved by the "Engineer".

Avoidance of waste, nuisance and risk

89. Where in the opinion of the "Municipality" a nuisance, health or other risk to the public is caused due to construction activities and/or a lack of maintenance of any service, the "Municipality" may give the "Developer" and or OWNER'S ASSOCIATION written notice to remedy the defect failing which the "Municipality" may carry out the work itself or have it carried out, at the cost of the "Developer" and or OWNER'S ASSOCIATION.

Streetlighting

90. The "Developer" will be responsible for the design and construction at his own expense of all internal street lighting services and street lighting on link roads leading to his development (excluding Class 1, 2 and 3 Roads) according to specifications determined by the municipality's Manager: Electrical Services and under the supervision of the consulting engineer, appointed by the "Developer";
91. Prior to commencing with the design of street lighting services, the consulting electrical engineer, as appointed by the "Developer" must acquaint himself with, and clarify with the municipality's Manager: Electrical Engineering, the standards of materials and design requirements to be complied with and possible cost of connections to existing services;
92. The final design of the complete internal street lighting network of the development must be submitted by the consulting electrical engineer, as appointed by the "Developer", to the municipality's Manager: Electrical Engineering for approval before any construction work commences;
93. Any defect with the street lighting services constructed by the "Developer" which may occur during the defects liability period of 12 (TWELVE) months and which occurs as a result of defective workmanship and/or materials must be rectified immediately / on the same day the

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

defect was brought to the attention of the consulting electrical engineer, appointed by the "Developer". Should the necessary repair work not be done within the said time the "Municipality" reserves the right to carry out the repair work at the cost of the "Developer";

94. The maintenance and servicing of all private internal street lighting shall be the responsibility and to the cost of the "Developer" and or Home Owner's Association.

Tyrone King Pr Tech Eng

Manager: Development (Infrastructure Services)

W:\2.0 DEVELOPMENT\01 Land Use applications\2570 (TK) Erf 2183 Klapmuts (LU-14678) ***\2570 () Erf 2183 Klapmuts (LU-14678)_1.doc

ATTACHMENT X

Geographic Information System (GIS) data capturing standards

In drawing up the As-build Plans relating to this development, the consultant must create the following separate layers in ESRI .shp, electronic file format in order for the data to reflect spatially correct.

Layer name	Content
TITLE	Title information, including any endorsements and references
NOTES	All noted information, both from the owner / surveyor and SG
PARENT_PROPLINES	Parent property lines
PARENT_PROPNUM	Parent erf number (or portion number)
PROPLINES	New portion boundaries
PROPANNO	New erf numbers
SERVLINES	Servitude polygons
SERVANNO	Servitude type
STREET_NAMES	Road centre lines with street names
STREET_NUMBERS	Points with street numbers
COMPLEX BOUNDARIES	Where applicable, polygon with complex name (mention whether gated or not and if so, where gates are)
SUBURB	Polygon with suburb name, where new suburb / township extension created

PROPOSED REZONING AND SUBDIVISION OF ERF 2183, KLAPMUTS

ESTATE

Where applicable, polygon with estate name (mention whether gated or not and if so, where gates are)

When data is provided in a .shp format it is mandatory that the .shx, .dbf, files should accompany the shapefile. The prj file containing the projection information must also accompany the shapefile.

It is important that different geographical elements for the GIS capture process remains separate. That means that political boundaries like wards or suburbs be kept separate from something like rivers. The same applies for engineering data types like water lines, sewer lines, electricity etc. that it is kept separate from one another. When new properties are added as part of a development, a list of erf numbers with its associated SG numbers must be provided in an electronic format like .txt, .xls or .csv format.

For road layer shapefiles; the road name, the from_street and to_street where applicable as well as the start en end street numbers needs to be included as part of the attributes. A rotation field needs to be added to give the street name the correct angle on the map.

In addition to being geo-referenced and in WGS 1984 Geographic Coordinate System, the drawing must be completed using real world coordinates based on the Stellenbosch Municipality standard as follows:

- Datum : Hartebeeshoek WGS 84
- Projection : Transverse Mercator
- Central Longitude/Meridian 19
- False easting : 0.00000000
- False northing : 0.00000000
- Central meridian : 19.00000000
- Scale factor : 1.00000000
- Origin latitude : 0.00000000
- Linear unit : Meter



Stellenbosch Municipality

Development Charge Calculation



APPLICATION INFORMATION	
Application Number:	DC 2570 (0 Erf 2183 Klipmuts (LL-14879)_1
Development Name	La Rochelle
Date	08 December 2023
Financial Year	2023/2024
Erf Location (Selected from 7 Locations)	Klipmuts
Erf Region (Selected Urban or Rural)	Urban
Erf No. / Farm No.:	2183
DC Parameters Reference:	Subdivisional Plan Draft 8_SDP Ref KL/11996/ZN_8 dated Sept 2022

SUMMARY OF DC CALCULATION									
Service	Water	Sewer	Stormwater	Solid Waste	Roads & Transport	Sub Total (Civil Eng Services)	Community	Totals	
Units:	litres	litres	litres	litres	litres		persons		
Total Increased Services Usage	65.4	54.5	1.982	4.38	436		436		
Total Service Usage Reduction	0	0	0	0	0.0		0		
Total Service Usage after Reduction	65.40	54.50	1.98200	4.380	436.0		436		
Charges before adjusting for positive only, before Deductions	R 639 468.02	R 1 735 635.74	R 136 472.73	R 426 458.65	R 2 590 179.91	R 5 528 215.08	R 1 681 903.40	R 7 210 118.48	
Charges adjusted for positive only, before Deductions	R 639 468.02	R 1 735 635.74	R 136 472.73	R 426 458.65	R 2 590 179.91	R 5 528 215.08	R 1 681 903.40	R 7 210 118.48	
Total Deductions:	R -	R -	R -	R -	R -	R -	R -	R -	
Total Development Charges Payable (excluding VAT):	R 639 468.02	R 1 735 635.74	R 136 472.73	R 426 458.65	R 2 590 179.91	R 5 528 215.08	R 1 681 903.40	R 7 210 118.48	
VAT	R 95 920.20	R 260 345.36	R 20 470.81	R 63 968.90	R 388 526.99	R 829 232.26	R 252 285.51	R 1 081 517.77	
Total Development Charges Payable (including VAT):	R 735 388.22	R 1 995 981.10	R 156 943.64	R 490 427.45	R 2 978 706.90	R 6 357 447.32	R 1 934 188.91	R 8 291 636.23	

APPLICANT INFORMATION	
Application Processed by	Tyrona King
Signature	
Notes	

Klapmuts

Land Use Category	Unit Type	Existing Usage		Proposed New Usage		Proposed Usage Amount	Water	Sewer	Stormwater		Spill/Vent	Roads & Transport		Sub Total (CIV Eng Services)	Community	Total
		Area (m ²)	Unit Amount	Area (m ²)	Unit Amount		Yes	Yes	Yes	Yes	Yes	Yes	Yes			
Residential	Single Residential -1500m ²															
	Single Residential -500m ²															
	Single Residential -250m ²															
	Single Residential -250m ²															
	Second Dwelling					600										
	Less Farm Residential															
Accommodation	Single Residential															
	Apartment															
	Apartment Village															
	Old age home															
	Student Accommodation/Commune/Hostels															
	Guest House															
	Inverted Guest House															
	Hotel Residential															
	Service Residences															
	Other															
Commercial	Office															
	Office															
	Office															
	Office															
	Office															
	Office															
	Office															
	Office															
	Office															
	Office															
Industrial	Industrial - Light															
	Industrial - Heavy															
	Industrial - Heavy															
	Industrial - Heavy															
	Industrial - Heavy															
	Industrial - Heavy															
	Industrial - Heavy															
	Industrial - Heavy															
	Industrial - Heavy															
	Industrial - Heavy															
Other	Other															
	Other															
	Other															
	Other															
	Other															
	Other															
	Other															
	Other															
	Other															
	Other															
Total Area																

Figures are subject to change for details only before Deductions

Figures are subject to change for details only before Deductions

Deductions per service (then usage reductions)

Deduction Deduction (%)

Additional Deduction per service - Item Service Agreement (sum)

Sub Total after Adjustments and Deductions (including VAT)

VAT

Total Development Charges

Figures are subject to change for details only before Deductions	R 438 668.02	R 1 735 635.74	R 136 472.73	R 420 458.65	R 2 560 178.81	R 5 528 215.08	R 1 681 903.40	R 7 218 118.46
Figures are subject to change for details only before Deductions	R 619 668.02	R 1 735 635.74	R 136 472.73	R 420 458.65	R 2 560 178.81	R 5 528 215.08	R 1 681 903.40	R 7 218 118.46
Deductions per service (then usage reductions)								
Deduction Deduction (%)								
Additional Deduction per service - Item Service Agreement (sum)								
Sub Total after Adjustments and Deductions (including VAT)	R 619 668.02	R 1 735 635.74	R 136 472.73	R 420 458.65	R 2 560 178.81	R 5 528 215.08	R 1 681 903.40	R 7 218 118.46
VAT	R 95 820.20	R 200 341.36	R 20 470.81	R 53 668.60	R 348 526.69	R 828 252.26	R 252 285.51	R 1 081 817.77
Total Development Charges	R 735 988.22	R 1 935 977.10	R 156 943.54	R 474 127.25	R 2 908 705.40	R 6 356 467.34	R 1 934 188.91	R 8 299 585.27

INTEROFFICE
MEMORANDUM

STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNICIPALITY • UMASIPALA • MUNISIPALITEIT

DEPARTMENT: COMMUNITY SERVICES

Stellenbosch Municipality, 123 Merriman Avenue, Stellenbosch, 7599

To:	Administrative Officer: Land Use Management Salome Newman	From:	Senior Environmental Planner: Schalk van der Merwe
CC:	Manager: Environmental Management Tammy Leibrandt	Date:	18 September 2023
Re:	ERF 2183, KLAPMUTS - LU/14679		

The above application refers. From an environmental planning point of view this department has no objection to the approval of the application subject to the following:

1. Activities on site, during construction and thereafter, must comply with the Western Cape Noise Control Regulations.
2. During construction the owner, developer or any agent acting on his/her behalf, must take all reasonable steps to prevent nuisance caused by dust in accordance with the National Dust Control Regulations.

S VD MERWE
SENIOR ENVIRONMENTAL PLANNER:
COMMUNITY SERVICES



ANNEXURE F



Department of Environmental Affairs and Development Planning

Helene Janser

Directorate: Development Management (Region 2)

Helene.Janser@westerncape.gov.za | Tel: 084 585 2000

Reference: 15/3/2/12/BS2

CK Rumboll & Associates

zanelle@rumboll.co.za

FOR ATTENTION: ZANELLE NORTJE

REQUEST FOR PROVINCIAL PLANNING COMMENT: APPLICATION FOR REZONING, SUBDIVISION, DEPARTURE AND AMENDMENT OF CONDITION OF AN EXISTING APPROVAL: ERF 2183, KLAPMUTS

1. Your request for comment dated 14 September 2023 has reference.
2. The purpose of the application at hand is to develop 109 Less Formal Residential Zoned erven on Erf 2183, Klapmuts, to be known as the La Rochelle Housing Project.
3. The subject property is located inside the urban edge of Klapmuts and is earmarked for 'Mixed Use Community and Residential Infill' in terms of the Stellenbosch SDF, 2023. The La Rochelle Housing project is an UISP housing development and has been identified as such in the SDF.
4. It is held that the proposed development represents a spatially compact development and is aligned with the MSDF.
5. This Directorate reserves the right to revise initial comments and request further information based on any additional information that may be received.

Kobus Munro

Digitally signed by Kobus Munro
Date: 2023.09.28 10:06:16 +02'00'

DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 2)





**Western Cape
Government**

Department of Environmental Affairs and Development Planning
Ntanganedzeni Mabasa
 Directorate: Development Management, Region 1
 Ntanganedzeni.Mabasa@westerncape.gov.za | Tel: 021 483 2803

REFERENCE: 16/3/3/6/B4/23/1401/23

DATE: 29 November 2023

CK Rumboll & Vennote / Partners
 PO Box 211
 Rainierstr 16
MALMESBURY
 7299

Attention: Ms Zanelle Nortje

Tel: 022 482 1845
 Email: zanelle@rumboll.co.za

Dear Sir

APPLICABILITY OF THE NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998 (ACT NO. 107 OF 1998) ("NEMA") ENVIRONMENTAL IMPACT ASSESSMENT ("EIA") REGULATIONS, 2014 (AS AMENDED) TO THE PROPOSED REZONING, SUBDIVISION AND DEPARTURE OF ERF NO. 2183, KLAPMUTS.

1. The electronic copy of the abovementioned documents received by the Department on 13 September 2023, refer.
2. This serves as an acknowledgement of receipt of the aforementioned documents by this Department.
3. According to the information submitted to this Department, the following is noted:
 - 3.1 The proposal entails the amendment of conditions of an existing approval, rezoning and subdivision of Erf No.2183 in Klappmuts, and a departure from the street building line.
 - 3.2 It is indicated that the site was approved as part of the Environmental Authorisation ("EA") that was issued on 4 May 2007, which approved a low-cost housing development on Portion 4 of Farm No.744, Klappmuts. The farm portion was subsequently registered as Erf No. 342, and further subdivided to create Erf No. 2183.
 - 3.3 However, it is not clear from the information provided to determine whether the proposed layout is in accordance with the Site Development Plan ("SDP") that was authorised as part of the aforementioned EA.
4. Your attention is drawn to the listed activities in terms of the NEMA EIA Regulations, 2014 as defined in Listing Notices 1, 2 and 3. Although the site forms a component of the low-cost housing development that was approved in the EA issued on 4 May 2007, it is not clear whether the proposed layout is in accordance with the Site Development Plan ("SDP") that was authorised as part of the aforementioned EA. The Department can therefore not confirm whether the existing EA is valid, whether the proposal will require an amendment of the existing EA, or whether any additional requirements in term of the EIA Regulations, 2014 (as amended) are applicable.

5. Adequate information must therefore be provided to demonstrate and confirm that the proposed development and layout is in accordance with the SDP that was authorised as part of the EA that was for the development on 4 May 2007, as specified, before the Department can advise on the applicability of the EIA Regulations, 2014, (as amended).
6. This Department reserves the right to revise its initial comments and request further information from you based on any new or revised information received.

Yours faithfully

**Andrea
Thomas**

Digitally signed by
Andrea Thomas
Date: 2023.11.29
11:39:23 +02'00'

PP HEAD OF COMPONENT

ENVIRONMENTAL IMPACT MANAGEMENT SERVICES: REGION 1

DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING

CC: (1) Schalk van der Merwe (Stellenbosch.Municipality)

Email: Schalk.vandermerwe@ Stellenbosch.gov.za

CK RUMBOLL & VENNOTE / PARTNERS



PROFESIONELE LANDMETERS ~ ENGINEERING AND MINE SURVEYORS ~ STADS- EN STREEKSBEPLANNERS ~ SECTK

DATUM / DATE: 4 December 2023

ONS VERW / OUR REF: KLA/11996/ZN

YOUR REF: 16/3/3/6/B4/23/1401/23

PER EMAIL: andrea.thomas@westerncape.gov.za

ATTENTION: Andrea Thomas

Directorate: Development Management, Region 1

Department of Environmental Affairs and Development Planning

PROPOSED HOUSING DEVELOPMENT LA ROCHELLE ON ERF 2183, KLAPMUTS

This letter relates to the above mentioned application and your letter dated 29 November 2023, ref 16/3/3/6/B4/23/1401/23.

Your letter noted that additional information is required to determine if the proposed development and layout is in accordance with the SDP which was authorised as part of the EA issued on 30 April 2007.

The Municipality went through their archives and couldn't find a plan stamped and signed with the approved Environmental Authorisation (EA) of 2007. They could also not find any amendments made to the EA of 2007.

In terms of town planning it was found that the original land use approval of 29 February 2008 included a Site Development Plan (SDP) that shows the 550 subsidy residential erven, the same as approved in the EA. However, there was an amendment of SDP approved by town planning in 2013 that shows 1047 units and other erven, of which one is the site for less formal residential – Erf 2183 Klappmuts. This SDP of 2013 is the one that was implemented on site and the clips below shows the applicable areas of the possible area approved in the EA and the SDP approved in 2013 by town planning. The plan is also attached. Erf 2183 was shown as a single erf with the zoning to allow Less Formal Residential of which we are proposing internal subdivision.

There is no record that the EA was amended from 550 units to 1047 units in 2013 in the archives of the Municipality. Is there a possibility that you can have a look in your archives if you have anything like that on the system? If not, what is our next steps?

VENNOTE / PARTNERS:

IHJ Rumboll PrL (SA), BSc (Surv), M.I.P.L.S., AP Steyl PrL (SA), BSc (Surv), M.I.P.L.S.

ADDRESS/ ADRES: zanelle@rumboll.co.za / PO Box 211 / Rainierstr 16, Malmesbury, 7299
MALMESBURY (T) 022 482 1845 (F) 022 487 1661 / VREDENBURG (T) 022 719 1014

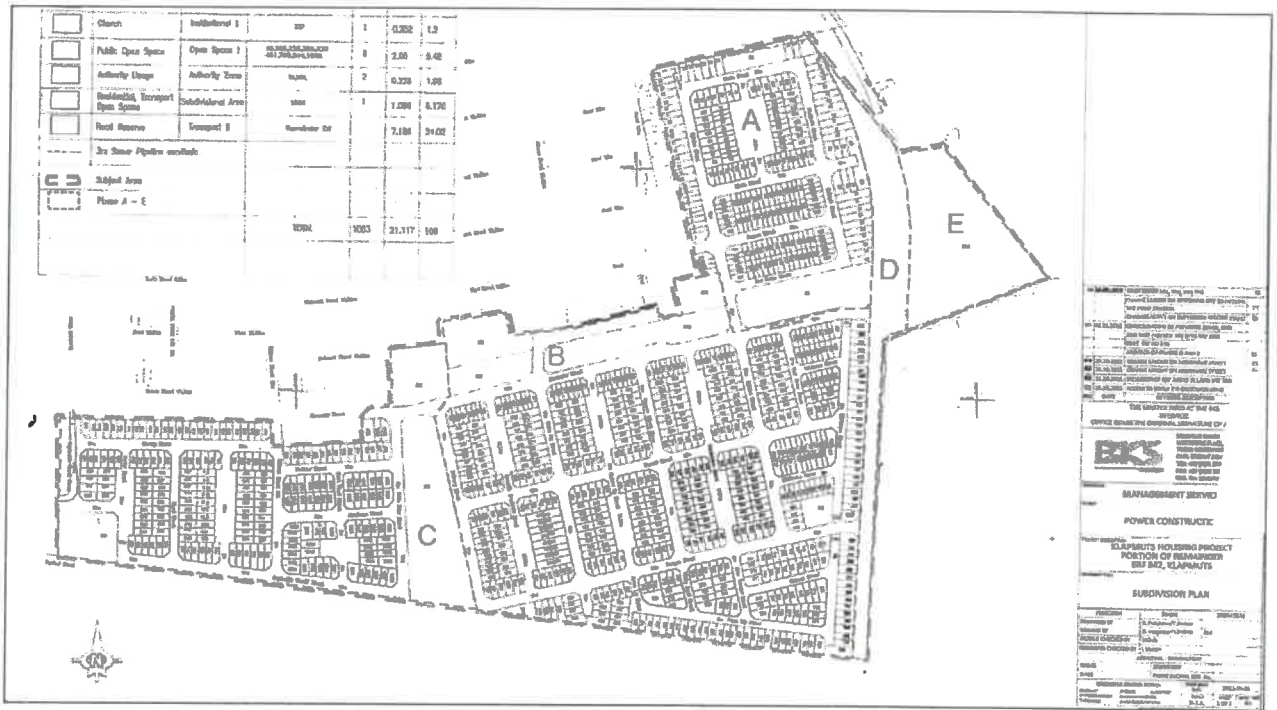


Figure 1: SDP approved by town planning in 2013



Figure 2: Locality Map showing applicable areas

Apart from the EA, the proposed development on Erf 2138, Klapmuts, and the current status quo on site, will not trigger any of the listed activities as set out in the NEMA EIA Regulations, 2014 (as amended). The site has no natural vegetation, less than 1ha ins size and is covered with informal structures.

Hope you can assist us with the above regards. Please contact me if you have any other questions.

Yours truly

A handwritten signature in dark ink, appearing to read 'Zanelle Nortjé', with a stylized flourish at the end.

Zanelle Nortjé

For *CK RUMBOLL AND PARTNERS*

Our Ref: HM / CAPE WINELANDS/ STELLENBOSCH/ KLAPMUTS / ERF 2183
Case No: 22032901SB
Enquiries: Stephanie Barnardt
E-mail: Stephanie.Barnardt@westerncape.gov.za
Tel: 021 483 5959



CK Rumboll and Partners – Zanelle Nortje
 Shaun.October@stellenbosch.gov.za; zanelle@rumboll.co.za

RESPONSE TO NOTIFICATION OF INTENT TO DEVELOP: FINAL
In terms of Section 38(4) of the National Heritage Resources Act (Act 25 of 1999) and the Western Cape
Provincial Gazette 6061, Notice 298 of 2003

NOTIFICATION OF INTENT TO DEVELOP: PROPOSED UPGRADING OF INFORMAL SETTLEMENTS PROGRAMME (UISP) HOUSING DEVELOPMENT ON ERF 2183, KLAPMUTS CAPE TOWN, SUBMITTED IN TERMS OF SECTION 38(1) OF THE NATIONAL HERITAGE RESOURCES ACT (ACT 25 OF 1999)

The matter above has reference.

Heritage Western Cape is in receipt of the above matter received. This matter was discussed at the Heritage Officers meeting held on 17 May 2022.

You are hereby notified that, since there is no reason to believe that the Proposed upgrading of Informal Settlements Programme (UISP) housing development on Erf 2183, Klappmuts will impact on heritage resources, no further action under Section 38 of the National Heritage Resources Act (Act 25 of 1999) is required.

However, should any heritage resources, including evidence of graves and human burials, archaeological material and paleontological material be discovered during the execution of the activities above, all works must be stopped immediately, and Heritage Western Cape must be notified without delay.

This letter does not exonerate the applicant from obtaining any necessary approval from any other applicable statutory authority.

HWC reserves the right to request additional information as required.

Should you have any further queries, please contact the official above and quote the case number.

Colette Scheermeyer
 Deputy Director



Heritage Western Cape
Erfenis Wes-Kaap
ILifa leMveli leNtshona Koloni

25 May 2022

www.westerncape.gov.za/cas

Street Address: Protea Avenue, Informal Green Market Square, Cape Town, 8000 • Postal Address: P.O. Box 905, Cape Town, 8000
 • Tel: +27 (0)21 483 5959 • E-mail: cas@westerncape.gov.za
 Straatadres: Protea Avenue, Informal Groenemarketplein, Kaapstad, 8000 • Posadres: P.O. Box 905, Kaapstad, 8000
 • Tel: +27 (0)21 483 5959 • E-pos: cas@westerncape.gov.za
 Idilesi yendawo: Indawo yendawo yase Protea Avenue, Indawo yase Groenemarketplein, Kaapstad, 8000 • Idilesi yeposi: Indawo yeposi yase Protea Avenue, Kaapstad, 8000 • Inombolo zomnyebe: +27 (0)21 483 5959 • Idilesi ye-inyeyile: cas@westerncape.gov.za



ANNEXURE G

Per Hand
Advang
4/06/2013

Enquiries	C Alexander / B Mdoda
Your ref.	-
Our Ref .	Erf 342, Klappmuts
Application No.	LU/2424
Date	2013-06-03
Telephone	021-808 8645 / 8690
Fax	021-808 8651

BY HAND

Stellenbosch Municipality
Directorate of Human Settlements
Absa Building
Plein Street
Stellenbosch
7600

FILE NR:	OUTGOING POST
SCAN NR:	
KL342 LU2424 APPR	
COLLABORATOR NR:	

Sir/Madam

APPLICATION FOR AMENDMENT OF THE APPROVED SUBDIVISION ON ERF 342, KLAPMUTS

Your application in the above regard, refers.

The Director: Planning and Economic Development at a recent meeting resolved as follows:

1. That **approval be granted** in terms of Section 30 of the Land Use Planning Ordinance, 1985 (Ordinance No 15 of 1985), for the amendment of the approved & endorsed subdivision plan dated 09 November 2011 on Erf 342, Klappmuts in order to make provision for a reservoir, as per Subdivision Plan No. J01587-003-01-SDP-F-06, dated 26 October 2011 drawn by BKS Management Services, attached as **Appendix C**, subject to the conditions as set out in **Appendix A**.

In terms of Section 62 of the Local Government Municipal Systems Act, No 32 of 2000, you may appeal to the Municipal Manager against the above Council decision (including any conditions imposed in case of approval) by giving written notice of such appeal, in which case you may upon request be given the opportunity to appear in person before the Appeal authority to state your case. A detailed motivated appeal with reasons therefore (and not only the intention to appeal), clearly stating in terms of which legislation it is made, as well as payment of the appeal fee to the amount of R670,00, should be directed to and received by the Municipal Manager, Stellenbosch Municipality, P O Box 17, Stellenbosch, 7599, or if hand delivered, to Town Planning, ground floor, municipal building, Plein Street, Stellenbosch, within 21 days of the date of registration at the Post office of this notification letter (with such registration day not included in the appeal period), provided where the last day for lodging an appeal falls either on a Sunday or public holiday, it shall be deemed to be the next working day thereafter.

Please note, appellants are not permitted to canvass the Municipal Manager or members of Council's Appeals Committee before or after the matter is heard. Should no appeal be received within such appeal period, or upon conclusion of this appeal process, you will be advised of your right to act on this decision.



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNICIPALITY • UMASIPALA • MUNISIPALITEIT

Department: Planning and Economic Development

Department: Beplanning en Ekonomiese Ontwikkeling

APPENDIX A FILE NO: KL342

In this approval document:

"Council" means the Stellenbosch Municipality

"the owner" means the registered owner of the property.

"the site" means ERF 342, KLAPMUTS

"scheme regulation" in this instance means the Stellenbosch Zoning Scheme Regulations and has the meaning assigned thereto by Ordinance 15 of 1985.

EXTENT OF APPROVAL: Amendment of the approved & endorsed subdivision plan dated 09 November 2011 on Erf 342, Klapmuts in order to make provision for a reservoir, as per Subdivision Plan No. J01587-003-01-SDP-F-06, dated 26 October 2011 drawn by BKS Management Services, attached as Appendix C.

VALIDITY OF APPROVAL: The approval shall lapse if not exercise within five (5) years from the final date of notification.

CONDITIONS IMPOSED: Subdivision Conditions

THAT THE FOLLOWING CONDITIONS ARE APPLICABLE IN TERMS OF SECTION 42 OF THE ORDINANCE, 15 OF 1985:

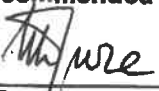
- a) That this approval applies only to the amendment of the site development plan and departure as per Subdivision Plan No. J01587-003-01-SDP-F-06, dated 26 October 2011 drawn by BKS Management Services and shall not be construed as authority to depart from any of the legal prescriptions or requirements;
- b) That building plans must be submitted to Council for consideration and approval prior to the commencement of any building work;
- c) That the property is outside the Stellenbosch area of electrical supply and all electrical requirements should be directed to Eskom;
- d) That Council reserves the right to impose further conditions if deemed necessary.

Compiled & Recommended By:


C Alexander
Senior Area Planner (Franschhoek, Dwars River Valley & Surrounds)

27/08/2013
Date

Recommended for Approved By:


N Duzo
Manager: Land Use Management

27/05/2013
Date

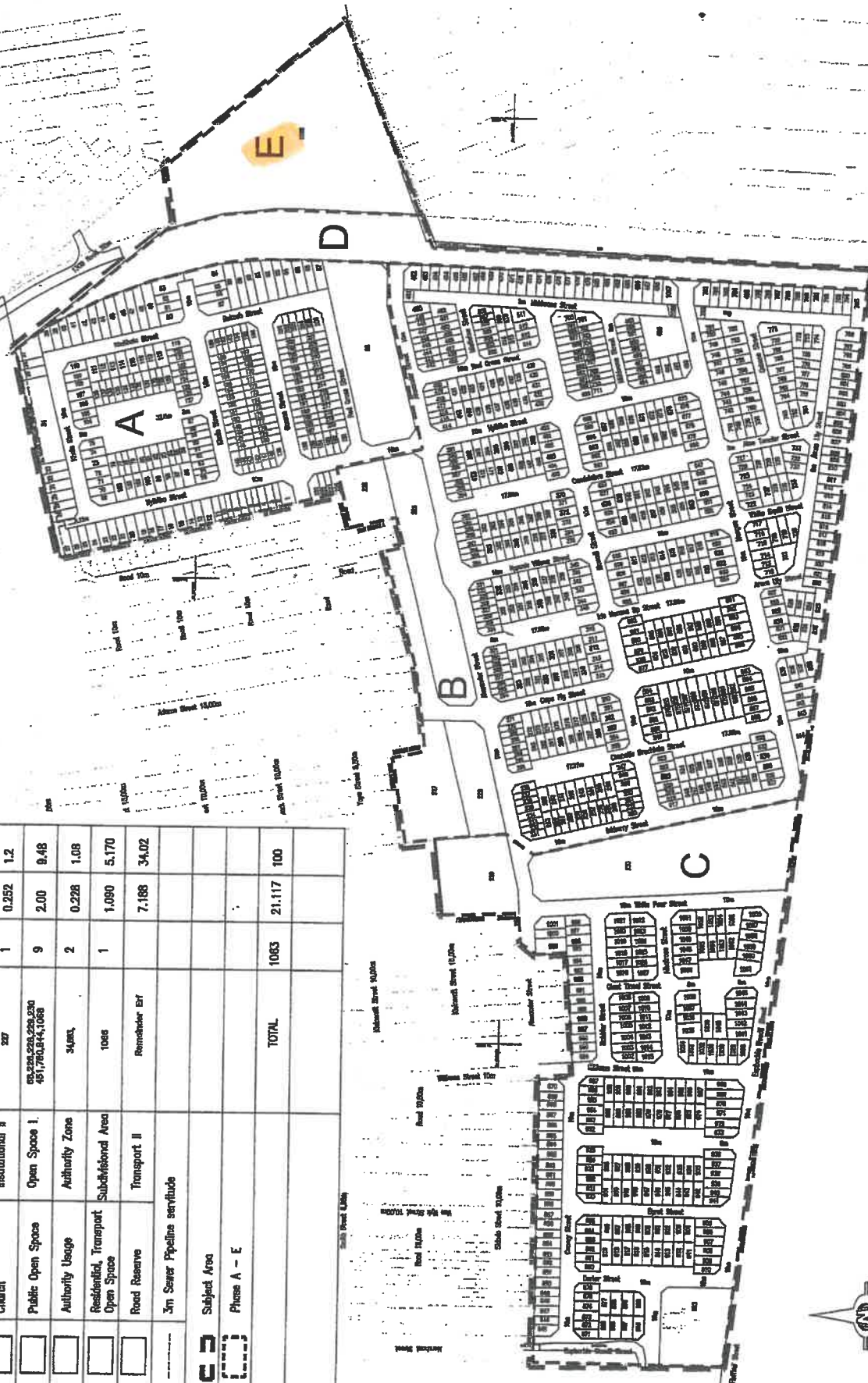
Approved By:


B Davidson
Director: Planning and Economic Development

31/05/2013
Date

LAND USE TABLE

SUBJECT	LAND USE	ZONING	PORTION NO.	ERVEN	AREA	%
	Informal Residential	Inf. Res	1-33,35-67,68-294,231-464, 733-488,490-720,722-779, 783-943,946-986,988-1086, 1087	1047	10,150	48.06
	Commercial/Max Use	Business I	229	1	0.119	0.56
	Creche	Institutional I	499,721	2	0.080	0.43
	Church	Institutional II	227	1	0.252	1.2
	Public Open Space	Open Space I	68,298,299,229,230 461,740,844,1086	9	2.00	9.48
	Authority Usage	Authority Zone	34,687	2	0.228	1.08
	Residential, Transport Open Space	Sub-Medical Area	1086	1	1.090	5.170
	Road Reserve	Transport II	Remainder Erf	7,188	34.02	
3m Senter Pipeline servitude						
Subject Area						
Phase A - E						
			TOTAL	1063	21,117	100

[illegible]

DATE	REVENUE DESCRIPTION
	THE MASTER HELD AT THE BRK
	831016



MANAGEMENT SERVICE

POWER CONSTRUCTION

**KLAPMUTS HOUSING PROJECT
PORTION OF REMAINDER
ERF 342, KLAPMUTS**

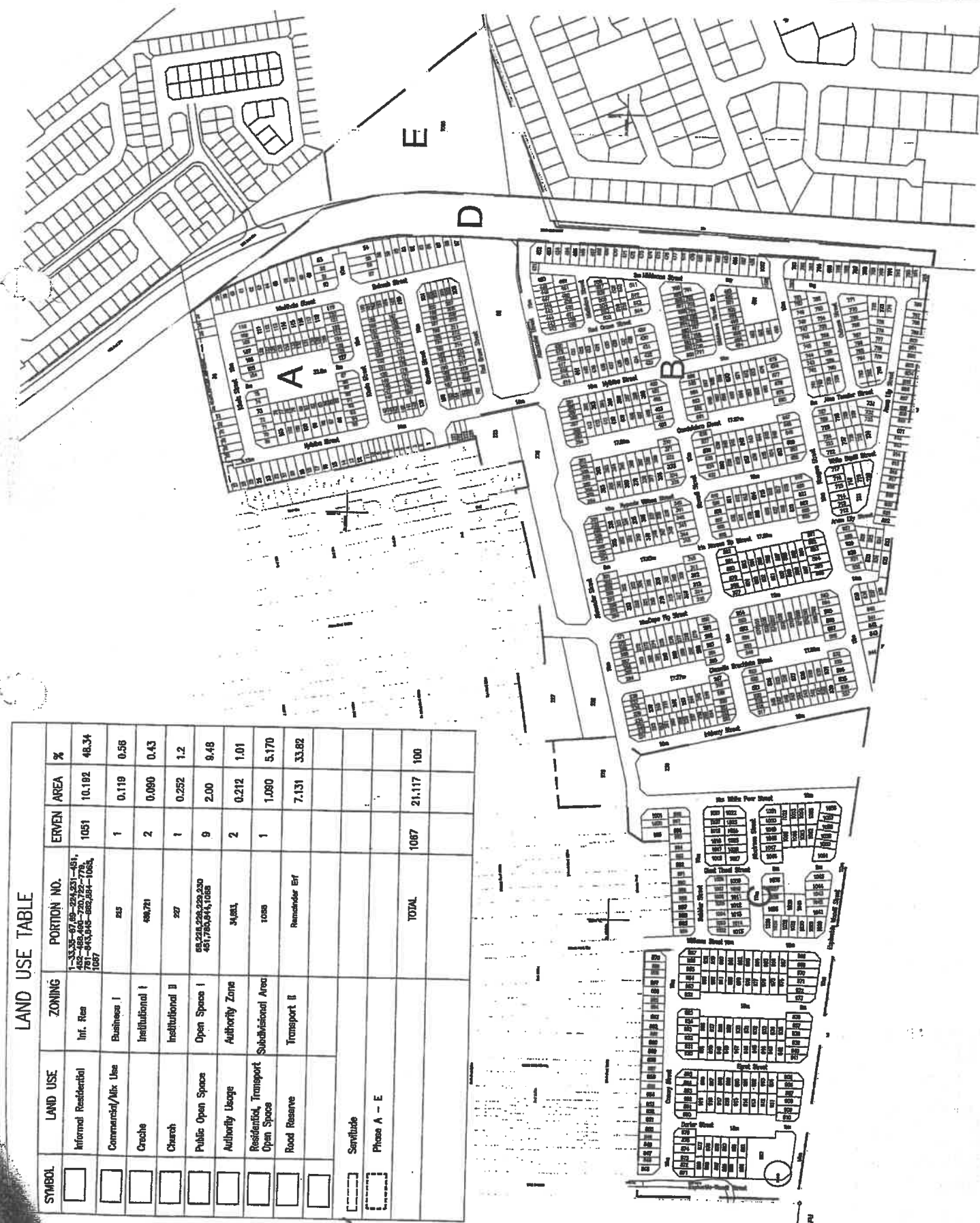
SUBDIVISION PLAN

FUNCTION	NAME	SIGNATURE	DATE	REMARKS	DATE	REMARKS
DESIGNED BY	H. Engstrand / J. Salomon					
DRAWN BY	H. Engstrand / J. Salomon					
CHECKED BY	MAK					
APPROVED BY	L. Lennartsson					
DATE						
REMARKS						

01587 - 003 - 01 - SDP - F - 06

LAND USE TABLE

SYMBOL	LAND USE	ZONING	PORTION NO.	ERVEN	AREA	%
	Informal Residential	Inf. Res	1-33,35-47, 49-59, 61-63, 65-67, 69-71, 73-75, 77-79, 81-83, 85-87, 89-91, 93-95, 97-99, 101-103, 105-107	1051	10.192	48.34
	Commercial/Alx Use	Business I	25	1	0.119	0.56
	Creche	Institutional I	498,721	2	0.090	0.43
	Church	Institutional II	227	1	0.252	1.2
	Public Open Space	Open Space I	68,228,229,230,231, 481,786,814,1083	9	2.00	9.48
	Authority Usage	Authority Zone	34,831	2	0.212	1.01
	Residential, Transport Open Space	Subdivisional Area	1058	1	1.090	5.170
	Road Reserve	Transport II	Remainder Erf		7.131	33.82
	Servitude					
	Phase A - E					
			TOTAL	1087	21.117	100



CONSOLIDATION OF PREVIOUS ERF 1008 AND 1007 (SEE ERF 04) INTO ERF 1087		DATE	2015-03-28
ADDITION OF PHASE D AND E		DATE	2015-03-28
CHARGE LAYOUT ON MAGNANIE STREET		DATE	2015-03-28
INCLUSION OF ERF AREAS IN LAND L		DATE	2015-03-28
ACCESS TO DRIVE ON GROENWATER		DATE	2015-03-28
ADDITION DESCRIPTION		DATE	2015-03-28
<p>THE MASTER HELD AT THE UP BELLEVILLE OFFICE BEARS THE ORIGINAL SIGNATURE</p>			
		BELLEVILLE OFFICE WATERLOO RD CAPE TOWN 7700 TEL: +27 (0)21 551 1111 FAX: +27 (0)21 551 1111 E-MAIL: info@up.co.za	
<p>MANAGEMENT SERVICE</p> <p>DISCUSSURE</p> <p>CURT</p>		<p>POWER CONSTRUCTION</p> <p>PROJECT DESCRIPTION</p> <p>KLAPMUTS HOUSING PROJECT</p> <p>PORTION OF REMAINDER</p> <p>ERF 342, KLAPMUTS</p>	
<p>SUB-DIVISION PLAN</p> <p>DRAWING TITLE</p>			
<p>DESIGNED BY</p> <p>NAME</p> <p>DATE</p>	<p>DRAWN BY</p> <p>NAME</p> <p>DATE</p>	<p>CHECKED BY</p> <p>NAME</p> <p>DATE</p>	<p>APPROVED BY</p> <p>NAME</p> <p>DATE</p>
<p>DATE</p> <p>2015-03-28</p>	<p>DATE</p> <p>2015-03-28</p>	<p>DATE</p> <p>2015-03-28</p>	<p>DATE</p> <p>2015-03-28</p>
<p>PROJECT NO.</p> <p>101587</p>	<p>DATE</p> <p>2015-03-28</p>	<p>DATE</p> <p>2015-03-28</p>	<p>DATE</p> <p>2015-03-28</p>
<p>PROJECT NO.</p> <p>101587</p>	<p>DATE</p> <p>2015-03-28</p>	<p>DATE</p> <p>2015-03-28</p>	<p>DATE</p> <p>2015-03-28</p>

Enquiries	C Alexander / B Mdoda
Your ref.	-
Our Ref.	Erf 342, Klapmuts
Application No.	LU/2424
Date	2013-08-05
Telephone	021-808 8645 / 8690
Fax	021-808 8651

BY HAND

Stellenbosch Municipality
 Directorate of Human Settlements
 Absa Building
 Plein Street
 Stellenbosch
 7600

FILE NR:	OUTGOING POST
<input type="text"/>	
SCAN NR:	
KL342 LU2424 FINAL	
COLLABORATOR NR:	
<input type="text"/>	

Sir/Madam

APPLICATION FOR AMENDMENT OF THE APPROVED SUBDIVISION ON ERF 342, KLAPMUTS

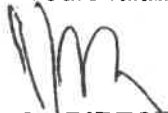
The current application in the above regard and my letter dated 3 June 2013, refer.

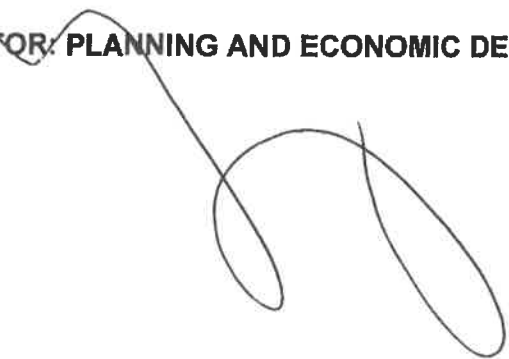
The Director: Planning and Development Services at a meeting held in May 2013 resolved as follows:

1. That **approval be granted** in terms of Section 30 of the Land Use Planning Ordinance, 1985 (Ordinance No 15 of 1985), for the amendment of the approved & endorsed subdivision plan dated 09 November 2011 on Erf 342, Klappmuts in order to make provision for a reservoir, as per Subdivision Plan No. J01587-003-01-SDP-F-06, dated 26 October 2011 drawn by BKS Management Services, attached as **Appendix C**, subject to the conditions as set out in **Appendix A**.

I wish to advise that the appeal process has now been concluded and that the decision as per Council's previous letter of approval is therefore now considered final. Accordingly, you may now act on the decision, subject to compliance with the conditions attached as **Appendix A**.

Yours faithfully


 for **DIRECTOR: PLANNING AND ECONOMIC DEVELOPMENT**





STELLENBOSCH
 STELLENBOSCH • PNIEL • FRANSCHHOEK
 MUNICIPALITY • UMASIPALA • MUNISIPALITEIT
 Department: Planning and Economic Development
 Department: Beplanning en Ekonomiese Ontwikkeling

APPENDIX A
FILE NO: KL342

In this approval document:

"Council" means the Stellenbosch Municipality

"the owner" means the registered owner of the property.

"the site" means ERF 342, KLAPMUTS

"scheme regulation" in this instance means the Stellenbosch Zoning Scheme Regulations and has the meaning assigned thereto by Ordinance 15 of 1985.

EXTENT OF APPROVAL: Amendment of the approved & endorsed subdivision plan dated 09 November 2011 on Erf 342, Klappmuts in order to make provision for a reservoir, as per Subdivision Plan No. J01587-003-01-SDP-F-06, dated 26 October 2011 drawn by BKS Management Services, attached as **Appendix C**.

VALIDITY OF APPROVAL: The approval shall lapse if not exercised within five (5) years from the final date of notification.

CONDITIONS IMPOSED: Subdivision Conditions

THAT THE FOLLOWING CONDITIONS ARE APPLICABLE IN TERMS OF SECTION 42 OF THE ORDINANCE, 15 OF 1985:

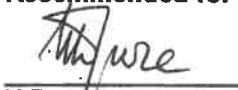
- a) That this approval applies only to the amendment of the site development plan and departure as per Subdivision Plan No. J01587-003-01-SDP-F-06, dated 26 October 2011 drawn by BKS Management Services and shall not be construed as authority to depart from any of the legal prescriptions or requirements;
- b) That building plans must be submitted to Council for consideration and approval prior to the commencement of any building work;
- c) That the property is outside the Stellenbosch area of electrical supply and all electrical requirements should be directed to Eskom;
- d) That Council reserves the right to impose further conditions if deemed necessary.

Compiled & Recommended By:


C Alexander
 Senior Area Planner (Franschhoek, Dwars River Valley & Surrounds)

27/08/2013
 Date

Recommended for Approved By:


N Duze
 Manager: Land Use Management

27/05/2013
 Date

Approved By:


B Davidson
 Director: Planning and Economic Development

31/05/2013
 Date



APPLICATION FOR REZONING AND SUBDIVISION ON FARM 527/7 STELLENBOSCH FARMS

CONTENT	
ANNEXURES	PAGE NUMBER
ANNEXURE A: Locality Plan	128-129
ANNEXURE B: Title Deed	130-142
ANNEXURE C: Proposed subdivisional plan	143-145
ANNEXURE D: Applicants Motivation	146-184
ANNEXURE E: Previous Approvals	185-193
ANNEXURE F: Proof of Evidence (Public Participation, General Plan & Affidavit)	194-223
ANNEXURE G: Objections, & response to objections from applicant	224-283
ANNEXURE H: Comment from the Manager: Spatial Planning	284-285
ANNEXURE I: Comment from Senior Environmental Planner: Community Services	286-304
ANNEXURE J: Comment from the Director: Infrastructure Services	305-326
ANNEXURE K: Comments from the Department of Transport and Public Works	327
ANNEXURE L: Comments from the Department of Environmental Affairs and Development Planning	328-330
ANNEXURE M: Engineering Services Report	331-351
ANNEXURE N: Traffic Impact Assessment	352-566



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNICIPALITY • UMASIPALA • MUNISIPALITEIT

STELLENBOSCH MUNICIPALITY			
PLANNING REPORT: LAND USE AND LAND DEVELOPMENT APPLICATION: APPLICATION FOR REZONING AND SUBDIVISION ON FARM 527/7 STELLENBOSCH FARMS			
Application Reference	File Ref: LU/15064	Application Date	2023/01/11
		Last day for comments or additional information	2024/02/16

PART A: APPLICANT DETAILS			
First name(s) & Surname	Rudolf Schroder		
Company name	Zutari (Pty) Ltd		
SACPLAN registration number	A/151/2009		
Registered owner(s)	Stellenbosch Municipality	Is the applicant properly authorised to submit the application	Yes

PART B: PROPERTY DETAILS			
Property description	Farm 527/7	Administrative District	Stellenbosch Farms
Physical address	School street, Stellenbosch (See Annexure A)		
Extent (m ² /ha)	18, 8340 ha	Nearest town	Jamestown
Existing Development and Current land use	Vacant with the exception of the Informal Settlement located on the south part of the site.		
Any unauthorised land use/building work	None		
Title Deed Nr.	T 017752/2018 (See Annexure B)		
Current zoning and approved land use rights as per zoning scheme bylaw 2019	Agriculture and Rural Zone		

PART C: APPLICATION DETAILS

Applications(s)	<p>1. An application is made in terms of the Stellenbosch Municipality Land Use Planning By-law, 2023 on Farm 527/7 Stellenbosch Farms for the following:</p> <p>1.1. Rezoning in terms of Section 15 (2)(a) of the said by-law from Agriculture and Rural Zone to Subdivisional area in order to allow for the following uses;</p> <ul style="list-style-type: none"> a) 175 Conventional Residential Zone (Subsidy housing + Single Residential housing) erven ($\pm 23\,615\text{ m}^2$) b) 150 Conventional Residential Zone (Subsidy housing) ($\pm 20\,779\text{ m}^2$) c) 71 Conventional Residential zone (Gap Housing) erven ($\pm 12\,622\text{ m}^2$) d) 176 Multi unit Residential zone (Flats) erven ($\pm 20\,616\text{ m}^2$) e) 2 Public Open Space Zone erven ($\pm 2\,246\text{ m}^2$) f) 1 Community Zone erven ($\pm 1\,100\text{ m}^2$) g) 1 Transport facility Zone (Taxi rank) erven ($\pm 516\text{ m}^2$) h) Public Roads and Parking Zone erven <p>1.2 Subdivision in terms of Section 15 (2)(d) of the said by-law in accordance with the subdivisional plan in order to allow the proposed development.</p>
Purpose of Application	The purpose of the application is to facilitate phase two (2) & three (3) of the previously approved development plan for Farm 527/4 into various land portions as depicted on the subdivisional plan.
Pre-consultation	A pre-consultation meeting was conducted.

PART D: APPLICATION BACKGROUND**1. Location of property**

The subject property is located on the southern portion of Jamestown. The property is bordered by Jamestown residential to the north, Stellerszicht Secondary school to the east and Stellenrust Wine Estate to the south (See **Annexure A** for locality plan).

2. The prevailing development context of the subject surrounding/ neighbouring area

The subject property is surrounded by mix of land uses that includes Jamestown residential to the north, educational uses and various farms such as the Klein Zalze Wine Estate, Rust en Vrede Wine Estate etc.

3. Historic use and development of the property.

The Remainder of Portion 7 of the Farm 527 was created after Phase 1 (state subsidy housing) was subdivided from Portion 4 of the Farm 527. The site has been rezoned for residential purposes allowing for a mix of residential types. Phase 1 of the development consisting of 162 subsidised housing opportunities has been completed in November 2016. The development rights that were previously approved (28 August 2013) for phases 2 & 3 on the Remainder of Portion 7 of the Farm 527 Stellenbosch but lapsed included the rezoning of the area to subdivisional area to make provision for the following intended land uses; (See

Annexure E)

- a) Site and Service
- b) Two (2) -storey walk-ups
- c) GAP housing
- d) High income housing and
- e) Public open space

PART E: APPLICATION OVERVIEW AND MOTIVATION (See Annexure D)

- o The proposal is consistent with existing Policy and Planning Frameworks and adheres to the principles of SPLUMA.
- o The urban development proposal supports the principles and is compliant with the Western Cape Provincial Spatial Development Framework (PSDF), District Spatial Development Framework & Stellenbosch Municipality Spatial Development Framework (MSDF).
- o The proposed housing development is aligned with the strategic local and provincial plans.
- o The goal of this application is the delivery of additional state subsidized housing units, serviced sites for affordable housing (plot and plan), GAP housing units, high density units and high-income housing.
- o The proposed development will provide much needed housing to the local community, specifically the provision of subsidised housing.
- o The site is ideally located for the proposed development and the physical characteristics of the property are suitable for the proposed development.
- o An EIA was conducted during Phase 1 of the initial subdivision of the project area. The current subdivision layout uses the exact same footprint of the previous approved layout; therefore, no additional environment impacts are triggered and the previous environmental authorisation that were issued are still valid.

The full applicant's motivation is attached as Annexure D.

PART F: PUBLIC PARTICIPATION, COMMENTS AND RESPONSE

1. Process followed

The applicant has notified the internal and external departments, advertised in the local newspaper and notified (by serving of notices) all interested and affected parties, as well as community organizations and also placed notices on the property. The advertising period was from 13 April 2023 to 15 May 2023 (See **Annexure F**), **29 objections** received (See **Annexure F**).

2. Public & stakeholder inputs

The following objections were received: (See **Annexure G**)

Althea Pietersen (16 Everbearing Street, Erf 408)	Anthony haralambous (Erf 527)	Anton van Gass (44 Watergang Str, Aan De Weber Estate, Jamestown, Stellenbosch)
Chrisben John February (Jamestown Erfenis / Heritage)	Chrisben John February (Plot 510 / 206, Webersvalley road, Erf 510/206)	Debbie Davidse (39 Webersvalley Road, Erf 199)
Dora Brocchetto (81 Watergang Street, Erf 952)	Erna Mouton (52 Watergang Street, Erf 851)	Gerado Williams (2 Everbearing Street, Erf 403(JT))
Gerhard Neethling (Watergangstr.89, Erf 914)	Grant Gideons (55 Parfaite Street, Erf 449)	Ilse Langhout (50 Watergang Street, Erf 853)
Jaen Boje (76 Watergang Street, Erf 903)	James Keen (114 Webersvallei Rd, Portion 207 (a portion of portion 20) of the Farm Blaauw Klip Number 510)	Janice Pietersen (8 Parfaite Street, Erf 252)
Jeanine Groenewald (25 Watergang Street, Erf 889)	Konrad Brand (48 Watergang Street, Erf 855)	Leishan Berg (4 Watergang, Erf 819)
Mariet Smal (99 Watergang Street, Erf 842)	Mark Le Roux (Waterford Partnership, COO and Winemaker)	Nicola Giliomee (46 aan de Weber, Erf 46)
Paul Mouton (52 Watergang Street, Erf 851)	Philippa Aschmann (100 Watergang street, Erf 843)	Riaan Snyman (80 Blouklip Close, Erf 924)
Stefan Blommaert (Watergangstr. 24, Erf 824)	Ters Conradie (41 Watergang Street, Erf 862)	Rene Spies (Jamestown Ratepayers Assosication)
Rene Spies (3 Nared Crescent, Jamestown, Stellenbosch)	Wilbar Robberts (Managing Director, Karoo Classics)	

Summary of the objections/comments received and the applicant's response (See **Annexure F**)

ISSUES RAISED		APPLICANTS RESPONSE
Main Category	Sub-Category	
Agriculture and heritage	Loss of heritage and close-knit rural community identity of Jamestown	<p>There have been several comments made regarding the perception that the proposed development will have an impact on the heritage of Jamestown and diminish the unique rural characteristic of the most scenic routes in Stellenbosch. Suggestions were made for the Municipality to consider other alternative municipal sites that are closer to central Stellenbosch for the housing development project. The public feels that locating certain communities in the outskirts of town reinforces the Apartheid regime and the group areas act. There were also requests made for a heritage impact assessment to be conducted before any rezoning is considered.</p> <p>The municipal land in question, has been earmarked for development as noted in the Stellenbosch Municipal Development Framework. It is within the municipalities mandate and responsibility to optimise land parcels that fall within the urban edge prior to considering other portions of land that sits outside of the urban edge. Land that falls within the urban edge has existing infrastructure and this is economically beneficial given that there is no need to invest large amount of funds to establish new infrastructure to enable the land to be developable to its fullest potential. A full heritage impact assessment was undertaken during the previous planning stages, and Heritage Western Cape authorised the development to proceed.</p>
	Land could be used to better	<p>Several comments have been made regarding better use of the land proposed for development, farm 527 forms part of the phase 2 and phase 3</p>

	empower Jamestown landowners by making it available to BBEEE farmers for sustainable farming.	specifically to serve local BBEEE farmers whose heritage is built on agriculture, and who currently travel far to access agricultural property.	development areas which have been previously rezoned, earmarked and approved for housing development, with phase 1 already implemented. Phase 2 and phase 3 is currently not impacted by any agricultural activities. The possible future phase 4 area is considered to be planned on the Remainder of the farm 527, which is currently being used for agricultural activities, but is not part of this application.
	Illegal informal dwellers have become a threat to rivers and surrounding agricultural land.	Public concerns were raised regarding the current development and illegal informal dwellers, without access to basic services have become a threat to rivers and surrounding agricultural land.	The main purpose of the phase 2 and phase 3 development, is to formalize the area by eradicating the informal settlement and protecting the natural environment. Once the development is realised, the current informal dwellers will be relocated onto serviced sites where they will have better access to services including access roads, running water, toilets etc. This formalised environment will then reinforce the protection of the environmental and surrounding agricultural land
Engineering services and built environment.	Traffic concerns regarding access, and inadequate infrastructure to	Public concerns were raised related to the traffic impact of the proposed development. Concerns include that the development only has one legal access road from the R44 to Jamestown and that the roads traveling to and from Jamestown have not	When the initial planning was done by the municipality, a full traffic impact assessment was conducted, and the current design of the development was done in accordance with the recommendations made by the traffic engineers at

<p>accommodate further developments.</p>	<p>accommodated all the additional demand. Concerns regarding Skool street that cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.</p> <p>Other concerns raised are existing safety and congestion issues along Blaauwklippen Road, and Webersvalley Road.</p>	<p>the time. The same layout structure recommended and approved previously has been used to form the basis of the formal subdivision of the layout plan (the current application).</p> <p>An update to the previously approved traffic impact assessment including updates to traffic counts are currently in progress, the updated information will guide and confirm if additional road upgrades are required in light of the proposed development.</p>
<p>Strain on existing public facilities.</p>	<p>Public concerns have been raised regarding the perceived strain on existing public services, namely, the library, clinic, and schools, as well as strain on bulk infrastructure namely' stormwater, sewer and water infrastructure, and concerns that the proposed development has not made provision for any additional social infrastructure, creches, clinics, police stations, and schools. Some comments were also made regarding concerns of the possibility that the school will be removed as a result of the planned phase 4 development. Also noted is that the application for phase 2 and 3 should be limited to the boundaries set in the application.</p>	<p>Investigations were conducted as part of the initial planning process to confirm the capacity of the existing bulk infrastructure. An update to this investigation is also currently being updated to confirm if additional infrastructure upgrades will be required.</p> <p>With regards to provision of additional public facilities, it has been recognised that there's a need, however the proposed current layout plan is based on the previously approved layout plan which made allowance for only one community stand. The Municipality will determine what type of facility is best suited for the community stand. All additional public facilities or the shortfall in public facilities will be addressed if the phase four area can be planned.</p>

			<p>With regards to concerns of the possibility that the school will be removed as a result of the planned stage 4 development, phase 4 land has not yet been planned and does not form part of the said application. A lot of investigations and studies must still be conducted on the Phase 4 land to determine what land uses will be suitable</p>
Socio Economic Aspects	Perceived increased level of crime.	Comments were made that the proposed development will lead to increased crime levels in the area. Some comments also noted that the phase 1 development has already brought more crime to the area.	<p>The urban design and design for safety principles have been incorporated in the layout design. The principle of natural surveillance creates spaces with opportunities for encountering, engaging, and interacting with other people. If a space has "more eyes" coming and going, it can discourage a potential crime that is likely to occur in isolated locations.</p>
	Impact on property value.	There were a number of comments received with members of the public claiming that property values will decline, specifically in relation to the proposed taxi rank which they vehemently oppose.	<p>There are a variety of factors that drive property values in any given market. In the real estate market particularly, availability and investment potential have been noted as critical factors. Other factors that drive the real estate market are demographics, interest rates, as well as government policy and legislation. Currently the land is not optimised and the informal settlement as it stands is not favourable for the</p>

			<p>environment. The proposed development aims to address this by creating a formal and healthy neighbourhood with formal services. This will protect the surrounding areas and it will increase the value of the land.</p> <p>The proposed taxi rank is for the benefit of a large number of people that are dependent on public transportation. The traffic engineers will assess the traffic impact and make any recommendations for any required upgrades that will need to be incorporated.</p>
Rezoned area will create opportunity for displaced families which may end up in a permanent "noodhuise" camp.	Public has noted their concerns regarding the possibility of having more informal dwellers move into the property and create permanent informal settlements.	The whole objective of the proposed development is to provide housing opportunities and for the eradication of the informal settlement and that serviced sites will be created to improve the quality and access to services for the community. The proposed development will create a formalised environment, with each stand having access to a water connection, toilet facilities etc, and overtime people will be able to build formal houses on these stands which will further improve their standard of living.	

Economic aspects	Loss of Stellenrust to Golden Triangle, with attendant jobless and loss of export revenue.	<p>There are concerns on the implications of the proposed development on businesses and the economy of the study area and surroundings. Concerns include the loss of jobs created by Stellenrust. Furthermore, concerns have been noted relating to the limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market.</p>	<p>Current informal dwellers have already out of their own choosing, selected this area to live on. The existing informal settlement was created out of a need and a clear shortage of affordable housing opportunities in Jamestown, which this proposed development will help to resolve. The location of the development site is favourable for housing given its proximity to economic opportunities in the surrounding area. This development will also create job opportunities for construction workers for the duration of construction. In the long term, the location of the proposed development is connected to the greater Stellenbosch and the people living in the area will be able to work within Stellenbosch. The Town is connected to a wide range of job opportunities.</p> <p>The concerns raised regarding the loss of jobs created by Stellenrust is related to the future phase 4 of the proposed development and is therefore not applicable to this application. The phase 4 land has not yet been planned and a lot of investigations and studies must still be conducted on the land to determine if development of the land is feasible.</p>
------------------	--	--	--

Institutional aspects	<p>Jamestown people will not be guaranteed accommodation, municipal lists are not trusted.</p>	<p>The public has raised concerns regarding not fully trusting the municipal housing lists, and they fear that Jamestown residents will not be guaranteed accommodation. The municipality's housing department is in regular contact with the ward councillor and the community living in the informal settlement regarding the allocation of housing opportunities to the affected community.</p>	<p>The rezoning and subdivision of the land is the first step to establish the development rights before any housing opportunities can be realised. Only after the rezoning and subdivision has been approved can the engineering designs commence, and construction drawings prepared for implementation.</p> <p>An in-depth market research study was completed in November 2022 which provides valuable insights into the household income of the area and the demand for various types of housing. The proposed development is supported by the housing demand that has been demonstrated in the area. The Municipality will work closely with the councillor and the community of the informal settlement before any sites are allocated to beneficiaries.</p> <p>The municipality is responsible to allocate housing opportunities according to the housing waiting list and the most deserving beneficiaries are given priority according to the Department of Human Settlements policies.</p> <p>An EIA was conducted during Phase 1 of the initial subdivision and rezoning of the project area. All environmental features were assessed at the time and</p>
Application needs to comply	Claims were made that the environmental authorisation issued to the proposed development has lapsed. Requests have been made that a new		

	with all applicable law.	environmental impact assessment must be conducted before this rezoning application can be considered.	<p>the site development plan that was developed and approved at the time incorporated all environmental features identified during the investigations.</p> <p>The original town planning approvals and the environmental authorisation was granted as part of the previous application is confirmed to include the entire phase 1, 2 and 3 areas. The Department of Environmental Affairs and Development Planning issued an environmental authorisation on 14 June 2010, which included the entire development area. Phase 1 was implemented in accordance with that environmental authorisation and the environmental authorisation was therefore activated and remains valid. The phase 2 and 3 development are merely a continuation of that same process and falls within the same environmental authorisation. It has been confirmed that no new environmental authorisation is therefore required.</p>
--	--------------------------	---	---

	Public participation process	The public is concerned that the public participation has been excluded from the application process	A public participation process has been undertaken in conjunction with the required environmental processes. The proposed subdivision and rezoning of the Remainder of Portion 7 of the farm 527 Stellenbosch, have been subjected to a thorough public participation process in terms of the provisions for public participation as set out in Section 45 of the Stellenbosch Municipality Land Use Planning By-Law, 2015, which entailed an advert in the press, notice to affected property owners, notice to community organisations and external departments.
--	------------------------------	--	--

3. Comments from internal service departments

- 3.1 The **Manager: Spatial Planning** supported the application (see **Annexure H** for email dated 17 August 2023).
- 3.2 The **Senior Environmental Planner: Community Services** supported the application subject to conditions (See **Annexure I** for memo dated 23 January 2023).
- 3.3 The **Director: Engineering Services** supported the proposal subject to conditions (see **Annexure J** for memo dated 16 February 2024).

PART G: ASSESSMENT OF LAND USE AND LAND DEVELOPMENT APPLICATION

1. Legislative and Policy Context of land use and land development application

The legislative, principles, policies, guidelines and plans which are considered as relevant to the application under consideration and land use application, are as follows:

- 1.1 Stellenbosch Municipality Land Use Planning Bylaw, 2023
- 1.2 Stellenbosch Municipality Spatial Development Framework, 2023
- 1.3 Provincial Spatial Development Framework
- 1.4 SPLUMA and Chapter VI of the Land Use Planning Act, 2014 (Act 3 of 2014)

2. Assessment of grounds of the land use and land development application

2.1 Land use principles

The proposal has significant bearing on development principles referred to in Section 42 of the Spatial Planning and Land Use Management Act (SPLUMA) (Act 16 of 2013) and Chapter VI of the Western Cape Land Use Planning Act (LUPA) (Act 3 of 2014):

- o Spatial Justice
- o Spatial Sustainability
- o Efficiency
- o Spatial Resilience
- o Good Administration

2.2 Applicable MSDF and LSDF's

The proposed development is located within the approved urban edge of Stellenbosch and earmarked for mixed- use community and residential infill. The Municipal Spatial Development Framework sets out new development actions to support inclusive infill development on vacant public land within Jamestown.

The proposed application is therefore consistent with the broad proposal of the Stellenbosch Municipal Spatial Development Framework and complies with the land use planning principles and other policies of the Municipality. The project is also included in the Capital Expenditure Framework (CEF) of the Municipality and listed as a priority project in the MSDF.

2.3 Applicable planning policies and guidelines

The Integrated Development Planning (IDP) stipulates priorities, and the development of housing is one of the critical priorities. The IDP housing as the burning and of utmost importance issue for residents in all categories. This includes all categories from rental stock, BNG, GAP housing, upgrade of informal settlements and mixed-use developments. The subject property falls within the strategic focus areas in the IDP therefore aligns with the objectives of IDP.

2.4 Service infrastructure capacity and sustainability

In terms of engineering services, a report done by Zutari (Pty) Ltd, dated 03 November 2023 focussing on the provision of civil engineering services. The report concluded that no major issues are foreseen for the proposed development in terms of engineering services. Ample capacity is available for all civil services, given proposed upgrades are facilitated ahead of construction. Detail design will identify and address all other minor issues such as exact connection points and other construction details.

The application was circulated to the Stellenbosch Municipality Engineering Services, and they indicated that the engineering services drawings have already been approved and are to be installed in accordance with the approved drawings. Upgrades to the bulk water reticulation network are included in the master plan. The Electrical services department indicated that the subject property is outside Stellenbosch area of supply, therefore all Electrical requirements should be directed to ESKOM (See **Annexure J**).

2.5 Any investigations carried out in terms of other laws that are relevant to the consideration of the subject application (e.g., EIA, TIA, HIA etc.)

A Traffic Impact Study was done by Zutari (Pty) Ltd, dated 31 January 2024 Rev 3 to investigate the expected transport related impacts the proposed development will have on the existing road network in the area. The report concluded that it is recommended that the R44/Webersvallei Road intersection be upgraded before the additional traffic to/from Phase 2 and 3 Jamestown residential development be added. However, considering that the development generates a very small % (< 2%) of the traffic using this intersection, this would not necessarily be for the developer's account (See **Annexure N**).

A continuous NMT link between the development and the R44/School Street and the R44 / Webersvallei intersection must be established. To achieve this, the Infrastructure Services Directorate requires that the gaps in the existing sidewalk network must be completed.

2.6 The proposal (the applicable provisions of the zoning scheme)

The subject property is zoned Agriculture and Rural Zone and in terms of the zoning of the subject property, the land unit must be rezoned to Subdivisional Area in order to facilitate the proposed development.

Therefore, the application is to rezone and subdivide Farm 527/7 Stellenbosch in order to allow for the following uses:

- 175 Conventional Residential Zone (Subsidy housing + Single Residential housing) erven ($\pm 23\ 615\text{ m}^2$)
- 150 Conventional Residential Zone (Subsidy housing) ($\pm 20\ 779\text{ m}^2$)
- 71 Conventional Residential zone (Gap Housing) erven ($\pm 12\ 622\text{ m}^2$)
- 176 Multi unit Residential zone (Flats) erven ($\pm 20\ 616\text{ m}^2$)
- 2 Public Open Space Zone erven ($\pm 2\ 246\text{ m}^2$)
- 1 Community Zone erven ($\pm 1\ 100\text{ m}^2$)
- 1 Transport facility Zone (Taxi rank) erven ($\pm 516\text{ m}^2$)
- Public Roads and Parking Zone erven

However, after consultations with the engineering services department, changes had to be made to the layout based on road planning by the roads and stormwater department. Therefore, the layout was amended, and the following land uses are proposed:

- 274 Conventional Residential Zone (Single Residential housing) erven ($\pm 44\ 291\text{ m}^2$)
- 2 Public Open Space Zone erven ($\pm 699\text{ m}^2$)
- 1 Community Zone erven ($\pm 577\text{ m}^2$)
- 1 Transport facility Zone (Transport Embayment) erven ($\pm 1\ 929\text{ m}^2$)
- Public Roads and Parking Zone erven (Public Roads) ($52\ 069\text{ m}^2$)

3. General desirability in accordance with possible impacts on neighbouring properties and surrounding areas.

3.1 Combability with surrounding properties

The subject property is surrounded by mix of land uses that includes Jamestown residential to the north, educational uses and various farms such as the Klein Zalze Wine Estate, Rust en Vrede Wine Estate etc. It is therefore envisaged that this proposal, would not negatively affect the character of the area and surrounding properties.

3.2 Impact on existing rights

The proposal will not have a detrimental impact on the existing rights of the neighbouring properties as the character of the area, privacy, amenity, views etc will not be compromised.

3.3 Impact on safety, health and wellbeing of the surrounding community

There is no reason to believe that the proposed development will result in any changes to the safety and security in the area since this application will increase residential opportunities in the area and enhance the optimal land uses.

4. Assessment of comments on application

The interested and affected parties as well as community organisations raised concerns regarding issues relating to loss of agriculture and heritage, strain on existing engineering services and built environment,

socio economic aspects such as perceived increases level of crime and loss on property values on the surrounding properties, economic aspects, institutional aspects and processes.

The subject property has been earmarked for development as noted in the Stellenbosch Municipal Development Framework. It is within the municipality's mandate and responsibility to optimise land parcels that fall within the urban edge prior to considering other portions of land that sits outside of the urban edge. Land that falls within the urban edge has existing infrastructure and this is economically beneficial given that there is no need to invest large amount of funds to establish new infrastructure to enable the land to be developable to its fullest potential. The proposed development is to formalise the current area which enhances the current land uses and increases housing opportunities, therefore the envisioned socio-economic impacts are not more than that that are normally associated with urban land uses.

Necessary public facilities are accommodated on the proposed SDP through a portion zoned for community use to alleviate the strain on existing public facilities. The housing allocation will be done in accordance with the Department of Human Settlements' policies. Furthermore, extensive public participation was conducted in terms of the provisions for public participation as set out in Section 45 of the Stellenbosch Municipality Land Use Planning By-Law, 2023, which entailed an advert in the press, notice to affected property owners, notice to community organisations and external departments. Moreover, the purpose of the application is to facilitate phase two (2) & three (3) of the previously approved development plan for Farm 527/4 into various land portions as depicted on the subdivisional plan. It is therefore an extension of the Jamestown Integrated Housing Development.

5. Additional planning evaluation for removal of restrictions

Not applicable to this application.

PART H: SUMMARY OF KEY FINDINGS OF ASSESSMENT

After having independently considered and weighted all the relevant information the evaluation of the subject land use and land development application concludes that the proposed development as submitted can be supported from a land use planning point of view for the following reasons.

1. The subject property is located within the approved urban edge of Stellenbosch and addressed in the municipal CEF.
2. The proposed development will provide access to residential opportunities within Jamestown.
3. The proposed development is not out of character and compatible with the surrounding and current land uses.
4. The proposed development will have a positive impact on the town's local economy as it will create new employment opportunities.

PART I: RECOMMENDATION

1. That the applications in terms Section 15 (2) of the Stellenbosch Municipality Land Use Planning By-law, 2023 on Farm 527/7 Stellenbosch for the following:

- 1.1 **Rezoning** in terms of Section 15 (2)(a) of the said by-law from Agriculture and Rural Zone to Subdivisional area in order to allow for the following uses:

- a) 274 Conventional Residential Zone (Single Residential housing) erven ($\pm 44\,291\text{ m}^2$)
- b) 2 Public Open Space Zone erven ($\pm 699\text{ m}^2$)
- c) 1 Community Zone erven ($\pm 577\text{ m}^2$)
- d) 1 Transport Facility Zone (Transport Embayment) erven ($\pm 1929\text{ m}^2$)
- e) Public Roads and Parking Zone erven (Public Roads) ($52\,069\text{ m}^2$)

- 1.2 **Subdivision** in terms of Section 15 (2)(d) of the said by-law in accordance with the subdivisional plan in order to allow the proposed development.

BE APPROVED in terms of Section 60 of the said bylaw, subject to conditions in terms of Section 66 of the said Bylaw:

2. Conditions of Approval:

- 2.1 The approval applies only to the proposed development under consideration shall not be construed as authority to depart from any other legal prescriptions or requirements from Council or other legislation or Bylaws or Regulations that may be applicable.
- 2.2 The development be undertaken in accordance with the Subdivisional layout and phasing plan, Rev 3, drawn by CHH (Zutari Pty (Ltd)), dated 15/12/2023, attached as **Annexure C**.
- 2.3 A phasing plan which indicates the spatial phasing and associated timeframe of the development be submitted to the Municipality for approval.
- 2.4 The approval granted shall not exempt the applicant from complying with any other legal prescriptions or requirements that might have a bearing on the proposed use.
- 2.5 New erf diagrams or general plans for the newly created land units be submitted to the municipality for clearance and record purposes.
- 2.6 A Street Naming and Numbering Plan be submitted and approved prior to the issuing of Section 28 Certification.
- 2.7 An electronic copy (shp, dwg, dxf) of the approved General Plan be submitted to the Directorate Planning and Economic Development for record purposes, which plan indicate the following information:

- a) Newly allocated erf numbers
- b) Co-ordinates
- c) Survey dimensions
- d) Street names and numbering

2.8 Development charges are payable in accordance with the prevailing and applicable Council Tariffs at the time of payment prior to the transfer of the first property or approval of any building plans, whichever occurs first, or as may be agreed on in writing with the Director Infrastructure Services.

2.9 Should the full extent of permissible development rights, as approved herein-above, not be implemented initially or development is phased, a pro rata Development Charge will be levied in accordance with the extent to which the development rights will be implemented, provided that the remaining development charges will be levied for the remaining permissible development rights when implemented in future. Remaining Development Charges will be levied in accordance with the prevailing and applicable Council Tariffs at the time of payment prior to the transfer of the first property or approval of any building plans, whichever occurs first.

2.10 A service agreement regarding the responsibilities for the provision of engineering services be entered into with the Municipality prior to the construction of any Engineering services or infrastructure in terms of Section 66(3) and Section 82(4) of the said Bylaw, which service agreement includes and complies with the conditions as imposed by the Directorate Infrastructure Services in their memo dated 16 February 2024, attached as **Annexure J**.

3. The reasons for the above decision are as follows:

- 3.1 The scale and nature of the proposed development will not compromise the existing character of the surrounding urban landscape considering that it will offer residential opportunities in the area.
- 3.2 The subject property is located within the approved urban edge of Stellenbosch and the proposed development is included in the Municipal Capital Expenditure Framework.
- 3.3 Provision has been made for the required infrastructure and there is sufficient services to support the proposal.

4. Matters to be noted:

- 4.1 The subdivision only comes into effect once all suspensive conditions or relevant legislative provisions have been complied with.
- 4.2 The approval granted shall not exempt the applicant from complying with any other legal prescriptions or requirements that might have a bearing on the proposed use.

- 4.3 All engineering services and infrastructure as required in terms of the conditions and services agreement be complied with to the satisfaction of the Municipality and/ or the relevant authority prior to the issuing of a Section 28 Certification.
- 4.4 Building plans be submitted and approved by the Municipality prior to the commencing of any building works, including the preparation of land, which will only be approved when all relevant (or qualified) conditions of approval have been complied with.

PART J: ANNEXURES

ANNEXURE A: Locality Plan

ANNEXURE B: Title Deed

ANNEXURE C: Proposed subdivisional plan

ANNEXURE D: Applicants Motivation

ANNEXURE E: Previous Approvals

ANNEXURE F: Proof of Evidence (Public Participation, General Plan & Affidavit)

ANNEXURE G: Objections, & response to objections from applicant

ANNEXURE H: Comment from the Manager: Spatial Planning

ANNEXURE I: Comment from Senior Environmental Planner: Community Services

ANNEXURE J: Comment from the Director: Infrastructure Services

ANNEXURE K: Comments from the Department of Transport and Public Works

ANNEXURE L: Comments from the Department of Environmental Affairs and Development Planning

ANNEXURE M: Engineering Services Report

ANNEXURE N: Traffic Impact Assessment

PART K: ASSESSMENT OF THE LAND USE AND LAND DEVELOPMENT APPLICATION

APPLICATION FOR REZONING AND SUBDIVISION ON FARM 527/7 STELLENBOSCH FARMS

AUTHOR OF PLANNING ASSESSMENT REPORT

NAME: B. Zondo

CAPACITY: Senior Town Planner

SACPLAN REGISTRATION: C/8589/2017

DATE: 14/02/2024

REVIEW AND RECOMMENDED BY PROFESSIONAL TOWN AND REGIONAL PLANNER**NAME:** C Kriel**CAPACITY:** Manager: Land Use Management**SACPLAN REGISTRATION:** A/212/10**DATE:** 16/02/2024**PART L: SUBMISSION OF LAND USE AND LAND DEVELOPMENT ASSESSMENT REPORT****APPLICATION FOR REZONING AND SUBDIVISION ON FARM 527/7 STELLENBOSCH FARMS****Authorised Employee to assess and make a recommendation on a land use and land development application for consideration by the authorised decision maker:**

As the duly authorised official in terms of Section 56 of the Stellenbosch Municipal Land Use Planning Bylaw (2023) to assess and make a recommendation on the above planning application, the subject planning report is hereby submitted for consideration to the duly authorised decision maker in accordance with the Categorisation Model for Land Use and Land Development Applications as approved by the Stellenbosch Municipality in accordance with Section 69(1) of the said Bylaw.

In terms of the Categorisation Model duly approved in terms of Section 69(1) of the said Bylaw vide Item 11.8.1 and dated 24 May 2023, the subject application is categorised as follows:

Category: A(c) (2), D (c) (2)**Decision Making Authority:** SMPT

Rational: The property is owned by the Stellenbosch Municipality and objections from interested and affected parties have been submitted against the proposed land use and land development application.

Name:**Capacity:****SACPLAN Registration:****Signature:****Date:**

PART M: SUBMISSION OF LAND USE AND LAND DEVELOPMENT ASSESSMENT REPORT**APPLICATION FOR REZONING AND SUBDIVISION ON FARM 527/7 STELLENBOSCH FARMS****Administrator to Authorised Official / Municipal Planning Tribunal:**

It is hereby confirmed that proper notice was served of the Municipal Planning Tribunal meeting at which this land use and land development application will serve for consideration.

The land use and land development application will serve at the scheduled meeting of the Municipal Planning Tribunal on:

Date: **01 March 2024**

Name:

Steen Carstens

Capacity:

SMAM

Signature:

Date:


16/2/2024



128

STELLENBOSCH

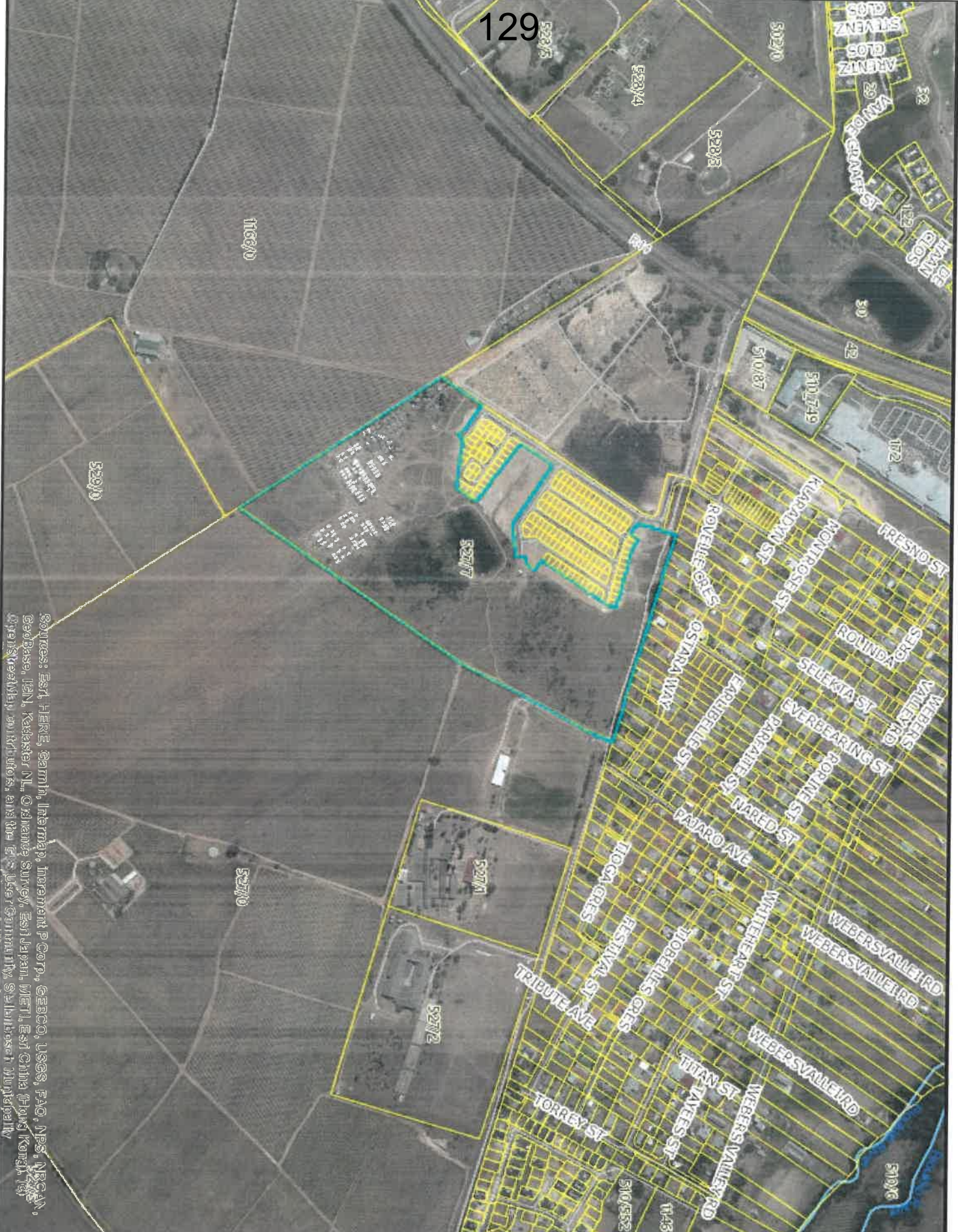
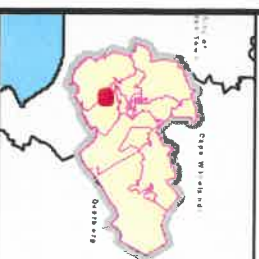
STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

ANNEXURE A: LOCALITY PLAN

1:9 027,98

Legend



Stellenbosch Municipality
Planning & Economic Development
Created by: Corporate GIS
Date: 2024/02/07



Author: Stellenbosch Municipality



Stellenbosch Municipality
Street Address:
71 Plein Street, Stellenbosch, 7600
Tel: 021 808 8658

[illegible]



130

STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

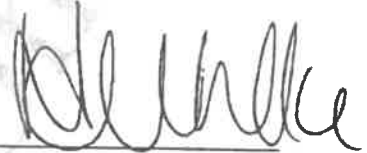
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

ANNEXURE B: TITLE DEED

129

ESI ATTORNEYS
7 Belfour Office Park
Cnr Edmar & Roger Street
Tygervally

Prepared by me



CONVEYANCER
TANIA HANCKE

Fee endorsement		
	Amount	Office fee
Purchase price/Value	R.....	30500
Mortgage capital Amount	R.....	R.....
Reason for exemption	Exempt i.t.o. Cat..... section..... Act.....	

SERTIKATAAT VAN GEREISTREERDE TITEL UITGEREN	
CERTIFICATE OF REGISTERED TITLE ISSUED	
TEN OPSIGTE VAN IN RESPECT OF	ERF 967 JAMES TOWN
3,9251 hectares	REMAINDER 14,9089
000017753/2018	3 
23 APR 2018	SECRETARIS/SECRETARY

T 000017752/2018

CERTIFICATE OF REGISTERED TITLE

Issued under the provisions of Section 43 of the Deeds Registries Act 47 of 1937

WHEREAS

THE MUNICIPALITY OF STELLENBOSCH

Has applied for the issue to it of a Certificate of Registered Title under section forty-three of the Deeds Registries Act, 1937, in respect of the undermentioned land, being portion of the land registered in his name under Stellenbosch Freeholds Volume 6 No. 3 of 1889.

DATA / VERIFY
14 MAY 2018
FATGEYAH LARNEY

DATA / CAPTURE
25 APR 2018
WENBY KANTH

NOW THEREFORE, in pursuance of the provisions of the said Act, I Registrar of Deeds, Cape Town, do hereto certify that the said

MUNICIPALITY OF STELLENBOSCH

It's Successors in Title or assigns,

is the registered owners of

**PORTION 7 OF THE FARM NO. 527
IN THE MUNICIPALITY AND DIVISION STELLENBOSCH
PROVINCE OF THE WESTERN CAPE**

IN EXTENT: 18,8340 (ONE EIGHT COMMA EIGHT THREE FOUR ZERO)
HECTARES

AS WILL MORE FULLY APPEAR from Diagram SG Number 820/2014 annexed hereto and held by Stellenbosch Freeholds Volume 6 No. 3 of 1889.

A. **SUBJECT** to the following conditions as set out in Stellenbosch Freeholds Volume 6 No. 3 of 1889, namely:-

- "I That all roads and thoroughfares now existing over the land whether described in diagram or not shall remain free and uninterrupted.
- III That the said Land shall be subject to all such Duties and Regulations as are either already or shall in future be established with regard to such Lands."

B. **SUBJECT FURTHER** to the following endorsement dated 04-09-1986 as appears from the said Stellenbosch Freeholds Volume 6 No. 3 of 1889 to wit:-

"Remainder

By Notarial Deed of Servitude no. K753/1986S dated 30.6.1986 and registered this day the Remainder of the within property, measuring



144,5974 Ha is subject to the right in perpetuity to lay down, inspect, maintain, repair, renew and remove a line of water pipes indicated by the broken line **CDEFGH** on Diagram no. 7310/1979, annexed hereto which represents a line 8m south of the northern boundary of the servitude area, 12m wide, and the line **AB** on the said diagram, being the northern boundary of the servitude area 12m wide, in favour of the Council of the City of Cape Town, with ancillary rights, as will more fully appear from the said Notarial Deed."

(now represented by the figure **a j b** as on Diagram No. SG820/2014)

- C. **SUBJECT FURTHER** to the following endorsement dated 17-08-2001 as appears from the said Stellenbosch Freeholds Volume 6 No. 3 of 1889, to wit:-

"Remainder

By Notarial Deed of Servitude K716/2001S dated 12 July 2001 the within property is subject to a pipeline servitude i.f.o. The City of Cape Town and successors in title. The Southern and Northern boundaries are indicated by line **ABCDE** on diagram No. 10313/1995 as will more fully appear from said Notarial Deed."

(now represented by the figure **ABCDE** on diagram No. SG820/2014)

- D. **SUBJECT** to the following servitude as contained in Notarial Deed of Servitude for pipeline number K

The line **A B C D E F G H J** representing the centre line of a servitude sewer pipeline 3(three) meters wide as shown on Diagram No. SG2472/2011 annexed.

(now represented by the figure **c d k m e f** on Diagram No. SG820/2014)

- E. **SUBJECT** to the following servitude imposed by the Municipality Stellenbosch in its favor on subdivision of the Remainder of Farm No. 527:

The line g h on Diagram No. 820/2014 represents the centre line of a servitude pipeline 3,00 m wide vide Diagram no. 8145/1995 annexed.



And that by virtue of these presents the said

MUNICIPALITY OF STELLENBOSCH

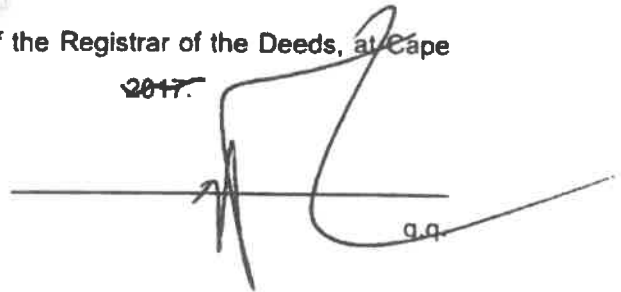
Its Successors in Title, or assigns

Now is and henceforth shall be entitled thereto conformably to local custom, the State, however, reserving its rights.

IN WITNESS whereof I, the said Registrar, together with the Appearer, have subscribed to these presents, and have caused my Seal of Office to be affixed thereto.

THUS DONE AND EXECUTED at the Office of the Registrar of the Deeds, at Cape
Town on 23 APR 2018

2017.
g.g.



In my presence,


REGISTRAR OF DEEDS



129

ESI ATTORNEYS
7 Bellfour Office Park
Cnr Roger & Edmar Street
Tygervally
7530

1-4
C/S

Prepared by me



CONVEYANCER
TANIA HANCHE

**APPLICATION IN TERMS OF SECTION 43
Of the Deeds Registries Act 47 of 1937**

I, the undersigned,

GERALDINE METTLER in my capacity as **MUNICIPAL MANAGER** of the **MUNICIPALITY OF STELLENBOSCH** duly authorised thereto

do hereby apply in terms of section 43 of the Deeds Registries Act 47 of 1937 to the Registrar of Deeds at Cape Town, for the issue to me of a Certificate of Registered Title in respect of

**PORTION 7 OF THE FARM NO. 527
IN THE MUNICIPALITY AND DIVISION STELLENBOSCH
PROVINCE OF THE WESTERN CAPE**

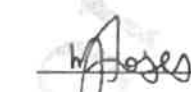
IN EXTENT: 18,8340 (ONE EIGHT COMMA EIGHT THREE FOUR ZERO) HECTARES

AS WILL APPEAR FROM DIAGRAM SG820/2014

AND HELD BY Stellenbosch Freeholds Volume 6 No. 3 of 1889.

SIGNED AT STELLENBOSCH ON 22 May 2017.

AS WITNESSES:

1.  _____

2.  _____

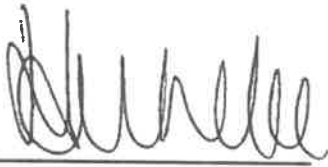

GERALDINE METTLER
On behalf of STELLENBOSCH
MUNICIPALITY

CONVEYANCER'S CERTIFICATE

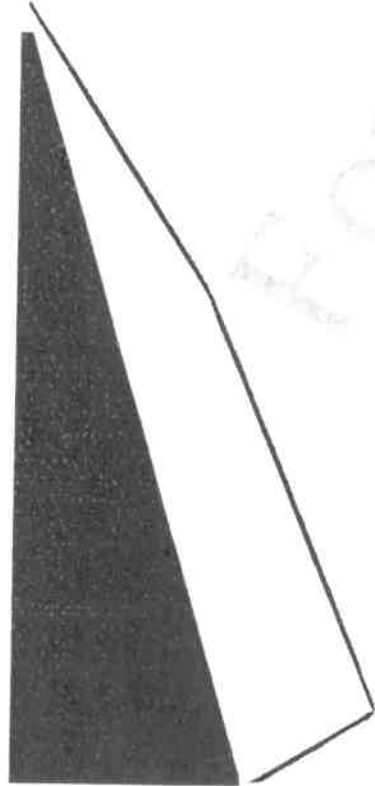
I, the undersigned

**TANIA HANCKE
CONVEYANCER**

Hereby certify that the expropriation endorsement registered 29 July 1965, on Freehold STF-6-3/1889 is not applicable by reason of situation.



**TANIA HANCKE
CONVEYANCER**



3

PROD DEEDS REGISTRATION SYSTEM - CAPE TOWN

DATE : 20180410 TIME : 11:06:47.2 PAGE : 1

PREPARED BY : DRS88822 - GONCALVES BELINDA

TRACK NUMBER : 88086954299

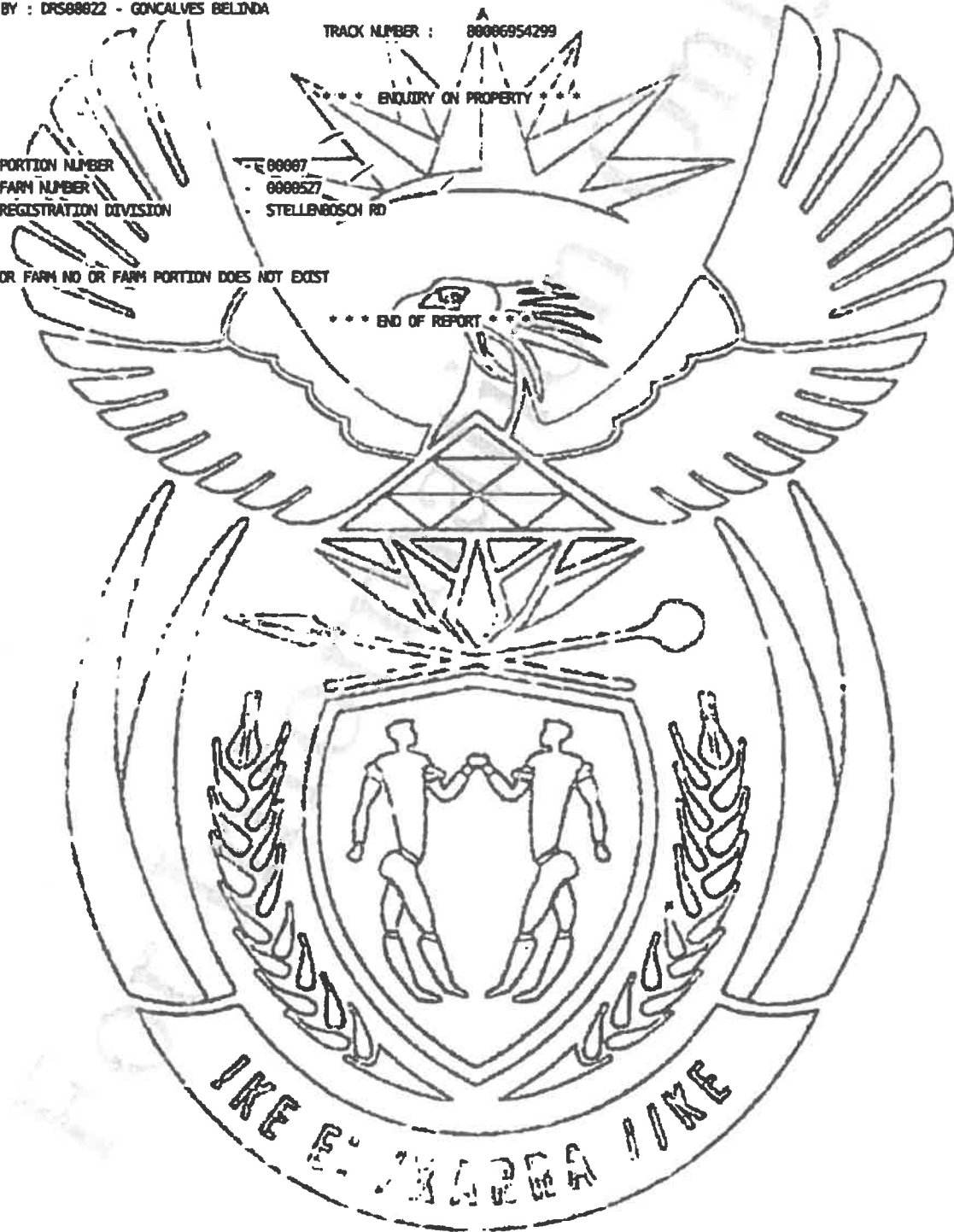
ENQUIRY ON PROPERTY

PORTION NUMBER
FARM NUMBER
REGISTRATION DIVISION

• E 00007
• 000057
• STELLENBOSCH RD

REG DIV OR FARM NO OR FARM PORTION DOES NOT EXIST

*** END OF REPORT ***



professional land surveyors reg/ L10575

DATE 03-04-2017

THIS PORTION IS SUBJECT TO
~~CONDITIONS REFERRED TO IN~~
SECT. 11 (5) OF ACT 21/1940.

SIDES Metres		ANGLES OF DIRECTION		CO-ORDINATES Y System WG 18° X	
AB	415.29	286 27 10	A	0.00	+3 700 000.00
BC	42.98	22 43 30	B	+14 541.20	+61 515.07
CD	71.98	28 07 50	C	+14 142.91	+61 633.59
DE	138.02	28 02 30	D	+14 159.52	+61 673.25
EF	418.40	34 38 20	E	+14 288.35	+61 736.73
FG	356.11	146 48 20	F	+14 486.17	+61 856.55
GH	369.26	213 53 50	G	+14 686.06	+62 202.79
HJ	15.27	184 06 00	H	+14 480.11	+61 897.26
JK	7.07	146 07 10	J	+14 486.35	+61 590.76
KL	63.26	104 04 50	K	+14 490.02	+61 575.95
LA	38.84	184 48 10	L	+14 551.38	+61 566.88
Indicatory Date					+61 554.48
Gm	0.50	213 53 50	m	+14 695.76	+61 896.85
nF	0.50	34 38 20	n	+14 485.88	+62 202.38
LIBERTAS		Δ		+14 120.50	+58 672.23
STEL7		Δ		+14 440.04	+62 808.02

3. The line g: represents the centre line of a servitude pipeline 3,00m wide vide Dgm No. 8145/1995 annexed to D/S

Inset 1
Scale: 1/100

Portion 6

Farm 1166

g, m, n

Inset 2
Scale: 1/100

Farm 1166

Remainder

E, G, F, h, n

The figure A B C D E F G H J K L represents

Portion 7 of the Farm No. 527

Situate in the Municipality of Stellenbosch
Administrative District of Stellenbosch
Surveyed in February - May 2013
by me

S.G. Le Brun (PLS 0337) Professional Land Surveyor

This diagram is annexed to
No. 000017752/2018
dated 23 APR 2018
i.f.o.

The original diagram is
SG. No. 958/1888
annexed to Grant
No. Stel.F.6 - 3

File No. Shel527
S.R. No. E403/2014
Comp. BH-8DCD (3785)
BH-8DCY42 (1510)

Registrar of Deeds

Boundary FG established
vide BA 051/1940

LP1 C0670000

FOR ENDORSEMENTS
SEE BACK OF DIAPHRAGM

STELLEMBOSCH TARM

5277

S.G. No.
B20/2014
Approved

for Surveyor-General
21-11-2014

THE FOLLOWING DEDUCTIONS HAVE BEEN MADE FROM THIS DIAPHRAM

SURVEY RECORD	DIAPHRAM NO.	SUBDIVISION	AREA M ² /SQ. M.	TRANSFER NO.	INITIALED	REMARKS
SRMS# 2015	271 B ✓ 2015	Gr-f 9A.7 Jonestown	3,925.1 Ha			

CERTIFIED COPY FOR REGISTRATION
FOR SURVEYOR GENERAL *Alid*
DATE 03-04-2017

David Hellig & Abrahamse
Professional Land Surveyors ref L10575

OFFICE COPY

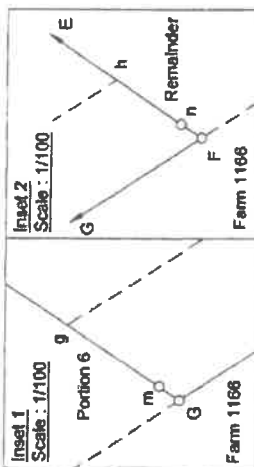
SIDES Metres	ANGLES OF DIRECTION	CO-ORDINATES Y System WG 19° X
AB 415.29	288 27 10	0.00
BC 42.99	22 43 30	+14 541.20
CD 71.98	28 07 50	+14 142.91
DE 138.02	28 02 30	+14 159.52
EF 418.40	34 38 20	+14 183.48
FG 365.11	148 48 20	+14 258.35
GH 369.26	213 53 50	+14 498.17
HJ 7.07	194 06 00	+14 696.08
JK 63.26	149 07 10	+14 897.28
KL 39.84	104 04 50	+14 490.11
LA 39.84	194 48 10	+14 498.39
Indicated Data		+14 490.02
Gm 0.50	213 53 50	+14 551.38
nF 0.50	34 38 20	+14 695.78
		+14 495.88
		+14 120.50
		+14 440.04
		+58 672.23
		+62 808.62

Beacon Descriptions:

F, G no beacon
All others 12mm round iron pegs

Servitude Notes:

- The line a b represents a line 8.00m south of the northern boundary of a servitude pipeline 12.00m wide vide Dgm No. 731/01979 annexed to D/S
- The line c d k m e f represent a centre line of a sewer servitude pipeline 3.00m wide vide Dgm No. 247/2011 annexed to D/S
- The line g h represents the centre line of a servitude pipeline 3.00m wide vide Dgm No. 8145/1995 annexed to D/S



Scale 1: 3000

The figure A B C D E F G H J K L

represents

18,8340 Hectares

of land, being

Portion 7 of the Farm No. 527

Situate in the Municipality of Stellenbosch
Administrative District of Stellenbosch
Surveyed in February - May 2013

by me

S.G. Le Brun (PLS 0337) Professional Land Surveyor

This diagram is annexed to
No. T17752/2018
dated
i.f.o.

Registrar of Deeds

The original diagram is

SG. No. 958/1888
annexed to Grant
No. Stel.F.8 - 3

Boundary FG established
vide BA 051/1940

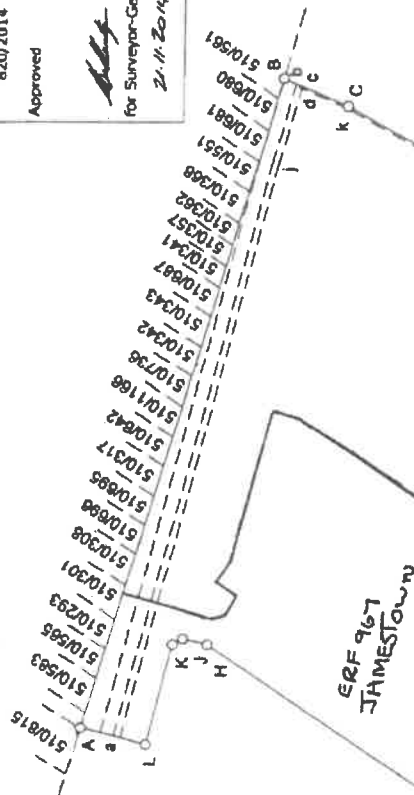
File No. Stel.527
S.R. No. E403/2014
Comp. BH-8DCD (3785)
BH-8DCD/42 (1510)

LPI C0670000

FOR ENDORSEMENT
- ON PLAN OF MAPPINGS.G. No.
820/2014

Approved

for Surveyor-General
21/11/2014



Portion 8

ERF 967
JHAMESTOWN

Portion 8

Remainder

Farm 1168

See
Inset 2

EXEMPT FROM PROVISIONS OF ACT
70 OF 1970
SECTION 1(a)

THIS PORTION IS SUBJECT TO
CONVEYANCE REFERRED TO IN
SECT. 4 OF ACT 21/1940.

APPROVED IN TERMS OF SECT. 25
OF CAP. 1:100
MAY 2013
28/05/2013

DATE

THE FOLLOWING DEDUCTIONS HAVE BEEN MADE FROM THIS DIAGRAM

PLAT RECORD	DIAGRAM NO.	SUBDIVISION	AREA ACRES	TRANSFER NO.	INITIALED
21154 2015	2718	Erf 967 J. J. Jackson	3,025.14	1153/18	



143

STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

ANNEXURE C: PROPOSED SUBDIVISIONAL PLAN



PHASE	NOTATION	ERF TYPE	ZONING (S1B SCHEME)	NUMBER	AREA sqm	ERF Numbers
2		SINGLE RESIDENTIAL COMMUNITY	CONVENTIONAL RES. COMMUNITY	167	25 020	1 - 167
		PLAY SPACE	PUB. OPEN SPACE	1	1577	168
		TRANSPORT/EMBARKMENT	PUBLIC ROADS	1	436	169
		PUBLIC STREET	PLAY SPACE	1	1929	170
			PUBLIC ROADS	1	37 439	171
3		SINGLE RESIDENTIAL	CONVENTIONAL RES.	107	171	172 - 279
		PLAY LOT	PUB. OPEN SPACE	1	263	280
		PUBLIC STREET	PUBLIC ROADS	1	14 631	281

a) TOTAL NUMBER OF RESIDENTIAL OPPORTUNITIES: 274 UNITS
b) AVERAGE GROSS DENSITY: 27.5du/h

CEMETERY
527/6

PHASE 1

PHASE 2
6,5401 HA

PHASE 4

PHASE 3
3,4164 HA

VINEYARD

1166

a) TOTAL NUMBER OF RESIDENTIAL
OPPORTUNITIES: 274 UNITS
b) AVERAGE GROSS DENSITY: 27.5du/h

VINEYARD

PHASE	NOTATION	ERF TYPE	ZONING (STB. SCHEME)	NUMBER	AREA sqm	Erf Numbers
2		SINGLE RESIDENTIAL	CONVENTIONAL RES.	167	25 020	1 - 167
		COMMUNITY	COMMUNITY	1	577	168
		PLAY SPACE	PUB. OPEN SPACE	1	436	169
		TRANSPORT EMBAYMENT	TRANSPORT FACILITIES	1	1929	170
		PUBLIC STREET	PUBLIC ROADS	1	37 439	171
3		SINGLE RESIDENTIAL	CONVENTIONAL RES.	107	19 271	172 - 279
		PLAY LOT	PUB. OPEN SPACE	1	263	280
		PUBLIC STREET	PUBLIC ROADS	1	14 630	281

FIGURE ABCDEFGHI REPRESENTS FARM 527/4, STELLENBOSCH, IN
EXTENT 18,8073 HA, WHICH IS TO BE REZONED TO A SUBDIVISIONAL
AREA AND DEVELOPED AS INDICATED

N

ZUTARI
IMPACT. ENGINEERED.

STELLENBOSCH
STELLENBOSCH • PNIEL • PRANSCHNOEK

MUNICIPALITY • UMASIPALA • MUNISIPALITEIT

CLIENT

DISCLAIMER

IF CONSTRUCTION
DRAWINGS ARE ISSUED
UNDESIGNED, THE MASTER
WITH THE ORIGINAL
SIGNATURE OF
APPROVAL WILL BE
HELD AT THE ZUTARI
OFFICE OF THE
APPROVER

REV DATE

REV3 15/12/2023

SUB-DIVISIONAL_LAYOUT



146

STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

ANNEXURE D: APPLICANTS MOTIVATION



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNICIPALITY • UMASIPALA • MUNISIPALITEIT

ZUTARI
IMPACT. ENGINEERED.

**Application in terms of Section 15(2)(a) and 15(2)(d)
of the Stellenbosch Municipality By-Law on
Municipal Land Use Planning, 2015, for the Rezoning
and Subdivision of the Remainder of Portion 7 of the
Farm 527 Stellenbosch**

Motivation Report

**Jamestown Integrated
Development – Phase 2 & 3 –
Rezoning & Subdivision**

The Subdivision and Rezoning of the Remainder of
Portion 7 of the farm 527 Stellenbosch

Submission date: 2023/04/03

Document number: 1002169PH2_3
Revision: 3

Document control record

Document prepared by:

Zutari (Pty) Ltd
 Reg No 1977/003711/07
 Suite 201
 2nd Floor
 Bloemhof Building
 65 York Street
 George
 South Africa
 PO Box 509
 George
 6530
 Docex: DX42

T +27 44 874 2165
 F +27 44 873 5843
 E george@zutari.com

Document Control						
Project name		Jamestown Integrated Development – Phase 2 & 3 – Rezoning & Subdivision				
Document number		1002169PH2_3	Project number		1002169	
Client		Stellenbosch Municipality				
Client contact		Shaun October Programme Manager Department: Housing Development Directorate: Planning & Economic Development T: +27 21 808 8756 NPK Building, corner of Rynveld and Van Riebeeck Streets, 2nd Floor, Stellenbosch, 7600		Client reference		Jamestown Integrated Development – Phase 2 & 3 – Rezoning & Subdivision
Rev	Date	Revision details/status	Author	Reviewer	Verifier (if required)	Approver
0	2022/12/07	Submitted Report				
1	2022/01/11	Revised Report with correct Zoning descriptions as per latest zoning scheme				
2	2022/01/12	Corrected current zoning				
3	2022/04/03	Amended Subdivision Layout				
Current revision		3				

All rights reserved | The information contained herein is confidential and proprietary to Zutari and/or its business partners. It may include personal information of data subjects connected to Zutari and/or our business purpose. To safeguard the information and the competitive position of information owners, the content hereof shall not be used, disclosed, or otherwise processed for any purpose other than the purpose for which it was developed. Users can only rely on the accuracy of the final version of the Report. Processing and disclosure of information is subject to our Privacy Notice and users indemnify Zutari against the consequences of unauthorised use or disclosure. Any concerns may be addressed to the Zutari Information Officer.

Contents

ANNEXURES	4
1 INTRODUCTION & BACKGROUND.....	5
1.1 Introduction.....	5
1.2 Background	5
1.3 Application	6
1.4 Purpose of Memorandum.....	7
1.5 Pre-Application Consultation	7
1.6 Information Required in terms of Section 38 of the By-Law	8
1.7 Applicant Detail	9
2 PROPERTY PARTICULARS	10
2.1 Property Description, Registered Owner & Title Deed.....	10
2.2 Locality	10
2.3 Extent	13
2.4 Jurisdiction.....	14
2.5 Restrictive Title Conditions.....	14
2.6 Surveyor General Diagrams and Servitudes.....	14
2.7 Mortgage Bond	15
2.8 Applicable Zoning Scheme and Current Zoning.....	15
2.9 Site Analysis and Site Photos.....	16
2.10 Topography	22
2.11 Current Land Use, Existing buildings and structures.....	22
2.12 Surrounding Land Use	23
3 APPLICATION PARTICULARS.....	24
3.1 Proposed Rezoning and Subdivision:	24
3.1.1 Rezoning Details	24
3.1.2 Subdivision Details	25
4 MOTIVATION	27
4.1 Land development principles.....	27
4.1.1 Spatial justice	27
4.1.2 Spatial sustainability	27
4.1.3 Efficiency.....	27
4.1.4 Spatial resilience	28
4.1.5 Good administration.....	28
4.2 Need and Desirability	28
4.2.1 Need	28
4.2.2 Desirability.....	28
4.2.3 Strategic Local and Provincial Planning Frameworks	29
4.2.4 Location and accessibility of the property.....	32
4.2.5 Physical characteristic of the property.....	32
4.3 Engineering & Bulk Services	34
4.3.1 Buried Services	34
4.3.2 Stormwater.....	35
4.3.3 Roads.....	35
4.3.4 Solid Waste	35
4.3.5 Electrical Services	36
5 PUBLIC PARTICIPATION	36

6 CONCLUSION.....	36
ANNEXURES	37

Figures

- Figure 1 - Pre-application Feedback
- Figure 2: Western cape province
- Figure 3: Locality of Stellenbosch Municipality
- Figure 4: Regional Locality
- Figure 5: Windeed Report
- Figure 6: photos of site
- Figure 7: Current land use
- Figure 8: Surrounding land uses
- Figure 9: Proposed subdivision plan
- Figure 11: Map adapted from Stellenbosch Municipality SDF, 2019 - indicating that the land is located within the urban edge and earmarked for development
- Figure 12: Map adapted from Stellenbosch Municipality SDF, 2019 - indicating that the land is earmarked for Mixed-use Community and Residential in-fill. The phase 4 area (east of the site of application) is also indicated as an area that is earmarked for Mixed Use Community and Residential Infill development.
- Figure 13 - Wetland on the site of application that influences the Layout of the Proposed Development

Tables

- Table 1: Information required in terms of Section 38 of the By-Law
- Table 2: Applicant Details
- Table 3: Property Details
- Table 4: Current Development Controls

ANNEXURES

ANNEXURE	DESCRIPTION
A	Application Form, completed and signed by Applicant
B	Power of Attorney
C	Proof of Registered Ownership (Title Deed)
D	Copy of the Surveyor-General's Diagram
E	Locality Plan
F	Subdivisional Layout Plan / Site Development Plan
G	Zoning Certificate

1 INTRODUCTION & BACKGROUND

1.1 Introduction

Zutari (Pty) Ltd was appointed by Stellenbosch Municipality (housing Department) to prepare and submit this application to Stellenbosch Municipality on their behalf for the change in land use rights of the Remainder of Portion 7 of the Farm 527 Stellenbosch.

Application is made for the rezoning and subdivision of the land parcel known as the Remainder of Portion 7 of the Farm 527 Stellenbosch in order to create an integrated housing development.

1.2 Background

The Remainder of Portion 7 of the Farm 527 Stellenbosch was created after Phase 1 (state subsidy housing) was subdivided from Portion 4 of the Farm No. 527. The site has been rezoned for residential purposes allowing for a mix of residential types. Phase 1 of the development consisting of 162 subsidised housing opportunities has been completed in November 2016.

At a meeting of the Council of the Stellenbosch Municipality held on 30 May 2013, Council resolved, amongst others, as follows:

"(a) that Council's resolution dated 28-02-2012 be rescinded and replaced as follows:

i. that the application for the subdivision of the property in terms of Section 25 of the Land Use Planning Ordinance, 1985, Ordinance 15 of 1985 (LUPO) be approved ..."

ii. that the application for the rezoning of Portion 4 of the property in terms of Section 16 of the LUPO, be approved, to create a subdivisional area ..."

The Development rights that were previously approved for Phases 2 and 3 on the Remainder of Portion 7 of the Farm 527 Stellenbosch included the rezoning of the area to "subdivisional area" to make provision for the following intended land uses:

- site and service,
- 2-storey walk-ups,
- GAP housing,
- high income housing and
- public open space.

The town planning department of the Stellenbosch Municipality stated that the rezoning to subdivisional area is no longer valid and that a new rezoning application is therefore to be submitted with the subdivision application to re-instate the intended zoning and give effect to the proposed subdivision.

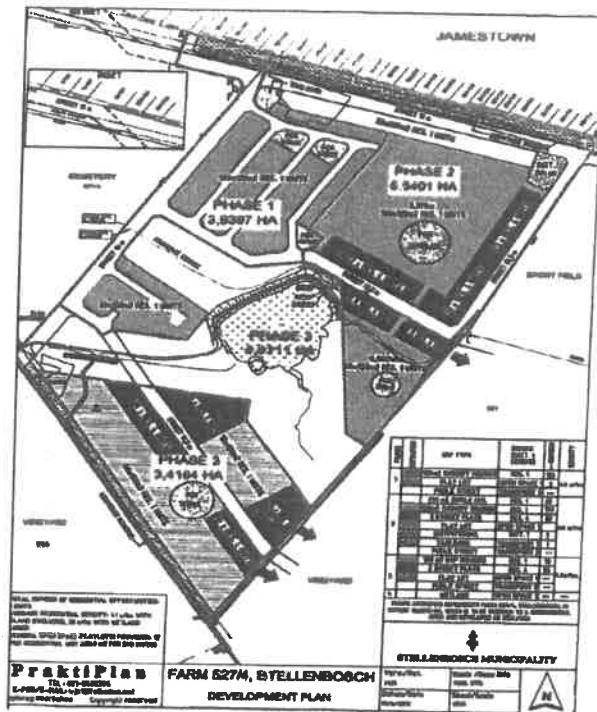


Figure 2: Approved Development Plan for Portion 4 of Farm 527

It is proposed that phases two and three be made available simultaneously for development in the short to medium term.

It is therefore the intention to submit an application in terms of Section 15(2)a for the rezoning of the area known as the remainder of portion 7 of the farm 527 to subdivisonal area and to simultaneously apply in terms of Section 15(2)d of the Stellenbosch Municipality Land Use Management By-laws, 2015 to subdivide the areas known as Phases 2 and 3 (portions of the Remainder of Portion 7 of the Farm 527 Stellenbosch) into various land portions as depicted on the attached subdivision layout plan.

1.3 Application

An application is hereby submitted for the following:

- a) In terms of Section 15(2)(a) of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015, for the rezoning of the Remainder of Portion 7 of the Farm 527 Stellenbosch from "Agriculture and Rural Zone" to a "subdivisional area" in order to allow for the following uses:
 - 253 Conventional Residential Zone stands
 - 9 Multi-unit Residential Zone stands
 - 1 Community Zone stand
 - 4 Public Open Space Zone stands
 - 1 Transport Zone stand
 - Public Roads
- b) Subdivision of the Remainder of Portion 7 of the Farm 527 Stellenbosch in accordance with the attached subdivision plan (Annexure G) in terms of Section 15(2)(d) in order to give effect to the above approved subdivisional zoning.

1.4 Purpose of Memorandum

- (i) To gather all relevant information regarding the proposed rezoning and subdivision proposal into one document;
- (ii) To analyse all relevant information regarding the natural and manmade environment, and
- (iii) To motivate the need and desirability of the proposed rezoning and subdivision of the Remainder of Portion 7 of the Farm 527 Stellenbosch, in terms of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015, in order to enable the relevant governing bodies to make an informed decision.

1.5 Pre-Application Consultation

In terms of **Section 37** of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015:

- (1) The Municipality may require an owner who intends to submit an application or his or her agent to meet with the authorised employee and, where applicable, with employees of other relevant organs of state for a pre-application consultation before he or she submits an application to the Municipality in order to determine the information and documents that must be submitted with the application.
- (2) The Municipality may issue guidelines regarding—
 - (a) applications that require a pre-application consultation;
 - (b) the nature of the information and documents that must be submitted with an application;
 - (c) the attendance of employees from the Municipality or other organs of state at a pre-application consultation; and
 - (d) the procedures at a pre-application consultation.
- (3) The Municipality must keep minutes of the proceedings of a pre-application consultation.

In terms of this application and the development proposal contained herein, several consultation sessions were held with the project stakeholders and relevant municipal officials and a formal pre-application was submitted to the Municipality on 20 September 2022.

A formal pre-application application was submitted to the Municipality on 20 September 2022 whereafter a pre-planning consultation was held with the Stellenbosch Municipality's Planning Department.

Feedback was received on 12 October 2022. It was confirmed that the applicant can proceed with the submission of a formal rezoning and subdivision application:

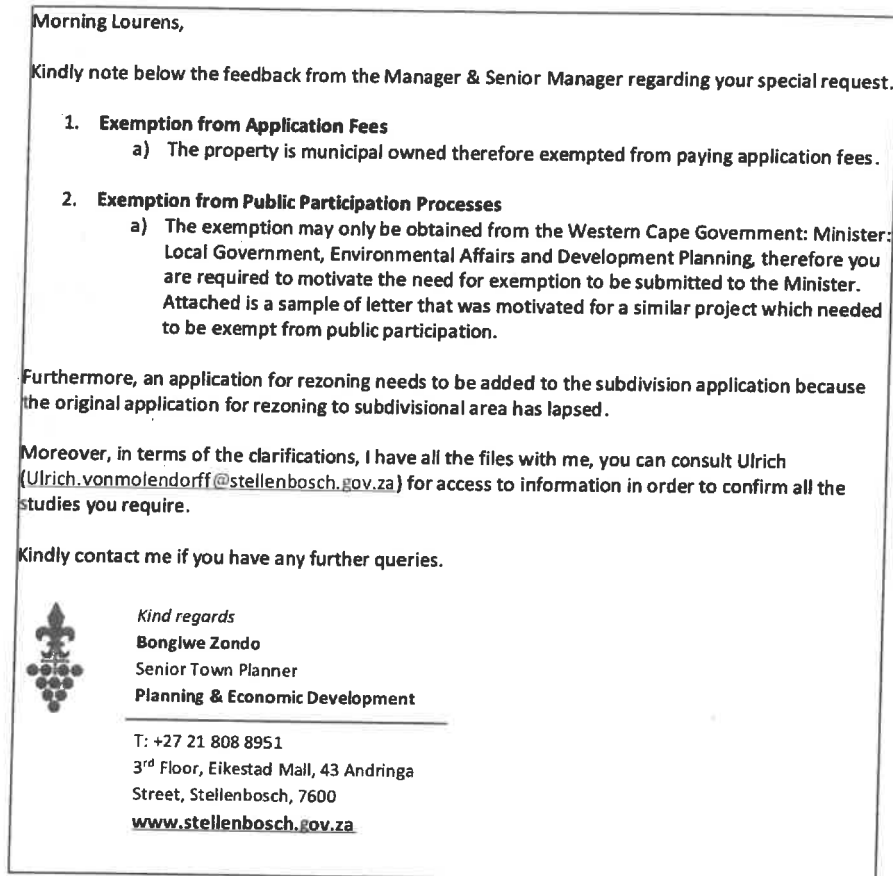


Figure 1 - Pre-application Feedback

1.6 Information Required in terms of Section 38 of the By-Law

In terms of Section 38 of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015, an application must be accompanied by the following information and documents:

Table 1: Information required in terms of Section 38 of the By-Law

Information Required	Location	Included in the Application	
		Yes	No
Application form, completed and signed by applicant	Annexure A	X	
Power of Attorney & Proof that the person is authorised to act on behalf of the Client	Annexure B	X	
Proof of Registered Ownership (Title Deed)	Annexure C	X	
Bondholder's Consent	N/A		X
Written motivation for the application based on the criteria referred to in Section 65	See Report	X	

Copy of the Surveyor-General's diagram	Annexure D	X	
Locality Plan	Annexure E	X	
Subdivisional Layout Plan	Annexure F	X	
Proof of Payment of Application Fees	No application fees are due as it is the Municipality's own application.		X
Conveyancer's Certificate indicating that the application is not restricted by any condition contained in the title deed.	Application to be referred to the Municipality's legal department for comments		X
Minutes of pre-application consultation	Formal Feedback received on submitted Pre-application	X	

1.7 Applicant Detail

Stellenbosch Municipality is the lawful owner of the property as stated on the registered title deed of the property (T17752/2018). Attached please find a copy of the Title Deed, **T17752/2018 (Annexure C)**.

The Stellenbosch Municipality appointed Zutari (Pty) Ltd to submit an application for rezoning and subdivision on their behalf. Zutari (Pty) Ltd, in their capacity as consultant for Stellenbosch Municipality, was authorised by the Municipality to sign any and all relevant documentation which may be necessary for the proposed planning application on behalf of the Municipality. The procuration signed by the Stellenbosch Municipality, appointed Zutari (Pty) Ltd. as the lawful agent to prepare and compile the documentation required for the change in land use rights and subdivision of the Remainder of Portion 7 of the Farm 527, Stellenbosch. Attached please find a copy of Zutari's appointment letter and Service Level Agreement (**Annexure B**).

Table 2: Applicant Details

Applicant, full name and title	Zutari (Pty) Ltd. Reg No. 1977/003711/07
Contact Person of Authorised Professional Planner	Rudolf Schröder
SACPLAN Registration number:	A/151/2009 (See registration certificate attached)
Street Address	Suite 201 2 nd Floor Bloemhof Building 65 York Street George 6529

Telephone Number	+27 44 805 5400 / +27 83 390 6963
Email Address	rudolf.schroder@zutari.com

2 PROPERTY PARTICULARS

2.1 Property Description, Registered Owner & Title Deed

The property that forms the site of application is known as the Remainder of Portion 7 of the Farm 527 Stellenbosch (also referred to as 'the site of application'). The registered owner of the property as reflected on the title deed T17752/2018 is the Stellenbosch Municipality. See **Annexure C** for a copy of the Title Deed (T17752/2018). Attached please also find a copy of Zutari's appointment letter and Service Level Agreement authorising Zutari to submit an application on the Municipality's behalf (**Annexure B**).

Remainder of Portion 7 of the Farm 527, Stellenbosch	
Title Deed Number:	T17752/2018
Title Deed Description:	Remainder of Portion 7 of the Farm 527, Stellenbosch.
Registered Owner	Stellenbosch Municipality
Extent:	14.9089 hectares

Table 3: Property Details

2.2 Locality

Stellenbosch is located in the Western Cape South Africa:

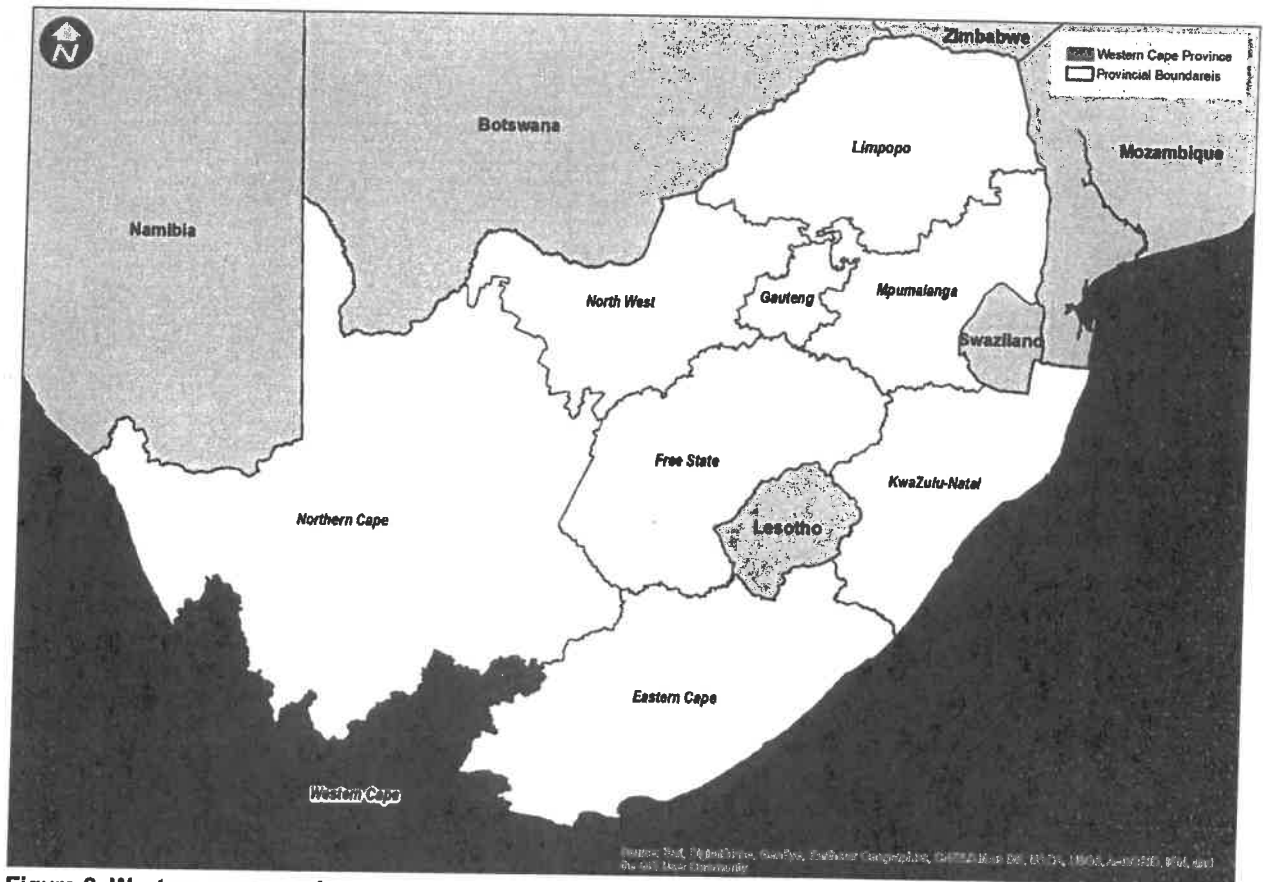


Figure 2: Western cape province

The map below (extracted from the 2014 Western Cape Provincial Spatial Development Framework (PSDF)) provides an indication of the spatial location of Stellenbosch within the Western Cape Province and depicts its connectivity to adjacent major centres.



FIG.1 WESTERN CAPE PROVINCE - MUNICIPAL JURISDICTIONS

Figure 3: Locality of Stellenbosch Municipality

Jamestown is a quiet rural settlement on the southern outskirts of Stellenbosch in the Cape Winelands District of the Western Cape province of South Africa. It is situated next to Blaauwklippen Vineyards, on the eastern side of route 44 from Stellenbosch to Somerset West and Strand coastal resort. The main access from the R44 is via Webersvallei Road, the main road in Jamestown with *watererven* – long, narrow agricultural plots on the south bank of Blouklip River – on the north side of the road and residential plots on the south side of the road.

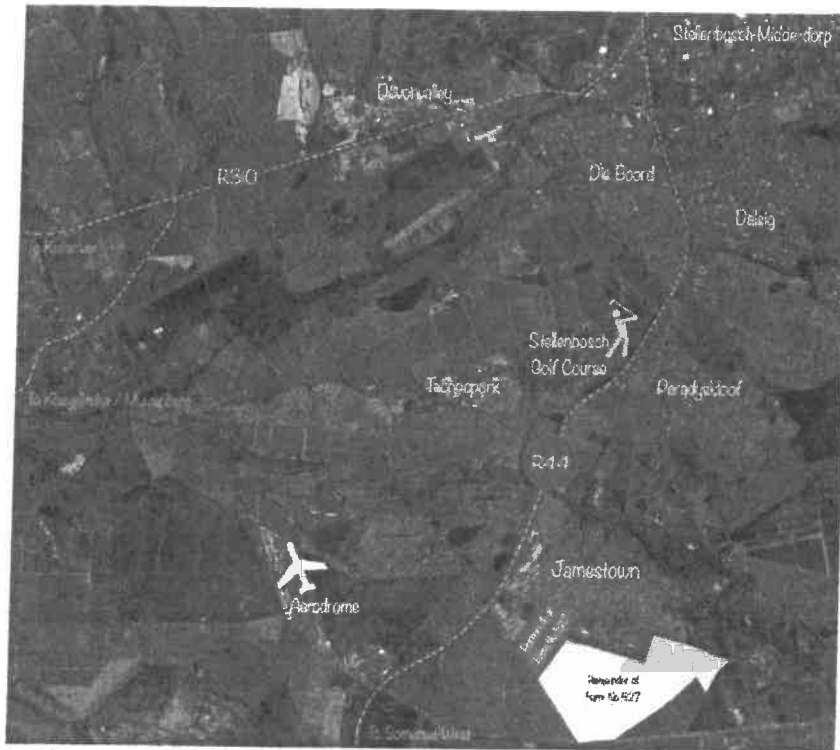
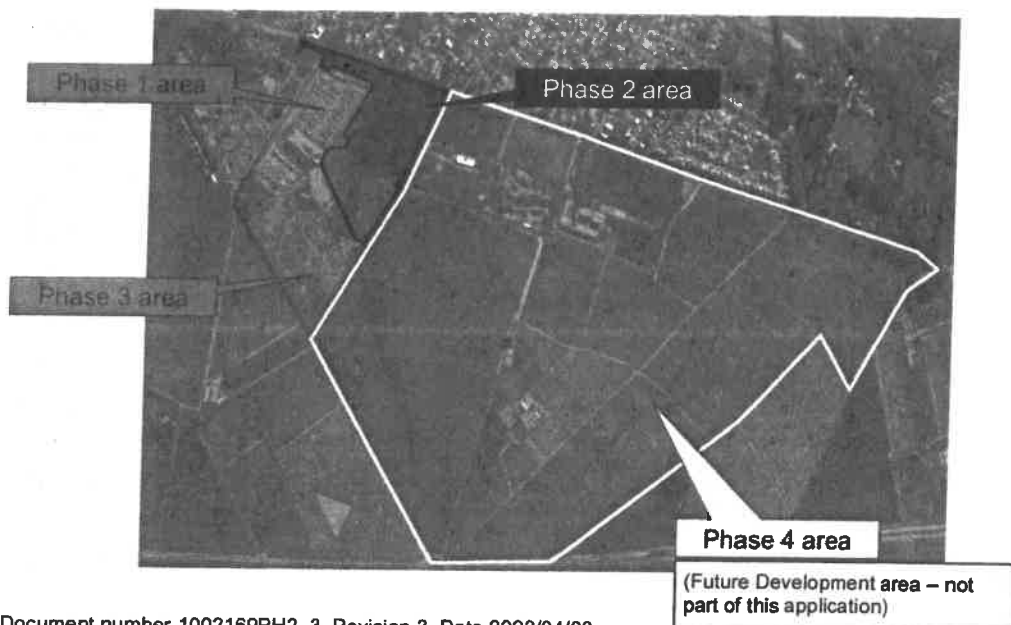


Figure 1: Portion 7 of Farm 527 & Remainder Farm 527: Regional Location

Figure 4: Regional Locality

The project site is located in the southern portion of Jamestown. The site is boarded by Jamestown residential to the north, Stellensizht Secondary school to the east and Stellenrust Wine Estate to the South.



The locality map, which gives a visual representation of The Remainder of Portion 7 of the Farm 527's locality within Jamestown is attached in **Appendix E**.

2.3 Extent

The total extent of the Remainder of Portion 7 of the Farm 527 Stellenbosch is illustrated as being 14.9089 hectares in extent according to the Windeed Report.

Deeds Office Property

STELLENBOSCH RD. FARM 527, 527. 7. CAPE TOWN

Lexis® WinDeed



This report is compiled exclusively from the very latest data directly supplied to WinDeed by the Deeds Office.

Any personal information obtained from this system will only be used as per the Terms and Conditions agreed to and in accordance with applicable data protection laws including the Protection of Personal Information Act, 2013 (POPIA), and shall not be used for marketing purposes.

** ASTERISKS INDICATE THE INFORMATION IS ENRICHED FROM THE WINDEED DATABASE.

SEARCH CRITERIA

Search Date	2022/12/06 09:50	Farm Number	527
Reference	-	Registration Division	STELLENBOSCH RD
Report Print Date	2022/12/06 09:51	Portion Number	7
Farm Name	-	Remaining Extent	NO
Deeds Office	Cape Town	Search Source	Deeds Office

PROPERTY INFORMATION

Property Type	FARM	Diagram Deed Number	T17752/2018
Farm Name	FARM 527	Local Authority	STELLENBOSCH MUN
Farm Number	527	Province	WESTERN CAPE
Registration Division	STELLENBOSCH RD	Remaining Extent	YES
Portion Number	7 (REMAINING EXTENT)	Extent	14.9089H
Previous Description	-	LPI Code	C06700000000052700007
Suburb / Town**	4KM NORTH OF DALSIG	Co-ordinates (Lat/Long)**	-33.982315 / 18.843906

OWNER INFORMATION (1)

MUN STELLENBOSCH		Owner 1 of 1	
Company Type**	LOCAL AUTHORITY	Document	T17752/2018
Registration Number	-	Microfilm / Scanned Date	-
Name	MUN STELLENBOSCH	Purchase Price (R)	CRT
Multiple Owners**	NO	Purchase Date	-
Multiple Properties**	NO	Registration Date	2018/04/23
Share (%)	-		

ENDORSEMENTS (1)

#	Document	Institution	Amount (R)	Microfilm / Scanned Date
1	NOW SUBDIVISION	TOWN JAMESTOWN WC	-	-

Figure 5: Windeed Report

See subsequent sections of this report for more detail in this regard.

2.4 Jurisdiction

Stellenbosch Municipality, Western Cape Province, South Africa.

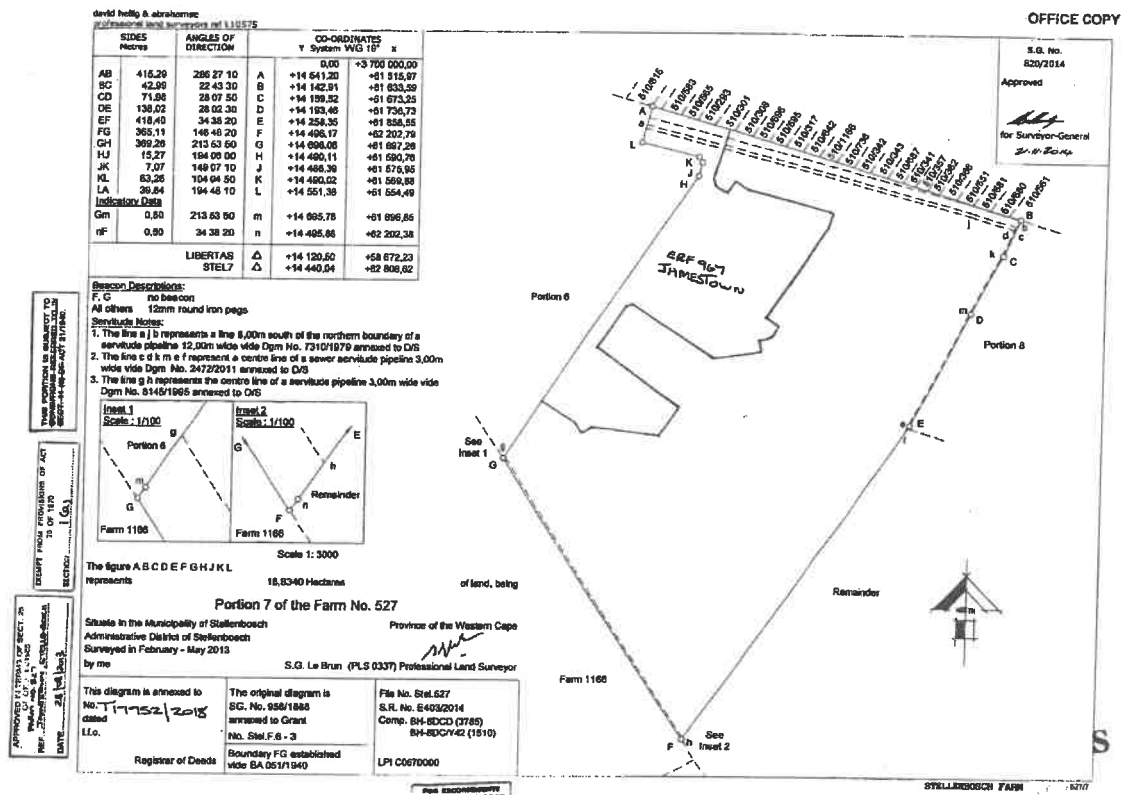
2.5 Restrictive Title Conditions

There are no conditions in the title deed of the property that are deemed as being restrictive to the proposed development.

Please refer to the attached Copy of Title Deed T17752/2018 (**Annexure C**). The Municipality's Legal Department will be requested to provide confirmation that the application is not restricted by any condition contained in the title deed.

2.6 Surveyor General Diagrams and Servitudes

The SG diagram for the property is attached as **Annexure D**



The SG diagram depicts the whole portion 7 of the farm 527 (which includes the phase 1 area known as Erf 967 Jamestown). The extent of portion 7 is indicated as 18,834 hectares. Note that application is made on the Remainder of Portion 7 of the Farm 527 (which excludes Erf 967 Jamestown). The extent of the area that this application is made is therefore 14.9089 hectares as confirmed in the Title Deed.

The following servitudes effect the property along the northern boundary:

Servitude Notes:

1. The line a j b represents a line 8,00m south of the northern boundary of a servitude pipeline 12,00m wide vide Dgm No. 7310/1979 annexed to D/S
2. The line c d k m e f represent a centre line of a sewer servitude pipeline 3,00m wide vide Dgm No. 2472/2011 annexed to D/S
3. The line g h represents the centre line of a servitude pipeline 3,00m wide vide Dgm No. 8145/1995 annexed to D/S



2.7 Mortgage Bond

There is no mortgage bond registered against the property.

2.8 Applicable Zoning Scheme and Current Zoning

The Stellenbosch Municipality: Zoning Scheme By-Law, 2019 is the applicable Zoning Scheme for the site of application.

According to the Stellenbosch Municipality Zoning Scheme 2019, The Remainder of Portion 7 of the Farm 527 is zoned "**Agriculture and Rural Zone**" with the development controls provided in the table below:

Controls	Existing
Erf	Remainder of Portion 7 of the Farm No. 527
Zoning	Agriculture and Rural Zone
Primary uses permitted	<ul style="list-style-type: none"> • Agriculture building • Agriculture • Dwelling House • Forestry • Natural Environment

	<ul style="list-style-type: none"> • Occasional use • Private Road • Polytunnel • Second dwelling • Employee housing (one unit)
--	--

Table 4: Current Development Controls

The zoning of The Remainder of Portion 7 of the Farm 527 is confirmed in the zoning certificate attached in **Appendix G**.

2.9 Site Analysis and Site Photos

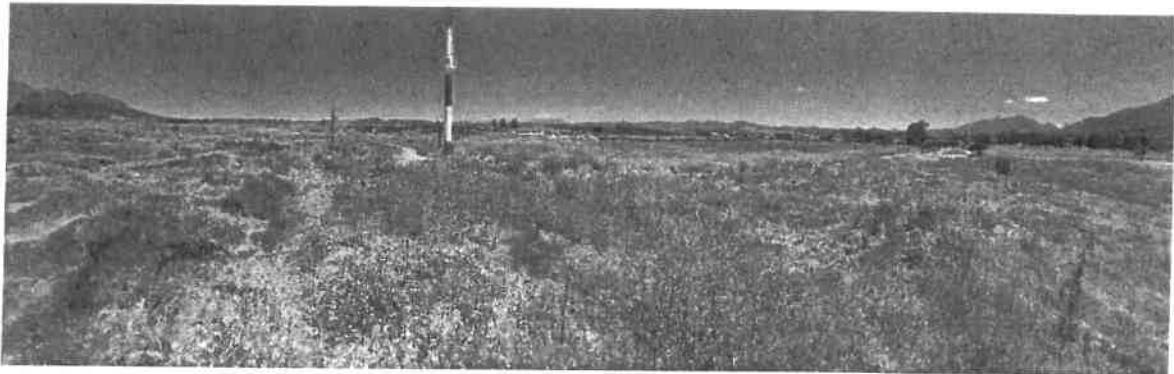
The development site is situated in Jamestown, forming part of Stellenbosch Local Municipality within the Cape Winelands District Municipality - Western Cape Province. The proposed development is located on Portion 7 and Remainder of the Farm 527, Jamestown.

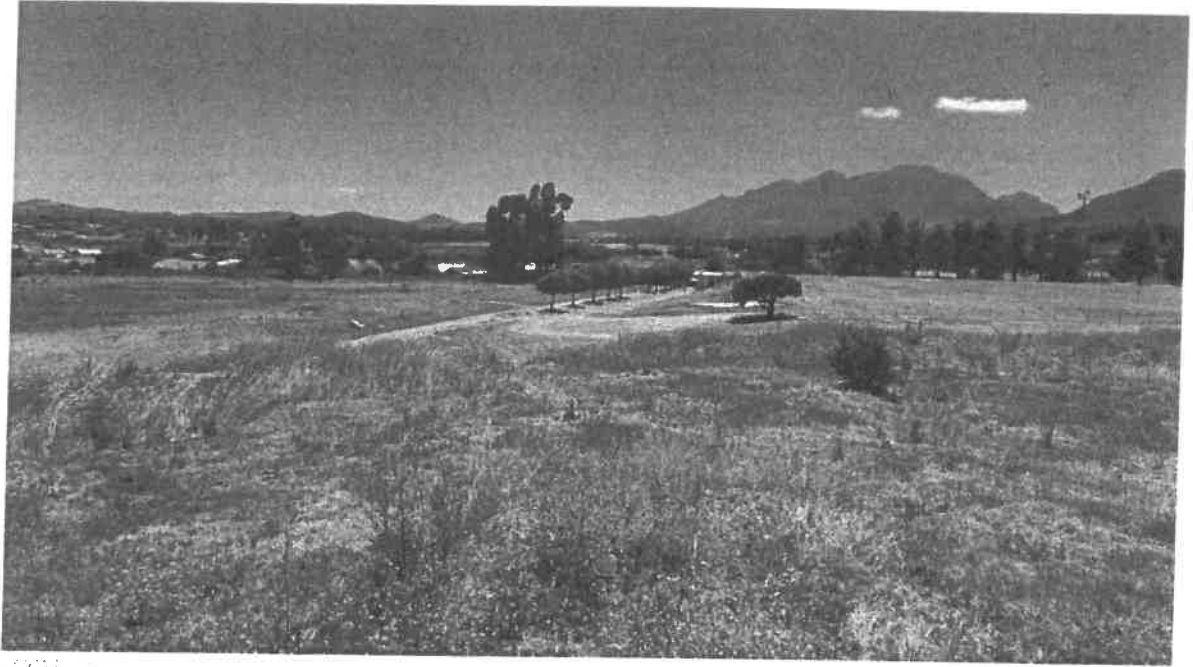
The property is adjacent to the established town – Jamestown. The proposed development site is situated adjacent to the R44 as well as Stellenrust road. Various wine farms surround the proposed development site, including Kleine Zalze Wine Estate, Rust en Vrede Wine Estate etc. This is indicative of the high-end estates surrounding the proposed development site; however, the proposed development will include a mixed typology of housing and public amenities. The type of housing to be integrated include: state subsidised housing, affordable housing, GAP housing, high-density units and high-end units.

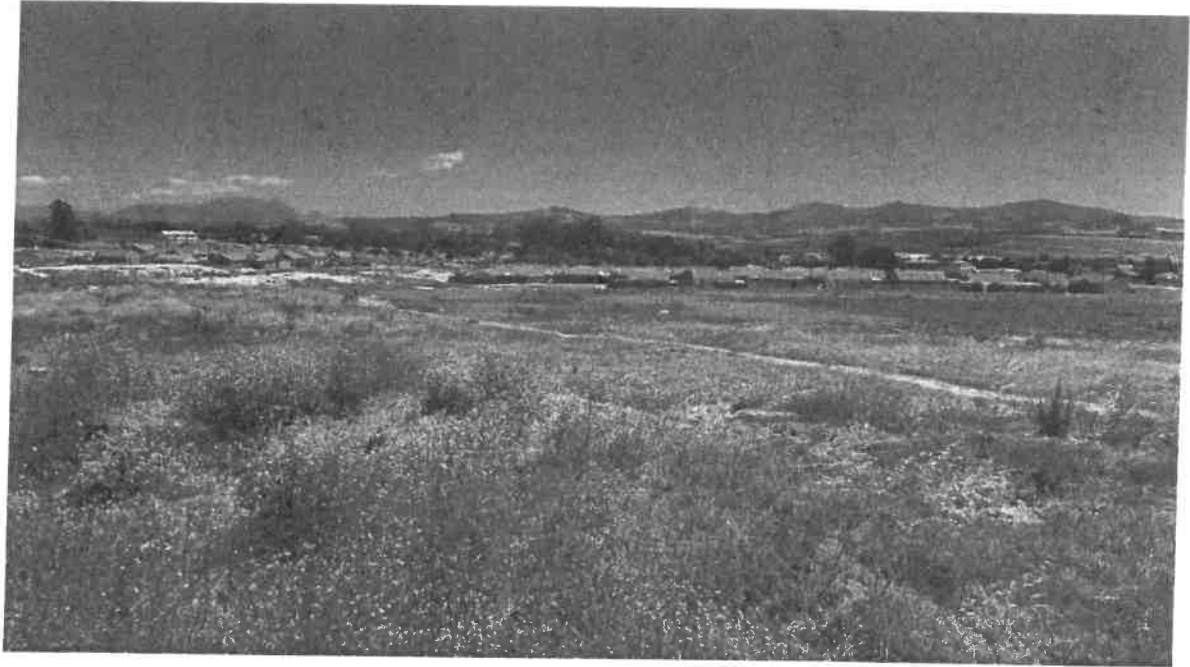
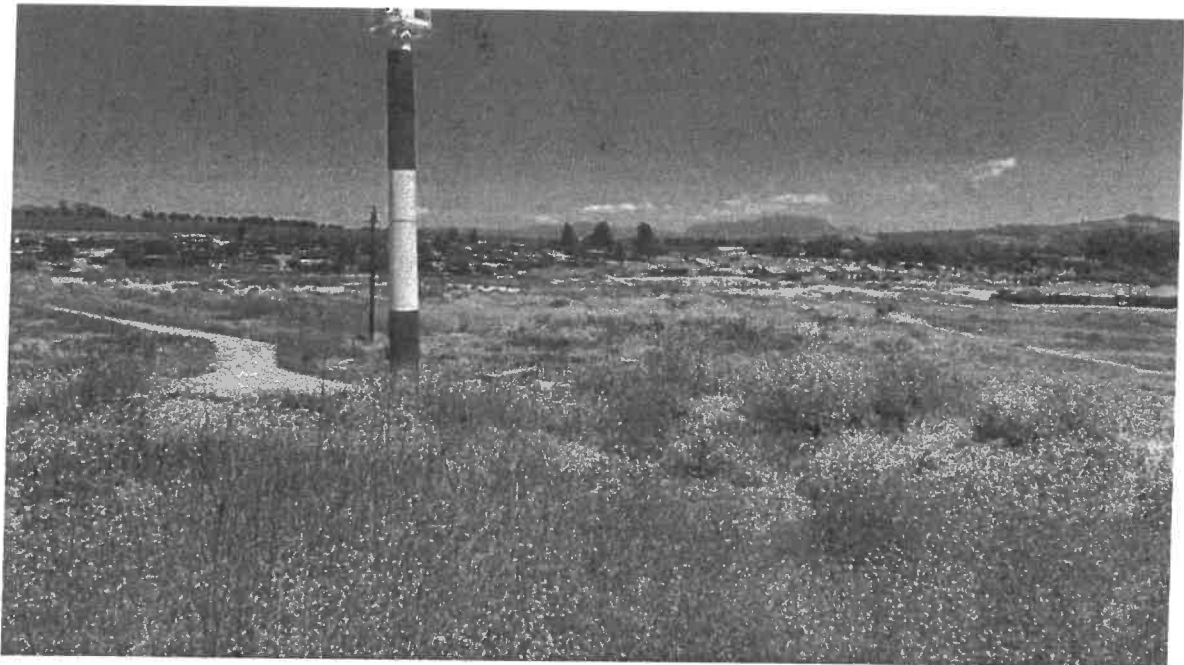
Most of the site is currently vacant with the Jamestown Informal Settlement located to the South on part of the site. It is the intention to provide housing opportunities to the residents of the informal settlement to house those residents onto formal serviced sites & houses.

See the below associated images for more detail with regards to the above mentioned.

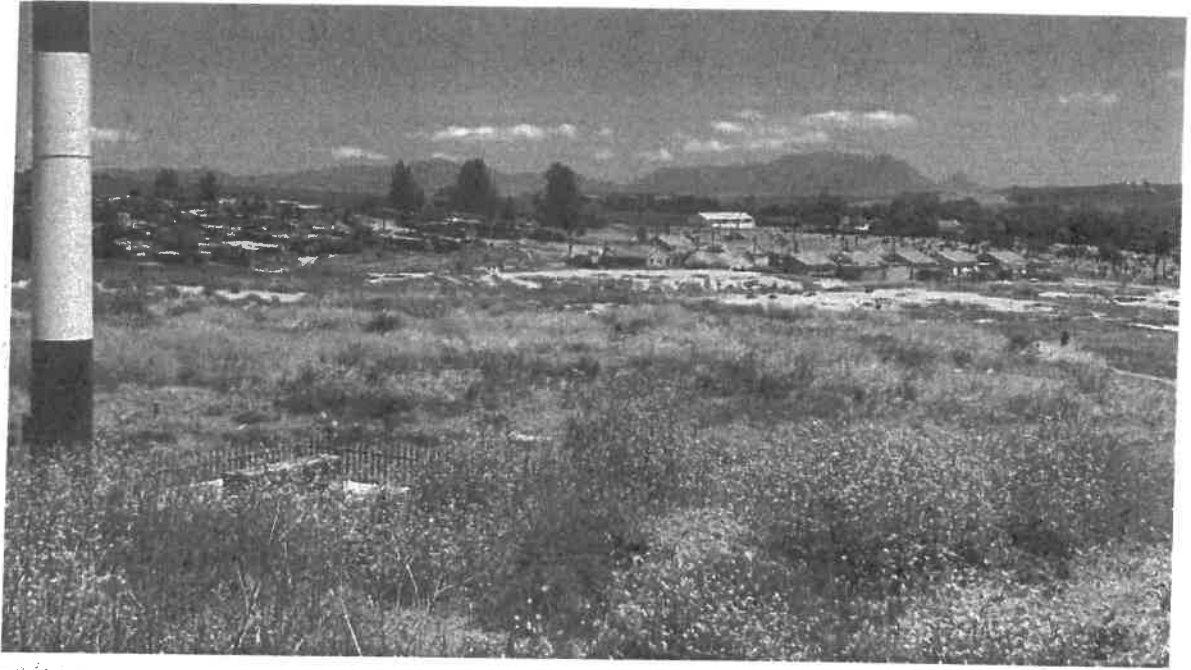
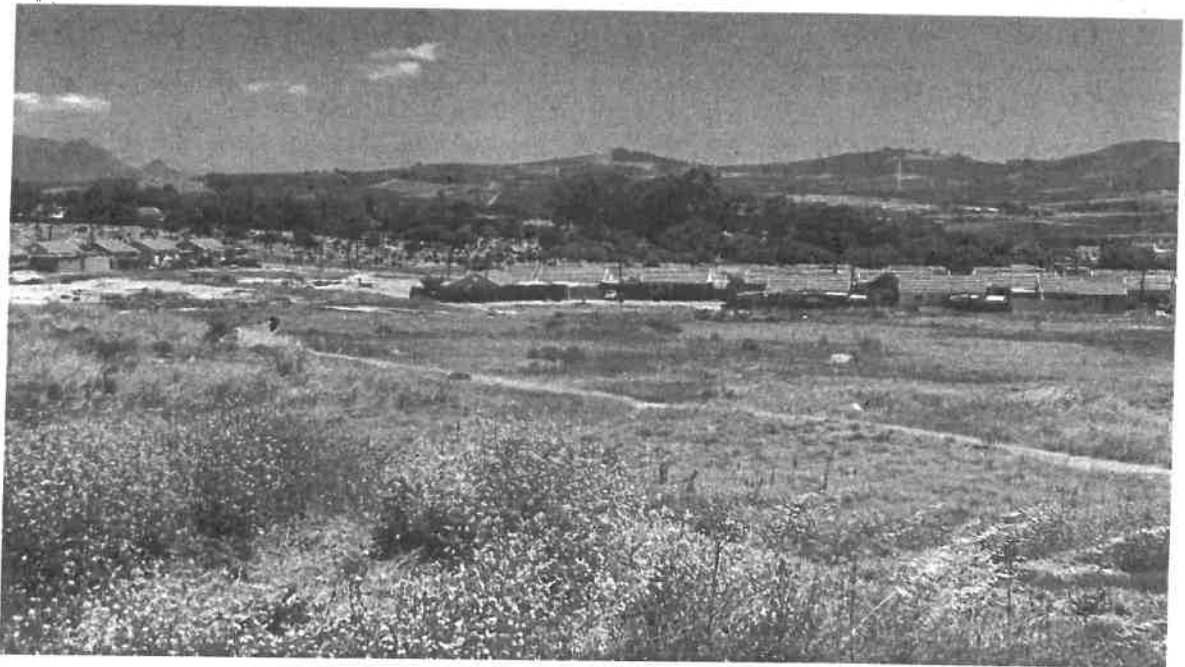
Figure 6: photos of site

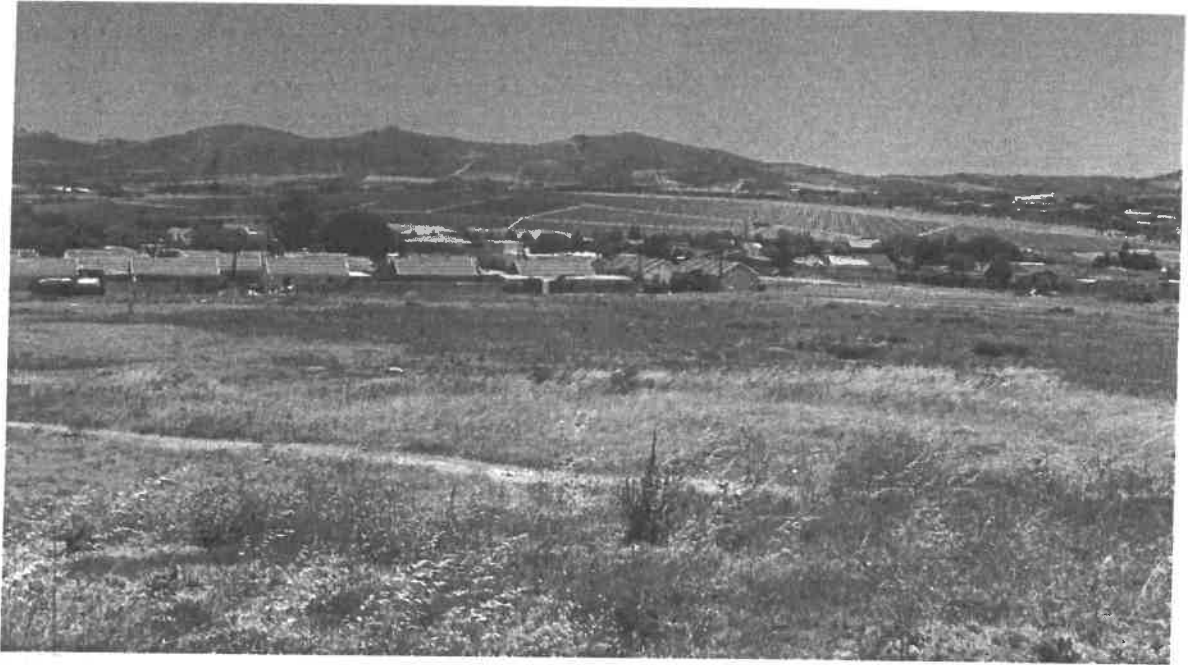
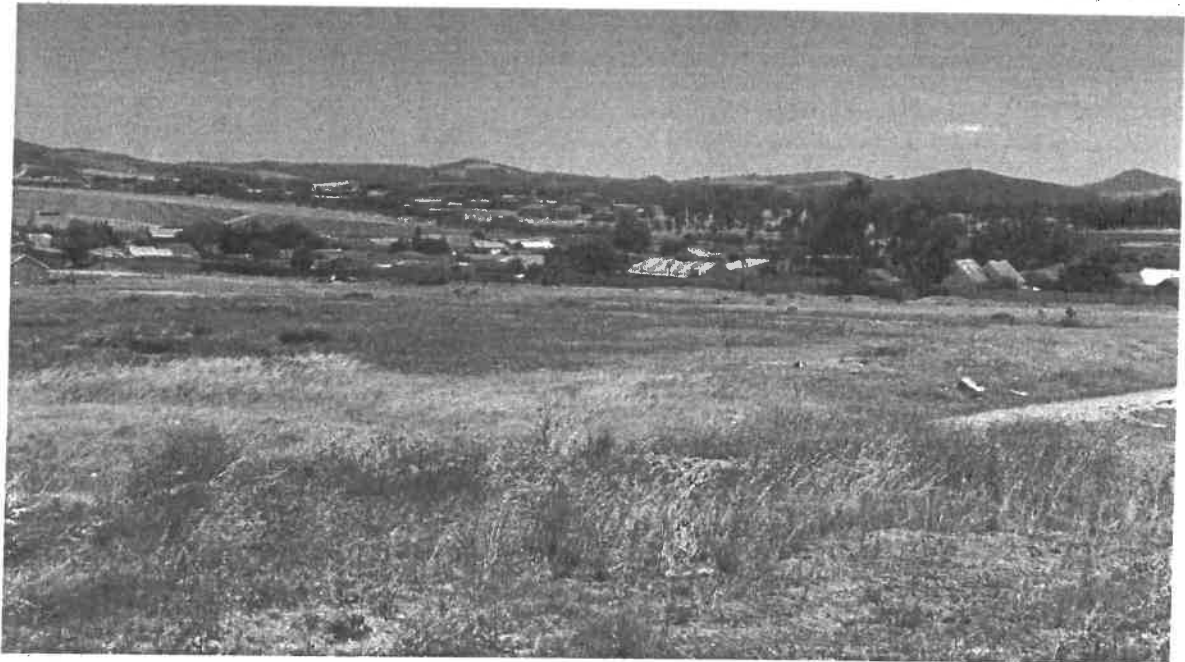


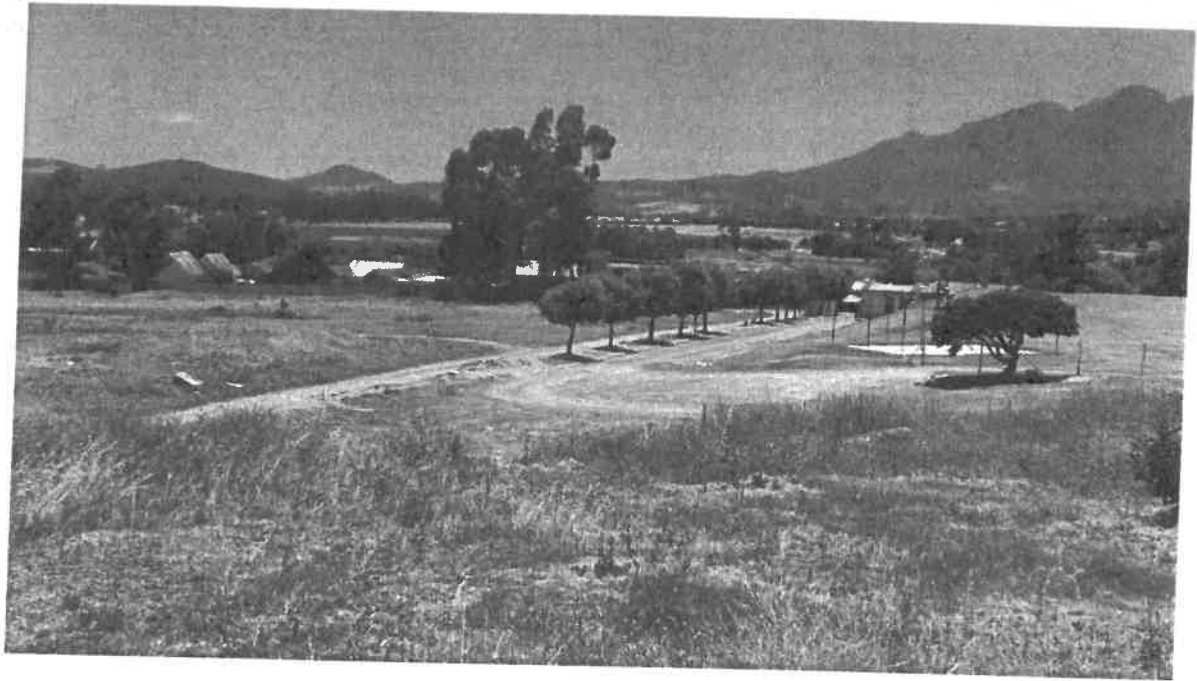






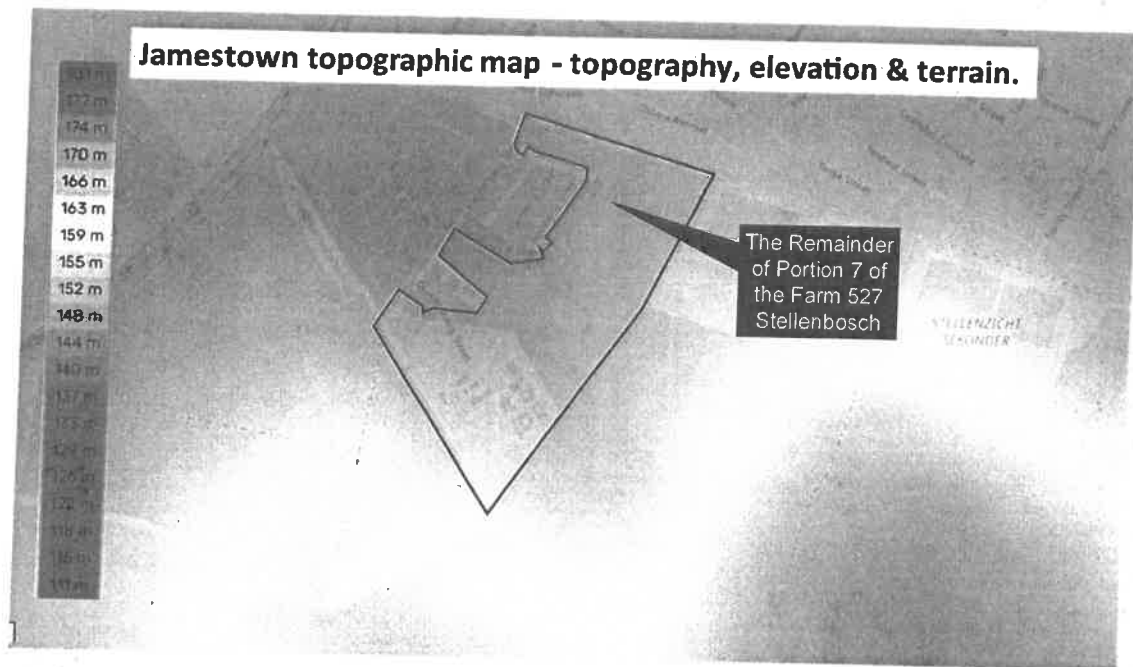






2.10 Topography

The site of development has a relatively flat topography that is ideal for the proposed housing development.



2.11 Current Land Use, Existing buildings and structures

The site is currently vacant, with the exception of the informal settlement located on the southern part of the site:

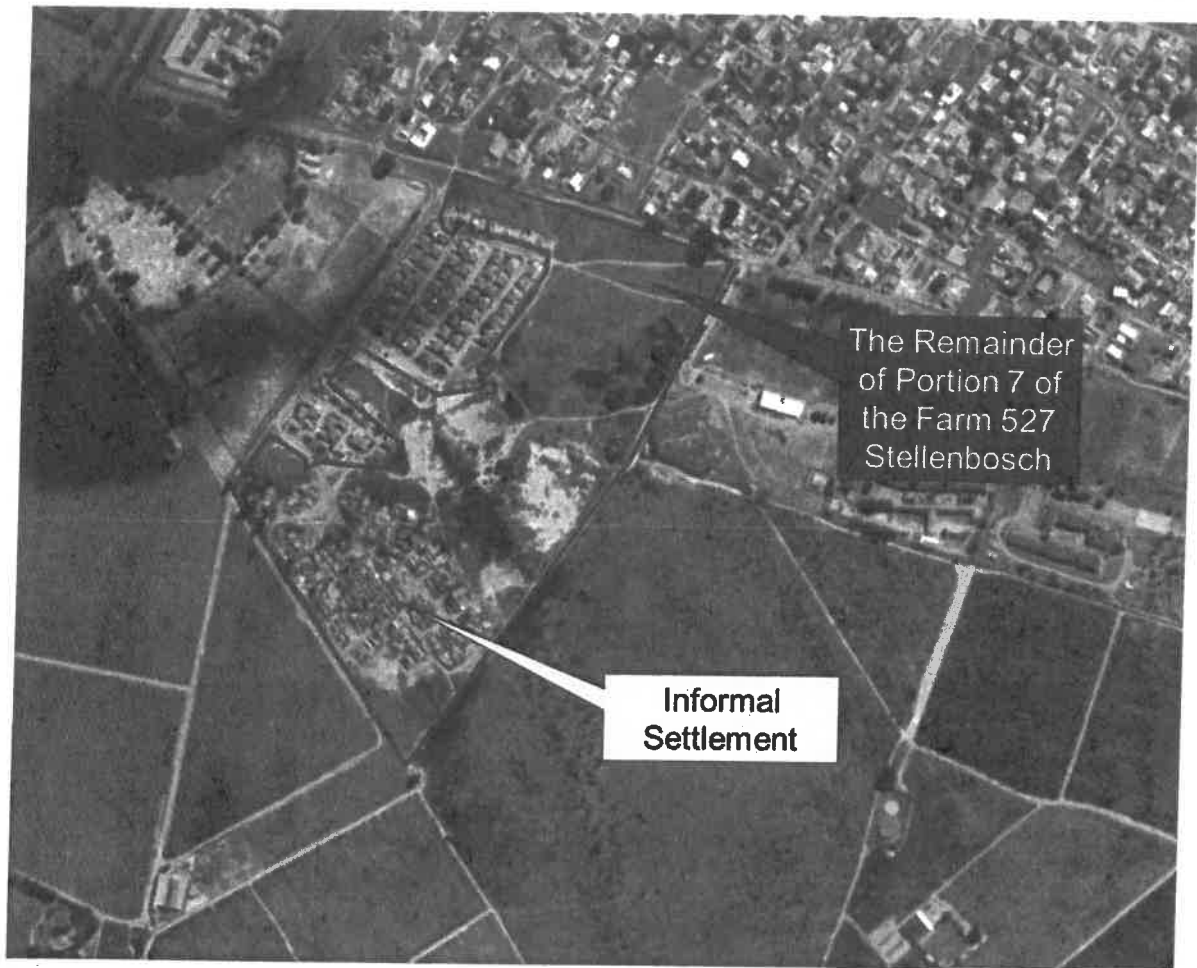


Figure 7: Current land use

2.12 Surrounding Land Use

The site of application is located South of the existing Jamestown residential development. The Jamestown Integrated Development Phase 1 is directly adjacent to the site in the North-West. The Jamestown Cemetery is located to the West of the site. To the East is a sports club, the Weber Gedenk NGK Primary School and the Stellenzicht Secondary School. The areas to the East and South are used for agricultural purposes.

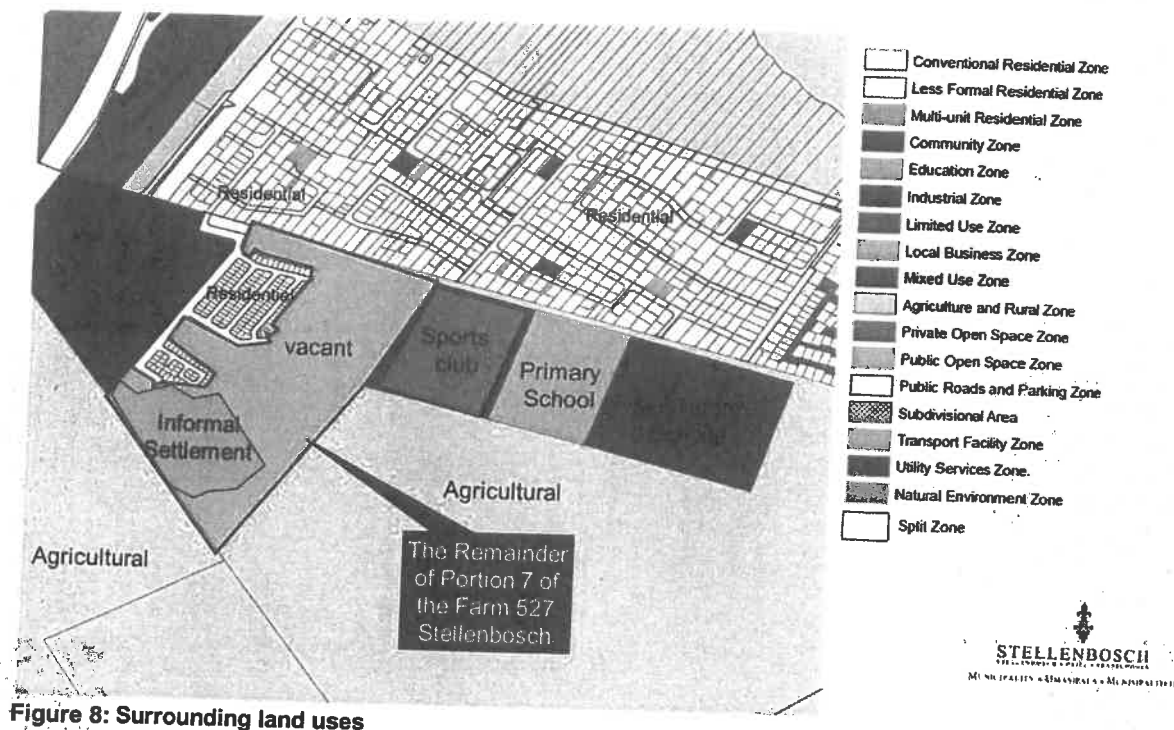


Figure 8: Surrounding land uses

3 APPLICATION PARTICULARS

The previous sections of this report has provided an overview of the site context and the various components of the site analysis undertaken to date, as well as an outline of the proposed developemnt. Furthermore, previous sections of this report has detailed the potential impacts and the required approvals which will be needed for the legal implementation of the proposed development. However, in order to clarify the exact details of the application, this section will reiterate specifically what it is that is being applied for in this application.

3.1 Proposed Rezoning and Subdivision:

The Remainder of Portion 7 of the Farm 527 Stellenbosch, is located within the municipal boundaries of the Stellenbosch Municipality. Subsequently the Stellenbosch Municipality: Zoning Scheme By-Law, 2019 is the applicable Zoning Scheme applicable to the development proposal discussed in the sections above, in terms of regulating and controlling municipal zoning.

Herewith application for the following:

- (i) In terms of **Section 15(2)(a)** of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015, for the **rezoning** of the Remainder of Portion 7 of the Farm 527 Stellenbosch from "Agriculture and Rural Zone" to a "subdivisional area" and
- (ii) **Subdivision** of the Remainder of Portion 7 of the Farm 527 Stellenbosch in accordance with the attached subdivision plan (**Annexure F**) in terms of **Section 15(2)(d)**.

3.1.1 Rezoning Details

Application is made in terms of Section 15(2)(a) of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015, for the rezoning of the Remainder of Portion 7 of the Farm 527 Stellenbosch from "Agriculture and Rural Zone" to a "subdivisional area" in order to allow for the following uses, as depicted on the attached subdivision layout plan attached as Annexure F:

- 253 Conventional Residential Zone stands
- 9 Multi-unit Residential Zone stands
- 1 Community Zone stand
- 4 Public Open Space Zone stands
- 1 Transport Zone stand
- Public Roads

3.1.2 Subdivision Details

Application is made for the subdivision of the Remainder of Portion 7 of the Farm 527 Stellenbosch in accordance with the attached subdivision plan (Annexure F) in terms of Section 15(2)(d) of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015 in order to give effect to the above approved subdivisional zoning.

The aim is to subdivide the Remainder of Portion 7 of the Farm 527 Stellenbosch into various portions as indicated on the subdivisional layout



Please see full SDP set attached as **Annexure F**.

4 MOTIVATION

4.1 Land development principles

The proposal is consistent with existing Policy and Planning Frameworks and adheres to the principles of the Spatial Planning and Land Use Management Act, 2015 (Act No 16 of 2013). (SPLUMA). This application complies with the following General Principles for development as stated in Chapter 2 of the Spatial Planning and Land Use Management Act, 2013 (Act No 16 of 2013):

- Section 7 (b): The principle of spatial sustainability, whereby spatial planning and land use management systems must:
 - (vi) promote land development in locations that are sustainable and limit urban sprawl; and
 - (vii) result in communities that are viable;
- Section 7 (c): The principle of efficiency whereby:
 - land development optimises the use of existing resources and infrastructure.

The proposal also sets out to meet the land development principles referred to in Section 42 of the Spatial Planning and Land Use Management Act (Act 16 of 2013) (SPLUMA) and Chapter VI of the Western Cape Land Use Planning Act (Act 3 of 2014) (LUPA):

- Spatial justice
- Spatial sustainability
- Efficiency
- Spatial resilience
- Good administration

4.1.1 Spatial justice

The principle of spatial justice relates to redressing the past development imbalances to improve access to, and use, of land. The goal of the proposed integrated housing development in Jamestown is the delivery of additional state subsidized housing units, serviced sites for affordable housing (plot and plan), GAP housing units, high density units and high-income housing for sale on the open market. The provision of housing opportunities and services in the area is intended to service people of different races, cultural backgrounds, religions, etc. to bring about community and social cohesion.

4.1.2 Spatial sustainability

The principle of spatial sustainability relates to land use management systems that promote land development that is within the fiscal, institutional and administrative means of South Africa, must protect prime and unique agricultural land, and must comply with environmental laws and limit urban sprawl. The land identified for the Jamestown Integrated Human Settlement Development is ideally located within the urban edge of the municipality and in an area that is earmarked for urban expansion according to the Spatial Development Framework. This contributes to both spatial sustainability and spatial resilience.

4.1.3 Efficiency

The principle of efficiency relates to the optimal use of existing resources and infrastructure. The expansion of the housing development will capitalise on the existing infrastructure. Such infrastructure

may include, but is not limited to, the existing movement network and bulk service connections. The development will also yield the least impact on the environmental resources of the area.

4.1.4 Spatial resilience

The principle of spatial resilience relates to the flexibility of spatial policies and land use management systems, therefore the applicability to this application is limited.

4.1.5 Good administration

The principle of good governance relates to all spheres of government ensuring an integrated approach to land use and land development. The proposed development supports the principle of good administration as it is aligned to the overall strategic spatial development of the municipal area as indicated in the Stellenbosch Municipality Spatial Development Framework and the Integrated Development Plan.

4.2 Need and Desirability

4.2.1 Need

According to the Stellenbosch Municipality Integrated Development Plan (IDP) 2016/2017, "Stellenbosch faces a shortage of around $\pm 20\,000$ housing units".

In accordance with the housing need, Stellenbosch Municipality has identified a portion of land in Jamestown for residential purposes. A portion (3.9317ha) of this land has recently been developed for state subsidized housing that was completed in November 2016. The particular goal of this application is to create an integrated development that will contribute in the delivery of additional state subsidized housing units, serviced sites for affordable housing (plot and plan), GAP housing units, high density units and high income housing for sale on the open market.

There is accordingly an urgent need for the Property to be developed so as to create an integrated residential environment, providing for a range of housing opportunities and choice by catering inter alia for the mix types of housing, together with appropriate public amenities.

4.2.2 Desirability

Jamestown was established during the 1880's by the Rhenish Missionary Church. Agriculture was the main activity when the small village was established. The agricultural base of the settlement has been steadily eroded since the 1970's and urban development accelerated during the 1990's.

The turn of the century witnessed rapid urban densification, with Jamestown becoming an important decentralized urban node along the R44. The De Zalze Winelands Golf Estate together with Jamestown form a stand-alone urban development node defined by a nodal urban edge. The proposed mixed-use residential development will provide additional housing to the community of Jamestown, especially those in need of subsidised housing. A few informal settlers have settled on the site, as there is currently no subsidy housing available for them. It is envisaged that the majority of these settlers be re-established into the subsidy housing components of the proposed residential development.

The proposed activity will provide much needed housing to the local community, specifically the provision of subsidised housing. The community will as a result realize an increased sense of security and human well-being as the informal settlers on the land will be removed and re-established in subsidised housing. The removal of informal settlers will also strengthen the communities' visual image and integrity. The community will realize an increase standard of health and hygiene, as the

informal settlers have inadequate ablution facilities and live in a very harsh environment. Society in general will benefit as a few individuals are removed from beneath the burden of extreme poverty. This creates a sense of accomplishment and progression in our country.

4.2.3 Strategic Local and Provincial Planning Frameworks

The proposed housing development is aligned with the strategic local and provincial plans. This section discusses the plans that are applicable to this application and their relation to the proposed development.

Provincial Spatial Development Framework

One of the objectives of the Provincial Spatial Development Framework is to promote urban and rural transformation. The NPC proposes a national focus on spatial transformation given the enormous costs imposed by existing spatial divides. It recognises that achieving this is a complex long-term process. The NDP's human settlement targets are: more people living closer to their places of work; better quality public transport; and more jobs in proximity to townships. To achieve these targets, it advocates strong measures to prevent further development of housing in marginal places, increased urban densities to support public transport, incentivising economic activity in and adjacent to townships; and engaging the private sector in the gap housing market.

Developing Integrated and Sustainable Settlements:

As a transversal instrument the PSDF embraces the concept of sustainable and integrated human settlements.

Settlement Policy Objectives

The Provincial settlement policy objectives are to:

1. Protect and enhance sense of place and settlement patterns
2. Improve accessibility at all scales
3. Promote an appropriate land use mix and density in settlements
4. Ensure effective and equitable social services and facilities
5. Support inclusive and sustainable housing

The protection and enhancement of heritage and cultural resources is a clear Provincial mandate with indirect but strong links to its economic development mandate, especially with respect to skills retention in the knowledge economy.

The proposed development therefore aligns with the objectives of the Provincial Spatial Development Framework.

Stellenbosch Spatial Development Framework

According to the Stellenbosch Municipality Spatial Development Framework, 2019, the area of the proposed development is located within the urban edge and is earmarked for development:

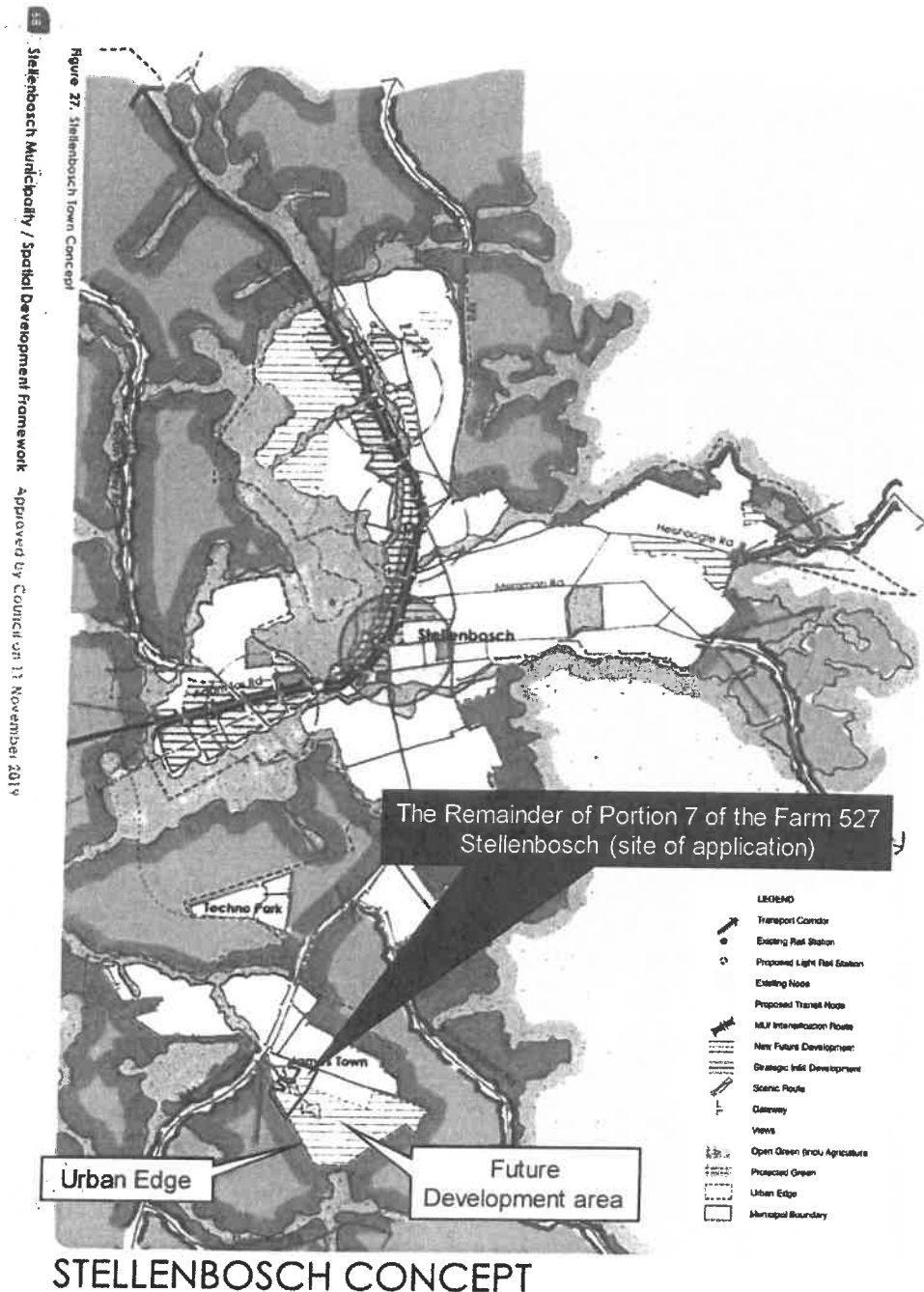
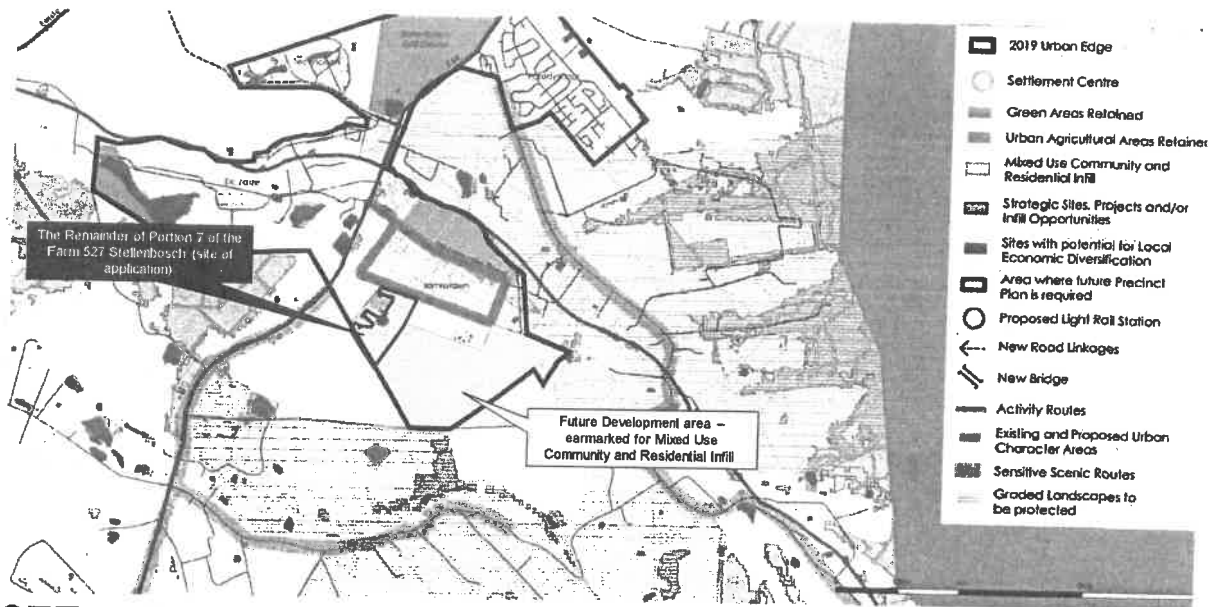


Figure 10: Map adapted from Stellenbosch Municipality SDF, 2019 - indicating that the land is located within the urban edge and earmarked for development

The Stellenbosch Municipality Spatial Development Framework, 2019, also earmarks the area to be developed for "**Mixed-use Community and Residential in-fill**".



STELLENBOSCH FRAMEWORK

Figure 11: Map adapted from Stellenbosch Municipality SDF, 2019 - indicating that the land is earmarked for Mixed-use Community and Residential in-fill. The phase 4 area (east of the site of application) is also indicated as an area that is earmarked for Mixed Use Community and Residential Infill development.

The proposed development therefore aligns with the objectives of the Municipal Spatial Development Framework.

Integrated Development Plan (IDP)

Some priorities identified in the IDP of the Municipality includes the development of housing:

- *The burning issue of housing for our residents in all categories remains of utmost importance. All categories from rental stock, BNG, GAP housing, upgrade of informal settlements and mixed-use developments. We shall seek every possible opportunity in all ten dorpiés across the municipality;*
- *Focus on social housing and gap housing to address the plight of backyarders and to provide dignified living opportunities to as many residents as possible;*

The provision of housing is also identified as a Strategic focus area in the IDP

Strategic Focus Area 4: Dignified Living

All our citizens should have access to a dignified life, irrespective of their relative material wealth or their background. By a dignified life, we mean, inter alia, access to shelter, ethical administration of municipal housing, and sufficient choice in housing opportunity for different income groups, including young people. We also mean neighbourhoods with accessible public facilities and services. Support for vulnerable groups, including the youth, women and the elderly is critical, as is a close working relationship with other government and social agencies that focus on the needs of these groups.

The Jamestown development is listed as a project in the IDP:

Human Settlements	Infrastructure Transfers - Capital	206477	Jamestown Ph2, Ph3 and Ph4 (1044 sites) IRDP
-------------------	---------------------------------------	--------	--

- Jamestown: Housing (Phase 2, 3 and 4): To obtain development rights/township establishment.

IDP Ref	Responsible Department	Key Activity/ Project/ Programme/ Initiative (measurable action)	Description of Unit of Measurement	Project Phase	Number of Housing Opportunities
TBC	Housing Development	Finalise the sub-division plan for Jamestown (Phase 2 and 3)	Percentage of the Jamestown, Phase 2 and 3 capital budget actually spent by 30 June	Planning	±2 000 housing opportunities (to be determined per phase)
TBC	Housing Development	Obtain development rights for mixed-use development for Jamestown Phase 4	Percentage of the Jamestown, Phase 4 capital budget actually spent by 30 June	Planning	

4.2.4 Location and accessibility of the property

The proposed site identified for the extension of the Jamestown Integrated Housing Development is directly adjacent to Phase 1 of the development and directly South of the existing Jamestown residential area. The site is easily accessible from the main entrance on School Road that leads off the R44. The site is ideally located for the proposed development.

4.2.5 Physical characteristic of the property

The site is vacant with no man-made elements (e.g. building/structures) except for the informal settlement that is located on the Southern part of the site. The site is unfenced and features low sensitivity botanical resources. The slope of the site is relatively flat. The areas of conservation value and sensitivity along the drainage area that runs through the middle of the site have been avoided and will not be impacted by the proposed development. The physical characteristic of the property is therefore suitable for the proposed development.

4.2.5.1 Environmental Impact

An EIA was conducted during Phase 1 of the initial subdivision of the project area.

All environmental features were assessed at the time and the site development plan that was developed and approved at the time incorporated all environmental features identified during the investigations.

A detailed aquatic and wetland investigation were part of the studies conducted during the previous planning process. The location of a wetland on the site of application influences the design of the proposed development. The current subdivision layout uses the exact same footprint of the previous approved layout, so no additional environmental impacts are triggered and the previous environmental authorisation that was issued is therefore still valid.



Figure 12 - Wetland on the site of application that influences the Layout of the Proposed Development

The wetland assessment conducted during the previous planning process concluded the following:

It is therefore the conclusion of the present study that the farm dam and drainage canals currently present on the site are not considered to be functional wetlands and have lost any remaining natural surrounding vegetation. The protection of a buffer zone of indigenous vegetation around these drainage features for the purpose of maintaining wetland integrity is therefore neither considered feasible nor, necessary.

4.2.5.2 Geotechnical Conditions

The developable portion of the site has gentle slopes and will require limited earthworks remodelling for effective stormwater drainage. Based on geotechnical investigations previously undertaken in the

Jamestown area it is anticipated that geologically the site is situated in terrain composed of and underlain at shallow depth by granites of the Cape Granite Suite.

The granite is typically mantled by sandy and gritty soils of naturally transported origin. This material can be expected to be of unacceptably loose consistency due to reworking during historical agricultural activities. It is expected that subgrade conditions within the sandy transported soils are typically satisfactory with only re-compaction required to improve conditions to the standards required for road building purposes.

Likewise, it is expected that founding of new buildings will typically require conventional spread footing foundations, however, the depth of founding will probably be of the order of 1,0 – 1,5m due to the presence of the reworked transported soils.

It is expected that groundwater will occur as a seasonally fluctuating perched water table which will rise to ground level during periods of intense rainfall. During the summer months, however, groundwater will not present any untoward problems during either terracing of the site, installation of deep services or construction of foundations.

Therefore, before design and construction of roads, services and building foundations commences, it is recommended that a geotechnical investigation which includes the excavation of machine dug trial holes and in-situ / laboratory testing be undertaken to establish the soil parameters and verify the expectations expressed above thereby confirming subsoil conditions.

4.3 Engineering & Bulk Services

4.3.1 Buried Services

4.3.1.1 Potable Water

The average daily demand for potable water is expected to be around 270 kilo litres per day. This is likely to peak at about 22 litres per second. The demand for firefighting is less at 15 litres per second.

The proposed development is located next to existing potable water reservoirs. An existing 250mm diameter supply pipeline from these reservoir crosses the proposed development and will need to be diverted.

According to the bulk potable water supply Master Plan for the greater Jamestown area and surroundings conducted by Messrs GLS Consulting which has now been adopted by the Stellenbosch Municipality for its future development of the area, the proposed development will require the provision of the following bulk infrastructure as shown in GLS Consulting drawings enclosed in Annexure C:

- SSW.J3: 25 l/s @ 30m Booster Pump Station
- SSW.J4: 680m x 200mm diameter new supply pipeline SSW.J1: 775m x 160mm diameter pipeline to replace an exiting 75mm diameter pipeline
- SSW.B18: New 1.8 MI reservoir
- SSW.B19: 2030m x 200mm diameter new bulk supply pipeline

Within the new development itself separate metered connections are proposed for potable water supply to each of the single residential erven and to the community facility erven. The apartment complexes will be provided with a metered bulk potable water supply to the erf. Conventional fire hydrants will be placed in the roads. Pipelines for potable water will not exceed 365 mm in diameter.

4.3.1.2 Sewers

The wastewater generated on site is planned to be collected conventionally in gravity sewers and reticulated to the lower end of the site and discharged by a 160mm diameter sewer outfall through the municipal burial site into an existing 160mm diameter collector sewer in Rovellesingel in the adjacent Jamestown township. The fully developed site is expected to discharge approximately 203 kl/day of sewage peaking at around 4.7 litres per second.

According to the sewer Master Plan for the greater Jamestown area and surroundings conducted by GLS Consulting which has also been adopted by the Stellenbosch Municipality for its future development of the area, the proposed development will require the provision of the following bulk infrastructure as shown in GLS Consulting drawings enclosed in Annexure C:

- 160m x 160mm diameter new outfall sewer
- Items 3, 5 & 6: Decommission the Jamestown, Techno Park, De Zalze 1 & De Zalze 2 pump stations
- SS3.1: New 50 l/s Blaauwklippen pump station
- SS3.2: 4 200m x 250mm diameter new rising main
- SS4.2: 342m x 200mm diameter outfall sewer and road crossing
- SS4.3: 140m x 355mm diameter new outfall sewer

Pipelines for sewers for the reticulation of the development and the sewer outfall will not exceed 365 mm in diameter.

4.3.2 Stormwater

Pipelines carrying stormwater will exceed 365 mm in diameter in accordance with the local authority's requirement for a minimum pipe diameter of 375 mm.

Stormwater leaving the site is proposed to be discharged to the existing unlined furrow/canal in the municipal burial site. Possible improvements in the appearance of the existing unlined furrow/canal can be looked into. Discharge will be limited to 300 litres per second.

4.3.3 Roads

The layout of the roads is shown on the attached drawing. These roads are planned to be an appropriate width to match those in Jamestown and the greater Stellenbosch area. The roads will be constructed with grade no flatter than 1 in 200. All roads will be designed to municipal standards. The roads will be designed to be able to effectively discharge stormwater run-off during major flood events.

4.3.4 Solid Waste

Solid waste to be generated from the development is estimated to be of the order of 130m³ per month (uncompacted). The municipality will collect the solid waste generated during the operational phase of the development. The solid waste will be collected from the individual single erven and from dedicated refuse rooms at the entrance to the apartment complexes. The municipally allocated 240 litre mobile refuse bins will be emptied on a weekly basis directly onto municipal trucks to be off-loaded at a licensed landfill site.

The attached letter in Annexure E from Mr Michael Rhode of the Stellenbosch Municipality confirms that although the Stellenbosch landfill site is currently running out of capacity there are plans underway to make available the necessary spare capacity to accommodate waste disposal and waste recovery both in future and in the interim.

4.3.5 Electrical Services

An estimated electrical supply of approximately 2.7MVA or 3900A 3-phase to the development. The assumptions are based on a middle-income residential area which yields a 14kVA BDMD resulting in an ADMD of 4.2kVA at the local substation. This includes provision for site lighting and the possibility of minor future expansion.

The bulk infrastructure upgrade requirements that are planned for the development are:

- 3.4kmx 70mm²11kV cable
- Substation – 2x New breakers & Terminations

The Stellenbosch Municipality confirmed that there is adequate capacity to supply power to this proposed development.

5 PUBLIC PARTICIPATION

The public participation process followed for the application is in accordance with Section 41(7) of the Stellenbosch Municipal Land Use Planning Bylaw (2015).

The prescribed period which must be allowed for the submission of inputs and comments on an application is 30 days for interested and affected parties, and 60 days for any organ of state.

6 CONCLUSION

There is an urgent need for the property to be developed so as to create an integrated residential environment, providing for a range of housing opportunities and choice by catering inter alia for the mix types of housing, together with appropriate public amenities.

Therefore, the goal of this project is the delivery of additional state subsidized housing units, serviced sites for affordable housing (plot and plan), GAP housing units, high density units and high-income housing for sale on the open market.

The report provides a motivation for the proposed rezoning and subdivision of the Remainder of Portion 7 of the Farm 527 Stellenbosch for a proposed housing development (Phase 2 and 3 of the Jamestown Integrated Human Settlement Development). The proposal is made in accordance with the provisions of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015 as well as the Stellenbosch Municipality: Zoning Scheme By-Law, 2019. Based on the evidence presented and the need for additional housing opportunities in the area, it can be argued that the proposed development will provide a much-needed service to the local residents of Jamestown.

In view of the above, it is recommended that the Stellenbosch Municipal Council look favourably upon this application.

ANNEXURES

ANNEXURE	DESCRIPTION
A	Application Form, completed and signed by Applicant
B	Power of Attorney
C	Proof of Registered Ownership (Title Deed)
D	Copy of the Surveyor-General's Diagram
E	Locality Plan
F	Subdivisional Layout Plan / Site Development Plan
G	Zoning Certificate

In diversity there is beauty
and there is strength.

MAYA ANGELOU

Document prepared by:

Zutari (Pty) Ltd

Reg No 1977/003711/07

Suite 201

2nd Floor

Bloemhof Building

65 York Street

George

South Africa

PO Box 509

George

6530

Docex: DX42

T +27 44 874 2165

F +27 44 873 5843

E george@zutari.com

ZUTARI
IMPACT. ENGINEERED.



ANNEXURE E: PREVIOUS APPROVALS

Enquiries	P April / U Von Molendorff
Your ref.	-
Our Ref .	Farm No 527, Jamestown, Stellenbosch
Application No.	-
Date	2013-08-28
Telephone	021-808 8683 / 8682
Fax	021-808 8651

BY HAND

Manager : New Housing

Attention : Mr Lester van Stavel

FILE NR:	OUTGOING POST
SCAN NR:	31527 FINAL
COLLABORATOR NR:	299598

Sir

RESCISSION OF PREVIOUS RESOLUTION TAKEN ON 28-02-2012 REGARDING THE REZONING AND SUBDIVISION OF A PORTION OF FARM NO 527, STELLENBOSCH (JAMESTOWN HOUSING DEVELOPMENT PROJECT)

Your application in the above regard, refers.

The Council at a meeting held on 30 May 2013, resolved as follows:

(a) that Council's resolution dated 28-02-2012 be rescinded and replaced as follows:

- (i) that the application for the subdivision of the property in terms of Section 25 of the Land Use Planning Ordinance, 1985, Ordinance 15 of 1985 (LUPO) be approved in order to subdivide Farm 527 into six (6) portions as set out in paragraph 2.1 above;
- (ii) that the application for the rezoning of Portion 4 of the property in terms of Section 16 of the LUPO, be approved, to create a subdivisional area in terms of Section 22 of the LUPO, for the subdivision and development detailed in paragraph 2.1 above, inclusive of departures from the land use parameters, in terms of Section 15 of the LUPO;
- (iii) that the project detail and business plan as well as other legal requirements be submitted to Council for approval before the tender process is embarked upon; and

(b) that paragraph 2.1 of Council's minutes dated 28-02-2012 (See **APPENDIX 1**) be replaced with the following amended paragraph:

2.1 Application details

In terms of Section 18(1) of the LUPO, "A rezoning may, on the initiative of the Administrator or council, be granted under section 16(1) by either the Administrator after consultation with the council concerned or, if authorised

Farm No 527, Jamestown, SB (with endorsements)

Antony S
Lester van Stavel
L. van Stavel
 23/9/2013
FILE

thereto by the provisions of a structure plan, that council in respect of land situated in its area of jurisdiction, irrespective of whether or not a local authority is the owner of the land."

Section 18(2) determines that: "The provisions of section 16 and 17 shall, in so far as they can be applied, apply mutatis mutandis in relation to such a rezoning; provided that where the local authority concerned is not the Owner of the land concerned, the owner, if his address is known or can be ascertained, shall be notified of the proposed rezoning and be afforded an opportunity of commenting; provided further that the provisions of section 16(2) shall not apply to land which is rezoned in terms of subsection (1) of this section with a view to the acquisition thereof by the council concerned."

The Director: Planning and Development submitted an application (attached as APPENDIX 1) on 22 June 2011 and advertised it on 3 August 2011, in compliance with the above. A previous application was submitted by Diesel and Munns on 5 February 2009, including the subdivision of the entire Farm 527 into six (6) portions namely:

- Portion 1: It is the section of Farm 527 located on the western side of the R44. It is proposed that this portion of land remain zoned for agricultural purposes, in keeping with the surrounding properties. It is approximately 2,17 hectares in extent.
- Portion 2: The R44 has not been subdivided from Farm 527. Portion 2 should be rezoned to **Local Authority**, to accommodate the road with reserve of 50 metres, along the lines of the existing fences along the R44.
- Portion 3: The cemetery is located on this portion. It must be zoned as **Local Authority** for cemetery purposes. The proposed cemetery site is approximately 10 hectares in extent.
- Portion 4: The proposed development occurs on this portion (on rental allotments G, H and K). It is approximately 18, 47 hectares in extent, but various services servitudes reduce the developable land.
- Portion 5: Municipal sports fields are located on this portion. It is therefore proposed to rezone it to **Private Open Space** for sports fields. The boundary follows the existing fence lines around the sports fields and encloses roughly 4, 63 hectares.
- Remainder: It is proposed to maintain the remainder of Farm 527 as farm land for the time being, zoned **Agriculture**. It has an approximate area of 84, 36 hectares.

The Subdivisional Area must allow the following development:

- (i) Approximately 395 single dwelling erven with sizes varying between 100 and 450 m², Zoned **Single Residential**, with **special development** for additional dwelling units and **occupational uses**, and departures from building line and coverage parameters, to allow semi-detached and row housing.
- (ii) Approximately 176 dwellings on more or less than nine erven, zoned **General Residential** and departures from the land use restrictions:
 - Coverage: at most 50%;
 - Floor factor: at most 0, 75;
 - Height: at most three storeys; and
 - Street building line: at least 6 m.

Farm No 527, Jamestown, SB (with endorsements)

- (iii) **Educational Institution / Place of Worship** erf for use as a day care facility and religious purposes.
- (iv) **Public Open Space** of no less than 5, 2 hectares.
- (v) **Local Authority** for taxi rank.
- (vi) **Local Authority** for street purposes

I wish to advise that the appeal process has now been concluded and that the above decision is therefore now considered final. Accordingly, you may now act on the above decision, subject to compliance with the conditions.

The requirements as stated in the attached regulations 3.5 and 3.6 of the scheme regulations which have been promulgated in terms of section 7(2) of Ordinance 15 of 1985 (PN.1047/1988) must be complied with.

Services must be provided to the subdivision in accordance with regulation 39 of the regulations promulgated in terms of section 47(1) of Ordinance 15 of 1985 (PN.1050/1988). In this regard your attention is invited to the Provincial Administration's Circulars LG/PB.15/1986 dated 1986-06-20 and LG/PB.17/1986 dated 1986-07-09.

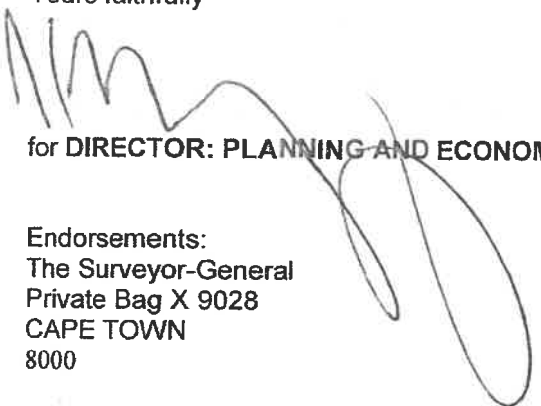
Your attention is also invited to the following:-

Section 26, 27 and 28 of Ordinance 15 of 1985. In terms of section 27(2) this approval lapses within a period of five years from the date of this letter (or such extended period which the Council may approve) if the owner fails to provide the Registrar of Deeds with the documents and information he requires, to meet the requirements of the latter in connection with the cancellation of the existing title conditions, to supply services in accordance with a condition imposed in terms of section 42(1) in respect of the subdivision and to obtain the registration of at least one fundamental unit.

It must be noted that the Surveyor-General, when he approves the diagrams or general plan of the newly created erven, will endorse on the reverse side of the diagram with a rubberstamp the date and reference number of this approval. The Registrar of Deeds will not register the separate erven until my Council has endorsed the Certificate of registered Title or Power of Attorney.

This endorsement will be given at the submission of proof that the establishment conditions, as stated in this letter, have been complied with. Furthermore the title conditions which were imposed, must be mentioned in the power of Attorney or the Certificate of Registered Title, which document, together with the diagrams, must be submitted to my Council for endorsement.

Yours faithfully



for **DIRECTOR: PLANNING AND ECONOMIC DEVELOPMENT**

Endorsements:
The Surveyor-General
Private Bag X 9028
CAPE TOWN
8000

Farm No 527, Jamestown, SB (with endorsements)

PN 1047/1988

After a subdivision has been approved in terms of section 25(1) of the Ordinance, the person who at any stage is the owner of any land unit which is directly involved with the subdivision, must without compensation:

Allows that main gas pipes, electrical, telephones and television cables and/or wires, main and/or other water pipes and sewers and stormwater pipes, channels and furrows of any other fundamental unit or units may be transported over the land, and that surface installations, such as mini-substations, meter switchboxes and services pillars be erected thereon, if it is considered necessary by the Council, in the manner and place which from time to time will be reasonably expected, it includes the right of access to the land unit at any reasonable time with the purposes to erect any works in connection with the above-mentioned, to alter, remove or investigate; and

To receive the material or allow the excavations on the land unit which may be necessary to allow the use of the full width of an adjoining street and to provide the road embankment of a safe and proper slope, which due to differences between the level of the street, as finally built, and the level of the land unit may be necessary, unless he prefers to build abutment piers to the satisfaction of the Council and within a period as determined by the Council.

In terms of section 31(2) of the Ordinance the Council may permit a building or structure to be erected on a land unit forming part of a subdivision which has not been confirmed.

PN.1050/1988**Subdivision: Land and Services**

Whenever an application for the subdivision of land is granted in terms of section 25 of the Ordinance the standard of the services which must be provided in connection with such an application and the distribution of the cost of such services between the developer and the local authority must be in accordance with guidelines which is formulated from time to time by the Chief Director and which will form the conditions to which such subdivision is subject to.

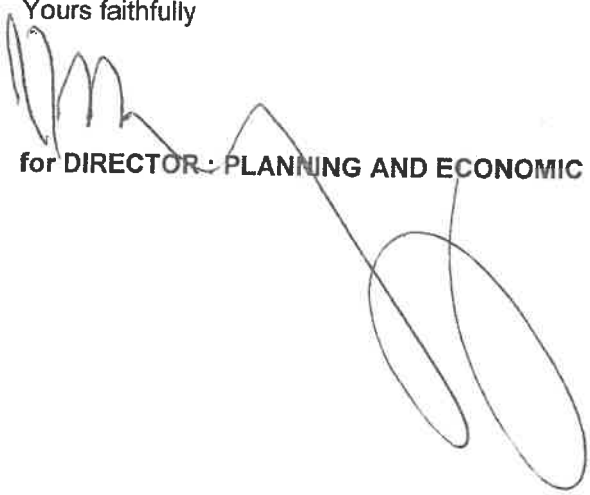
The Surveyor General
Private Bag X 9028
CAPE TOWN
8000

Sir

**RESCISSION OF PREVIOUS RESOLUTION TAKEN ON 28-02-2012 REGARDING THE
REZONING AND SUBDIVISION OF A PORTION OF FARM NO 527, STELLENBOSCH
(JAMESTOWN HOUSING DEVELOPMENT PROJECT)**

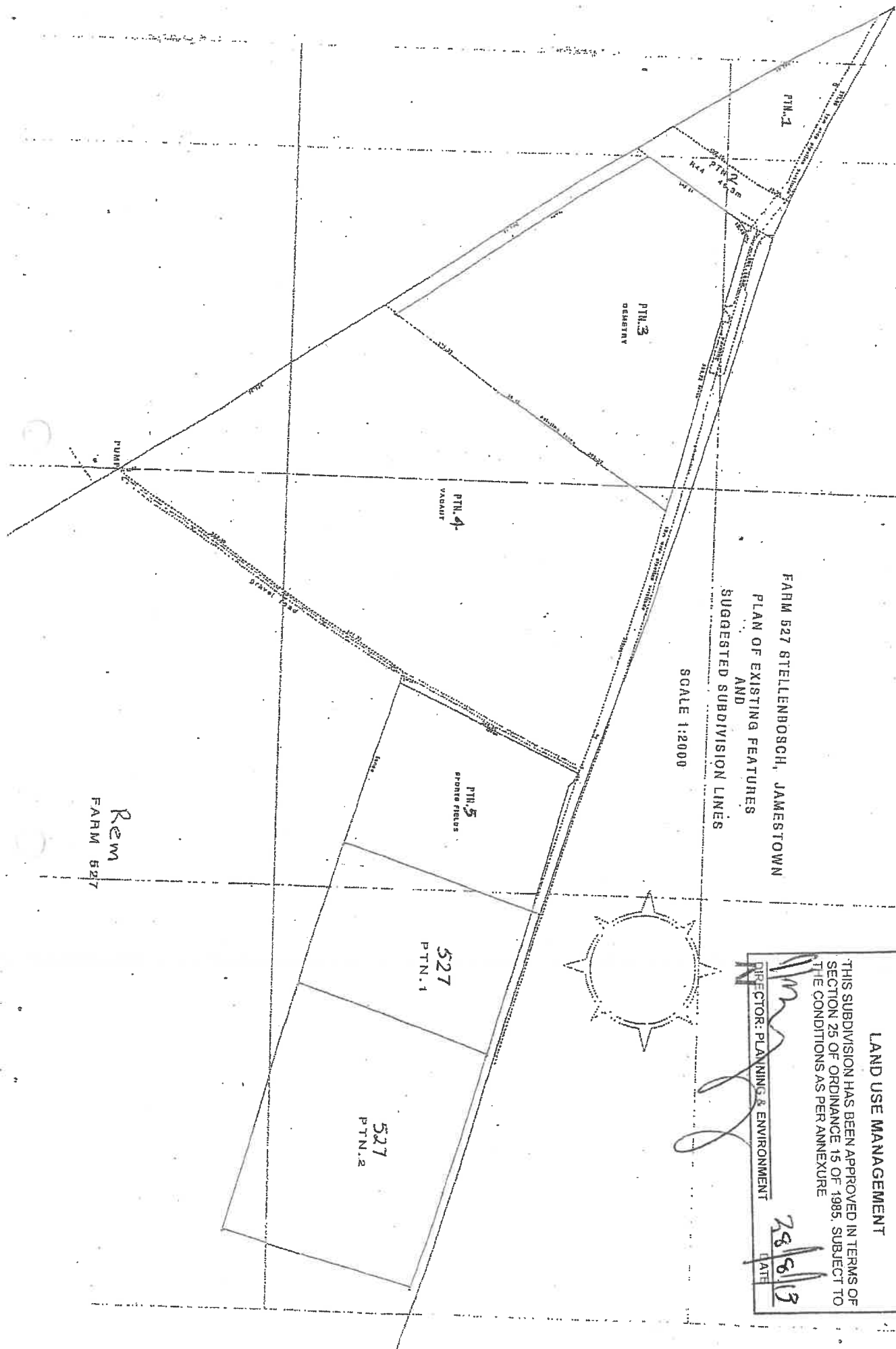
Attached for your information, please find a copy of the abovementioned letter.

Yours faithfully



for DIRECTOR: PLANNING AND ECONOMIC DEVELOPMENT

Farm No 527, Jamestown, SB (with endorsements)



STELLENBOSCH MUNICIPALITY

LAND USE MANAGEMENT

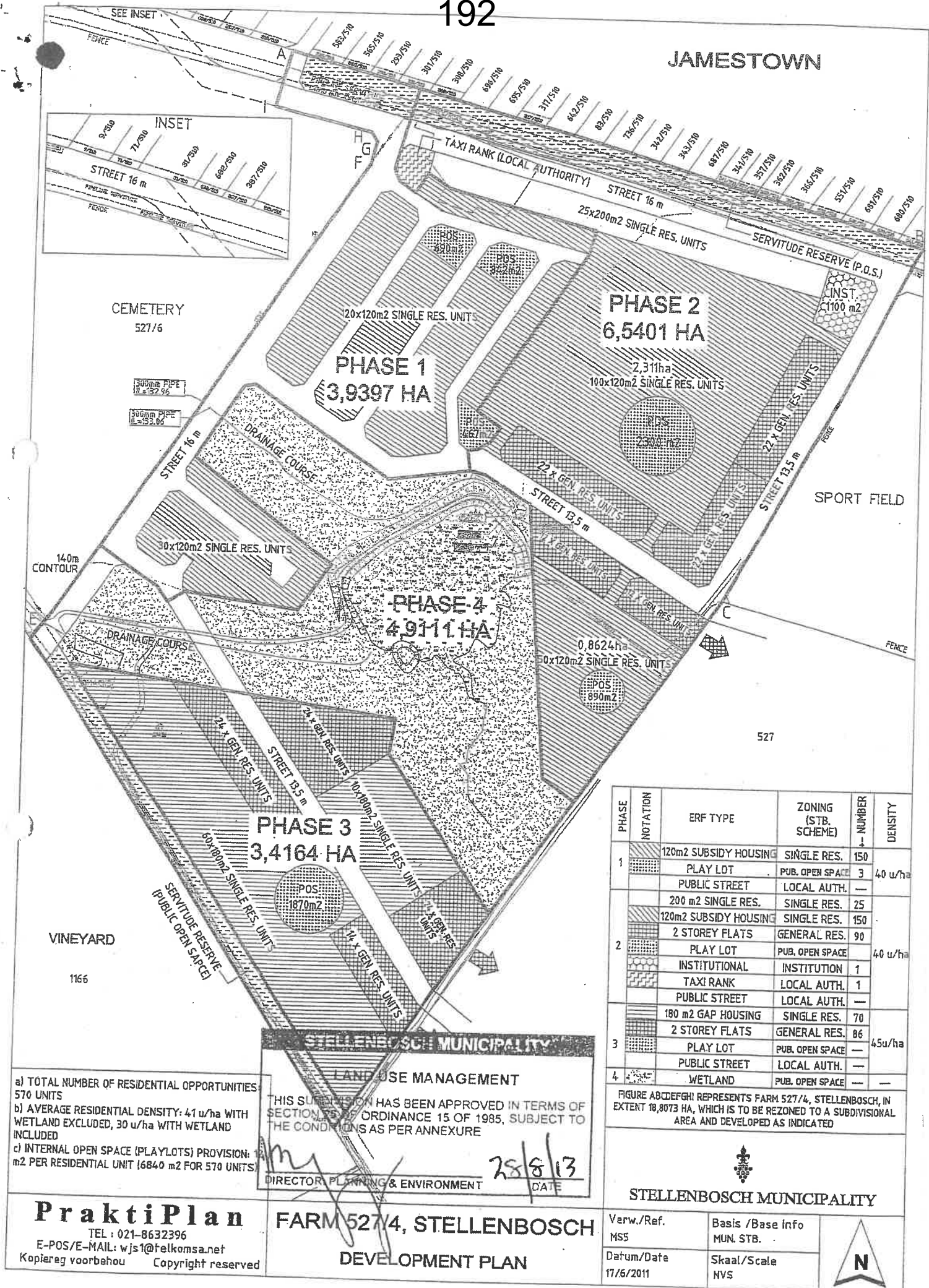
THIS SUBDIVISION HAS BEEN APPROVED IN TERMS OF SECTION 25 OF ORDINANCE 15 OF 1985, SUBJECT TO THE CONDITIONS AS PER ANNEXURE

DIRECTOR: PLANNING & ENVIRONMENT

DATE 28/6/13

Rem
FARM 527

JAMESTOWN







**ANNEXURE F: PROOF OF EVIDENCE (PUBLIC PARTICIPATION, GENERAL
PLAN & AFFIDAVIT)**



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

July 2021v2

DIRECTORATE: PLANNING & ECONOMIC DEVELOPMENT

www.stellenbosch.gov.za/planning-portal/

SUBMIT COMPLETED FORM TO RELEVANT LAND USE MANAGEMENT ADMINISTRATOR

LAND USE PLANNING APPLICATION: PUBLIC PARTICIPATION PROCESS

PORTFOLIO OF EVIDENCE (POE) CHECKLIST AND DECLARATION

Sections 45, 46 and 55 of the Stellenbosch Municipal Land Use Planning By-Law (2015)

Erf / Farm no	527	Portion(s) if farm	Re/7	Allotment Area	James town
Owner/ Applicant	Stellenbosch Municipality			LU/#	15064 (TP228/2022)
Notice Period	From:	13 April 2023		To:	N/A

CONFIRMATION OR DOCUMENTATION SUBMITTED	OWNER/APPLICANT			ADMIN VERIFY
	YES	NO	N/A	
1. The declaration is duly signed	✓			
2. Applicant confirms that the public participation process was duly undertaken as instructed and attached	✓			
3. Municipality informed of the start date and closure date	✓			
4. The advertisement period complies with the required 30 days (60 days for municipal departments and organs of state)	✓			
5. If applicable, confirms that the site notice was placed and kept on site for the full duration of the public participation process			✓	
6. All communications (other than notices) in respect of the public participation process attached	✓			
Proof of notices published				
7. If applicable, photo evidence to confirm site notice (one close up and one from across the street)			✓	
8. Wording of the advertisement accurate and copy attached	✓			
9. Proof of notices published (publication date visible)	✓			
Proof of notices served				
10. Wording of notice accurate and example attached	✓			
11. Proof of all notices served to neighbouring properties attached	✓			
12. Proof of all notices served to interest and community groups attached	✓			
13. Proof of all notices served to municipal departments and organs of state (government dept's and entities) attached	✓			
Comments received				
14. All objections and comments received attached, including amended comments if relevant	✓			
15. All comments from municipal departments and organs of state received (must also be attached to POE)	✓			
16. Consent from abutting property owners obtained and attached	✓			
17. Applicant's written reply / responding comments on all the objections attached	✓			

1. The POE may only be submitted once all relevant municipal departments and organs of state have submitted their comment, inclusive of the applicant's written reply thereto.
2. When any comments have been discussed or amended terms negotiated with the relevant commenting entity, the amended comments and the applicant's written reply thereto must be attached to the POE.
3. The decision-making period will only commence after receipt and confirmation of a complete POE in accordance with section 57 of the Bylaw.

DECLARATION

and ID No: 78053/5089081, as the Applicant for the above application, hereby confirms:

- 1) the public participation process for the subject application was duly undertaken in accordance with the instruction for such process and the associated requirements stipulated in the Stellenbosch Municipal Land Use Planning Bylaw;
- 2) the information contained in the above checklist and the accompanied information and documentation in the Portfolio of Evidence for the concluded public participation process, are accurate and complete; and
- 3) the personal information (e.g. name, address, contact details) of interested and affected parties as supplied by the Municipality was only used for official municipal communication matters with reference to the Protection of Personal Information Act 4 of 2013 (POPI).

Duly signed on 07/08/2023 at George
Date Place

Ch Schwöder
Signature

<i>For office use only</i>	
CHECKED BY ADMINISTRATIVE OFFICER	
CHECKED BY TOWN PLANNER	
DATE VERIFIED	

NOTES TO BE RECORDED:

Public participation Report

Jamestown Integrated Development – Phase 2 & 3 – Rezoning & Subdivision

**The Subdivision and Rezoning of the Remainder of
Portion 7 of the farm 527 Stellenbosch.**

Submission date: 2023/07/28

Document number: Click or tap here to enter text.

Revision: 1

Document control record

Document prepared by:

Zutari (Pty) Ltd

Reg No 1977/003711/07

264 Main Street

Paarl

South Africa

T +27 21 860 2200

F +27 21 860 2222

E paarl@zutari.com

Document Control						
Project name		Jamestown Housing Development				
Document number		Click or tap here to enter text.	Project number		1002169	
Client		Stellenbosch Municipality				
Client contact		0827889891	Client reference		Shaun October	
Rev	Date	Revision details/status	Author	Reviewer	Verifier (if required)	Approver
0	2021/05/12			Rudolf Schröder	Rudolf Schröder	Rudolf Schröder
Current revision		1				

Approval			
Author signature		Approver signature	
Name		Name	
		Rudolf Schröder	
Title		Title	
		Professional Planner	

Contents

1	Project Context and Introduction	5
2	Pre-Application	6
3	Application for Rezoning and Subdivision	7
4	Section 41 Compliance Letter - Confirmation of Complete Application Submitted	9
5	Stakeholder Engagement and Public Participation	9
5.1	Public notice in the Local Newspaper (Eikestadnuus)	10
5.2	Notices placed on Municipal Website	11
5.3	Notice to affected property owners and community organisations.	12
5.4	Comments from External Departments and Interested and Affected Parties	14
5.4.1	Request for comments:	14
5.4.2	External Departments:	16
5.5	Compliance with Public Participation Requirements	17
6	Comments Received	18
6.1	Categories of comments received from the public	18
6.1.1	MAIN CATEGORY: Agriculture and heritage	19
	SUB-CATEGORY: Loss of heritage and close-knit rural community identity of Jamestown ..	19
	SUB-CATEGORY: Land could be used to better empower Jamestown landowners by making it available to BBEEE farmers for sustainable farming.	19
	SUB-CATEGORY: Illegal informal dwellers have become a threat to rivers and surrounding agricultural land.	20
6.1.2	MAIN CATEGORY: Engineering services and built environment	20
	SUB-CATEGORY: Traffic concerns regarding access, and inadequate infrastructure to accommodate further developments.	20
	SUB-CATEGORY: Strain on existing public facilities.	21
6.1.3	MAIN CATEGORY: Socio Economic Aspects	21
	SUB-CATEGORY: Perceived increased level of crime.	21
	SUB-CATEGORY: Impact on property value.	21
	SUB-CATEGORY: Rezoned area will create opportunity for displaced families which may end up in a permanent "noodhuise" camp.	22
6.1.4	MAIN CATEGORY: Economic aspects	22
	SUB-CATEGORY: Loss of Stellenrust to Golden Triangle, with attendant jobless and loss of export revenue.	22
6.1.5	MAIN CATEGORY: Institutional aspects.	23
	SUB-CATEGORY: Jamestown people will not be guaranteed accommodation, municipal lists are not trusted.	23
	SUB-CATEGORY: Application needs to comply with all applicable law.	24
	SUB-CATEGORY: Public participation process	24
6.2	Comments received from External Departments	25
6.2.1	Western Cape Department of Environmental Affairs and Development Planning ..	25
7	Conclusion	25
	Annexure A - Jamestown response to comments matrix	26
	Annexure B - Comments Received from the Public	26
	Annexure C - Comments received from External Departments	26

Figures

Figure 1: Approved Development Plan for Portion 4 of Farm 527

Figure 2: Screenshot of submission of application

Figure 3: Section 41 Compliance letter

Figure 4: Public Notice as published in Eikestadnuus 13 April 2023

Figure 5: Screenshot of notice placed on municipal website.

Figure 6: Screenshot of notice placed on municipal website

Figure 7: Example of email sent requesting comments from external departments.

Figure 8: Delivery notice email to external departments.

Figure 9: Schedule of delivery notice to emails

Tables

Table 1: List of affected property owners and community organisations affected.

Table 2: List of external departments requested for comments.

Table 3: Main and subcategory of comments received.

Annexures

Annexure A - Jamestown response to comments matrix

Annexure B - Comments Received from the Public

Annexure C - Comments received from External Departments.

1 Project Context and Introduction

Zutari (Pty) Ltd was appointed by Stellenbosch Municipality (housing Department) to prepare and submit this application to Stellenbosch Municipality on their behalf for the change in land use rights of the Remainder of Portion 7 of the Farm 527 Stellenbosch.

Application is made for the rezoning and subdivision of the land parcel known as the Remainder of Portion 7 of the Farm 527 Stellenbosch in order to create a BNG and GAP housing development.

The Remainder of Portion 7 of the Farm 527 Stellenbosch was created after Phase 1 (state subsidy housing) was subdivided from Portion 4 of the Farm No. 527. The site has been rezoned for residential purposes allowing for a mix of residential types. Phase 1 of the development consisting of 162 subsidised housing opportunities has been completed in November 2016.

At a meeting of the Council of the Stellenbosch Municipality held on 30 May 2013, Council resolved, amongst others, as follows:

“(a) that Council’s resolution dated 28-02-2012 be rescinded and replaced as follows:

- i. that the application for the subdivision of the property in terms of Section 25 of the Land Use Planning Ordinance, 1985, Ordinance 15 of 1985 (LUPO) be approved ...”*
- ii. that the application for the rezoning of Portion 4 of the property in terms of Section 16 of the LUPO, be approved, to create a subdivisional area ...”*

The Development rights that were previously approved for Phases 2 and 3 on the Remainder of Portion 7 of the Farm 527 Stellenbosch included the rezoning of the area to “subdivisional area” to make provision for the following intended land uses:

- site and service,
- 2-storey walk-ups,
- GAP housing,
- high income housing and
- public open space.

The town planning department of the Stellenbosch Municipality stated that the rezoning to subdivisional area is no longer valid and that a new rezoning application is therefore to be submitted with the subdivision application to re-instate the intended zoning and give effect to the proposed subdivision.

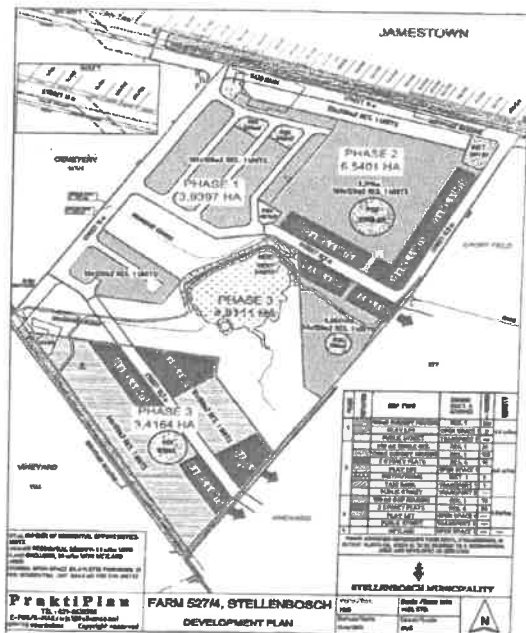


Figure 1: Approved Development Plan for Portion 4 of Farm 527

It is proposed that phases two and three be made available simultaneously for development in the short to medium term.

It is therefore the intention to submit an application in terms of Section 15(2)a for the rezoning of the area known as the remainder of portion 7 of the farm 527 to subdivisional area and to simultaneously apply in terms of Section 15(2)d of the Stellenbosch Municipality Land Use Management By-laws, 2015 to subdivide the areas known as Phases 2 and 3 (portions of the Remainder of Portion 7 of the Farm 527 Stellenbosch) into various land portions as depicted on the attached subdivision layout plan.

2 Pre-Application

In terms of **Section 37** of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015:

- (1) The Municipality may require an owner who intends to submit an application or his or her agent to meet with the authorized employee and, where applicable, with employees of other relevant organs of state for a pre-application consultation before he or she submits an application to the Municipality in order to determine the information and documents that must be submitted with the application.
- (2) The Municipality may issue guidelines regarding—
 - (a) applications that require a pre-application consultation;
 - (b) the nature of the information and documents that must be submitted with an application;

- (c) the attendance of employees from the Municipality or other organs of state at a pre- application consultation; and
 - (d) the procedures at a pre-application consultation.
- (3) The Municipality must keep minutes of the proceedings of a pre-application consultation.

In terms of this application and the development proposal contained herein, several consultation sessions were held with the project stakeholders and relevant municipal officials and a formal pre- application was submitted to the Municipality on 20 September 2022.

A formal pre-application application was submitted to the Municipality on 20 September 2022 where- after a pre-planning consultation was held with the Stellenbosch Municipality's Planning Department.

Feedback was received on 12 October 2022. It was confirmed that the applicant can proceed with the submission of a formal rezoning and subdivision application:

Morning Lourens,

Kindly note below the feedback from the Manager & Senior Manager regarding your special request.

1. **Exemption from Application Fees**
 - a) The property is municipal owned therefore exempted from paying application fees.
2. **Exemption from Public Participation Processes**
 - a) The exemption may only be obtained from the Western Cape Government: Minister: Local Government, Environmental Affairs and Development Planning, therefore you are required to motivate the need for exemption to be submitted to the Minister. Attached is a sample of letter that was motivated for a similar project which needed to be exempt from public participation.

Furthermore, an application for rezoning needs to be added to the subdivision application because the original application for rezoning to subdivisional area has lapsed.

Moreover, in terms of the clarifications, I have all the files with me, you can consult Ulrich (Ulrich.vonmolendorff@stellenbosch.gov.za) for access to information in order to confirm all the studies you require.

Kindly contact me if you have any further queries.



Kind regards Bongiwe Zondo Senior Town Planner

Planning & Economic Development

T: +27 21 808 8951

3rd Floor, Eikestad Mall, 43 Andringa Street, Stellenbosch, 7600

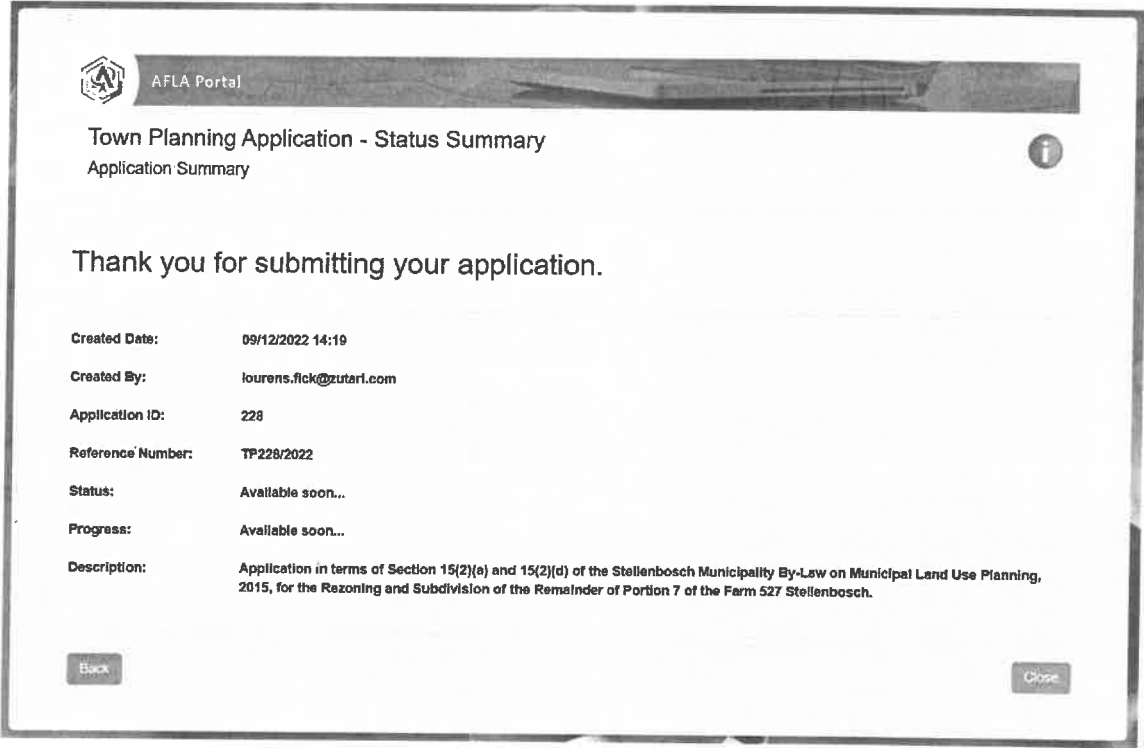
www.stellenbosch.gov.za

Following the feedback received on the pre-application, a rezoning and subdivision application was formally submitted to the Municipality's Planning Department on 9 December 2022.

3 Application for Rezoning and Subdivision

A Rezoning and Subdivision application was submitted on the 9th of December 2022 for the following:

- a) In terms of Section 15(2)(a) of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015, for the rezoning of the Remainder of Portion 7 of the Farm 527 Stellenbosch from "Agriculture and Rural Zone" to a "subdivisional area" in order to allow for the following uses:
- 253 Conventional Residential Zone stands.
 - 9 Multi-unit Residential Zone stands.
 - 1 Community Zone stand.
 - Public Open Space Zone stands.
 - 1 Transport Zone stand.
 - Public Roads
- b) Subdivision of the Remainder of Portion 7 of the Farm 527 Stellenbosch in accordance with the attached subdivision plan in terms of Section 15(2)(d) in order to give effect to the above approved subdivisional zoning.



AFLA Portal

Town Planning Application - Status Summary
Application Summary

Thank you for submitting your application.

Created Date:	09/12/2022 14:19
Created By:	lourens.flick@zutar1.com
Application ID:	228
Reference Number:	TP228/2022
Status:	Available soon..
Progress:	Available soon..
Description:	Application in terms of Section 15(2)(a) and 15(2)(d) of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015, for the Rezoning and Subdivision of the Remainder of Portion 7 of the Farm 527 Stellenbosch.

[Back](#) [Close](#)

Figure 2: Screenshot of submission of application

4 Section 41 Compliance Letter - Confirmation of Complete Application Submitted

The application for the Rezoning and Subdivision of the Remainder of Portion 7 of the farm 527 Stellenbosch, was submitted to the Municipality's Planning Department in terms of Section 15 of the Stellenbosch Municipality Land Use Planning By-Law, 2015 on 9 December 2022.

A Section 41 Compliance letter was issued on 13 January 2023 confirming that the application is deemed to be complete:

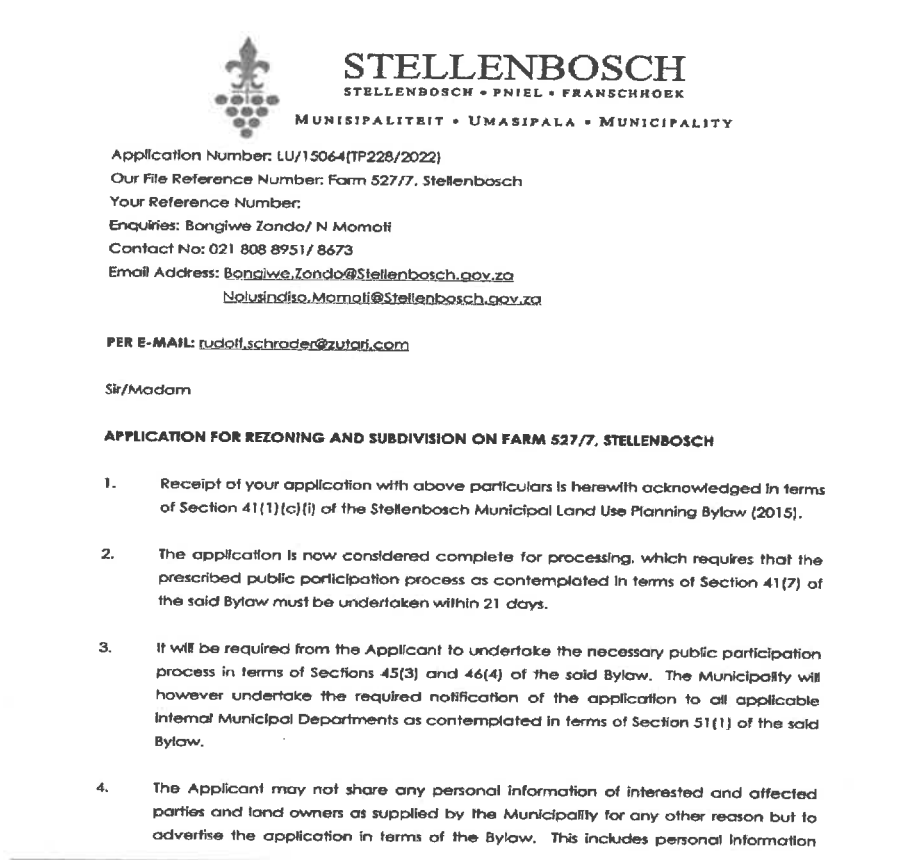


Figure 3: Section 41 Compliance letter

5 Stakeholder Engagement and Public Participation

A public participation process is also undertaken in conjunction with the required environmental processes.

The proposed subdivision and rezoning of the Remainder of Portion 7 of the farm 527 Stellenbosch, have been subjected to a thorough public participation process in terms of the

provisions for public participation as set out in Section 45 of the Stellenbosch Municipality Land Use Planning By-Law, 2015, which entailed the following:

AFFECTED /INTERESTED PROPERTY OWNERS LIST

ADVERTISING INSTRUCTION	YES	NO
Advertise in press - Eikestadnuus	✓	
Notice on the property		✓
Notice to affected property owners	✓	
Notice to community organizations	✓	
External departments	✓	

More details regarding each of these are provided in the section below:

5.1 Public notice in the Local Newspaper (Eikestadnuus)

Notice of the proposed subdivision and rezoning of the Remainder of Portion 7 of the farm 527 Stellenbosch, has been published in two official languages in the local newspaper (Eikestadnuus), on 13 April 2023 as prescribed in Section 45 of the Stellenbosch Municipal Land Use Planning By-Law, 2015.

4 Eikestadnuus • GEMEENSKAPSHUIS COMMUNITY NEWS

13 April 2023

STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

**NOTICE OF LAND DEVELOPMENT APPLICATION
IN THE STELLENBOSCH MUNICIPAL AREA
NOTICE NUMBER: 94/2023**

APPLICATION TYPE: PROPERTY DESCRIPTION (The Remainder of Portion 7 of the Farm 527, 14.91ha)

Application address: The Remainder of Portion 7 of the Farm 527, Stellenbosch
Applicant: Zutari, represented by Rudolf Schröder; rudolf.schroeder@zutari.com
Owner: Stellenbosch Municipality. Contact: Department: Housing Development; Directorate: Planning and Economic Development, T: +27 21 808 8756
Application reference: LU/15064(TP228/2022)

Description of land development application:
a) In terms of Section 15(2)(a) of the Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015, for the rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch from "Public Open Space Zone" to a "subdivisional area" in order to allow for the following uses:
• 253 Conventional Residential Zone stands;
• 9 Multi-unit Residential Zone stands;
• 1 Community Zone stand;
• 4 Public Open Space Zone stands;
• 1 Transport Zone stand;
• Public Roads; and
b) Subdivision of the Remainder of Portion 7 of the Farm 527, Stellenbosch in accordance with the subdivision plan in terms of Section 15(2)(d) in order to give effect to the above approved subdivisional zoning.

Notice is hereby given in terms of the said By-law that the above-mentioned application has been submitted to the Stellenbosch Municipality for consideration. The application is available for inspection on the Planning Portal of the Stellenbosch Municipality Website for the duration of the public participation process at the following address: <https://www.stellenbosch.gov.za/planning/documents/planning-notices/land-use-applications-advertisements>. If the website or documents cannot be accessed, an electronic copy of the application can be requested from the Applicant.

Written comments, which must include the reference to the application, the name, contact details and physical address of the person to submit the comments, the reasons for the comments, and the interest of the person in the application, may be submitted in terms of Section 50 of the said By-law to the Applicant by electronic mail as follows: Rudolf Schröder from Zutari at +27 44 805 5400 and/or rudolf.schroeder@zutari.com. By lodging an objection, comment or representation, the person doing so acknowledges that information may be made available to the public and to the applicant.

The comments must be submitted within 30 days from the date of this notice to be received on or before the closing date of 15 May 2023.

It should be noted that the Municipality, in terms of Section 50(5) of the said By-law, may refuse to accept any comments/objection received after the closing date.

For any enquiries on the application or the above requirements, or if you are unable to write and/or submit your comments as provided for, you may contact the Applicant for assistance at the email address provided or telephonically at (+27 44 805 5400) during normal office hours.

**KENNISGEWING VAN GRONDONTWIKKELINGSAANSOEK
IN DIE STELLENBOSCH MUNISIPALE AREA
KENNISGEWINGNUMMER: 94/2023**

AANSOEK TYPE: EIGENDOMS BESKRYWING (Die Resant van Gedeelte 7 van die Plaas 527, 14.91ha)

Adres van eiendoms: Die Resant van Gedeelte 7 van die Plaas 527, Stellenbosch
Aansoeker: Zutari, verteenwoordig deur Rudolf Schröder; rudolf.schroeder@zutari.com.
Eienaar: Stellenbosch Munisipaliteit, Departement: Behoudingsontwikkeling; Direksoraat: Beplanning en Ekonomiese Ontwikkeling, T: +27 21 808 8756
Aansoek Verwysing: LU/15064(TP228/2022)

Beskrywing van grondontwikkelingsaansoek:
a) Ingevolge Artikel 15(2)(a) van die Stellenbosch Munisipaliteit Verordening op Munisipale Grondgebruik-beplanning, 2015, vir die herbenoeming van die Resant van Gedeelte 7 van die Plaas 527, Stellenbosch vanaf "Openbare Oopruimte Sone" na 'n "Onderverdelingsgebied" om voorsiening te maak vir die volgende gebruike:
• 253 erwe vir konvensionele residensiële sone;
• 9 Multi-eenhed residensiële Sone erwe;
• 1 Gemeenskapone erf;
• 4 Openbare Oop Ruimtesone erwe;
• 1 Vervoersone erf;
• Openbare paaie, en
b) Onderverdeling van die Resant van Gedeelte 7 van die Plaas 527, Stellenbosch in ooreenstemming met die onderverdelingsplan Ingevolge Artikel 15(2)(d) ten einde uitvoering te gee aan bogenoemde goedgekeurde onderverdelingsbenoeming.

Kennis word hiermee gegee in terme van die genoemde Verordeninge dat bowermelde aansoek by die Stellenbosch Munisipaliteit ingedien is vir oorweging. Die aansoek is beskikbaar vir insae op die Beplannings Portaal van die Stellenbosch Munisipaliteit se Website vir die tydsduur van die publieke deelname proses by die volgende adres: <https://www.stellenbosch.gov.za/planning/documents/planning-notices/land-use-applications-advertisements>. Indien die webwerf of dokumente nie toeganklik is nie, kan die Aansoeker versoek word om 'n elektroniese kopie beskikbaar te stel.

Skriflike kommentaar, wat besonderhede ten opsigte van die verwyings nommer van die aansoek, die name, fisiese adres en kontak besonderhede van die persoon wat die kommentaar lewer, die redes vir die kommentaar, en die belang van die persoon wat die kommentaar lewer in die aansoek, kan ingedien word in terme van Artikel 50 van genoemde Verordeninge aan die Aansoeker by wyse van elektroniese pos as volg: Rudolf Schröder van Zutari by +27 44 805 5400, rudolf.schroeder@zutari.com. Deur 'n beswaar, kommentaar of versoek te rig, erken die persoon wat dit doen dat inligting aan die publiek en aan die aansoeker beskikbaar gestel kan word.

Die kommentaar moet binne 30 dae vanaf die datum van hierdie kennisgewing gestuur word en moet ontvang word voor of op die laaste dag van die sluitingsdatum van 15 Mei 2023.

Daar moet kennis geneem word dat die Munisipaliteit, Ingevolge Artikel 50(5) van die genoemde Verordening, mag weier om enige kommentaar/beswaar wat na die sluitingsdatum ontvang word, te aanvaar.

Indien daar enige versoek op die aansoek of bowermelde vereistes vir die lewer van kommentaar is, of indien dit nie moontlik is om elektroniese kommentaar te lewer of die kommentaar op die wyse te lewer soos voorsiening gemaak is nie, kan die Aansoeker gestel word vir bystand by die vermelde elektroniese pos adres of telefonies by (+27 44 805 5400) gedurende normale kantoor ure.

Figure 4: Public Notice as published in Eikestadnuus 13 April 2023

Document number Click or tap here to enter text., Revision 1, Date 2023/07/28

The closing date for comments according to the notice was 15 May 2023.

5.2 Notices placed on Municipal Website

Notice of the proposed subdivision and rezoning was placed on the Municipal Website

See the below screenshots taken of the notice:

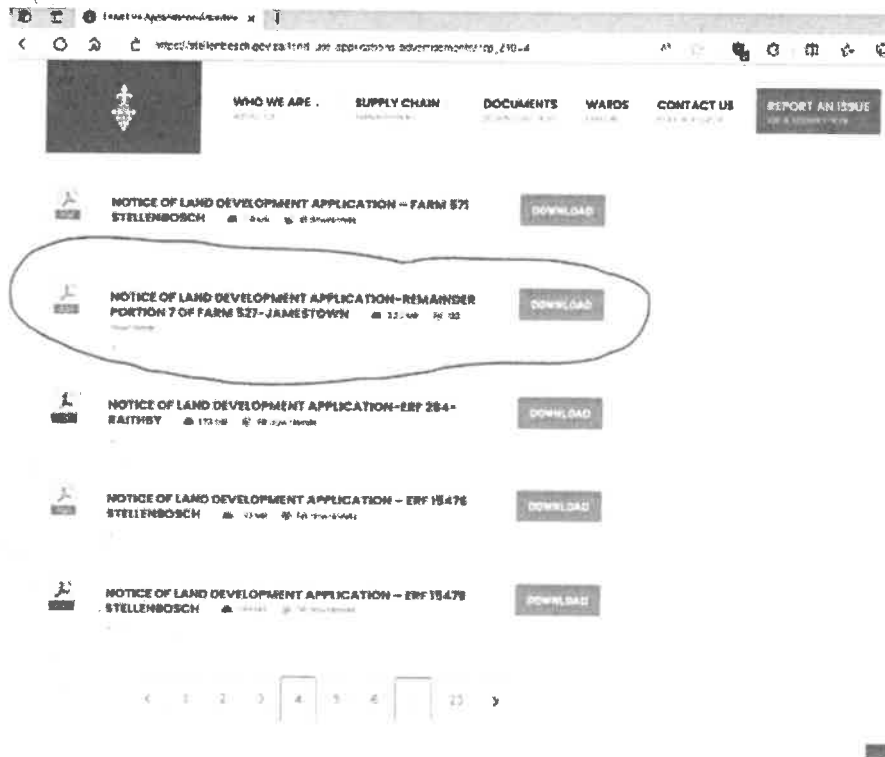


Figure 5: Screenshot of notice placed on municipal website.

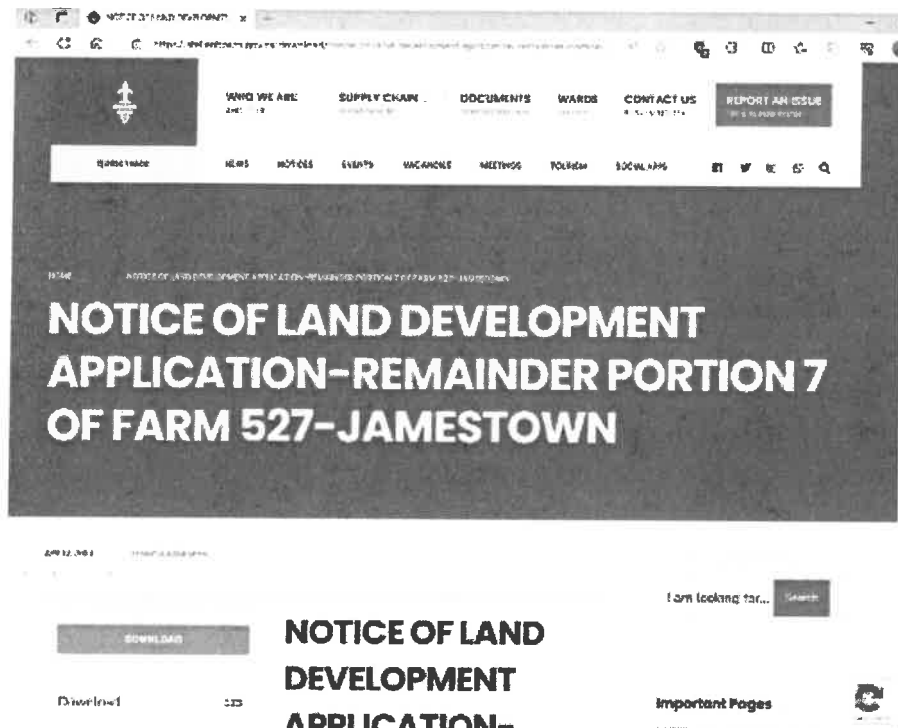


Figure 6: Screenshot of notice placed on municipal website

5.3 Notice to affected property owners and community organisations.

The table below provides details regarding all the affected property owners and community organisations.

Affected person's Title: Mr/Mrs. A Brown Nuwe Uitbreiding, 9 Sneeuberg, Erf 1098, Jamestown, Stellenbosch 0796226268	Affected person's Title: Mr/Mrs. Muller Nuwe Uitbreiding, 11 Sneeuberg, Erf 1099, Jamestown, Stellenbosch 0730538922	Affected person's Title: Mr/Mrs. Coetzee Nuwe Uitbreiding, 21 Sneeuberg, Erf 1104, Jamestown, Stellenbosch 0742829036
Affected person's Title: Mr/Mrs. Muller Nuwe Uitbreiding, 23 Stellenberg Road, Erf 979, Jamestown, Stellenbosch 0796879437	Affected person's Title: Mr/Mrs. Baron 37 Ostariaalaan, Erf 520, Jamestown, Stellenbosch 0781903575	Affected person's Title: Mr/Mrs. Petersen Nuwe Uitbreiding, 15 Stellenberg Road, Erf 975, Jamestown, Stellenbosch 0783222732

Affected person's Title: Mr/Mrs. Dunstan 13 Ostariaalaan, Erf 540, Jamestown, Stellenbosch 0218800400/0825621465	Affected person's Title: Mr/Mrs. Denysen 1 Ostariaalaan, Erf 308, Jamestown, Stellenbosch 0737636297	Affected person's Title: Mr/Mrs. Mekyline Nuwe Uitbreiding, 5 Stellenberg Road, Erf 970, Jamestown, Stellenbosch 0622348615
Affected person's Title: Mr/Mrs. Louw Nuwe Uitbreiding, 17 Stellenberg Road, Erf 976, Jamestown, Stellenbosch 0623863648	Affected person's Title: Mr/Mrs. Petersen Nuwe Uitbreiding, 4 Rooiberg Road, Erf 1082, Jamestown, Stellenbosch 0719609352	Affected person's Title: Mr/Mrs. Davids Nuwe Uitbreiding, 21 Stellenberg Road, Erf 978, Jamestown, Stellenbosch 0784003382
Affected person's Title: Mr/Mrs. Jacobs Nuwe Uitbreiding, 27 Sneeuberg, Erf 1108, Jamestown, Stellenbosch 0731445682	Affected person's Title: Mr/Mrs. Adonis Nuwe Uitbreiding, 20 Rooiberg Road, Erf 1090, Jamestown, Stellenbosch 0619544138	Affected person's Title: Mr/Mrs. Marthinus Nuwe Uitbreiding, 6 Rooiberg Road, Erf 1083, Jamestown, Stellenbosch 0719837902
Affected person's Title: Mr/Mrs. Smith Nuwe Uitbreiding, 5 Sneeuberg, Erf 1096, Jamestown, Stellenbosch 0763589970	Affected person's Title: Mr/Mrs. Ko 31 Pajarolaan, Erf 530, Jamestown, Stellenbosch 0645187372	Affected person's Title: Mr/Mrs. Schroeder Nuwe Uitbreiding, 22 Rooiberg Road, Erf 1091, Jamestown, Stellenbosch 0715658760
Affected person's Title: Mr/Mrs. Europa Nuwe Uitbreiding, 7 Sneeuberg, Erf 1097, Jamestown, Stellenbosch 0717104887	Affected person's Title: Mr/Mrs. Lackey Nuwe Uitbreiding, 24 Rooiberg Road, Erf 1092, Jamestown, Stellenbosch 0630448829	Affected person's Title: Mr/Mrs. Maarman Nuwe Uitbreiding, 1 Sneeuberg, Erf 1094, Jamestown, Stellenbosch 0780030303
Affected person's Title: Mr/Mrs. Hector Nuwe Uitbreiding Stellenberg/Rooiberg Road, Erf 969, Jamestown, Stellenbosch 0609237502	Affected person's Title: Mr/Mrs. Hendricks Nuwe Uitbreiding, 25 Sneeuberg, Erf 1107, Jamestown, Stellenbosch 0780030303	Affected person's Title: Mr/Mrs. Cloete Nuwe Uitbreiding, 13 Sneeuberg, Erf 1100, Jamestown, Stellenbosch 0741962106

Affected person's Title: Mr/Mrs. Ju Nuwe Uitbreiding, 10 Rooiberg Ro Erf 1085, Jamestown, Stellenbosch 0715483471	Affected person's Title: Mr/Mrs. Januarie Nuwe Uitbreiding, 8 Rooiberg Roa Erf 1084, Jamestown, Stellenbosch 0719837902	Affected person's Title: Mr/Mrs. Daniels Nuwe Uitbreiding, 13 Stellenberg Road, Erf 974, Jamestown, Stellenbosch 0783222732
Affected person's Title: Mr/Mrs. Kiewiedo Nuwe Uitbreiding, 17 Sneeuweg, E 1102, Jamestown, Stellenbosch 0727037325	Affected person's Title: Mr/Mrs. Koopman Nuwe Uitbreiding, 3 Sneeuweg, E 1095, Jamestown, Stellenbosch 0785166765	Affected person's Title: Mr/Mrs. September Nuwe Uitbreiding, 15 Sneeuweg 1101, Jamestown, Stellenbosch 0740417836
Affected person's Title: Mr/Mrs. P/A Wyland Boerdery Mountain Breeze Farm Stall, Erf 1166, Jamestown, Stellenbosch 0218801700	Affected person's Title: Mr/Mrs. Muller Nuwe Uitbreiding, 19 Stellenberg Road, Erf 977, Jamestown, Stellenbosch 0712643917	Affected person's Title: Mr/Mrs. Ruiter 35 Roveleestraat, Erf 348, Jamestown, Stellenbosch 0218874670/0824225333
Affected person's Title: Mr/Mrs. Jooste Nuwe Uitbreiding, 14 Rooiberg Ro Erf 1087, Jamestown, Stellenbosch 0713005854	Affected person's Title: Mr/Mrs. Mathyse Nuwe Uitbreiding, 12 Rooiberg Road, Erf 1086, Jamestown, Stellenbosch 0710802720	Affected person's Title: Mr/Mrs. 31 Ostariaalaan, Erf 516, Jamestown, Stellenbosch 0218801750/0733631828
Affected person's Title: Mr/Mrs. Scribante Erf 346, Jamestown, Stellenbosch 0834618915	Affected person's Title: Mr/Mrs. Cloete Nuwe Uitbreiding, 19 Sneeuweg, E 1103, Jamestown, Stellenbosch 0822581969	Affected person's Title: Mr/Mrs. Plaatjies Nuwe Uitbreiding, 16 Rooiberg Road, Erf 1088, Jamestown, Stellenbosch 0818802668

Table 1: List of affected property owners and community organisations affected.

5.4 Comments from External Departments and Interested and Affected Parties

Comments from external departments and interested and affected parties have been requested via email.

5.4.1 Request for comments:

An example of the email that was sent is provided below as well as a delivery report schedule demonstrating proof that emails were sent to the various external departments.

Detailed comments and responses are contained in this report to provide the Municipality with details of the comments received and the applicant's response thereto.

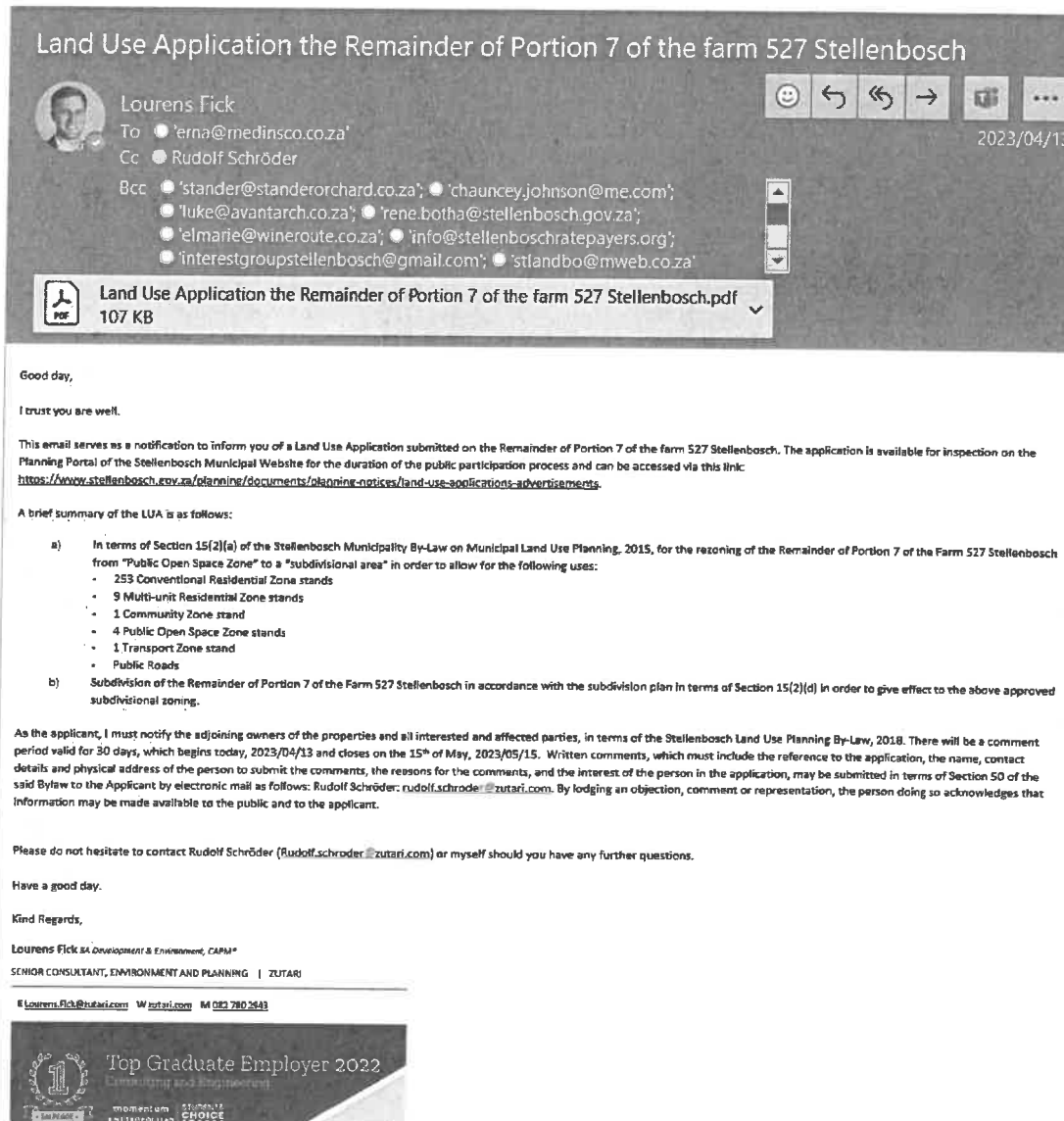


Figure 7: Example of email sent requesting comments from external departments.

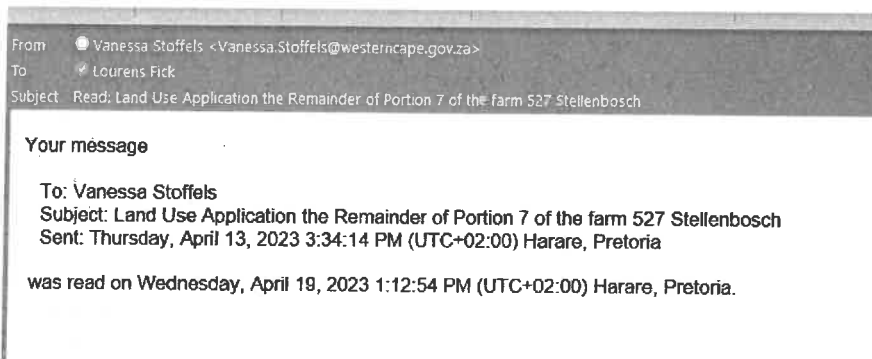


Figure 8: Delivery notice email to external departments.

Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	161 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	80 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	80 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	80 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	79 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	79 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	79 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	80 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	79 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	78 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	80 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	78 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	80 KB
Microsoft Outlook	Undeliverable: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch =>https://products.office.com/en-us/CSImages/Office365Logo_Orange.png?version=146100a9-2a1b-4cda-b0e1-cf468fccc0470> Your message to alison@baarsma.co.za couldn't be delivered. alison wasn't found at baarsma.co.za	Thu 2023/04/13 15:25	471 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	81 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	82 KB
Microsoft Outlook	Relayed: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server.	Thu 2023/04/13 15:25	83 KB

Figure 9: Schedule of delivery notice to emails

5.4.2 External Departments:

The schedule below provides details regarding all the external departments that were requested to provide comments:

	CONTACT DETAILS	E-MAIL	COMMENTS REQUESTED	DELIVERY
Stellenbosch Wine Routes	– Elmarie - elmarie@wineroute.co.za	elmarie@wineroute.co.za	Email sent on 12 June 2020 – 4:52 PM	
Stellenbosch ratepayers' association	info@stellenboschrates.org	info@stellenboschrates.org	Email sent on 12 June 2020 – 5:05 PM	

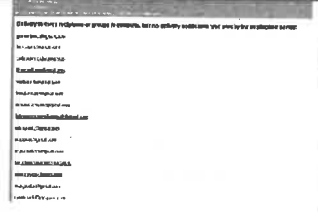
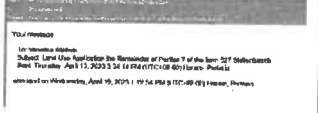
Stellenbosch Interest Group	interestgroupstellenbosch@gmail.com	interestgroupstellenbosch@gmail.com	Email sent on 12 June 2020 – 5:11 PM	
Chrisben February			Email sent on 7 July 2020 – 1:06 PM	
Stellenbosch Agricultural Society	stlandbo@mweb.co.za	stlandbo@mweb.co.za	Email sent on 7 July 2020 – 2:17 PM	
Dept. of Transport and Public Works	Vanessa Stoffels Vanessa.stoffels@westerncape.gov.za	Vanessa.stoffels@westerncape.gov.za	Email sent on 12 June 2020 – 5:15 PM	
Department of Environmental Affairs and Development Planning	Mare-Liez Oosthuizen/Kobus Munro enquiries.eadp@westerncape.gov.za	enquiries.eadp@westerncape.gov.za	Email sent on 7 July 2020 – 1:26 PM	
Heritage Western Cape	Heritage Western Cape, Private Bag X9067 Cape Town, 8000	HWC.HWC@westerncape.gov.za	Email sent on 12 June 2020 – 5:18 PM	

Table 2: List of external departments requested for comments.

5.5 Compliance with Public Participation Requirements

In accordance with the requirements of the Land Use Planning Bylaw for Stellenbosch Municipality, 2015, the applicant hereby furnishes the Planning department with the following documents as proof that the public participation requirements have been met:

- Copies of the notice placed in the local newspaper (the copy reflects the original date of the newspaper, the date is not written by hand);
- Proof that the notice was sent to Stellenbosch Municipality and that it was placed on the Municipal website (copy of email sent and screen shot of notice on website);
- Proof of the notices sent to the external departments and interested and affected parties.

6 Comments Received

A number of comments were received from the general public.

- 29 response / comments were received from members of the public in response to the application notice.
- 1 External department provided comment.

All comments received were grouped into categories of concerns or key issues to be addressed, as many of the comments received relate to the same aspect or key issue. Each area of concern is grouped into a main category, each with a number of sub-categories related to that main category.

Refer to Annexure B - Comments Received from the Public as well as referral to sections in Public Participation Report where the comment has been addressed.

6.1 Categories of comments received from the public.

The below section provides an overview of the key issues raised from the comments received. Please find attached all comments received from the public as well as referral to sections in the Public Participation Report where the comment has been addressed, attached to this report as Annexure B.

The key issues raised during the public participation process have been categorised in the following **five main categories**, each with its own **sub-category**:

	MAIN CATEGORY	SUB-CATEGORY
1.	Agriculture and heritage	<ul style="list-style-type: none"> ▪ Loss of heritage and close-knit rural community identity of Jamestown. ▪ Land could be used to better empower Jamestown landowners by making it available to BBEEE farmers for sustainable farming. ▪ Illegal informal dwellers have become a threat to rivers and surrounding agricultural land.
2.	Engineering services and built environment	<ul style="list-style-type: none"> ▪ Traffic concerns regarding access, and inadequate infrastructure to accommodate further developments. ▪ Strain on existing public facilities.
3.	Socio Economic Aspects	<ul style="list-style-type: none"> ▪ Perceived increased level of crime. ▪ Impact on property value ▪ Rezoned area will create opportunity for displaced families which may end up in a permanent "noodhuise" camp.
4.	Economic aspects	<ul style="list-style-type: none"> ▪ Loss of Stellenrust to Golden Triangle, with attendant jobless and loss of export revenue.
5.	Institutional processes	<ul style="list-style-type: none"> ▪ Jamestown people will not be guaranteed accommodation, municipal lists are not trusted. ▪ Application needs to comply with all applicable law. ▪ Public participation process

Table 3: Main and subcategory of comments received.

The below section provides an overview of the key issues raised from the comments received, grouped per main category and sub-category as described in the above table.

6.1.1 MAIN CATEGORY: Agriculture and heritage

SUB-CATEGORY: Loss of heritage and close-knit rural community identity of Jamestown

There have been several comments made regarding the perception that the proposed development will have an impact on the heritage of Jamestown and diminish the unique rural characteristic of the most scenic routes in Stellenbosch. Suggestions were made for the Municipality to consider other alternative municipal sites that are closer to central Stellenbosch for the housing development project. The public feels that locating certain communities in the outskirts of town reinforces the Apartheid regime and the group areas act. There were also requests made for a heritage impact assessment to be conducted before any rezoning is considered.

Response to comments:

The municipal land in question, has been earmarked for development as noted in the Stellenbosch Municipal Development Framework. It is within the municipalities mandate and responsibility to optimise land parcels that fall within the urban edge prior to considering other portions of land that sits outside of the urban edge. Land that falls within the urban edge has existing infrastructure and this is economically beneficial given that there is no need to invest large amount of funds to establish new infrastructure to enable the land to be developable to its fullest potential. A full heritage impact assessment was undertaken during the previous planning stages, and Heritage Western Cape authorised the development to proceed.

SUB-CATEGORY: Land could be used to better empower Jamestown landowners by making it available to BBEEE farmers for sustainable farming.

Several comments have been made regarding better use of the land proposed for development, specifically to serve local BBEEE farmers whose heritage is built on agriculture, and who currently travel far to access agricultural property.

Response to comments:

The land known as the Remainder of Portion 7 of the farm 527 forms part of the phase 2 and phase 3 development areas which have been previously rezoned, earmarked and approved for housing development, with phase 1 already implemented. Phase 2 and phase 3 is currently not impacted by any agricultural activities. The possible future phase 4 area is considered to be planned on the Remainder of the farm 527, which is currently being used for agricultural activities, but is not part of this application.

SUB-CATEGORY: Illegal informal dwellers have become a threat to rivers and surrounding agricultural land.

Public concerns were raised regarding the current development and illegal informal dwellers, without access to basic services have become a treat to rivers and surrounding agricultural land.

Response to comments:

The main purpose of the phase 2 and phase 3 development, is to formalize the area by eradicating the informal settlement and protecting the natural environment. Once the development is realised, the current informal dwellers will be relocated onto serviced sites where they will have better access to services including access roads, running water, toilets etc. This formalised environment will then reinforce the protection of the environmental and surrounding agricultural land.

Engineering
services and built
environment.

6.1.2 MAIN CATEGORY: Engineering services and built environment.

SUB-CATEGORY: Traffic concerns regarding access, and inadequate infrastructure to accommodate further developments.

Public concerns were raised related to the traffic impact of the proposed development. Concerns include that the development only has one legal access road from the R44 to Jamestown and that the roads traveling to and from Jamestown have not accommodated all the additional demand. Concerns regarding Skool street that cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.

Other concerns raised are existing safety and congestion issues along Blaauwklippen Road, and Webersvalley Road.

Response to comments:

When the initial planning was done by the municipality, a full traffic impact assessment was conducted, and the current design of the development was done in accordance with the recommendations made by the traffic engineers at the time. The same layout structure recommended and approved previously has been used to form the basis of the formal subdivision of the layout plan. (the current application).

An update to the previously approved traffic impact assessment including updates to traffic counts are currently in progress, the updated information will guide and confirm if additional road upgrades are required in light of the proposed development.

SUB-CATEGORY: Strain on existing public facilities.

Public concerns have been raised regarding the perceived strain on existing public services, namely, the library, clinic, and schools, as well as strain on bulk infrastructure namely' stormwater, sewer and water infrastructure, and concerns that the proposed development has not made provision for any additional social infrastructure, creches, clinics, police stations, and schools. Some comments were also made regarding concerns of the possibility that the school will be removed as a result of the planned phase 4 development. Also noted is that the application for phase 2 and 3 should be limited to the boundaries set in the application.

Response to comments:

Investigations were conducted as part of the initial planning process to confirm the capacity of the existing bulk infrastructure. An update to this investigation is also currently being updated to confirm if additional infrastructure upgrades will be required.

With regards to provision of additional public facilities, it has been recognised that there's a need, however the proposed current layout plan is based on the previously approved layout plan which made allowance for only one community stand. The Municipality will determine what type of facility is best suited for the community stand. All additional public facilities or the shortfall in public facilities will be addressed if the phase four area can be planned.

With regards to concerns of the possibility that the school will be removed as a result of the planned stage 4 development, phase 4 land has not yet been planned and does not form part of the said application. A lot of investigations and studies must still be conducted on the Phase 4 land to determine what land uses will be suitable.

Socio Economic
Aspects

6.1.3 MAIN CATEGORY: Socio Economic Aspects

SUB-CATEGORY: Perceived increased level of crime.

Comments were made that the proposed development will lead to increased crime levels in the area. Some comments also noted that the phase 1 development has already brought more crime to the area.

Response to comments:

The urban design and design for safety principles have been incorporated in the layout design. The principle of natural surveillance creates spaces with opportunities for encountering, engaging, and interacting with other people. If a space has "more eyes" coming and going, it can discourage a potential crime that is likely to occur in isolated locations.

SUB-CATEGORY: Impact on property value.

There were a number of comments received with members of the public claiming that property values will decline, specifically in relation to the proposed taxi rank which they vehemently oppose.

Response to comments:

There are a variety of factors that drive property values in any given market. In the real estate market particularly, availability and investment potential have been noted as critical factors. Other factors that drive the real estate market are demographics, interest rates, as well as government policy and legislation.

Currently the land is not optimised and the informal settlement as it stands is not favourable for the environment. The proposed development aims to address this by creating a formal and healthy neighbourhood with formal services. This will protect the surrounding areas and it will increase the value of the land.

The proposed taxi rank is for the benefit of a large number of people that are dependent on public transportation. The traffic engineers will assess the traffic impact and make any recommendations for any required upgrades that will need to be incorporated.

SUB-CATEGORY: Rezoned area will create opportunity for displaced families which may end up in a permanent “noodhuise” camp.

Public has noted their concerns regarding the possibility of having more informal dwellers move into the property and create permanent informal settlements.

Response to comments:

The whole objective of the proposed development is to provide housing opportunities and for the eradication of the informal settlement and that serviced sites will be created to improve the quality and access to services for the community. The proposed development will create a formalised environment, with each stand having access to a water connection, toilet facilities etc, and overtime people will be able to build formal houses on these stands which will further improve their standard of living.

Economic aspects

6.1.4 MAIN CATEGORY: Economic aspects

SUB-CATEGORY: Loss of Stellenrust to Golden Triangle, with attendant jobless and loss of export revenue.

There are concerns on the implications of the proposed development on businesses and the economy of the study area and surroundings. Concerns include the loss of jobs created by Stellenrust. Furthermore, concerns have been noted relating to the limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market.

Response to comments:

Current informal dwellers have already out of their own choosing, selected this area to live on. The existing informal settlement was created out of a need and a clear shortage of affordable housing opportunities in Jamestown, which this proposed development will help to resolve. The location of the

development site is favourable for housing given its proximity to economic opportunities in the surrounding area. This development will also create job opportunities for construction workers for the duration of construction. In the long term, the location of the proposed development is connected to the greater Stellenbosch and the people living in the area will be able to work within Stellenbosch. The Town is connected to a wide range of job opportunities.

The concerns raised regarding the loss of jobs created by Stellenrust is related to the future phase 4 of the proposed development and is therefore not applicable to this application. The phase 4 land has not yet been planned and a lot of investigations and studies must still be conducted on the land to determine if development of the land is feasible.

Institutional
aspects.

6.1.5 MAIN CATEGORY: Institutional aspects.

SUB-CATEGORY: Jamestown people will not be guaranteed accommodation, municipal lists are not trusted.

The public has raised concerns regarding not fully trusting the municipal housing lists, and they fear that Jamestown residents will not be guaranteed accommodation. The municipality's housing department is in regular contact with the ward councillor and the community living in the informal settlement regarding the allocation of housing opportunities to the affected community.

Response to comments:

The rezoning and subdivision of the land is the first step to establish the development rights before any housing opportunities can be realised. Only after the rezoning and subdivision has been approved can the engineering designs commence, and construction drawings prepared for implementation.

An in-depth market research study was completed in November 2022 which provides valuable insights into the household income of the area and the demand for various types of housing. The proposed development is supported by the housing demand that has been demonstrated in the area. The Municipality will work closely with the councillor and the community of the informal settlement before any sites are allocated to beneficiaries.

The municipality is responsible to allocate housing opportunities according to the housing waiting list and the most deserving beneficiaries are given priority according to the Department of Human Settlements policies, as described below:

ALLOCATING BENEFICIARIES FOR HOUSING OPPORTUNITIES:

(see <https://www.westerncape.gov.za/general-publication/allocating-beneficiaries-housing-opportunities>)

1. Citizens needing housing assistance must approach the local municipal housing office to obtain and complete a registration form for a housing opportunity.

2. The citizen gets registered on the municipality's Housing Demand Database to stand in line for becoming a beneficiary of the housing opportunity once it becomes available.

3. Municipalities continuously plan for housing opportunities in the form of housing projects. These plans are submitted to the Western Cape Department of Human Settlements for approval to which funding is allocated. Such a plan takes a while to draft and involves a feasibility study, an environmental impact study, integration with local facilities making sure it is close to schools, work, business opportunities and health facilities.

4. The development of the project commences once the project plan is approved, together with all other necessary approvals, and funding is allocated to the project.

5. Once development commences the municipality then applies its beneficiary selection criteria, as set out in its approved housing allocation policy, to preselect a short-list of potential beneficiaries for the project.

6. These preliminary selected households' information is then captured from the subsidy application forms into the Housing Subsidy System (HSS). Several checks are done against the Population Register, Deeds Office, the Unemployment Insurance Fund (UIF) and other Government systems to ensure that applicants still qualify. A few rounds of beneficiary selection may take place, removing applicants who don't qualify any longer, until all the housing opportunities have been allocated.

7. The municipality then contacts the shortlisted potential beneficiaries to determine whether they are still interested and to get them to complete the subsidy application forms (often municipalities assist with this process or do it on behalf of the beneficiaries). It is thus very important that applicants keep their details, especially their contact information, on the housing database up to date to ensure that they are easily contactable. The municipality then publicises the approved beneficiary list for public scrutiny.

8. Once all planning and project approval processes have been successfully completed, construction of the project commences. Projects are usually executed in phases where housing opportunities are handed over continuously until the whole project is complete and signed off.

9. Once construction is complete, beneficiaries are contacted to inform them that they may now take occupation of the residential unit. Relevant paperwork, such as title deeds, is included in the handover process (for example with BNG units). Should the housing opportunity involve a rental unit, applicants will sign a lease when taking occupation of the rental unit.

SUB-CATEGORY: Application needs to comply with all applicable law.

Claims were made that the environmental authorisation issued to the proposed development has lapsed. Requests have been made that a new environmental impact assessment must be conducted before this rezoning application can be considered.

Response to comments:

An EIA was conducted during Phase 1 of the initial subdivision and rezoning of the project area. All environmental features were assessed at the time and the site development plan that was developed and approved at the time incorporated all environmental features identified during the investigations.

The original town planning approvals and the environmental authorisation was granted as part of the previous application is confirmed to include the entire phase 1, 2 and 3 areas. The Department of Environmental Affairs and Development Planning issued an environmental authorisation on 14 June 2010, which included the entire development area. Phase 1 was implemented in accordance with that environmental authorisation and the environmental authorisation was therefore activated and remains valid. The phase 2 and 3 development are merely a continuation of that same process and falls within the same environmental authorisation. It has been confirmed that no new environmental authorisation is therefore required.

SUB-CATEGORY: Public participation process

The public is concerned that the public participation has been excluded from the application process.

Response to comments:

A public participation process has been undertaken in conjunction with the required environmental processes. The proposed subdivision and rezoning of the Remainder of Portion 7 of the farm 527 Stellenbosch, have been subjected to a thorough public participation process in terms of the provisions for public participation as set out in Section 45 of the Stellenbosch Municipality Land Use Planning By-Law, 2015, which entailed an advert in the press, notice to affected property owners, notice to community organisations and external departments.

6.2 Comments received from External Departments

The proposed subdivision and rezoning of the Remainder of Portion 7 of the farm 527 Stellenbosch was submitted to external departments for commentary. The following section provides a summary of the comments received from external departments (see Annexure C for detailed comments). To date, comments from the following external departments were received:

- Western Cape Department of Environmental Affairs and Development Planning.

6.2.1 Western Cape Department of Environmental Affairs and Development Planning

The comments received from the DEADP's Western Cape Development Management Department were issued on 14 July 2023 (reference 15/3/2/12/BS2). The department submits that there are no objections to the rezoning and subdivision of the Remainder of Portion 7 of the Farm 527, Stellenbosch as proposed.

7 Conclusion

The objective of this Public Participation Report is to outline the public participation and Stakeholder engagement process that was followed, following the submission of the application for the Rezoning and Subdivision of the Remainder of Portion 7 of the Farm 527.

The public participation process followed was in strict compliance with the specifications of the Land Use Planning Bylaw for Stellenbosch Municipality, 2015.

This Public Participation report details the outcomes of the public participation process with all comments received, responses to comments as well as all correspondence to and from external departments. It is believed that any concerns raised by the public and stakeholders have been considered and have sufficiently been addressed. No comments have been received that warrants the proposed development to not proceed or requires any amendments to the layout plan or proposed land uses.

Annexure title

Annexure A - Jamestown response to comments matrix

Annexure B - Comments Received from the Public

	Stakeholder
1	Althea Pietersen
2	Anthony haralambous
3	Anton van Gass
4	Chrisben John February (Representing James Town Heritage)
5	Chrisben John February
6	Debbie Davidse
7	Dora Brocchetto
8	Erna Mouton
9	Gerado Williams
10	GERHARD NEETHLING
11	Grant Gideons
12	Ilse Langhout
13	Jaen Boje
14	James Keen
15	Janice Pietersen
16	Jeanine Groenewald
17	Konrad Brand
18	Leishan Berg
19	Mariet Smal
20	Mark Le Roux
21	Nicola Giliomee
22	Paul Mouton
23	Philippa Aschmann
24	Riaan Snyman
25	Stefan Blommaert
26	Ters Conradie
27	Rene Spies (Representing the Jamestown Ratepayers Association)
28	Rene Spies
29	Wilbar Robberts

Annexure C - Comments received from External Departments

In diversity there is beauty and
there is strength.

MAYA ANGELOU

Document Prepared by:

Zutari (Pty) Ltd
Reg No 1977/003711/07
264 Main Street
Paarl
South Africa

T +27 21 860 2200
F +27 21 860 2222
E paarl@zutari.com
W zutari.com

enter text., Revision 1, Date 2023/07/28



ANNEXURE G: OBJECTIONS, & RESPONSE TO OBJECTIONS FROM APPLICANT

OBJECTION TO REZONING OF Farm 527/7, Stellenbosch (LU/15064)**TO:****Stellenbosch Municipality****Mr Lester van Stavel**

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: lester.vanstavel@stellenbosch.gov.za

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: rudolf.schroder@zutari.com

FROM:

Name: Althea Pietersen

RSA ID or Passport Number: 6308100158089

Jamestown Address: 16 Everbearing Street, Jamestown, Stellenbosch

Erf Number: 408

SUBJECT:

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

DATE: 01 February 2023

~~~~~

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. We require that this land remain agricultural to protect the close-knit rural community of Jamestown and that the land is better purposed to protect our heritage. To rezone this land from rural to residential would mean stripping our community of our rural identity.
2. The Jamestown community does not require, nor have enough numbers of residents to utilize such a large development and it could be better purposed as agricultural land, to empower the Jamestown landowners and farmers, whose heritage is built on agriculture - especially strawberry farming.
3. We desire that this land be made available to the many BBEEE Jamestown farmers, who currently have to travel far to access agricultural property to plant crops. There are limited agricultural plots available in Stellenbosch and we have several local Jamestown farmers in desperate need of land for farming.
4. Jamestown's rich history includes farmers like the Denyssen, Meyers, Williams, Isaacs, and many others who farmed in the Valley", an area which included the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.
5. Our local High School, Stellenzicht, also implements Agriculture as a subject, and portions of this land would be ideal for the students for practical purposes and also for the new emerging farmers.

6. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters, considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.
7. Webersvalley Road is congested and has become dangerous for its residents. We have daycare facilities running adjacent to it, children crossing the streets, and a daily increase of noisy, racing cars. The noise nuisance for adjacent residents is unbearable. We do not have the infrastructure available to accommodate any further developments.
8. The community cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
9. The homeowners on Ostara Avenue have been living here for over 40 years. We **vehemently** oppose any taxi rank. The impact on our homes and privacy will be completely overruled and disregarded, not only with the construction phase but with the value of the property post-completion and with a taxi rank beyond our boundary wall. This is unacceptable and a total disregard for the rights of the residents.
10. Skool Street leading to the development is a dirt road and cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.
11. During the **Mayoral Committee meeting (minutes 2017.01.18)** it was stated that " The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
12. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to further marginalization of Stellenbosch's poorest, and thus an increase in crime in the area including Paradyskloof, farms, and Jamestown all of which has started to destroy the fabric of the Historic Mission Village heritage of Jamestown.
13. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
14. The Stellenbosch Municipality has undermined and disregarded the Jamestown community. Not only by using the current FARM 527 site as their illegal "emergency housing area", destroying the fabric and harmony of our community but by now trying to strip away at our rural character and heritage.
15. Finally, Stellenrust is a proudly Stellenbosch BBEEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2<sup>nd</sup> and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage but also hundreds of livelihoods. If a portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown heritage, or even better reassigned to the original farmers.

Signed:



Althea Claudine Pietersen

01/02/2023.

**OBJECTION**

To: Mr Lester van Stavel  
 Manager: Housing Development - Integrated Human Settlements  
 Stellenbosch Municipality  
 Email: lester.vanstavel@stellenbosch.gov.za

Mr Rudolf Schröder  
 Zutari (Pty) Ltd  
 Email: rudolf.schroder@zutari.com

From: Name: Anthony Haralambous

RSA ID or Passport Number: 940627521603

Jamestown Address: 46 Aan de Weber estate, Jamestown, Stellenbosch

Erf Number: 46

Subject: Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

Date: 5 February 2023

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. Safety. Increased traffic into blind corner on R44 already dangerous
2. Loss of Stellenrust to Golden Triangle, with attendant job losses, loss of export revenue
3. Impact on safety and security on Jamestown, neighbouring SA 'first-growth' wineries
4. Increase in traffic on Blaauklippen ring road
5. if the area is rezoned, in an emergency, the SBM may house displaced families in temporary accommodation, which ends up in a permanent 'noodhuise' camp
6. Jamestown people will not be guaranteed accommodation - municipal lists are not trusted

Signed: \_\_\_\_\_

*Julianne*



**To: STELENBOSCH MUNICIPALITY**

**03 FEBRUARY 2023**

**MANAGER: HOUSING DEVELOPMENT – INTEGRATED HUMAN SETTLEMENTS  
STELLENBOSCH MUNICIPALITY**

**ATT: MR. LESTER VAN STAVEL**

[Lester.vanstavel@ Stellenbosch.gov.za](mailto:Lester.vanstavel@ Stellenbosch.gov.za)

**Copy: MR. RUDOLF SCHRODER**

**ZUTARI (Pty) Ltd**

[Rudolf.schroder@zutari.com](mailto:Rudolf.schroder@zutari.com)

**From: MR. ANTON VAN GASS**

**44 WATERGANG STR, AAN DE WEBER ESTATE, JAMESTOWN, STELENBOSCH**

[anton@stabilidcape.co.za](mailto:anton@stabilidcape.co.za)

**OBJECTION TO THE REZONING OF THE REMAINDER OF PORTION 7 OF THE FARM 527,  
STELLENBOSCH, FROM AGRICULTURE AND RURAL ZONE TO A SUBDIVISIONAL AREA IN  
ORDER TO ALLOW FOR THE DEVELOPMENT OF A NEW SITE AND SERVICES.**

Dear Sir,

I, Anton Phillip van Gass, ID 7008255077089, do hereby object to the rezoning and development of aforementioned property for the following reasons,

1. Jamestown' existing stormwater, sewer and water infrastructures are limited and, without any further upgrades, cannot accommodate any further developments.
2. Jamestown' existing public services ie. public transport, clinic, library and schools are at capacity and cannot accommodate any further scholars or clients.
3. There is only one access road from the R44 into Jamestown which is already congested with traffic.
4. I am of the view that alternative sites which are more suitable to this development should be considered.
5. Jamestown has a rich farming history which is core to Stellenbosch' character. Farm land should never be rezoned and developed to accommodate a growing community. Stellenbosch Municipality must look at alternative options to resolve this concern.
6. All farmworkers currently employed on the Stellenrust farm will lose their jobs, not only affecting the workers but also the families that they provide for.
7. This land must remain rural at all costs to ensure the livelihoods of all farmworkers and to protect the farming communities heritage.

Thank you for considering this objection.

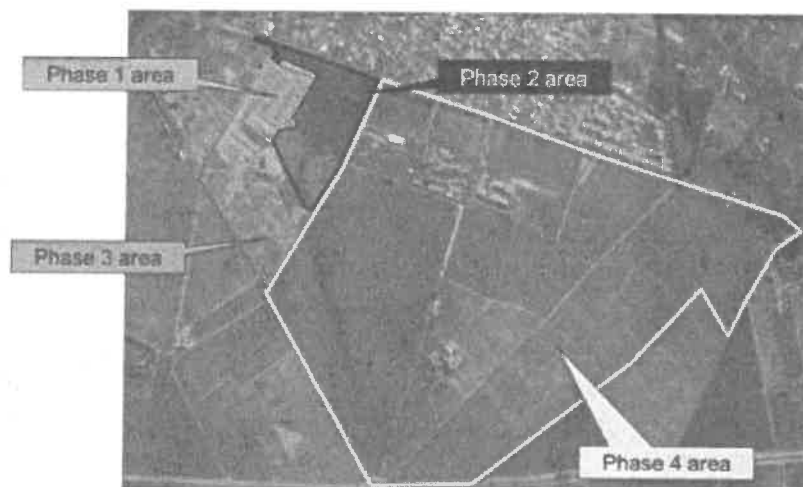


AP van Gass

0716797971

**Figure 4: Regional Locality**

The project site is located in the southern portion of Jamestown. The site is bordered by Jamestown residential to the north, Stellensicht Secondary school to the east and Stellenrust Wine Estate to the South.



Document number 1002169PH2\_3, Revision 2, Date 2023/01/12

**OBJECTION TO REZONING OF Farm 527/7, Stellenbosch ( LU/15064)****TO:****Stellenbosch Municipality****Mr Lester van Stavel**

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: [lester.vanstavel@stellenbosch.gov.za](mailto:lester.vanstavel@stellenbosch.gov.za)**Mr Rudolf Schröder**

Zutari (Pty) Ltd

Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)**FROM:**

Name: C.J February

RSA ID or Passport Number: 7411085121087

Jamestown Address: Plot 510 / 206, Webersvalley road, Jamestown, Stellenbosch

Erf Number: 510 / 206

**SUBJECT:**

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

**DATE:**

02 January 2023

~~~~~

I, THE ABOVE NAMED, DO HEREBY STRONGLY OBJECT TO THE REZONING AND DEVELOPMENT OF THE REMAINDER OF PORTION 7 OF FARM 527, AND TO ANY CONTEMPLATED FURTHER DEVELOPMENT OF FARM 527, FOR THE FOLLOWING REASONS:

1. We require that this land remain agricultural to protect the close knit rural community of Jamestown and that the land is better purposed to protect our heritage. To rezone this land from rural to residential would mean stripping our community of our rural identity.
2. The Jamestown community does not require, nor have enough numbers of residents to utilize such a large development and it could be better purposed as agricultural land, to empower the Jamestown landowners and farmers, whose heritage is built on agriculture - especially strawberry farming.
3. We desire that this land be made available to the many B-BBEE Jamestown farmers, who currently have to travel far to access agricultural property to plant crops. There are limited agricultural plots available in Stellenbosch and we have several local Jamestown farmers from a previously disadvantaged community in desperate need of land for farming.
4. Jamestown's rich history includes farmers like the Denyssen, Meyers, Williams, Isaacs, and many others who farmed in the Valley", an area which included the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce until it was taken away from them during the apartheid era and leased to a white farmer. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes to rectify the wrongs of the past.
5. During the development stages of the residential area between Webersvalley road and the so called Valley-Road, also known as "Skoolstraat" in Jamestown during the late 1980's private property

owners had to give a portion of their private owned plots without compensation for the establishment of the current streets and infrastructure. They also had to pay an additional Endowment fee (Begiftigingsfooi) of up to 30% the value of the plots to the Winelands District Municipality at the time, used for development and infrastructure of Jamestown. Unlike other surrounding towns and villages in Stellenbosch district where the Municipality were responsible for infrastructure, the Jamestown private landowners had therefor pay for development, upgrading and progress of Jamestown themselves through the Endowment Fee (Begiftigingsfooi) system and portions of their property being used for road and infra structure without compensation. With this in mind we strongly oppose this development and the possible use of our roads and infrastructure which is not designed for this type of major development, twice the size of Jamestown. During 2022 and further back in 2012 Stellenbosch Municipality, without proper consultation or research adjusted their policies and Revaluated our agricultural plots to Residential property, knowing the sensitivity towards our town and valley's Agricultural and Rural characteristics.

6. We strongly object to the overwhelming rate at which Gentrification and urbanization are destroying the once unique rural characteristics of this beautiful valley. If Gentrification continues at the current overwhelming rate, Jamestown will no longer have the same rural town character that many property owners once investing in. This rural characteristic is something Stellenbosch Municipality should be proud of and enhance and support. This is one of the reasons why so many private property owners and funders have invested in small-scale, sustainable farming projects. At the same time, the long-standing, previously disadvantaged brown farmers, who previously farmed on significant parts of farm 527/7 until replaced by white farmers during the Apartheid era will also be forced to stop with our small sustainable farming projects which is supported and encouraged by the Department of Agriculture, Western Cape Government. With the already high number of upmarket high density developments in and around Jamestown the past twenty years and especially the last few years we as community have noticed a significant increase in property valuations and associated increased Municipal Rates and Taxes. This big scale development is also leading to a significant number of property owners being forced to sell, and also losing their property in order to find a more affordable area to relocate to at the same time we saw a significant influx of middleclass and more affluent property owners. At the same time, we are also noticing an alarming increase rate of crime and even violent crimes and murders in the valley lately.
7. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well as pending future developments, including the "The James" development. Furthermore, the community will definitely object to any future plans for the previously proposed "Eastern link Road" through Pajaro Rd and the agricultural plots and crossing Blaauwklippen River connection or any similar future proposals.
8. Webersvalley road is congested and has become dangerous for its residents. We have daycare facilities running adjacent to it, children crossing the streets, and a daily increase of noisy, racing cars. The noise nuisance for adjacent residents is unbearable. We do not have the infrastructure available to accommodate any further developments.
9. The community cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
10. The homeowners on Ostara Avenue have been living here for over 40 years. We vehemently oppose any taxi rank. The impact on our homes and privacy will be completely overruled and disregarded, not only with the construction phase but with the value of the property post-completion and with a taxi rank beyond our boundary wall. This is unacceptable and a total disregard for the rights of the residents.

11. Skool street leading to the development is a dirt road and cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.
12. During the **Mayoral Committee meeting (minutes 2017.01.18)** it was stated that " The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
13. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to further marginalization of Stellenbosch's poorest, and thus an increase in crime in the area including Paradyskloof, farms, and Jamestown all of which has started to destroy the fabric of the Historic Mission-based Village heritage of Jamestown.
14. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project for the broader needs. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
15. The Stellenbosch Municipality has undermined and disregarded the Jamestown community. Not only by using the current FARM 527 site as their illegal "emergency housing area", destroying the fabric and harmony of our community but by now trying to strip away at our rural character and heritage.
16. Finally, Stellenrust is as a proudly Stellenbosch B-BBEE International Award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

Signed:



Chrisben John February

Contact: 083 406 1102

Email: chrisbenjf@hotmail.com

OBJECTION TO REZONING OF Farm 527/7, Stellenbosch (LU/15064)**TO:****Stellenbosch Municipality****Mr Lester van Stavel**

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: lester.vanstavel@stellenbosch.gov.za

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: rudolf.schroder@zutari.com

FROM:

Name: Deborah Davidse

RSA ID or Passport Number: 6306040219086

Jamestown Address: 39 Webersvalley Road, Jamestown, 7600

Erf Number: 199

SUBJECT:

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

DATE: 31.01.2023

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. We require that this land remain agricultural to protect the close knit rural community of Jamestown and that the land is better purposed to protect our heritage. To rezone this land from rural to residential would mean stripping our community of our rural identity.
2. The Jamestown community does not require, nor have enough numbers of residents to utilize such a large development and it could be better purposed as agricultural land, to empower the Jamestown landowners and farmers, whose heritage is built on agriculture - especially strawberry farming.
3. We desire that this land be made available to the many BBEEE Jamestown farmers, who currently have to travel far to access agricultural property to plant crops. There are limited agricultural plots available in Stellenbosch and we have several local Jamestown farmers in desperate need of land for farming.
4. Jamestown's rich history includes farmers like the Denyssen, Meyers, Williams, Isaacs, and many others who farmed in the Valley", an area which included the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.
5. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well (which already is becoming a problem for everyone with the constant traffic in and out of Webersvalley Road), we are

currently unable to use the road properly because of building/construction vehicles and other vehicles blocking our way.

6. Webersvalley road is congested and has become dangerous for its residents. We have daycare facilities running adjacent to it, children crossing the streets, and a daily increase of noisy, racing cars. The noise nuisance for adjacent residents is unbearable. We do not have the infrastructure available to accommodate any further developments.
7. The community cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
8. The homeowners on Ostara Avenue have been living here for over 40 years. We vehemently oppose any taxi rank. The impact on our homes and privacy will be completely overruled and disregarded, not only with the construction phase but with the value of the property post-completion and with a taxi rank beyond our boundary wall. This is unacceptable and a total disregard for the rights of the residents.
9. Skool street leading to the development is a dirt road and cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.
10. During the **Mayoral Committee meeting (minutes 2017.01.18)** it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
11. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to further marginalization of Stellenbosch's poorest, and thus an increase in crime in the area including Paradyskloof, farms, and Jamestown all of which has started to destroy the fabric of the Historic Mission Village heritage of Jamestown.
12. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
13. The Stellenbosch Municipality has undermined and disregarded the Jamestown community. Not only by using the current FARM 527 site as their illegal "emergency housing area", destroying the fabric and harmony of our community but by now trying to strip away at our rural character and heritage. Thanks to the Stellenbosch Municipality's blatant disregard of our Jamestown community, we do not enjoy the simple pleasures of safety & open space because Jamestown has become a dumping ground for those being removed from their current homes/living spaces and being dumped in Jamestown whilst our own residents who have been waiting for homes still do not have a roof of their own over their heads.
14. Finally, Stellenrust is as a proudly Stellenbosch BBEEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

Signed:

Davidse *Davidse*
D. J. DAVIDSE J. G. DAVIDSE

To: Stellenbosch Municipality

Mr Lester van Stavel

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: lester.vanstavel@stellenbosch.gov.za

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: rudolf.schroder@zutari.com

FROM:

Name: **Dora Brocchetto**

RSA ID : 7107110375082

Jamestown Address: 81 WATERGANG STREET , AAN DE WEBER , JAMESTOWN

Erf Number: 952

SUBJECT:

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.

2. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.
3. Webersvalley road is already congested and has become dangerous for its residents.
4. Blaauwklippen road will become packed with taxi bussed and pedestrians.
5. Jamestown do not have the infrastructure available to accommodate any further developments.
6. Jamestown cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
7. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
8. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to an increase in crime in the area including Paradyskloof, farms, and Jamestown .
9. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
10. Finally, Stellenrust is as a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

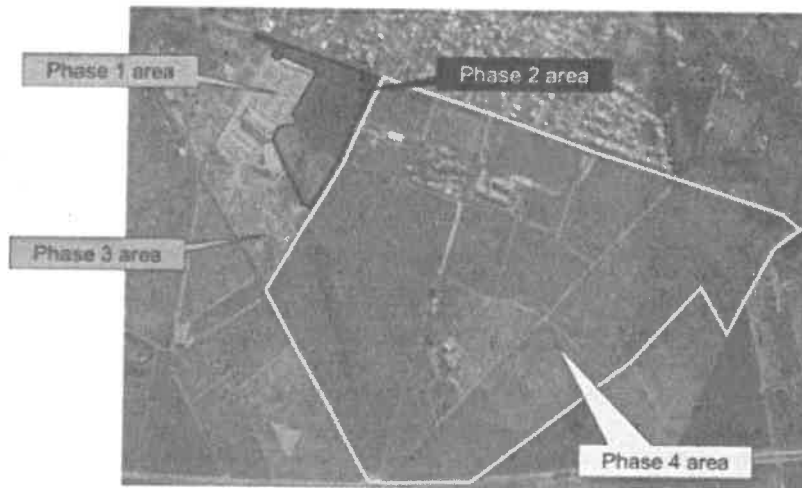
Thank you.



PROPOSED EVENTUAL DEVELOPMENT

Figure 4: Regional Locality

The project site is located in the southern portion of Jamestown. The site is boarded by Jamestown residential to the north, Stellensizht Secondary school to the east and Stellenrust Wine Estate to the South.



Document number 1002169PH2_3, Revision 2, Date 2023/01/12

To: Stellenbosch Municipality

Mr Lester van Stavel

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: lester.vanstavel@ Stellenbosch.gov.za

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: rudolf.schroder@zutari.com

FROM:

Name: **Erna Mouton**

RSA ID : 6512060171087

Jamestown Address: 52 WATERGANG STREET , AAN DE WEBER , JAMESTOWN

Erf Number:851

SUBJECT:

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "sub divisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.

2. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.
3. Webersvalley road is already congested and has become dangerous for its residents.
4. Blaauwklippen road will become packed with taxi bussed and pedestrians.
5. Jamestown do not have the infrastructure available to accommodate any further developments.
6. Jamestown cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
7. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
8. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to an increase in crime in the area including Paradyskloof, farms, and Jamestown .
9. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project..
10. Stellenrust is as a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

Thank you.

OBJECTION TO REZONING OF Farm 527/7, Stellenbosch (LU/15064)**TO:****Stellenbosch Municipality****Mr Lester van Stavel**Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality
Email: lester.vanstavel@stellenbosch.gov.za**Mr Rudolf Schröder**Zutari (Pty) Ltd
Email: rudolf.schroder@zutari.com**FROM:**

Name: Gerado Williams

RSA ID: 6510175147083

Jamestown Address: 2 Everbearing Street, Jamestown, Stellenbosch

Erf Number: JT403

SUBJECT:

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

DATE: 31 January 2023

~~~~~

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

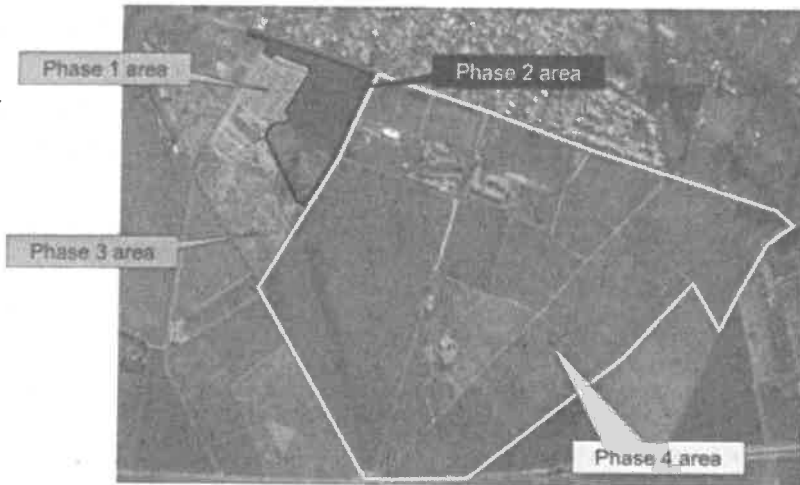
1. We require that this land remain agricultural to protect the close knit rural community of Jamestown and that the land is better purposed to protect our heritage. To rezone this land from rural to residential would mean stripping our community of our rural identity.
2. The Jamestown community does not require, nor have enough numbers of residents to utilize such a large development and it could be better purposed as agricultural land, to empower the Jamestown landowners and farmers, whose heritage is built on agriculture - especially strawberry farming.
3. We desire that this land be made available to the many BBEEE Jamestown farmers, who currently have to travel far to access agricultural property to plant crops. There are limited agricultural plots available in Stellenbosch and we have several local Jamestown farmers in desperate need of land for farming.
4. Jamestown's rich history includes farmers like the Denyssen, Meyers, Williams, Isaacs, and many others who farmed in the Valley", an area which included the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.
5. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.

6. Webersvalley road is congested and has become dangerous for its residents. We have daycare facilities running adjacent to it, children crossing the streets, and a daily increase of noisy, racing cars. The noise nuisance for adjacent residents is unbearable. We do not have the infrastructure available to accommodate any further developments.
7. The community cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
8. The homeowners on Ostara Avenue have been living here for over 40 years. We vehemently oppose any taxi rank. The impact on our homes and privacy will be completely overruled and disregarded, not only with the construction phase but with the value of the property post-completion and with a taxi rank beyond our boundary wall. This is unacceptable and a total disregard for the rights of the residents.
9. Skool street leading to the development is a dirt road and cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.
10. During the **Mayoral Committee meeting (minutes 2017.01.18)** it was stated that " The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
11. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to further marginalization of Stellenbosch's poorest, and thus an increase in crime in the area including Paradyskloof, farms, and Jamestown all of which has started to destroy the fabric of the Historic Mission Village heritage of Jamestown.
12. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
13. The Stellenbosch Municipality has undermined and disregarded the Jamestown community. Not only by using the current FARM 527 site as their illegal "emergency housing area", destroying the fabric and harmony of our community but by now trying to strip away at our rural character and heritage.
14. Finally, Stellenrust is as a proudly Stellenbosch BBEEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2<sup>nd</sup> and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown heritage, or even better reassigned to the original farmers.

Signed:

**Figure 4: Regional Locality**

The project site is located in the southern portion of Jamestown. The site is boarded by Jamestown residential to the north, Stellerszicht Secondary school to the east and Stellenrust Wine Estate to the South.



Document number 1002166PH2\_3, Revision 2, Date 2023/01/12

12

**From:**

LG NEETHLING

ID 8312195271086

Jamestown, Watergangstr.89, Aan de Weber

ERF 914

**For Attention:**

Stellenbosch Municipality (Lester van Stavel & Bongiwe Zondo)

Please find attached and below my official objection to the proposed developments Phase 2,3 & 4 of the 'Jamestown Integrated Development'.

Having grown up in Stellenbosch and attended both primary and high school here, it has been a sad sight to see the steady decline in Image & Heritage of this beautiful town.

Whilst private individuals and companies do whatever they can to preserve 'what makes Stellenbosch, Stellenbosch' it is shocking to come to light of the Municipality's plans for development on one of the most serene and beautiful landscapes in Stellenbosch.

You cannot one day wear your *Pro Wine Industry & Tourism* hat and the next day throw it in the bin.

**Below my comments, concerns, and objections:**

1. With increased crime in Jamestown after the arrival of 'Phase 1' it is clear that the municipality cannot manage a development of this size
2. There has been a spike in violent attacks on cyclist and joggers on the R44 next to the cemetery, one being an International World Champion Triathlete that was attacked with a Machete (the attacker ran off into 'Phase1') The bad press that Stellenbosch got after this, cannot be undone.

3. The amount / size of what is proposed in the allocated space makes a safe & healthy community basically impossible.
4. The roads in and out of Jamestown is already a mess, one can only look at 7am traffic or in the event of a funeral see the backlog of cars trying to get in and out of Jamestown – has provision been made for all of the extra traffic?
5. Is there any further infrastructure planned for the influx of people? Jamestown's 1 clinic cannot service the existing residents.
6. Is there plan for additional security? A Police station? Any more schools and pre-schools being built, to prevent the increase of children NOT going to school, that are seen during the day wandering the streets of Jamestown.
7. What alternative access roads are being planned besides the existing R44/ Ce Clemence?
8. The entrance at Stellenrust road is on a blind corner and very dangerous, you will recall a fatal accident a few weeks ago
9. Jamestown is slowly losing its heritage and rich history – the land proposed could be better purposed as agricultural land to empower the Jamestown landowners and farmers.
10. To rezone the land would mean stripping the community of their rural identity.
11. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question.
12. Webersvalley road (a community road with residents walking and playing on it) is already congested and has become dangerous for its residents.
13. Jamestown certainly does not have the infrastructure available to accommodate any further developments. The current facilities are not and were not designed to include all the additional intended occupants.
14. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that " The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
15. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to an increase in crime in the area including Paradyskloof, farms, and Jamestown.
16. Finally, Stellenrust is as a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates numerous job opportunities.  
They have 2nd and going on third generation workers and residents of Jamestown and Stellenbosch employed on the proposed Phase 4 land.  
This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

Kindly confirm receipt of e-mail

Thanks,  
L.G. Neethling



**OBJECTION TO REZONING OF Farm 527/7, Stellenbosch ( LU/15064)****TO:****Stellenbosch Municipality****Mr Lester van Stavel**

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: lester.vanstavel@stellenbosch.gov.za

**Mr Rudolf Schröder**

Zutari (Pty) Ltd

Email: rudolf.schroder@zutari.com

**FROM:**

Name: Grant Gideons

RSA ID or Passport Number: 8104155187083

Jamestown Address: 55 Parfaite Street

Erf Number: 449

**SUBJECT:**

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "sub divisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

**DATE: 05 February 2023**

I, the above named, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. We require that this land remain agricultural to protect the close knit rural community of Jamestown and that the land is better purposed to protect our heritage. To rezone this land from rural to residential would mean stripping our community of our rural identity.
2. The Jamestown community does not require, nor have enough numbers of residents to utilize such a large development and it could be better purposed as agricultural land, to empower the Jamestown landowners and farmers, whose heritage is built on agriculture - especially strawberry farming.
3. We desire that this land be made available to the many BBEEE Jamestown farmers, who currently have to travel far to access agricultural property to plant crops. There are limited agricultural plots available in Stellenbosch and we have several local Jamestown farmers in desperate need of land for farming.
4. Jamestown's rich history includes farmers like the Denyssen, Meyers, Williams, Isaacs, and many others who farmed in the Valley", an area which included the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.
5. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.

6. Webersvalley road is congested and has become dangerous for its residents. We have daycare facilities running adjacent to it, children crossing the streets, and a daily increase of noisy, racing cars. The noise nuisance for adjacent residents is unbearable. We do not have the infrastructure available to accommodate any further developments.
7. The community cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
8. The homeowners on Ostara Avenue have been living here for over 40 years. We vehemently oppose any taxi rank. The impact on our homes and privacy will be completely overruled and disregarded, not only with the construction phase but with the value of the property post-completion and with a taxi rank beyond our boundary wall. This is unacceptable and a total disregard for the rights of the residents.
9. Skool street leading to the development is a dirt road and cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.
10. During the **Mayoral Committee meeting (minutes 2017.01.18)** it was stated that " The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
11. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to further marginalization of Stellenbosch's poorest, and thus an increase in crime in the area including Paradyskloof, farms, and Jamestown all of which has started to destroy the fabric of the Historic Mission Village heritage of Jamestown.
12. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
13. The Stellenbosch Municipality has undermined and disregarded the Jamestown community. Not only by using the current FARM 527 site as their illegal "emergency housing area", destroying the fabric and harmony of our community but by now trying to strip away at our rural character and heritage.
14. Finally, Stellenrust is as a proudly Stellenbosch BBE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2<sup>nd</sup> and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown heritage, or even better reassigned to the original farmers.

Signed: Grant Gideons

**To: Stellenbosch Municipality**

**Mr Lester van Stavel**

**Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality**

Email: [lester.vanstavel@stellenbosch.gov.za](mailto:lester.vanstavel@stellenbosch.gov.za)

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)

**FROM:**

**Name: IM LANGHOUT (Ilse)**

**RSA ID : 7808040020082**

**Jamestown Address: 50 WATERGANG STREET , AAN DE WEBER , JAMESTOWN**

**Erf Number:853**

**SUBJECT:**

**Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.**

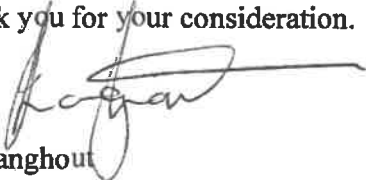
**I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:**

1. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today, with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.
2. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters

considering we already have Stellenbosch Square, La Clemence and Aan-de-Weber and will soon have Blaauwklip-aan-Rivier as well.

3. Webersvalley Road is already congested and has become dangerous for its residents.
4. Blaauwklippen Road will become packed with taxi's, busses and pedestrians.
5. Jamestown do not have the infrastructure available to accommodate any further developments.
6. Jamestown cannot take more pressure on the existing public services in Jamestown itself, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended residents. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
7. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
8. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to an increase in crime in the area including Paradyskloof, surrounding farms, and Jamestown .
9. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch Municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
10. Finally, Stellenrust is a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates +/- 250 jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

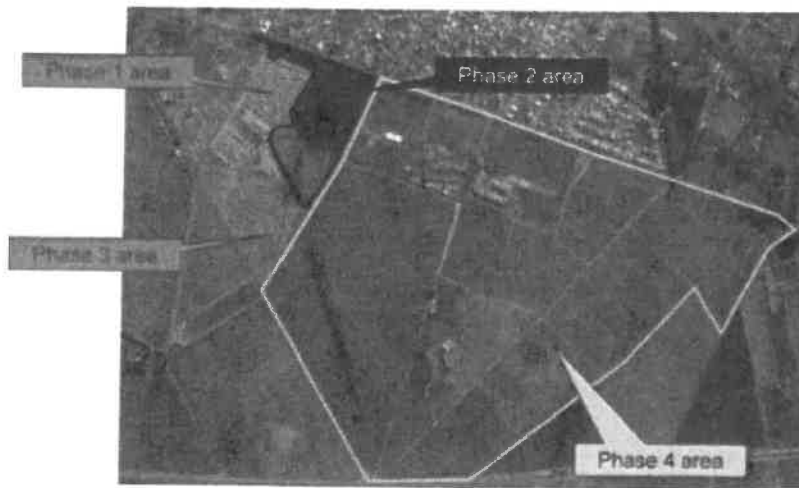
Thank you for your consideration.

  
IM Langhout  
ilse@adven.co.za

## PROPOSED EVENTUAL DEVELOPMENT

**Figure 4: Regional Locality**

The project site is located in the southern portion of Jamestown. The site is bordered by Jamestown residential to the north, Stellenzicht Secondary school to the east and Stellenrust Wine Estate to the South.



Document number 1002169PH2\_3, Revision 2, Date 2023/01/12

**OBJECTION TO REZONING OF REMAINDER Farm 527, Stellenbosch ( LU/15064)****TO:****Stellenbosch Municipality****Mr Lester van Stavel**

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: [lester.vanstavel@stellenbosch.gov.za](mailto:lester.vanstavel@stellenbosch.gov.za) **Nolusindiso Momoti**, email: [nolusindiso.Momoti@stellenbosch.gov.za](mailto:nolusindiso.Momoti@stellenbosch.gov.za) **Mr Rudolf Schröder**, Zutari (Pty) Ltd Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)**FROM:**

Name: James F Keen

RSA ID or Passport Number: 4912205035084

Jamestown Address: 114 Webersvallei Rd

Erf Number: Portion 207 (a portion of portion 20) of the Farm Blaauw Klip Number 510**SUBJECT:****Rezoning of the Remainder of of the Farm 527, Stellenbosch, from Agriculture and Rural Zone.****DATE: 03 FEB 2023**

~~~~~

I, the abovenamed, do hereby object to the rezoning and development of the **Remainder of Farm 527 (PHASE 4)**, and to any contemplated further development of Farm 527, for the following reasons:

1. We, as Jamestown residents require that this land remain agricultural to protect the close knit rural community of Jamestown and that the land is better purposed to protect our heritage. To rezone this land from rural to residential would mean stripping our community of our rural identity.
2. The Jamestown community does not require, nor have enough numbers of residents to utilize such a large development. We need job creation and this land could be better purposed as agricultural land, to empower the Jamestown landowners and farmers, whose heritage is built on agriculture - especially strawberry farming.
3. We desire that this land be made available to the many B-BBEE Jamestown farmers, who currently have to travel far to access agricultural property to plant crops. There are limited agricultural plots available in Stellenbosch and we have several local Jamestown farmers in desperate need of land for farming.
4. Jamestown's rich history includes farmers like the Denyssen, Meyers, Williams, Isaacs, and many others who farmed in the Valley", an area which included the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.
5. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.
6. Webersvalley road is congested and has become dangerous for its residents. We have daycare facilities running adjacent to it, children crossing the streets, and a daily increase of noisy, racing cars. The noise nuisance for adjacent residents is unbearable. We do not have the infrastructure available to accommodate any further developments.



7. The community cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
8. The homeowners on Ostara Avenue have been living here for over 40 years. We vehemently oppose any taxi rank. The impact on our homes and privacy will be completely overruled and disregarded, not only with the construction phase but with the value of the property post-completion and with a taxi rank beyond our boundary wall. This is unacceptable and a total disregard for the rights of the residents.
9. Skool street leading to the development is a dirt road and cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.
10. During the **Mayoral Committee meeting (minutes 2017.01.18)** it was stated that " The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
11. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to further marginalization of Stellenbosch's poorest, and thus an increase in crime in the area including Paradyskloof, farms, and Jamestown all of which has started to destroy the fabric of the Historic Mission Village heritage of Jamestown.
12. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
13. The Stellenbosch Municipality has undermined and disregarded the Jamestown community. Not only by using the current FARM 527 site as their illegal "emergency housing area", destroying the fabric and harmony of our community but by now trying to strip away at our rural character and heritage.
14. Finally, Stellenrust is as a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods of hundreds. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage. We cannot rob residents of much-needed jobs.

Signed:



5 February 2023

James F Keen

OBJECTION TO REZONING OF Farm 527/7, Stellenbosch (LU/15064)**TO:****Stellenbosch Municipality****Mr Lester van Stavel**Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality
Email: lester.vanstavel@stellenbosch.gov.za**Mr Rudolf Schröder**Zutari (Pty) Ltd
Email: rudolf.schroder@zutari.com**FROM:**

Name: Jamestown Heritage (Represented by C.J. February)

RSA ID or-Passport Number: 7411085121087

Jamestown Address: Plot 510 / 206, Webersvalley Road, Jamestown

Erf Number: 510/206

SUBJECT:

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

DATE:02 January 2023
~~~~~**I, THE ABOVE NAMED, DO HEREBY STRONGLY OBJECT TO THE REZONING AND DEVELOPMENT OF THE REMAINDER OF PORTION 7 OF FARM 527, AND TO ANY CONTEMPLATED FURTHER DEVELOPMENT OF FARM 527, FOR THE FOLLOWING REASONS:**

1. We require that this land remain agricultural to protect the close knit rural community of Jamestown and that the land is better purposed to protect our heritage. To rezone this land from rural to residential would mean stripping our community of our rural identity.
2. The Jamestown community does not require, nor have enough numbers of residents to utilize such a large development and it could be better purposed as agricultural land, to empower the Jamestown landowners and farmers, whose heritage is built on agriculture - especially strawberry farming.
3. We desire that this land be made available to the many B-BBEE Jamestown farmers, who currently have to travel far to access agricultural property to plant crops. There are limited agricultural plots available in Stellenbosch and we have several local Jamestown farmers from a previously disadvantaged community in desperate need of land for farming.
4. Jamestown's rich history includes farmers like the Denyssen, Meyers, Williams, Isaacs, and many others who farmed in the Valley", an area which included the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce until it was taken away from them during the apartheid era and leased to a white farmer. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes to rectify the wrongs of the past.
5. During the development stages of the residential area between Webersvalley road and the so called Valley-Road, also known as "Skoolstraat" in Jamestown during the late 1980's private property



owners had to give a portion of their private owned plots without compensation for the establishment of the current streets and infrastructure. They also had to pay an additional Endowment fee (Begiftigingsfooi) of up to 30% the value of the plots to the Winelands District Municipality at the time, used for development and infrastructure of Jamestown. Unlike other surrounding towns and villages in Stellenbosch district where the Municipality were responsible for infrastructure, the Jamestown private landowners had therefor pay for development, upgrading and progress of Jamestown themselves through the Endowment Fee (Begiftigingsfooi) system and portions of their property being used for road and infra structure without compensation. With this in mind we strongly oppose this development and the possible use of our roads and infrastructure which is not designed for this type of major development, twice the size of Jamestown. During 2022 and further back in 2012 Stellenbosch Municipality, without proper consultation or research adjusted their policies and Révaluated our agricultural plots to Residential property, knowing the sensitivity towards our town and valley's Agricultural and Rural characteristics.

6. We strongly object to the overwhelming rate at which Gentrification and urbanization are destroying the once unique rural characteristics of this beautiful valley. If Gentrification continues at the current overwhelming rate, Jamestown will no longer have the same rural town character that many property owners once investing in. This rural characteristic is something Stellenbosch Municipality should be proud of and enhance and support. This is one of the reasons why so many private property owners and funders have invested in small-scale, sustainable farming projects. At the same time, the long-standing, previously disadvantaged brown farmers, who previously farmed on significant parts of farm 527/7 until replaced by white farmers during the Apartheid era will also be forced to stop with our small sustainable farming projects which is supported and encouraged by the Department of Agriculture, Western Cape Government. With the already high number of upmarket high density developments in and around Jamestown the past twenty years and especially the last few years we as community have noticed a significant increase in property valuations and associated increased Municipal Rates and Taxes. This big scale development is also leading to a significant number of property owners being forced to sell, and also losing their property in order to find a more affordable area to relocate to at the same time we saw a significant influx of middleclass and more affluent property owners. At the same time, we are also noticing an alarming increase rate of crime and even violent crimes and murders in the valley lately.
7. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well as pending future developments, including the "The James" development. Furthermore, the community will definitely object to any future plans for the previously proposed "Eastern link Road" through Pajaro Rd and the agricultural plots and crossing Blaauwklippen River connection or any similar future proposals.
8. Webersvalley road is congested and has become dangerous for its residents. We have daycare facilities running adjacent to it, children crossing the streets, and a daily increase of noisy, racing cars. The noise nuisance for adjacent residents is unbearable. We do not have the infrastructure available to accommodate any further developments.
9. The community cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
10. The homeowners on Ostara Avenue have been living here for over 40 years. We vehemently oppose any taxi rank. The impact on our homes and privacy will be completely overruled and disregarded, not only with the construction phase but with the value of the property post-completion and with a taxi rank beyond our boundary wall. This is unacceptable and a total disregard for the rights of the residents.

**OBJECTION TO REZONING OF Farm 527/7, Stellenbosch ( LU/15064)****TO:****Stellenbosch Municipality****Mr Lester van Stavel**

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: lester.vanstavel@stellenbosch.gov.za

**Mr Rudolf Schröder**

Zutari (Pty) Ltd

Email: rudolf.schroder@zutari.com

**FROM:**

Name: Janice Pietersen

RSA ID or Passport Number: 8011190084086

Jamestown Address: 8 Parfaite Street

Erf Number: 252

**SUBJECT:**

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

**DATE: 31 January 2023**

I, the above named, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

We require that this land remain agricultural to protect the close knit rural community of Jamestown and that the land is better purposed to protect our heritage. To rezone this land from rural to residential would mean stripping our community of our rural identity.

The Jamestown community does not require, nor have enough numbers of residents to utilize such a large development and it could be better purposed as agricultural land, to empower the Jamestown landowners and farmers, whose heritage is built on agriculture - especially strawberry farming.

We desire that this land be made available to the many BBEEE Jamestown farmers, who currently have to travel far to access agricultural property to plant crops. There are limited agricultural plots available in Stellenbosch and we have several local Jamestown farmers in desperate need of land for farming.

Jamestown's rich history includes farmers like the Denyssen, Meyers, Williams, Isaacs, and many others who farmed in the Valley", an area which included the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.

There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.

Webersvalley road is congested and has become dangerous for its residents. We have daycare facilities running adjacent to it, children crossing the streets, and a daily increase of noisy, racing cars. The noise

nuisance for adjacent residents is unbearable. We do not have the infrastructure available to accommodate any further developments.

The community cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.

The homeowners on Ostara Avenue have been living here for over 40 years. We vehemently oppose any taxi rank. The impact on our homes and privacy will be completely overruled and disregarded, not only with the construction phase but with the value of the property post-completion and with a taxi rank beyond our boundary wall. This is unacceptable and a total disregard for the rights of the residents.

Skool street leading to the development is a dirt road and cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.

During the **Mayoral Committee meeting (minutes 2017.01.18)** it was stated that " The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.

As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to further marginalization of Stellenbosch's poorest, and thus an increase in crime in the area including Paradyskloof, farms, and Jamestown all of which has started to destroy the fabric of the Historic Mission Village heritage of Jamestown.

Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.

The Stellenbosch Municipality has undermined and disregarded the Jamestown community. Not only by using the current FARM 527 site as their illegal "emergency housing area", destroying the fabric and harmony of our community but by now trying to strip away at our rural character and heritage.

Finally, Stellenrust is as a proudly Stellenbosch BBEEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2<sup>nd</sup> and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

Signed:



**Rudolf Schröder**

---

**From:** Jaen Boje <nicboje23@gmail.com>  
**Sent:** Thursday, 02 February 2023 12:59  
**To:** Bongiwe.Zondo@stellenbosch.gov.za; Lester Vanstavel; Shaun October; Mandlenkosi.Mgogoshe; Admin.Housingdevelopment; Mayor@stellenbosch.gov.za  
**Cc:** Chris Van Der Walt; Ferdie van Zyl; Rudolf Schröder; Lourens Fick  
**Subject:** Objection to the proposed Jamestown Remainder of Portion 7 of Farm 527 Rezoning and Developmen

To whom it may concern

I, Jaen Bojé, ID number 7908130122085, am a resident and owner of the property at 76 Watergang Street (Erf 903) in Jamestown.

I strongly object to the rezoning and development of the Remainder of Portion 7 of Farm 527 and to any contemplated further developmental Farm 527, for the following reasons:

1. This will cause an increase in traffic into a blind corner on the R44 which is already dangerous
2. The rezoning from agricultural land will lead to job losses
3. It will dilute the historical nature and community of the village of Jamestown
4. The past failure of allocation to housing from the municipal housing list speaks for itself and thus Jamestown people can't be guaranteed accommodation
5. The local schools in Jamestown already struggle to accommodate all the students. This will place an additional burden on the schooling resources.

Kind regards  
Jaen

**To: Stellenbosch Municipality**

**Mr Lester van Stavel**

**Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality**

Email: [lester.vanstavel@ Stellenbosch.gov.za](mailto:lester.vanstavel@ Stellenbosch.gov.za)

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)

**FROM:**

Name: **JEANINE GROENEWALD**

RSA ID : 7909160147083

Jamestown Address: 25 WATERGANG STREET, AAN DE WEBER , JAMESTOWN

Erf Number:889

**1 February 2023**

**SUBJECT:**

**Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.**

**I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:**

1. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Rezoning of this area from Agriculture and Rural zone to a subdivisional area, could and will ruin the character of this area. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should rather be used to act in the best interest of the community by uplifting and improving it through sustainable farming employment initiatives, community gardens, and feeding schemes.
2. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.

3. Webersvalley road is already congested and has become dangerous for its residents.
4. Blaauwklippen road will become packed with taxi busses and pedestrians.
5. Jamestown do not have the infrastructure available to accommodate any further developments.
6. Jamestown cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
7. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
8. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services and employment, has become a serious threat, not only to rivers and the surrounding agricultural land, but to everyone who stays in the community. It has led to an increase in crime in the area including Paradyskloof, farms, and Jamestown and this poses a huge security risk to everyone staying in the community. Considering the current happenings in the Stellenbosch community, this can merely not be ignored.
9. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
10. Finally, Stellenrust is as a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

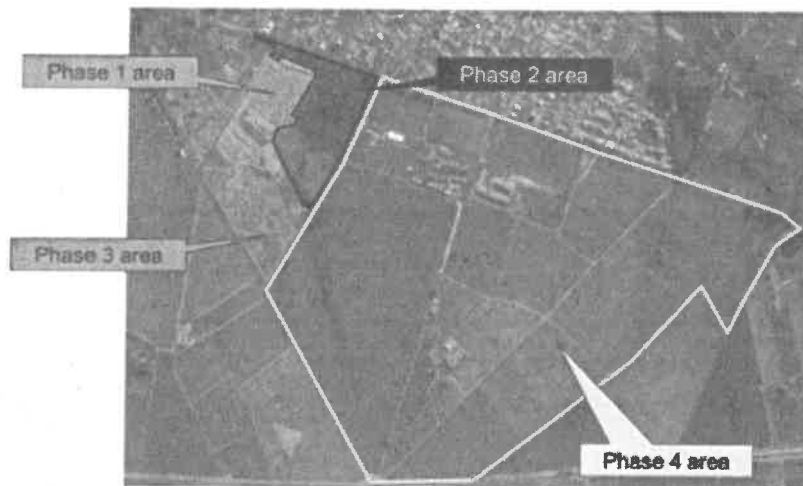
Thank you.

Greenewald

## PROPOSED EVENTUAL DEVELOPMENT

**Figure 4: Regional Locality**

The project site is located in the southern portion of Jamestown. The site is boarded by Jamestown residential to the north, Stellensizht Secondary school to the east and Stellenrust Wine Estate to the South.



Document number 1002169PH2\_3, Revision 2, Date 2023/01/12

To: Stellenbosch Municipality

**Mr Lester van Stavel**

**Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality**

Email: [lester.vanstavel@ Stellenbosch.gov.za](mailto:lester.vanstavel@ Stellenbosch.gov.za)

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)

**FROM:**

Name: **Konrad Frederik Brand**

RSA ID : 8103075078083

Jamestown Address: 48 WATERGANG STREET , AAN DE WEBER , JAMESTOWN

Erf Number:855

**SUBJECT:**

**Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.**

**I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:**

1. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.



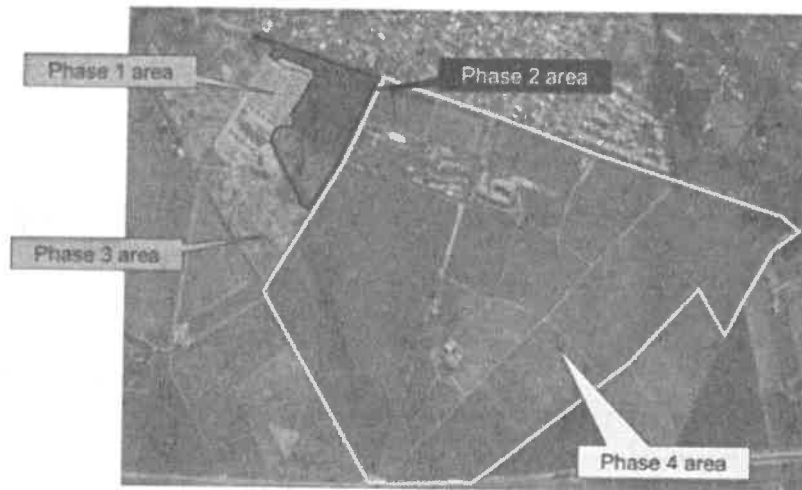
- Thank you.

14 Bre /

## PROPOSED EVENTUAL DEVELOPMENT

**Figure 4: Regional Locality**

The project site is located in the southern portion of Jamestown. The site is bordered by Jamestown residential to the north, Stellensizht Secondary school to the east and Stellenrust Wine Estate to the South.



Document number 1002169PH2\_3, Revision 2, Date 2023/01/12

## OBJECTION

To: Mr Lester van Stavel  
 Manager: Housing Development - Integrated Human Settlements  
 Stellenbosch Municipality  
 Email: lester.vanstavel@stellenbosch.gov.za

Mr Rudolf Schröder  
 Zutari (Pty) Ltd  
 Email: rudolf.schroder@zutari.com

From:

Name: Leishan-Ruth Lewis

RSA ID or Passport Number: 8208300077089

Jamestown Address: 4 Watergang, Aan De Weber  
Jamestown

Erf Number: 819

Subject: Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from  
 Agriculture and Rural Zone" to a "subdivisional area" in order to allow for  
 development of a site and services for 2-storey walk-ups, GAP housing, low and high  
 income housing and public open spaces.

Date:

1<sup>st</sup> February 2023

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion  
 7 of Farm 527, and to any contemplated further development of Farm 527, for the following  
 reasons:

1. Increased traffic on Blaauwklippen ring road, more  
accidents on R44 corner, more dangerous to cyclists & runners.
2. Will dilute Historic nature of Jamestown.
3. Vineyards are already too dangerous around Phase 1 development.  
Further phases will not be any different.
4. Stage 4 will remove the school.
5. There is no plan for further social infrastructure, creches, clinics  
police stations.
6. Strain on water and sewerage systems.

Signed: \_\_\_\_\_



To: Stellenbosch Municipality

**Mr Lester van Stavel**

**Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality**

Email: [lester.vanstavel@ Stellenbosch.gov.za](mailto:lester.vanstavel@ Stellenbosch.gov.za)

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)

**FROM:**

Name: **MARIET SMAL**

RSA ID : 5807040047089

Jamestown Address: 99 WATERGANG STREET , AAN DE WEBER , JAMESTOWN

Erf Number: 842

**SUBJECT:**

**Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.**

**I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:**

1. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.

2. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.
3. Webersvalley road is already congested and has become dangerous for its residents.
4. Blaauwklippen road will become packed with taxi busses and pedestrians.
5. Jamestown do not have the infrastructure available to accommodate any further developments.
6. Jamestown cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
7. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
8. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to an increase in crime in the area including Paradyskloof, farms, and Jamestown .
9. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
10. Finally, Stellenrust is as a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

Thank you.

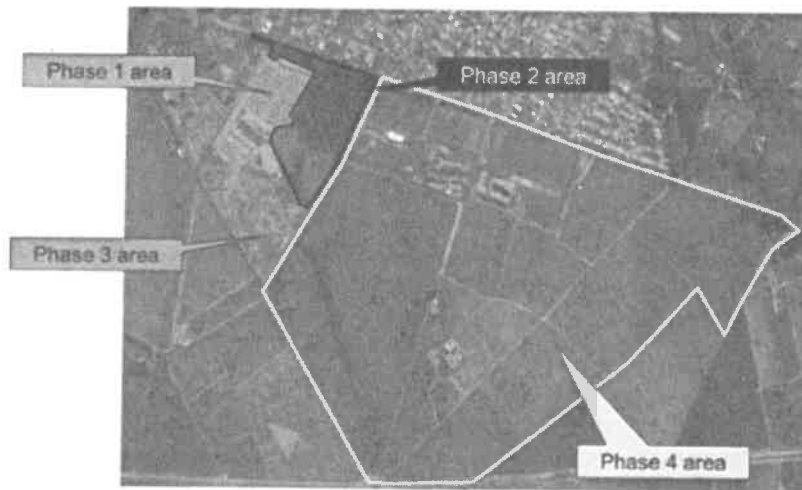


M C SMAL

## PROPOSED EVENTUAL DEVELOPMENT

**Figure 4: Regional Locality**

The project site is located in the southern portion of Jamestown. The site is boarded by Jamestown residential to the north, Stellensizht Secondary school to the east and Stellenrust Wine Estate to the South.



Document number 1002169PH2\_3, Revision 2, Date 2023/01/12

## OBJECTION

To: Mr Lester van Stavel  
 Manager: Housing Development - Integrated Human Settlements  
 Stellenbosch Municipality  
 Email: lester.vanstavel@ Stellenbosch.gov.za

Mr Rudolf Schröder  
 Zutari (Pty) Ltd  
 Email: rudolf.schroder@zutari.com

From: Name: Nicola Gillomee  
 RSA ID or Passport Number: 9404070049080  
 Jamestown Address: 46 Aan de Weber estate, Jamestown, Stellenbosch

Erf Number: 46

Subject: Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

Date: 5 February 2023

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. Safety. Increased traffic into blind corner on R44 already dangerous
2. Loss of Stellenrust to Golden Triangle, with attendant job losses, loss of export revenue
3. Impact on safety and security on Jamestown, neighbouring SA 'first-growth' wineries
4. Increase in traffic on Blaauklippen ring road
5. if the area is rezoned, in an emergency, the SBM may house displaced families in temporary accommodation, which ends up in a permanent 'noodhuise' camp
6. Jamestown people will not be guaranteed accommodation - municipal lists are not trusted

Signed: \_\_\_\_\_

*Nicola Gillomee*

**To: Stellenbosch Municipality**

**Mr Lester van Stavel**

**Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality**

Email: [lester.vanstavel@ Stellenbosch.gov.za](mailto:lester.vanstavel@ Stellenbosch.gov.za)

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)

**FROM:**

Name: **Paul Mouton**

RSA ID : 6307065130083

Jamestown Address: 52 WATERGANG STREET , AAN DE WEBER , JAMESTOWN

Erf Number:851

**SUBJECT:**

**Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "sub divisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.**

**I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:**

1. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.



2. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.
3. Webersvalley road is already congested and has become dangerous for its residents.
4. Blaauwklippen road will become packed with taxi bussed and pedestrians.
5. Jamestown do not have the infrastructure available to accommodate any further developments.
6. Jamestown cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
7. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
8. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to an increase in crime in the area including Paradyskloof, farms, and Jamestown .
9. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project..
10. Stellenrust is as a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

Thank you.

## OBJECTION

To: Mr Lester van Stavel  
 Manager: Housing Development - Integrated Human Settlements  
 Stellenbosch Municipality  
 Email: [lester.vanstavel@stellenbosch.gov.za](mailto:lester.vanstavel@stellenbosch.gov.za)

Mr Rudolf Schröder  
 Zutari (Pty) Ltd  
 Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)

From: Name: Philippa Aschmann

RSA ID or Passport Number: 8306020096080

Jamestown Address: 100 Watergang Street, Aan de Weber Estate

Erf Number: 843

Subject: Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

Date: 02/02/2023

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. Phase 1 is already not being managed - it is untidy, shabby and has brought more crime to the area
2. Impact on safety and security on Jamestown, and neighbouring houses and businesses
3. Impact the heritage and will be an eyesore in on of the most scenic routes in Stellenbosch
4. Impact of placing additional strain on water and sewerage infrastructure
5. Outsiders looking for emergency accomodation will set up camps like Kyamandi!
6. Value of housing and prestige of living in the area will diminish - municipality will get less rates and transfer fees will also fall when the housing market declines!

Signed: \_\_\_\_\_

*PA Sch*

**OBEJCTION TO: Land Use Application the Remainder of Portion 7 of the farm 527 Stellenbosch**

**TO:**

**Mr Rudolf Schröder**

Zutari (Pty) Ltd

Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)

**Nolusindiso Momoti** +2721 8088673,

[nolusindiso.momoti@stellenbosch.gov.za](mailto:nolusindiso.momoti@stellenbosch.gov.za)

**Mr Lester van Stavel**

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: [lester.vanstavel@stellenbosch.gov.za](mailto:lester.vanstavel@stellenbosch.gov.za)

**FROM:**

Name: RENE SPIES

RSA ID or Passport Number: 8411300130086

Jamestown Address: 3 NARED CRESCENT, JAMESTOWN. STELLENBOSCH

Erf Number: 391

Contact details: [jamestown.ratepayers@gmail.com](mailto:jamestown.ratepayers@gmail.com) / [rene@redletterdaypictures.com](mailto:rene@redletterdaypictures.com)

Interest of the person in the application: Ratepayer in community

**OBJECTION: APPLICATION IN TERMS OF SECTION 15(2)(a) AND 15(2)(d) OF THE STELLENBOSCH MUNICIPALITY BY-LAW ON MUNICIPAL LAND USE PLANNING, 2015: REZONING AND SUBDIVISION OF THE REMAINDER OF PORTION 7 OF THE FARM 527 STELLENBOSCH**

**DATE: 15 MAY 2023**

**Introduction:**

1. The objections encapsulated in this document are filed by RENE SPIES, ratepayer of ERF 391, JAMESTOWN.
2. In accordance with the applicable legal provisions set out below, I hereby express my support for the provision of affordable social housing in **phase 2 and 3**, portion 7 of Farm 527, for the many families residing in Jamestown.
3. My primary objective is to ensure that the Jamestown community members on the housing waiting list, as well as the the informal settlement residents, currently residing in nearly 250 informal houses on Portion 7 of Farm 527, are provided with the opportunity to access the in-

clusionary housing development as set out in the subdivision plan for PHASE 2 AND PHASE 3 only on Portion 7 of FARM 527. It is our earnest wish to best assist these individuals, **but in accordance with all applicable laws and regulations as stipulated below:**

## OBJECTIONS

4. At the outset, I remain of the firm belief that the Application is not only premature but also incomplete and contains various flawed assumptions and material gaps in information as will be explained below. As such, no local authority can apply its mind to the application in its current form.
5. In elaboration of the above, it is stated in the Motivational Report (under paragraph 1.2) that the development rights were previously approved for phases 2 & 3 of the Subject Property, including the subdivision and the rezoning thereof. It is furthermore stated that *"the town planning department of the Stellenbosch Municipality stated that the rezoning to subdivisional area is no longer valid and that a new rezoning application is therefore to be submitted with the subdivision application..."*. It is therefore apparent that the Application is made anew and that, from a legal perspective, it should be compliant with all the applicable laws, including the by-laws of the Municipality of Stellenbosch referred to in the heading of this letter of objection. The Municipality and its advisors and consultants must be acutely aware of the fact that applications of this nature need to be preceded with the requisite environmental authorisations as called for in terms of the National Environmental Management Act, 107 of 1998 ("**NEMA**").
6. The provisions of section 24(4) of NEMA prescribes the procedures for the investigation, assessment and communication of the potential consequences or impacts of activities on the environment. These provisions are all-encompassing and need to take into account a description of the environment likely to be significantly affected by the proposed activity in the application and so on. The provisions of section 2(4)(a) of NEMA are also significant in that it prescribes that the sustainable development requires the consideration of all relevant factors, including the disturbance of eco-systems, loss of biological diversity, the pollution and degradation of the environment, the avoidance of waste the use and exploitation of renewable resources and, moreover that a risk-adverse and cautious approach should be applied.
7. As can be expected, the Motivational Report does refer to the requisite environmental impact under paragraph 4.2.5.1. It is stated that an EIA was conducted during phase 1 of the initial subdivision of the project area and also that all environmental features were assessed *"at the time..."*. It is stated under paragraph 1.2 that the development consisting of phase 1 was completed as far back as November 2016. It is a reasonable deduction to make that the EIA for this phase was prepared long before the aforementioned date and based on the information and circumstances then at hand. This EIA is without doubt an old report and just that. It is old, outdated and not representative of the current situation at all. Furthermore, due to the fact that the initial application for the subdivision and rezoning of the Subject Property has, by the own admission of the Stellenbosch Municipality, lapsed and is no longer valid, we submit that the old EIA which formed the basis of the prior application has suffered the same fate as the prior application, namely that it has lapsed.
8. To summarise and in support of our contention that the Application is fatally flawed, premature and cannot be applied under the present circumstances, the current Application lacks an EIA which is critical to the consideration of the Application. The old EIA is no longer relevant at all, does not address the need and desirability of the current project and does not take cognisance of the present circumstances. At least seven years have passed since the old EIA was prepared and was based on the facts and circumstances as they then were. For instance, over these many years, there has been a significant change in the provision of electricity and other services. The environment, being dynamic, has also undergone changes.
9. We therefore argue that the Application is not fit to be considered for approval in that a vital element that should be addressed therein is the current impact on the environment and to be

preceded with a comprehensive and relevant Environmental Impact Assessment allowing all interested and affected parties (as part of a public participation process) to respond thereto in terms of the relevant provisions of NEMA.

10. **A feasibility study** demonstrating how the local community and informal dwellers will qualify for housing, in accordance with point 4.2.2 of the application, is requested as a prerequisite for the rezoning of land from rural to urban and the subdivision of Remainder portion 7 of FARM 527. This study must comply with the applicable legal provisions and regulations and be made available for review by relevant stakeholders. This requirement is essential in achieving the realisation of a thriving, safe and sustainable community for us to live in, as set out by the Stellenbosch IDP.

11. The statement in point 4.2.2 of the application that "a few informal settlers have settled on this sight" is incorrect and misleading.

11.1. Furthermore, prior to considering any rezoning of the Subject Property, we request an audit of the households in the informal settlement situated on the phase 3 area of the Subject Property. Based on this audit, a plan should detail how the developers will assist the informal dwellers in qualifying for the proposed housing, in accordance with that which is stipulated in paragraph 4.2.2 of the Application. The situation with reference to the fate of informal dwellers who are unable to qualify for housing in phase 2 and 3 must also be addressed. This information must be provided in accordance with the Stellenbosch Informal Settlement Upgrading Policy and Strategy and Section 26(2) (3) of the Constitution of South Africa, 1996. These plans and information must be included in the Application prior to the consideration of any rezoning or subsequent subdivision plan. It is crucial to note that the Informal Settlement Upgrading Policy and Strategy requires participatory planning, which entails active community involvement in the planning and execution of upgrading projects. This approach ensures that the community's needs and priorities are considered, and that the projects are sustainable and appropriate for the local context. Failure to comply with this request may result in a violation of the relevant legal provisions and regulations.

11.2. The mismanagement of Remainder portion 7, FARM 527 has led to a significant increase in criminal activities, and the infiltration of criminal gangs, along with rising rates of unemployment. These issues are progressively eroding the cultural heritage of Jamestown and undermining the social cohesion of our community. The adverse impact extends not only to Jamestown itself but also affects the surrounding farms, Stellenbosch Square, Le Clemence, and Paradyskloof.

11.3. The above is essential in achieving the realisation of a thriving, safe, dignified and sustainable living environment for its ratepayers, as set out by the IDP.

12. In accordance with the Stellenbosch Planning By-law and Zoning Scheme Regulations, it has come to our attention that **approximately 250 informal Wendy houses have been erected unlawfully on the "rural and agricultural land" identified as PORTION 7 OF FARM 527 and placed there by the owners "Municipality Stellenbosch"**. This unlawful occupation has resulted in the complete occupancy of the area designated for PHASE 3 development, thereby impeding the intended use of the land for housing purposes.

12.1. Prior to any rezoning of the land, it is legally required that steps be taken against the owner of the land to hold them accountable for the unlawful land use as stipulated in the Stellenbosch Planning by law, 2015, including **CHAPTER IX, section 85, 86, 87 which states:**

12.1.1. **85.** A person is guilty of an offence and is liable on conviction to a fine or imprisonment not exceeding 20 years or to both a fine and such imprisonment if he or she (b) utilises land in a manner other than prescribed by a zoning scheme.

12.1.2. An owner who permits his or her land to be used in a manner set out in subsection (1)(b) and who does not cease that use or take reasonable steps to ensure that the use ceases, is guilty of an offence and liable upon conviction to a fine or imprisonment not exceeding 20 years or to both a fine and such imprisonment.

12.1.3. **87.** (1) The Municipality must serve a compliance notice on a person if it has reasonable grounds to suspect that the person is guilty of an offence in terms of section 86.

12.1.4. (2) A compliance notice must instruct the person to cease the unlawful utilisation of land or construction activity or both, without delay.

12.1.5. (3) A person who has received a compliance notice with an instruction contemplated in subsection (2)(a) may not submit an application in terms of subsection (2)(b).

12.2 Undertaking the above steps is crucial for us as ratepayers in ward 21 to build sustainable, dignified and safe living environments,

13. As per the National Heritage Resources Act, No 25 of 1999, Section 38(1), I request that a **heritage impact assessment** be conducted for PORTION 7 OF FARM 527 before any rezoning is considered. This assessment must include the impact the proposed development will have on the **adjacent burial grounds and graves, as required by Section 36 of the Act**. Furthermore, the heritage impact assessment must take into account the preservation and promotion of living cultural practices, traditions, and knowledge systems that are essential to the identity and sense of belonging of the communities affected by the proposed development. Compliance with these legal requirements in order to protect our heritage and burial grounds is necessary before any rezoning can be considered.

14. At present, there exists a single designated legal access route connecting the R44 to Jamestown. The existing entrance and exits to Jamestown have not adequately catered to the growing number of commuters, taking into account the inclusion of La Clemence and Aan-de-Weber, and the forthcoming addition of Blaauwklippen-aan-Rivier. Prior to any land rezoning, it is imperative that a **traffic impact study** be conducted to ascertain how the supplementary influx of commuters will be adequately accommodated. As residents who utilize these roads, we are already experiencing overwhelming traffic congestion.

15. In accordance with the Stellenbosch zoning scheme by law and the planning by law, I hereby request that any proposed developments concerning phases 2 and 3 be limited to the boundaries set forth in the current application. It is imperative that any references or allusions to a hypothetical phase 4 development be excluded from consideration, as such statements are misleading and have been met with vehement opposition from the Jamestown community.

15.1. Furthermore, I stress the importance of protecting the longevity of the adjacent agricultural land by taking all necessary steps to ensure its preservation. Given that phases 2 and 3 are situated solely adjacent to rural land, it is crucial that development plans reflect this reality and prioritise the sustainability of the agricultural sector.

15.2. The above is crucial in order to protect the area that we as ratepayers invested in - a quiet, semi-rural village, settled amongst agricultural land.

16. I accordingly request that the Application be denied.



Signed

RENE SPIES

**OBJECTION TO REZONING OF Farm 527/7, Stellenbosch ( LU/15064)****TO:****Stellenbosch Municipality****Mr Lester van Stavel**

Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality

Email: [lester.vanstavel@stellenbosch.gov.za](mailto:lester.vanstavel@stellenbosch.gov.za) **Nolusindiso Momoti**, email: [nolusindiso.Momoti@stellenbosch.gov.za](mailto:nolusindiso.Momoti@stellenbosch.gov.za) **Mr Rudolf Schröder**, Zutari (Pty) Ltd Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)**FROM:**

Name: RENE SPIES

RSA ID or Passport Number: 8411300130086

Jamestown Address: 3 NARED CRESCENT, JAMESTOWN, STELLENBOSCH

Erf Number: 392

**SUBJECT:**

Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

**DATE: 01 FEB 2023**

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. We, as Jamestown residents require that this land remain agricultural to protect the close knit rural community of Jamestown and that the land is better purposed to protect our heritage. To rezone this land from rural to residential would mean stripping our community of our rural identity.
2. The Jamestown community does not require, nor have enough numbers of residents to utilize such a large development. We need job creation and this land could be better purposed as agricultural land, to empower the Jamestown landowners and farmers, whose heritage is built on agriculture - especially strawberry farming.
3. We desire that this land be made available to the many B-BBEE Jamestown farmers, who currently have to travel far to access agricultural property to plant crops. There are limited agricultural plots available in Stellenbosch and we have several local Jamestown farmers in desperate need of land for farming.
4. Jamestown's rich history includes farmers like the Denyssen, Meyers, Williams, Isaacs, and many others who farmed in the Valley", an area which included the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.
5. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.

6. Webersvalley road is congested and has become dangerous for its residents. We have daycare facilities running adjacent to it, children crossing the streets, and a daily increase of noisy, racing cars. The noise nuisance for adjacent residents is unbearable. We do not have the infrastructure available to accommodate any further developments.
7. The community cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
8. The homeowners on Ostara Avenue have been living here for over 40 years. We vehemently oppose any taxi rank. The impact on our homes and privacy will be completely overruled and disregarded, not only with the construction phase but with the value of the property post-completion and with a taxi rank beyond our boundary wall. This is unacceptable and a total disregard for the rights of the residents.
9. Skool street leading to the development is a dirt road and cannot be tarred since it runs over a bulk-water servitude. This land on FARM 527 is inaccessible to any development.
10. During the **Mayoral Committee meeting (minutes 2017.01.18)** it was stated that " The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
11. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to further marginalization of Stellenbosch's poorest, and thus an increase in crime in the area including Paradyskloof, farms, and Jamestown all of which has started to destroy the fabric of the Historic Mission Village heritage of Jamestown.
12. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
13. The Stellenbosch Municipality has undermined and disregarded the Jamestown community. Not only by using the current FARM 527 site as their illegal "emergency housing area", destroying the fabric and harmony of our community but by now trying to strip away at our rural character and heritage.
14. Finally, Stellenrust is as a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2<sup>nd</sup> and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods of hundreds. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage. We cannot rob residents of much-needed jobs.

Signed:



RENE SPIES,

Jamestown Ratepayers Assosication | [jamestown.ratepayers@gmail.com](mailto:jamestown.ratepayers@gmail.com)



## OBJECTION

To: Mr Lester van Stavel  
 Manager: Housing Development - Integrated Human Settlements  
 Stellenbosch Municipality  
 Email: lester.vanstavel@stellenbosch.gov.za

Mr Rudolf Schröder  
 Zutari (Pty) Ltd  
 Email: rudolf.schroder@zutari.com

From: Name: RIAAN SNEYMAN  
 RSA ID or Passport Number: 7809045088088  
 Jamestown Address: 80 BLOKKIP CLOSE,  
AAN DE WEBER ESTATE, JAMESTOWN, 7600  
 Erf Number: 924

Subject: Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.

Date: 8 February 2023.

I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:

1. PHASE 1 NOT MANAGED -> PHASE 2 & 3 WILL BE THE SAME.
2. SAFETY & SECURITY -> NOT ENOUGH SAPS.
3. INCREASE TRAFFIC ON BLOKKIP ROAD.
4. MORE STRAIN ON WATER & SEWERAGE INFRASTRUCTURE
5. BLEMISH/EYESORE ON SCENIC ROUTE
6. NO PLANS FOR OTHER SERVICES - CLINICS, POLICE STATIONS

Signed: 

**Rudolf Schröder**

---

**From:** Stefan Blommaert <Stefan.Blommaert@bextrans.co.za>  
**Sent:** Thursday, 02 February 2023 16:07  
**To:** Lester Vanstavel; bongiwe.zondo@stellenbosch.gov.za  
**Cc:** Lester Vanstavel; 'Mayor@stellenbosch.gov.za'; Cc: 'Bongiwe.Zondo@stellenbosch.gov.za'; Mandlenkosi.Mgogoshe; Admin.Housingdevelopment; Shaun October; Rudolf Schröder; Lourens Fick; Ferdie van Zyl; Ferdie van Zyl  
**Subject:** OBJECTION: Rezoning & Subdivision of the Remainder of Portion 7 of Farm 527, and to any further/future development of Farm 527 (Ie-Planned Phase 4)  
**Attachments:** Jamestown Phase 2&3 Rezoning & Subdivision Application\_revised with correct zoning descriptions2.pdf

Good Afternoon,

**For Attention:**  
 Stellenbosch Municipality (Lester van Stavel & Bongiwe Zondo)

**Please find below my concerns, and objections:**

- a. The roads in and out of Stellenbosch is a mess, just have a look at the AM and PM traffic. Has provision been made for all the extra traffic?
- b. The amount / size of what is proposed in the allocated space makes a safe & healthy community basically impossible.
- c. Is there plan for additional security? An extra Police station perhaps.
- d. Will any more schools and pre-schools being built, to prevent the increase of children NOT going to school?
- e. What alternative access roads are being planned besides the existing R44? The entrance at Stellenrust road is on a blind corner and very dangerous.
- f. To rezone the land would mean stripping the community of their rural identity.
- g. Jamestown certainly does not have the infrastructure available to accommodate any further developments.
- h. Stellenrust is an International award-winning Wine Farm that creates numerous job opportunities and attracts tourist and local holiday goers.

i. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.

**Figure 4: Regional Locality**

The project site is located in the southern portion of Jamestown. The residential to the north, Stellensizht Secondary school to the east and South.



**From:**  
EAS Blommaert  
Jamestown, Watergangstr. 24, Aan de Weber  
ERF 824

Please confirm receipt of e-mail

**Stefan Blommaert**  
*Director of Operations*  
Tel: +27 (0)21 880 9302  
Fax: +27 (0)86 515 1271  
Mobile: +27 (0)82 303 7103



**To: Stellenbosch Municipality**

**Mr Lester van Stavel**

**Manager: Housing Development - Integrated Human Settlements Stellenbosch Municipality**

Email: [lester.vanstavel@ Stellenbosch.gov.za](mailto:lester.vanstavel@ Stellenbosch.gov.za)

Mr Rudolf Schröder

Zutari (Pty) Ltd

Email: [rudolf.schroder@zutari.com](mailto:rudolf.schroder@zutari.com)

**FROM:**

Name: **JW CONRADIE ( TERS )**

RSA ID : 6101245054 085

Jamestown Address: 41 WATERGANG STREET , AAN DE WEBER , JAMESTOWN

Erf Number:862

**SUBJECT:**

**Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone" to a "subdivisional area" in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.**

**I, the abovenamed, do hereby object to the rezoning and development of the Remainder of Portion 7 of Farm 527, and to any contemplated further development of Farm 527, for the following reasons:**

1. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.

2. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.
3. Webersvalley road is already congested and has become dangerous for its residents.
4. Blaauwklippen road will become packed with taxi bussed and pedestrians.
5. Jamestown do not have the infrastructure available to accommodate any further developments.
6. Jamestown cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
7. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
8. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to an increase in crime in the area including Paradyskloof, farms, and Jamestown .
9. Other municipal sites, closer to central Stellenbosch should be tested as alternatives for this municipal housing development project. It is not okay for the Stellenbosch municipality to continue the legacy enforced by the Apartheid regime and the group areas act, secluding certain communities to the outskirts of town.
10. Finally, Stellenrust is as a proudly Stellenbosch B-BBEE International award-winning Wine Farm that creates +- 250 Jobs and through their supply chain feeds more than 500 families annually, some 2nd and going on third generation workers and residents of Jamestown and Stellenbosch. This land should remain rural, to protect not only the farming community's heritage, but also hundreds of livelihoods. If portion of the farm's land is to be repurposed, it should be in training and empowering the local community in farming activities and celebrating the Jamestown farming heritage.

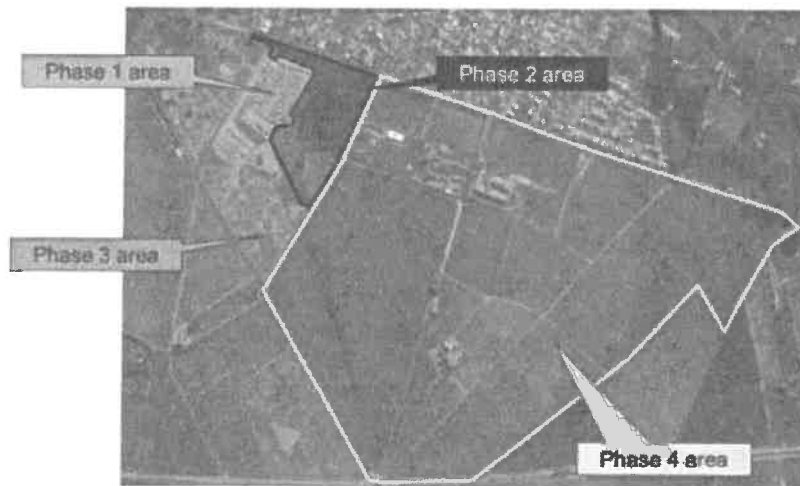
Thank you.



## PROPOSED EVENTUAL DEVELOPMENT

**Figure 4: Regional Locality**

The project site is located in the southern portion of Jamestown. The site is bordered by Jamestown residential to the north, Stellensizhi Secondary school to the east and Stellenrust Wine Estate to the South.



Document number 1002169PH2\_3, Revision 2, Date 2023/01/12

**Rudolf Schröder**

---

**From:** Wilbar Robberts <wilbarrob@gmail.com>  
**Sent:** Thursday, 02 February 2023 08:23  
**To:** Lester Vanstavel; Mayor@stellenbosch.gov.za; Cc: 'Bongiwe.Zondo@stellenbosch.gov.za'; Mandlenkosi.Mgogoshe; Admin.Housingdevelopment; Shaun October; Rudolf Schröder; Lourens Fick; Ferdie van Zyl  
**Subject:** Objection letter : Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch to allow for development of GAP housing

Good Day All

Please see below my objection with motivation against your **“Rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch, from Agriculture and Rural Zone” to a “subdivisional area” in order to allow for development of a site and services for 2-storey walk-ups, GAP housing, low and high income housing and public open spaces.**

1. Jamestown's has a rich farming history in the Valley" which includes the agricultural land currently in question. Until the 1970s, the Stellenbosch Municipality hired land out to the farmers to farm strawberries and other produce. Today with the rising unemployment, and few job opportunities available this side of Stellenbosch, this land should be utilized for sustainable farming employment initiatives, community gardens, and feeding schemes.
2. There is currently only one legal access road from the R44 to Jamestown. Entrance and exits to Jamestown have not accommodated all of the additional commuters considering we already have La Clemence and Aan-de-Weber and will soon have Blaauwklippen-aan-Rivier as well.
3. Webersvalley road is already congested and has become dangerous for its residents.
4. Blaauwklippen road will become packed with taxi bussed and pedestrians.
5. Jamestown do not have the infrastructure available to accommodate any further developments.
6. Jamestown cannot take more pressure on the existing public services in Jamestown, such as the library, clinic, and schools. These facilities are not and were not designed to include all the additional intended occupants. The overflow of the clinic, the noise nuisance it creates, and the dangers around the unavailability of parking have already stripped adjacent property owners of their rights and become incredibly hazardous to pedestrians and school children using these roads.
7. During the Mayoral Committee meeting (minutes 2017.01.18) it was stated that "The development of FARM 527, at Jamestown, requires the upgrading of road access and water services infrastructure." This area has no access roads, is far out from town, and has, limited economic/job opportunities for the semi-skilled and semi-professional people who constitute the main social housing target market segment.
8. As it stands, current development on FARM 527, combined with illegal informal dwellers, without access to basic services has become a serious threat to rivers and surrounding agricultural land, it has led to an increase in crime in the area including Paradyskloof, farms, and Jamestown .

Regards

Wilbar Robberts

Managing Director, Karoo Classics  
Stellenbosch & Franschhoek  
[www.karooclassics.com](http://www.karooclassics.com)

Tel Nr: 021 886 7596  
Cell Nr: 071 606 1869



**ANNEXURE H: COMMENT FROM THE MANAGER: SPATIAL PLANNING**

**Bongiwe Zondo**

---

**From:** Nolusindiso Momoti  
**Sent:** Friday, 02 February 2024 15:00  
**To:** Bongiwe Zondo  
**Subject:** FW: RE: Application for Rezoning and Subdivision on Farm 527/7, Stellenbosch-Comment

fyi.

---

**From:** Barbara-Ann Henning <Barbara-Ann.Henning@ Stellenbosch.gov.za>  
**Sent:** Thursday, August 17, 2023 12:36 PM  
**To:** Nolusindiso Momoti <Nolusindiso.Momoti@ Stellenbosch.gov.za>  
**Cc:** Bernabe De La Bat <Bernabe.DeLaBat@ Stellenbosch.gov.za>; Viola Anthony <Viola.Anthony@ Stellenbosch.gov.za>  
**Subject:** RE: Application for Rezoning and Subdivision on Farm 527/7, Stellenbosch- Comment

Dear Sindi

Your request for comment refers.

Please note that this department supports the proposed development as the subject property is located within the urban edge of Jamestown and the Stellenbosch MSDf earmarks the area to be developed for "Mixed-Use Community and Residential Infill".

The proposed development will be an extension of the Jamestown Integrated Housing Development directly adjacent and will form an integrated development with the existing Jamestown housing development. The proposed development will provide much needed housing to the local community.

Thank you.



*Regards / Groete,*  
**Barbara-Ann Henning (Pr.Pl A/2043/2015)**  
 Spatial Planner : Spatial Planning  
 Planning and Economic Development

---

T: +27 21 808 8656  
 NPK Building, c/o Ryneveld & Plein Street (2<sup>nd</sup> Floor), Stellenbosch, 7600  
[www.stellenbosch.gov.za/planning](http://www.stellenbosch.gov.za/planning)



**ANNEXURE I: COMMENT FROM SENIOR ENVIRONMENTAL PLANNER:  
COMMUNITY SERVICES**

# INTEROFFICE MEMORANDUM

287



**STELLENBOSCH**  
STELLENBOSCH • PNIEL • FRANSCHHOEK  
MUNICIPALITY • UMASIPALA • MUNISIPALITEIT

## DEPARTMENT: COMMUNITY SERVICES

Stellenbosch Municipality, 123 Merriman Avenue, Stellenbosch, 7599

|     |                                                                                   |       |                                                               |
|-----|-----------------------------------------------------------------------------------|-------|---------------------------------------------------------------|
| To: | <b>Administrative Officer: Land Use Management<br/>Nolusindiso Momoti</b>         | From: | <b>Senior Environmental Planner:<br/>Schalk van der Merwe</b> |
| CC: | <b>Manager: Community Services<br/>Albert van der Merwe</b>                       | Date: | <b>23 January 2023</b>                                        |
| Re: | <b>APPLICATION FOR REZONING AND SUBDIVISION: FARM 527/7, JAMESTOWN (LU/15064)</b> |       |                                                               |

The above application refers. From an environmental planning point of view this department has no objection to the approval of the application on condition that:

1. Applicable conditions as contained in the Environmental Authorization (issued in terms of the National Environmental Management Act, 107 of 1998 [Environmental Impact Assessment Regulations]), dated 14 June 2010, be adhered to.
2. Activities on site, during construction and thereafter, comply with the Western Cape Noise Control Regulations.
3. During construction the owner, developer or any agent acting on his/her behalf, must take all reasonable steps to prevent nuisance caused by dust in accordance with the National Dust Control Regulations.

**S VD MERWE**  
**SENIOR ENVIRONMENTAL PLANNER:**  
**COMMUNITY SERVICES**

|                  |           |
|------------------|-----------|
| FILE NR:         |           |
| SCAN NR:         | F 527/756 |
| COLLABORATOR NR: | 742957    |

**Bongiwe Zondo**

**From:** Rudolf Schröder <Rudolf.Schroder@zutari.com>  
**Sent:** Friday, 20 January 2023 08:19  
**To:** Schalk Van der Merwe  
**Cc:** Shaun October; Lester Vanstavel; Lourens Fick; Bongiwe Zondo  
**Subject:** [EX] RE: Jamestown Integrated Development - Phase 2 & 3 Rezoning Application  
**Attachments:** Development Framework A3.pdf; Subdivision Layout Plan\_revised zoning descriptions.pdf

Dear Schalk

Please find attached the original approved layout that was used as basis for the environmental authorisation as well as the Phase 1 implementation.

Our current layout (also attached) is based on exactly the same layout structure, the same number of stands and unit typology.

The only difference in the two layouts is that our current layout shows the individual stands subdivided in the blocks for the Phase 2 and 3 areas, where the original layout of 2011 only shows the road structure and the intended use/zoning and number of stands for each block.

Kind regards,

**Rudolf Schröder** *Pr. Pln, M.PMSA, MTRP*

ASSOCIATE SPECIALIST | ZUTARI

M +27-833906963 E [Rudolf.Schroder@zutari.com](mailto:Rudolf.Schroder@zutari.com) W [zutari.com](http://zutari.com)

---

**From:** Schalk Van der Merwe <[Schalk.VanderMerwe@ Stellenbosch.gov.za](mailto:Schalk.VanderMerwe@ Stellenbosch.gov.za)>  
**Sent:** Thursday, 19 January 2023 12:20  
**To:** Zutari Office George <[George@zutari.com](mailto:George@zutari.com)>  
**Subject:** Jamestown Integrated Development - Phase 2 & 3 Rezoning Application

Good day.

The above rezoning and subdivision application (Document Number 1002169PH2\_3), dated 2022/12/08, prepared by Zutari, is currently being considered by this department. In terms of the application the Environmental Authorisation (EA [issued in terms of NEMA], dated 2010/06/14) issued for Phase 1 is still valid with no additional impacts triggered. Under Section G (Conditions of Authorisation) of the above EA (Condition 15) it is stipulated that *any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be affected...*

Please confirm that there are no changes to the proposed development (project description) as applied for and what was submitted as part of the NEMA EIA process and approval in terms of the above EA.

Regards

**Schalk van der Merwe**  
 Environmental Planner

**Community & Protection Services:**  
 Stellenbosch Municipality

Verwysing  
Reference

E12/2/3/1-B4/16-0656/08

Isalathiso



Navrae  
Enquiries

CLAYTON HENDRICKS

Imibuzo

14 JUN 2010

Datum

Date

Umhla

Of issue

Departement van Omgewingsake en Ontwikkelingsbeplanning  
Department of Environmental Affairs and Development Planning  
ISabe leMiclmbi yeNdalo esiNgqongileyo noCwangciso loPhuhliso

The Municipal Manager  
Stellenbosch Municipality  
PO Box 17  
STELLENBOSCH  
7599

**Attention: Mr Johru Robyn**

Tel: (021) 808 8460

Fax: (021) 808 8379

Dear Sir

**APPLICATION: MIXED USE RESIDENTIAL DEVELOPMENT ON PORTIONS OF  
FARM NO. 527, JAMESTOWN, STELLENBOSCH.**

With reference to your application, find below the environmental authorisation (hereinafter referred to as the "Environmental Authorisation") in respect of this application.

**ENVIRONMENTAL AUTHORISATION**

**A. DESCRIPTION OF ACTIVITY:**

The development entails the establishment of a mixed use residential development on portions of Farm No. 527, Stellenbosch. The mixed use residential development will comprise of:

- 570 residential erven (which include low, -medium, - medium to higher income subsidy housing; low -and -income subsidised apartments; non-subsidised housing);
- 4 open spaces erven; and

*Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)*

- 2 Multi-functional community facilities; and
- associated infrastructure such as bulk services and internal roads.

These are activities identified in Government Notice No. R. 386 of 21 April 2006, being:

**Activity Number 1 (k):**

The construction of facilities or infrastructure, including associated structures or infrastructure for the bulk transportation of sewage and water, including storm water, in pipelines or channels with -

- (a) An internal diameter of 0,36 metres or more; or
- (b) A peak throughput of 120 litres per second or more;

**Activity Number 1 (m):**

The construction of facilities or infrastructure, including associated structures or infrastructure for any purpose in the one in ten year flood line of a river or stream, or within 32 metres from the bank of a river or stream where the flood line is unknown, excluding purposes associated with existing residential use, but including -

- (i) canals;
- (ii) channels;
- (iii) bridges;
- (iv) dams;
- (v) weirs;

**Activity Number 4:**

The dredging, excavation, infilling, removal or moving of soil, sand or rock exceeding 5 cubic metres from a river, tidal lagoon, tidal river, lake, in-stream dam, floodplain or wetland;

**Activity Number 12:**

The transformation or removal of indigenous vegetation of 3 hectares or more or of any size where the transformation or removal would occur within a critically endangered or an endangered ecosystem listed in terms of section 52 of the National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004);

**Activity Number 15:**

The construction of a road that is wider than 4 metres or that has a reserve wider than 6 metres, excluding roads that fall within the ambit of another listed activity or which are access roads of less than 30 metres long,

**Activity Number 16:**

The transformation of undeveloped, vacant or derelict land to -

*Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)*

- (b) residential, mixed, retail, commercial, industrial or institutional use where such development does not constitute infill and where the total area to be transformed is bigger than 1 hectare; and

**Activity Number 18:**

The subdivision of portions of land 9 hectares or larger into portions of 5 hectares or less,

hereinafter referred to as "the activities".

**B. LOCATION:**

The activity will be located on portions of Farm No. 527, Jamestown, Stellenbosch,

**Co-ordinates:**

Latitude: 33° 47' 7.575" S

Longitude: 18° 50' 36.129" E,

hereinafter referred to as "the site".

**C. APPLICANT:**

Stellenbosch Municipality

% Mr Johru Robyn

PO Box 17

STELLENBOSCH

7599

Tel: (021) 808 8460

Fax: (021) 808 8379

**D. ENVIRONMENTAL ASSESSMENT PRACTITIONER:**

Strategic Environmental Focus (Pty) Ltd

% Ms Vici Napier

P.O. Box 1330

DURBANVILLE

7551

Tel: (021) 979 3822

Fax: (021) 979 3830

**E. SITE VISIT(S):**

No site visit was conducted. The information submitted in the application documentation (i.e. photographs and maps of the site) together with relevant information contained in the Departmental information base, was considered sufficient to provide adequate information on the nature of the receiving environment.



*Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)*

**F. DECISION:**

This Department is satisfied, on the basis of information available to it and subject to compliance with the conditions of this environmental authorisation, that the applicant should be authorised to undertake the activities specified above.

By virtue of the powers conferred on it by the National Environmental Management Act, 1998 (Act No. 107 of 1998) ("NEMA") and the Environmental Impact Assessment ("EIA") Regulations, 2006 the competent authority hereby authorises the activities described above.

The granting of this environmental authorisation is subject to the conditions set out below.

**G. CONDITIONS OF AUTHORISATION:**

1. The activity, including site preparation, may not commence within 20 (twenty) days after receipt of this environmental authorisation. In the event that an appeal notice and subsequent appeal is lodged with the competent authority, the effect of this environmental authorisation will be suspended until such time as the appeal is decided.
2. One week's notice, in writing, must be given to the Directorate: Integrated Environmental Management (Region A), (hereinafter referred to as "this Directorate"), before commencement of construction activities.
  - 2.1 Such notice shall make clear reference to the site location details and reference number given above.
  - 2.2 The said notice must also include proof of compliance with the following conditions described herein:  
Conditions: 1, 10 and 12.
3. Any solid waste shall be disposed of at a landfill licensed in terms of the relevant legislation.
4. No development (this includes any structures or impervious surfaces) is allowed within the 1:50 year flood line.
5. An acceptable Stormwater Management plan must be compiled and implemented to the satisfaction of the relevant authority. The Stormwater Management plan must include, but is not limited to:
  - 5.1 Litter and sediment traps; and
  - 5.2 The use of indigenous riparian vegetation around the dam, ponds and drainage canal to maintain water quality.

***Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)***

6. The mitigation measures for the visual impact outlined in the report dated May 2009 drafted by Strategic Environmental Focus (Pty) Ltd must be implemented (Appendix A).
7. A search and rescue exercise must be undertaken for all indigenous shrubs and geophytes on site, and must be used for all landscaping.
8. No watercourses including wetlands can be impacted upon without being licensed by the Department of Water Affairs.
9. Should any heritage remains be exposed during excavations, these must immediately be reported to the Provincial Heritage Resources Authority of the Western Cape, Heritage Western Cape (in terms of the National Heritage Resources Act, 1999 (Act No. 25 of 1999)). Heritage remains uncovered or disturbed during earthworks must not be disturbed further until the necessary approval has been obtained from Heritage Western Cape.
  - 9.1 If any archaeological remains (including but not limited to fossil bones and fossil shells, coins, indigenous and/or colonial ceramics, any articles of value or antiquity, marine shell heaps, stone artifacts and bone remains, structures and other built features, rock art and rock engravings) are discovered during construction they must immediately be reported to Heritage Western Cape and must not be disturbed further until the necessary approval has been obtained from Heritage Western Cape.
  - 9.2 If any graves or unmarked human burials are discovered, they must be treated with respect and the South African Heritage Resource Agency (SAHRA) must be notified immediately and the burials must not be disturbed further until the necessary approval has been obtained from SAHRA. An archaeologist must be contracted to remove the remains at the expense of the developer.
10. The Environmental Management Plan ("EMP") submitted as part of the application for authorisation is herewith approved and must be implemented.
11. The holder of the authorisation must appoint a suitably experienced ECO (Environmental Control Officer) (or Site Agent where appropriate) for the construction phase of the development before commencement of any land clearing or construction activities, to ensure that the EMP and the mitigation measures and conditions of the authorisation are implemented and complied with.
12. The applicant must, at all times, ensure that the construction activities comply with the Noise regulations in terms of the Environment Conservation Act, 1989 (Act No. 73 of 1989).
13. The applicant must, in writing, within 10 (ten) calendar days of receiving notice of the Department's decision –

***Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)***

- 13.1 notify all registered Interested and Affected Parties (I&AP's) of the decision and the reasons for the decision; and --
- 13.2 Specify the date on which the authorisation was issued.
- 13.3 Inform all Registered I&AP's of the appeal procedure provided for in Chapter 7 of the regulations.
- 13.4 Advise all registered I&AP's that should they wish to appeal that they must lodge a Notice of Intention to Appeal with the Minister, within 10 days of receiving notice of the Department's decision and, must submit their appeal within 30 days of the lodging of their Notice of Intention to Appeal, by means of one of the following methods:
  - By post: Western Cape Ministry of Local Government,  
Environment Affairs and Development Planning  
Private Bag X9186  
Cape Town  
8000
  - By facsimile: (021) 483 4174; or
  - By hand: 9<sup>th</sup> floor Utilitas Building  
For Attention: Mr Jaap de Villiers  
1 Dorp Street  
Cape Town  
8001
- 13.5 Inform all registered I&AP's that a signed Appeal form obtainable from the Minister's office at tel (021) 483 3721/3195, email [ledevill@pgwc.gov.za](mailto:ledevill@pgwc.gov.za) or URL <http://www.capegateway.gov.za/eadp>; must accompany the appeal.
- 13.6 inform all registered I&AP's that should they wish to appeal, the appellant must serve on the applicant a copy of the notice of intention to appeal as well as a notice indicating where and for what period the appeal submission will be available for inspection by the applicant.
- 13.7 If the applicant should decide to appeal, the applicant must --
  - 14.7.1 lodge a Notice of Intention to Appeal with the Minister, within 10 days of receiving notice of this decision and,
  - 14.7.2 serve a copy of the notice of intention to appeal on all registered I&AP's as well as a notice indicating where and for what period the appeal submission will be available for inspection and,

***Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)***

14.7.3 submit the appeal within 30 days of the lodging of the notice of intention to appeal.

14. The holder of the authorisation shall be responsible for ensuring compliance with the conditions by any person acting on his behalf, including but not limited to, an agent, sub-contractor, employee or any person rendering a service to the holder of the authorisation.
15. Any changes to, or deviations from, the project description set out in this authorisation must be approved, in writing, by the Department before such changes or deviations may be effected. In assessing whether to grant such approval or not, the Department may request such information as it deems necessary to evaluate the significance and impacts of such changes or deviations and it may be necessary for the holder of the authorisation to apply for further authorisation in terms of the regulations.
16. The holder of the authorisation must notify this Directorate and any other relevant authority, in writing, within 24 hours thereof if any condition of this authorisation is not adhered to.
17. A copy of this authorisation must be kept at the property where the activities will be undertaken. The authorisation must be produced to any authorised official of the Department who requests to see it and must be made available for inspection by any employee or agent of the holder of the authorisation who works or undertakes work at the property.
18. Where any of the applicant's contact details change, including the name of the responsible person, the physical or postal address and/ or telephonic details, the applicant must notify the Department as soon as the new details become known to the applicant.
19. Non-compliance with a condition of this authorisation may result in the withdrawal of the authorisation and may render the holder liable for criminal prosecution.
20. This Department must be notified, within 30 days thereof, of any change of ownership and/or project developer. A request for the transfer of the rights and obligations contained in this environmental authorisation must be submitted in the following way:
  - 20.1 The current holder of the Environmental Authorisation must submit an original signed letter to the Department stating that he/she wish the rights and obligations contained in this environmental authorisation to be transferred, provide the Department with (a) confirmation that the environmental authorisation is still in force (i.e. validity period have not yet expired or the activity(ies) was lawfully commenced with), (b) the

***Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)***

contact details of the person to whom the rights and obligations are to be transferred, and (c) the reasons for the requested transfer.

- 20.2 The person to whom the rights and obligations are to be transferred must also submit an original signed letter to the Department (a) accepting the rights and obligations contained in this environmental authorisation and (b) must indicate that he/she has the ability to implement the mitigation measures and to comply with the conditions of authorisation.
- 20.3 If the transfer is found to be appropriate by the Department, the Department will issue a letter confirming the transfer of the rights and obligations contained in this environmental authorisation.
21. Departmental officials shall be given access to the property referred to in B above for the purpose of assessing and/or monitoring compliance with the conditions contained in this environmental authorisation, at all reasonable times.
22. These activities which are authorised may only be carried out at the property indicated above.
23. Notwithstanding this authorisation, the holder of the authorisation must still comply with any other statutory requirements that may be applicable to the undertaking of the activities.
24. These activities must commence within a period of three (3) years from the date of issue. If commencement of the activities does not occur within that period, the authorisation lapses and a new application for environmental authorisation must be made in order for the activities to be undertaken.

**H. RECOMMENDATIONS**

1. The Department recommends that the following water and electricity saving measures should be implemented:
- Passive architectural designs to ensure energy efficiency.
  - The use of energy saving light bulbs.
  - Outdoor lighting must be kept to a minimum.
  - Toilets must be fitted with interruptible flushing mechanisms to reduce the amount of water lost in each flush.
  - Toilet cisterns must have a capacity of less than 9 litres.
  - No automatic urinals must be installed.

*Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)*

- Taps and showerheads must have built in aerators to economise the flow rate of water.
- 2. The conditions as stipulated in the letter dated 13 November 2009 from the City of Cape Town relating to their 1 500 mm diameter bulk water pipeline, that traverses the northern boundary of the site, must be adhered to.

**I. REASONS FOR THE DECISION:**

The information contained in the Application Form and Basic Assessment Report dated 1 December 2009, and the additional information received on 20 January 2010 compiled by Strategic Environmental Focus (Pty) Ltd was taken into account in the Department's consideration of the application. The objectives and requirements of relevant legislation, policies and guidelines, including Section 2 of the NEMA, 1998 (Act No. 107 of 1998) have also been considered in this decision. A summary of the issues which, in the Department's view, were of the most significance is set out below.

**Environment**

The site has been transformed by agricultural activities and is unlikely to contain any biodiversity of conservation value. A search and rescue exercise, of the site, will be undertaken for any shrubs and geophytes which will be used for landscaping the development.

The farm dam and drainage canal present on the site have been found to be non-functional wetlands and rehabilitation to a fully functional wetlands is not feasible.

**Visual Impact**

A visual impact assessment of the development found that in terms of "sense of place" the change of landscape from semi rural landscape into developed, is rated as high due to the poor condition and low visual quality of the site compared to the regional landscape character. However, the site's current aesthetic value is considered poor.

Developing the site, with appropriate mitigation measures will enhance the visual and landscape character of the site, bring it in par to the prevailing landscape character, resulting in an enhancement of the area.

**Traffic Impact**

A traffic impact assessment (TIA) conducted by BKS (Pty) Ltd to assess the traffic impact created by the development found that the current road network has

*Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)*

sufficient capacity to accommodate the development. Various mitigation measures were recommended and have been included in the development.

**Socio – Economic**

The development will create much need medium-low housing in the area alleviating the demand for housing in the area. The construction phase of the development will also create temporary job opportunity for the local community.

**Alternatives**

No site alternatives were investigated as the site is owned by the Stellenbosch Municipality.

A development layout was developed prior to the undertaking of the EIA process which is most feasible for the site. The layout plan comprises of:

- 570 residential erven (which include low, -medium, - medium to higher income subsidy housing; low -and -income subsidised apartments; non-subsidised housing);
- 4 open spaces erven; and
- 2 Multi-functional community facilities; and
- associated infrastructure such as bulk services and internal roads.

The following alternatives were investigated:

**Stormwater Management Alternative 1(Preferred):**

This alternative entails that a stormwater attenuation pond (approximately 60 m x 60 m) be constructed and the existing dam on site be used to attenuate run-off from the development. The use of the dam requires a Water Use License or alternatively General Authorisation for the Department of Water Affairs.

This is the preferred alternative as no housing units will be lost due to large areas required for stormwater attenuation.

**Stormwater Management Alternative 2:**

This alternative entails that a stormwater attenuation pond (approximately 80 m x 80 m) be constructed with no stormwater discharge into the dam.

This alternative was rejected as a larger attenuation facility will result in the loss of housing units on the site.

***Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)***

**No-Go Alternative**

The no-go alternative, in which no development takes place leave the area vacant and will not alleviate the increasing housing demand in the area.

**Public Participation**

The public participation process comprised of the following:

- On the 10 January 2009 a advertisement was placed in the "Die Burger" and on 16 January 2009 advertisements were placed in the "Cape Times" and the "Eikestadnuus" newspapers, respectively;
- Background Information Document was distributed to identified I & AP's on 15 January 2009;
- A notice board was placed on site on 15 January 2009;
- The draft Basic Assessment Report was advertised on 25 September 2009;
- A public meeting was held at the Weber Gedenk Primary School on 13 October 2009; and
- The final BAR was available for comment at the Stellenbosch public library from 30 November 2009 to 18 January 2010.

At the end of the commenting period, all comments received were adequately addressed by the Environmental Assessment Practitioner and the applicant.

**Authorities Consultation:**

The following authorities commented and have no objection to the proposed development:

- Heritage Western Cape,
- CapeNature;
- Department of Water Affairs;
- Western Cape Department of Agriculture;
- Cape Winelands District Municipality;
- City of Cape Town;
- Stellenbosch Municipality;
- This Department's: Pollution and Waste Management Directorates.; and
- Department of Local Government: Structure Plan.

Comments and recommendations provided by the other relevant authorities have been considered in the evaluation of this application. No authorities have objected to the proposed activity. Where possible and relevant, the conditions imposed by these authorities have been included in this Environmental Authorisation insofar as



*Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)*

It relates to the environmental aspects of the proposed activity. This authorization is issued only in terms of the environmental legislation and the applicant is required to obtain all other necessary approvals before commencing with the activity.

In view of the above, this Directorate is satisfied that, subject to compliance with the conditions contained in the environmental authorisation, the proposed activity will not conflict with the general objectives of integrated environmental management laid down in Chapter 5 of the NEMA and that any potentially detrimental environmental impacts resulting from the proposed activity can be mitigated to acceptable levels. The application is accordingly granted.

**H. APPEAL:**

Appeals must comply with the provisions as outlined in Chapter 7 of the regulations.

If the applicant should decide to appeal, the applicant must lodge a Notice of Intention to Appeal with the Minister, within 10 days of being notified of this decision (the date of "being notified" deemed to be the date the notice of the Department's decision was sent, i.e. the date of issue), and serve a copy of the Notice of Intention to Appeal, on the same day that the Notice of Intent is lodged with the Minister, on all registered I&AP's as well as a notice indicating that the appeal submission will be available for inspection for a period of 30 days, that must either start on or before the date the appeal is submitted to the Minister, and also indicate where the appeal submission will be available for inspection.

Should any other person decide to appeal, the person must lodge a Notice of Intention to Appeal with the Minister, within 10 days of being notified of the Department's decision (the 10 day period is deemed to only start 10 days after the date of issue of the Department's decision), and serve a copy of the Notice of Intention to Appeal, on the same day that the Notice of Intent is lodged with the Minister, on the applicant as well as a notice indicating that the appeal submission will be available for inspection for a period of 30 days, that must either start on or before the date the appeal is submitted to the Minister, and also indicate where the appeal submission will be available for inspection.

All appeals must be submitted, within 30 days of the lodging of the Notice of Intention to Appeal, by means of one of the following methods:

By post: Western Cape Ministry of Local Government, Environment Affairs and  
Development Planning  
Private Bag X9186  
Cape Town, 8000

By facsimile: (021) 483 4174; or

***Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)***

By hand: 9<sup>th</sup> floor Utilitas Building  
For Attention: Mr Jaap de Villiers  
1 Dorp Street  
Cape Town, 8001

A prescribed Notice of Intent to Appeal form and Appeal form are obtainable from the Minister's office at tel (021) 483 3721, email [jedevill@pawc.gov.za](mailto:jedevill@pawc.gov.za) or URL <http://www.capegateway.gov.za/eado>.

Provincial Government, Local Authority or committees appointed in terms of the conditions of the application or any other public authority or organisation shall not be held responsible for any damages or losses suffered by the developer or his successor in title in any instance where construction or operation subsequent to construction be temporarily or permanently stopped for reasons of non-compliance by the developer with the conditions of authorisation as set out in this document or any other subsequent document emanating from these conditions of authorisation.

Your interest in the future of our environment is greatly appreciated.

Yours faithfully



AYUB MOHAMED

**DIRECTOR: INTEGRATED ENVIRONMENTAL MANAGEMENT (REGION A)**

DATE OF DECISION: 14/06/2010

Copies to: (1) Ms V Napier (SEF)  
(2) Mr J Le Roux (Stellenbosch Municipality)

Fax (021) 979 3830  
Fax (021) 808 8379

*Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)*

## APPENDIX A

*Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)*

**Design Phase**

- Where applicable a permeable fence is suggested to abate the dominant presence of the fence. It can blend into its surrounds and is thus less visible;
- Building facades and roofs should preferably be painted or finished with colours typical of the Cape Dutch Architectural style;
- Provide indigenous screen planting around buildings to reduce the visibility from external vantage points;
- Provide adequate screening on the western side (cemetery) of the development to reduce visual link, screening can be through increased vegetation screening or vegetated earthworks or berms;
- Avoid light trespass and glare originating from street and security lighting. Fit "full cut-off" luminaires to limit the amount of light trespass and to control light output and restrain glare (Shaffik, 1997);
- Minimise roads around the perimeter of the development. Concentrate road circulation in the centre between the buildings to reduce the possibility of vehicle lights disturbing adjacent residents at night;
- When vertical structures or surfaces are lit, such as building facades or signs, direct the light downwards. If the only alternative is to up-light the element, the correct luminaire must be fitted to avoid light spillage;
- Consider and reduce the height of building structures appropriately in order to, to reduce the visual impact of overlooking into adjacent Jamestown resident's yards thereby infringing on their privacy.

**Construction Phase**

- Keep the construction sites and camps neat, clean and organised in order to maintain a tidy appearance;
- Remove rubble and other building waste as soon as possible or place it in a container in order to keep the construction site free from additional unsightly elements;
- Locate the construction camps and the material stockpiles outside of the visual field of sensitive visual receptors for example locating them within the central portions of the site;
- Rehabilitate or vegetate disturbed areas as soon as practically possible after construction. This should be done to restrict long stages of exposed soil and possible erosion that will result in indirect landscape and visual impacts;
- If construction is necessary during night time, direct light sources away from residential units and roads; and
- Dust suppression procedures should be implemented especially on windy days during earth works.

*Department of Environmental Affairs & Development Planning  
Directorate: Integrated Environmental Management (Region A)*

**Operational Phase**

- Maintain the landscape to a high aesthetic standard to retain a high visual quality for visitors and observers; and
- Remove and replace dying trees with trees that will reach similar proportions to the existing trees.

**Lighting**

The following are examples of lamp types of 4050 lumens and below (the acceptability of a particular light is determined by its lumen output, not wattage; check manufacturer's specifications) which have been adopted by the SENQU local Municipality.

- 200 Watt Standard Incandescent;
- 150 Watt Tungsten-Halogen (quartz);
- 50 Watt High Pressure Sodium;
- 50 Watt Cool White Fluorescent; and
- 30 Watt Low Pressure Sodium.

"Fully-shielded lights" (commonly known as full cut-off lights) outdoor light fixtures shielded or constructed so that no light rays are emitted by the installed fixture at angles above the horizontal plane as certified by a photometric test report.



**ANNEXURE J: COMMENT FROM THE DIRECTOR: INFRASTRUCTURE  
SERVICES**



# MEMO

**DIRECTORATE: INFRASTRUCTURE SERVICES  
DIREKTORAAT: INFRASTRUKTUURDIENSTE**

**CIVIL ENGINEERING SERVICES**

---

**To ▫ Aan:** Director: Planning + Economic Development  
**Att Aandag** Nolusindiso Momoti  
**From ▫ Van:** Director: Infrastructure Services  
**Date ▫ Datum:** 16 February 2024  
**Our Ref ▫ Ons Verw:** Civil LU 2436  
**Your Ref:** LU/15064  
**Re ▫ Insake:** Farm 527/7, Stellenbosch: An application is made in terms of Section 15 (2)(a) of the Stellenbosch Municipality Land Use Planning By-law, 2015 for the Rezoning of Farm 527/7 Stellenbosch Farms from Agriculture and Rural Zone to Subdivisional area in order to allow for the following uses: a) 175 Conventional Residential Zone (Subsidy housing + Single residential housing) erven (± 23 615 m<sup>2</sup>) b) 71 Conventional Residential Zone (Gap Housing) erven (± 12 622 m<sup>2</sup>) c) 176 Multi unit Residential Zone (flats) (± 20 616 m<sup>2</sup>) d) 2 Public Open Space Zone erven (± 4 246 m<sup>2</sup>) e) 1 Community Zone erven erven (± 1 100 m<sup>2</sup>) f) 1 Transport facility Zone (Taxi rank) erven (± 516 m<sup>2</sup>) g) Public Roads and Parking Zone erven An application is made in terms of Section 15 (2)(d) of the Stellenbosch Municipality Land Use Planning By-law, 2015 for the Subdivision of Farm 527/7 Stellenbosch in accordance with the Subdivisional Plan.

---

Details, specifications and information reflected in the following documents refer:

- Jamestown Development Framework Drawing No 1002169 Number 230228 Rev 2 by Zutari dated 15/12/2023;
- Engineering Services Report by Zutari dated 2023/11/03 (Rev 0);
- Traffic Impact Assessment by Zutari dated 2024/01/31 Rev 3 (received via e-mail 15 Feb 2024);
- GLS report on water and sewer capacity dated 11 July 2023;

These comments and conditions are based on the following proposed development parameters:

*Engineering Conditions (major developments) rev 7*

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

| PHASE                                                                                                                                                       | NOTATION | ERF TYPE            | ZONING<br>(STB.<br>SCHEME) | NUMBER | AREA sqm | Erf Numbers |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------|----------------------------|--------|----------|-------------|
| 2                                                                                                                                                           |          | SINGLE RESIDENTIAL  | CONVENTIONAL RES.          | 167    | 25 020   | 1 - 167     |
|                                                                                                                                                             |          | COMMUNITY           | COMMUNITY                  | 1      | 577      | 168         |
|                                                                                                                                                             |          | PLAY SPACE          | PUB. OPEN SPACE            | 1      | 436      | 169         |
|                                                                                                                                                             |          | TRANSPORT EMBAYMENT | TRANSPORT FACILITIES       | 1      | 1929     | 170         |
|                                                                                                                                                             |          | PUBLIC STREET       | PUBLIC ROADS               | 1      | 37 439   | 171         |
| 3                                                                                                                                                           |          | SINGLE RESIDENTIAL  | CONVENTIONAL RES.          | 107    | 19 271   | 172 - 279   |
|                                                                                                                                                             |          | PLAY LOT            | PUB. OPEN SPACE            | 1      | 263      | 280         |
|                                                                                                                                                             |          | PUBLIC STREET       | PUBLIC ROADS               | 1      | 14 630   | 281         |
| FIGURE ABCDEFGHI REPRESENTS FARM 527/4, STELLENBOSCH, IN<br>EXTENT 18,8073 HA, WHICH IS TO BE REZONED TO A SUBDIVISIONAL<br>AREA AND DEVELOPED AS INDICATED |          |                     |                            |        |          |             |

Any development beyond these parameters would require a further approval and/or a recalculation of the Development Charges from this Directorate.

This document consists of the following sections:

**A. Definitions**

**B. Recommendation to decision making authority**

**C. Specific conditions of approval:** These conditions must be complied with before clearance certificate, building plan or occupation certificate approval; whichever is applicable to the development in question.

**D. General conditions of approval:** These conditions must be adhered to during implementation of the development to ensure responsible development takes place. If there is a contradiction between the specific and general conditions, the specific conditions will prevail:

**A. Definitions**

- that the following words and expressions referred to in the development conditions, shall have the meanings hereby assigned to except where the context otherwise requires:

- "Municipality" means the STELLENBOSCH MUNICIPALITY, a Local Authority, duly established in terms of section 9 of the Local Government Municipal Structures act, Act



**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

117 of 1998 and Provincial Notice (489/200), establishment of the Stellenbosch Municipality (WC024) promulgated in Provincial Gazette no. 5590 of 22 September 2000, as amended by Provincial Notice 675/2000 promulgated in Provincial Gazette;

- (b) *"Developer"* means the developer and or applicant who applies for certain development rights by means of the above-mentioned land-use application and or his successor-in-title who wish to obtain development rights at any stage of the proposed development;
- (c) *"Engineer"* means an engineer employed by the *"Municipality"* or any person appointed by the *"Municipality"* from time to time, representing the Directorate: Infrastructure Services, to perform the duties envisaged in terms of this land-use approval;
- (d) Where it is stated that a condition must be complied with prior to "subdivision clearance" and where a subdivision is not applicable, that condition will then apply to the next applicable stage of development approval i.e. building plan approval;

|                                  |
|----------------------------------|
| <b>B. <u>Recommendation:</u></b> |
|----------------------------------|

2. **The development is recommended for approval, subject to the conditions as stated below.**

|                                                  |
|--------------------------------------------------|
| <b>C. <u>Specific conditions of approval</u></b> |
|--------------------------------------------------|

3. that all previous relevant conditions of approval to this development application remain valid and be complied with in full unless specifically replaced or removed by the *"Engineer"*;
4. that the following conditions relating to the upgrades and arrangements for the effective provision of services are required to accommodate the development. No taking up of proposed rights including subdivision clearance / building plan approval / occupation certificates (whichever comes first) will be allowed until these conditions have been complied with;
5. **Stellenbosch WWTW (Waste Water Treatment Works):** The proposed development falls within the catchment area of the existing Stellenbosch WWTW (Waste Water Treatment Works). There is sufficient capacity at the WWTW for the proposed development.
6. **Water:**

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

- a. There is insufficient capacity in the bulk water reticulation network to accommodate the proposed development. The following upgrades must be implemented before subdivision clearance (refer to **Annexure: Water**):
  - i. Master plan item SSW.B2 (new Jamestown Upper Reservoir) is required to augment reservoir storage capacity in the existing Jamestown reservoir water distribution zone.
  - ii. master plan items SSW.B1 & SSW.B5 are required to connect the existing 355 mm Ø bulk supply pipeline from the Paradyskloof no. 2 reservoir to the proposed new Jamestown Upper reservoir for sufficient bulk supply,
  - iii. master plan items SSW1.1, SSW1.2 & SSW1.11 are required to connect the new Jamestown Upper reservoir to the existing Jamestown water distribution network, and
  - iv. master plan item SSW1.10 is required to connect the existing reticulation network of the Jamestown PRV zone to the existing reticulation network of the Jamestown reservoir zone.

It should be noted that the new Jamestown Upper reservoir including bulk water & associated infrastructure construction tender under BSM 30/23 has started dated 14 November 2023 and the proposed completion date is scheduled for September 2024.

- b. Details of the internal network and link pipelines will be assessed during detail design stage. All erven must be connected to the water network before subdivision clearance.

**7. Sewer:**

- a. There is sufficient capacity in the bulk sewer reticulation network to accommodate the proposed development.
- b. Details of the internal network and link pipelines will be assessed during detail design stage. All erven must be connected to the sewer network before subdivision clearance.

# PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4

## 8. Roads:

a. There is insufficient capacity in the roads and NMT networks to accommodate the proposed development. The following upgrades must be implemented before subdivision clearance:

i. The R44 / Webersvalley Road intersection must be upgraded. This intersection is currently in the process of being upgraded by private developments who also triggered its upgrade. Should the upgrade not be completed for whatever reason, this Phase 2/3 housing project must complete it before subdivision clearance can be issued. The proposed upgrades are indicated in the image below:



ii. A continuous NMT link between the development and the R44/School Street and the R44 / Webersvalley intersection must be established. To achieve this, the gaps in the existing sidewalk network must be completed – these gaps are indicated in blue in the image below. These sidewalk sections must be completed before completion of the houses when the additional pedestrian traffic is generated.

# PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4



- iii. For information to assist with future planning and budgeting: Please note that with the closure of School Street, Jamestown currently only as one access point. An additional access to Jamestown will be required before Phase 4 of this housing development can be implemented.

One of the following interventions is to be implemented by 2030 to address the future scenario:

- The additional lane both directions on the R44: The R44 cross section should have three lanes between Webersvallei Road and Techno Avenue on the northbound carriageway. On the southbound carriageway 3 through lanes should be provided between Techno Avenue and the R44 School Street intersection
- Alternative north south link eg. Pajero street (which will also alleviate traffic on R44)

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

- b. The proposed development obtains access from a provincial road (R44) and must therefore be submitted to the District Roads Engineer for comment and conditions. Any conditions set by the District Roads Engineer will be applicable and must be complied with before subdivision clearance;

**9. Stormwater Network:**

- a. Stormwater Management must be generally in accordance with Drawing No 1002169-0000-DRG-CC-101 Rev A by Zutari, dated 07/12/2023 (**Annexure SW**). More technical detail wrt the design of the system can be provided when engineering services drawings are submitted for approval. The proposed detention ponds must be designed in such a manner that it can have a multi-functional purpose, ie sports field / public recreational park.
- b. The consulting engineer, appointed by the "Developer", analyses the existing stormwater systems and determine the expected stormwater run-off for the proposed development, for both the minor and the major storm event. Should the existing municipal stormwater system not be able to accommodate the expected stormwater run-off, the difference between the pre- and post-development stormwater run-off must be accommodated on site, or the existing system must be upgraded to the required capacity at the cost of the "Developer" and to the standards and satisfaction of the Directorate: Infrastructure Services. The aforementioned stormwater analysis is to be submitted concurrent with the detail services plans for approval;

**10. Solid Waste:**

- a. The Municipality will provide a solid waste removal service, unless agreed otherwise in writing the Solid Waste Department;
- b. For large spoil volumes from excavations, to be generated during the construction of this development, will not be accepted at the Stellenbosch landfill site. The Developer will have to indicate and provide evidence of safe re-use or proper disposal at an alternative, licensed facility. This evidence must be presented to the Manager: Solid Waste (021 808 8241; [clayton.hendricks@stellenbosch.gov.za](mailto:clayton.hendricks@stellenbosch.gov.za)), before building plan approval and before implementation of the development. Clean rubble can be utilized by the Municipality and will be accepted free of charge, providing it meets the required specification.

## PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4

### Internal- and Link Services

11. that all link services, internal services and erf connections must be complete and commissioned by the "*Developer*", at his/her cost, prior to subdivision clearance;
12. that any alterations to existing services necessitated by the new development will be for the Developer's cost;

### Ownership and Responsibility of services

13. that it be noted that the roads are reflected as **public** roads. Therefor all internal services on the said erf will be regarded as public services and will be maintained by the "*Municipality*";

### Development Charges (DCs)

14. that the "*Developer*" hereby acknowledges that Development Charges are payable towards the following bulk civil services: water, sewerage, roads, stormwater, solid waste and community facilities as per Council's Policy and approved tariffs;
15. that the "*Developer*" hereby acknowledges that the development charges as determined by the "*Municipality*" and or the applicable scheme tariffs will be paid by the "*Developer*" towards the provision of bulk municipal civil services in accordance with the relevant legislation and as determined by Council's Policy, should this land-use application be approved;
16. that the "*Developer*" accepts that the Development Charges will be subject to annual adjustment up to date of payment. The amount payable will therefore be the amount as calculated according to the approved tariff structure and according to the DCs Policy principles at the time that payment is made;
17. that the "*Developer*" may enter into an engineering services agreement with the "*Municipality*" to install or upgrade bulk municipal services at an agreed cost, to be off-set against Development Charges payable in respect of bulk civil engineering services;
18. that the Development Charges levy be paid by the "*Developer*" per phase –
  - prior to the approval of subdivision clearance;
  - prior to the approval of any building- plans (where subdivision clearance is not applicable);
19. that the development shall be substantially in conformance with the Site Development Plan submitted in terms of this application. Any amendments and/or additions to the Site

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

Development Plan, once approved, which might lead to an increase in the number of units, or which might lead to an increase in the Gross Leasable Area i.e. a GLA, will result in the recalculation of the Development Charges;

20. Bulk infrastructure Development Charges and repayments are subject to VAT and are further subject to the provisions and rates contained in the Act on Value Added Tax of 1991 (Act 89 of 1991) as amended;
21. The Municipality may approach the Developer at any stage, before completion of the Development, to implement any infrastructure / community facilities, in lieu of DCs payable, should the need for such infrastructure / facilities be identified;

**Damage to municipal infrastructure and assets**

22. that the "*Developer*" will be held liable for any damage to municipal infrastructure, caused as a direct result of the development of the subject property. The "*Developer*" will therefore be required to carry out the necessary rehabilitation work, at his/her cost, to the standards of the Directorate: Infrastructure Services, prior to any clearance (or occupation certificate where clearance is not applicable) being given;

**D. General conditions of approval: The following general development conditions are applicable. If there is a contradiction between the specific and general development conditions, the specific conditions will prevail:**

23. that should the "*Developer*" not take up his rights for whatever reason within **two years** from the date of this memo, a revised Engineering report addressing services capacities and reflecting infrastructure amendments during the two year period, must be submitted to the Directorate: Infrastructure Services by the "*Developer*" for further comment and conditions. Should this revised Engineering report confirm that available services capacities are not sufficient to accommodate this development, then the implementation of the development must be re-planned around the availability of bulk services or the necessary upgrades must be done, as any clearances for the development will not be supported by the Directorate: Infrastructure Services for this development if bulk services are not available;
24. that the "*Developer*" indemnifies and keep the "*Municipality*" indemnified against all actions, proceedings, costs, damages, expenses, claims and demands (including claims pertaining to consequential damages by third parties and whether as a result of the damage to or interruption of or interference with the municipalities' services or apparatus or otherwise)



**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

arising out of the establishment of the development, the provision of services to the development or the use of servitude areas or municipal property, for a period that shall commence on the date that the installation of services to the development are commenced with and shall expire after completion of the maintenance period.

25. that the "*Developer*" must ensure that he / she has an acceptable public liability insurance policy in place;
26. that, if applicable, the "*Developer*" approach the Provincial Administration: Western Cape (District Roads Engineer) for their input and that the conditions as set by the Provincial Administration: Western Cape be adhered to before subdivision clearance;
27. that the "*Developer*" informs the project team for the proposed development (i.e. engineers, architects, etc.) of all the relevant conditions contained in this approval;
28. that the General Conditions of Contract for Construction Works (GCC) applicable to all civil engineering services construction work related to this development, will be the SAICE 3<sup>rd</sup> Edition 2015 – as revised;
29. that the "*Developer*" takes cognizance and accepts the following:
  - a.) that no construction of any civil engineering services may commence before approval of internal – and external civil engineering services drawings;
  - b.) that no approval of internal – and external civil engineering services drawings will be given before land-use and/or SDP approval is obtained;
  - c.) that no approval of internal – and external civil engineering services drawings will be given before the "*Developer*" obtains the written approval of all affected owners where the route of a proposed service crosses the property of a third party;
  - d.) that no building plans will be recommended for approval by the Directorate: Infrastructure Services before land-use and or SDP approval is obtained;
  - e.) that no building plans will be recommended for approval by the Directorate: Infrastructure Services before the approval of internal – and external civil engineering services drawings;
  - f.) that no building plans will be recommended for approval by the Directorate: Infrastructure Services before a subdivision clearance is issued;



**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

30. that it is recognized that the normal Site Development Plan, submitted as part of the land-use application, is compiled during a very early stage of the development and will lack engineering detail that may result in a later change of the Site Development Plan. Any later changes will be to the cost of the "Developer";
31. that even if a Site Development Plan is approved by this letter of approval, a further fully detailed site plan be submitted for approval prior to the approval of engineering services plans and or building- and/or services plans to allow for the setting of requirements, specifications and conditions related to civil engineering services. Such Plan is to be substantially in accordance with the approved application and or subdivision plan and or precinct plan and or site plan, etc. and is to include a layout plan showing the position of all roads, road reserve widths, sidewalks, parking areas with dimensions, loading areas, access points, stacking distances at gates, refuse removal arrangements, allocation of uses, position and orientation of all buildings, the allocation of public and private open spaces, building development parameters, the required number of parking bays, stormwater detention facilities, connection points to municipal water- and sewer services, updated land-use diagram and possible servitudes;
32. that if the fully detailed Site Development Plan, as mentioned in the above item, contradicts the approved Site Development Plan, the "Developer" will be responsible for the amendment thereof and any costs associated therewith;
33. that an amended Site Development Plan be submitted for approval prior to the approval of building plans for new buildings not indicated on the Site Development Plan applicable to this application and or changes to existing buildings or re-development thereof;

**Internal- and Link Services**

34. that the "Developer", at his/her cost, construct the internal (on-site) civil engineering services for the development, as well as any link (service between internal and available bulk municipal service) municipal services that need to be provided;
35. that the Directorate: Infrastructure Services may require the "Developer" to construct internal municipal services and/or link services to a higher capacity than warranted by the project, for purposes of allowing other existing or future developments to also utilise such services. The costs of providing services to a higher capacity could be offset against the Development

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

Charges payable in respect of bulk civil engineering services if approved by the Directorate: Infrastructure Services;

36. that the detailed design and location of access points, circulation, parking, loading - and pedestrian facilities, etc., shall be generally in accordance with the approved Site Development Plan and / or Subdivision Plan applicable to this application;
37. that plans of all the internal civil services and such municipal link services as required by the Directorate: Infrastructure Services be prepared and signed by a Registered Engineering Professional before being submitted to the aforementioned Directorate for approval;
38. that construction of services may only commence after municipal approval has been obtained;
39. that the construction of all civil engineering infrastructure shall be done by a registered civil engineering services construction company approved by the "Engineer";
40. that the "Developer" ensures that his/her design engineer is aware of the Stellenbosch Municipality Design Guidelines & Minimum Standards for Civil Engineering Services (as amended) and that the design and construction/alteration of all civil engineering infrastructure shall be generally in accordance with this document, unless otherwise agreed with the "Engineer". The said document is available in electronic format on request;
41. that a suitably qualified professional resident engineer be appointed to supervise the construction of all internal – and external services;
42. that all the internal civil services (water, sewer, roads and stormwater), be indicated on the necessary building plans for approval by the Directorate: Infrastructure Services;
43. that prior to the issuing of the Certificate of Practical Completion, in terms of GCC 2015 Clause 5.14.1, all internal - and link services be inspected for approval by the "Engineer" on request by the "Developer's" Consulting Engineer;
44. that a Certificate of Practical Completion, in terms of GCC 2015 Clause 5.14.1 be issued before subdivision clearance will be issued;
45. that subdivision clearance will only be issued if the bulk watermeter is installed, a municipal account for the said meter is activated and the consumer deposit has been paid;

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

46. that a complete set of test results of all internal – and external services (i.e. pressure tests on water - and sewer pipelines as well as densities on road structure and all relevant tests on asphalt), approved and verified by a professional registered engineer be submitted to the “*Engineer*” on request;
47. that the “*Developer*” shall adhere to the specifications of Telkom (SA) and or any other telecommunications service provider;
48. that the “*Developer*” shall be responsible for the cost for any surveying and registration of servitudes regarding services on the property;
49. that the “*Developer*” be liable for all damages caused to existing civil and electrical services of the “*Municipality*” relevant to this development. It is the responsibility of the contractor and/or sub-contractor of the “*Developer*” to determine the location of existing civil and electrical services;
50. that all connections to the existing services be made by the “*Developer*” under direct supervision of the “*Engineer*” or as otherwise agreed and all cost will be for the account of the “*Developer*”.
51. that the developer takes cognizance of applicable tariffs by Council in respect of availability of services and minimum tariffs payable;

**Servitudes**

52. that the “*Developer*” ensures that all main services including roads to be taken over by the Directorate: Infrastructure Services, all existing municipal – and or private services including roads, crossing private - and or other institutional property and any other services/roads crossing future private land/erven are protected by a registered servitude before subdivision clearance will be given;
53. The width of the registered servitude must be a minimum of 3 m or twice the depth of the pipe (measured to invert. of pipe), whichever is the highest value. The “*Developer*” will be responsible for the registration of the required servitude(s), as well as the cost thereof;
54. that the “*Developer*” obtains the written approval of all affected owners where the route of a proposed service crosses the property of a third party before final approval of engineering drawings be obtained.

## PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4

### **Stormwater Management**

55. Taking into account the recent water crisis, and associated increase in borehole usage, it is important that the groundwater be recharged as much as possible. One way of achieving the above is to consider using Sustainable Drainage Systems (SuDS) approach wrt SW management. From Red Book: "SuDS constitute an approach towards managing stormwater runoff that aims to reduce downstream flooding, allow infiltration into the ground, minimise pollution, improve the quality of stormwater, reduce pollution in water bodies, and enhance biodiversity. Rather than merely collecting and discarding stormwater through a system of pipes and culverts, this approach recognises that stormwater could be a resource." The Developer is encouraged to implement SuDS principles that are practical and easily implementable. Details of such systems can be discussed and agreed with the Municipality and must be indicated on the engineering drawings.
56. that the geometric design of the roads and/or parking areas ensure that no trapped low-points are created with regard to stormwater management. All stormwater to be routed to the nearest formalized municipal system;
57. that overland stormwater escape routes be provided in the cadastral layout at all low points in the road layout, or that the vertical alignment of the road design be adjusted in order for the roads to function as overland stormwater escape routes. If this necessitates an amendment of the cadastral layout, it must be done by the "*Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services;
58. that the design engineer needs to apply his/her mind to ensure a design that will promote a sustainable urban drainage system which will reduce the impacts of stormwater on receiving aquatic environments;
59. that no disturbance to the river channel or banks be made without the prior approval in accordance with the requirements of the National Water Act;
60. that the consulting engineer, appointed by the "*Developer*", analyses the existing stormwater systems and determine the expected stormwater run-off for the proposed development, for both the minor and the major storm event. Should the existing municipal stormwater system not be able to accommodate the expected stormwater run-off, the difference between the pre- and post-development stormwater run-off must be accommodated on site, or the existing system must be upgraded to the required capacity at the cost of the "*Developer*" and to the

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

standards and satisfaction of the Directorate: Infrastructure Services. The aforementioned stormwater analysis is to be submitted concurrent with the detail services plans;

61. that for larger developments, industrial developments or developments near water courses a stormwater management plan for the proposed development area, for both the minor and major storm events, be compiled and submitted for approval to the Directorate: Infrastructure Services.
62. that the approved management plan be implemented by the "*Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services. The management plan, which is to include an attenuation facility, is to be submitted concurrent with the detail services plans;
63. that in the case of a sectional title development, the internal stormwater layout be indicated on the necessary building plans to be submitted for approval.
64. that no overland discharge of stormwater will be allowed into a public road for erven with catchment areas of more than 1500m<sup>2</sup> and for which it is agreed that no detention facilities are required. The "*Developer*" needs to connect to the nearest piped municipal stormwater system with a stormwater erf connection which may not exceed a diameter of 300mm.

**Roads**

65. that, where applicable, the application must be submitted to the District Roads Engineer for comment and conditions. Any conditions set by the District Roads Engineer will be applicable;
66. that no access control will be allowed in public roads;
67. that the layout must make provision for all deliveries to take place on-site. Movement of delivery vehicles may not have a negative impact on vehicular – and pedestrian movement on public roads and or public sidewalks;
68. The design and lay-out of the development must be such that emergency vehicles can easily drive through and turn around where necessary;
69. that, prior to commencement of any demolition / construction work, a traffic accommodation plan for the surrounding roads must be submitted to the Directorate: Infrastructure Services for

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

approval, and that the approved plan be implemented by the "*Developer*", at his/her cost, to the standards of the Directorate: Infrastructure Services;

70. that visibility splays shall be provided and maintained on each side of the new access in accordance with the standard specifications as specified in the Red Book with regard to sight triangles at intersections;
71. that each erf has its own access (drive-way), *(the new access(es) (dropped kerb(s)) to the proposed parking bays be)* constructed to standards as set out by the the Directorate: Infrastructure Services and in line with the Road Access Guideline;
72. that the access road to the existing facility be kept in an acceptable condition, i.e. maintained to a standard which will result in a comfortable ride for a standard passenger vehicle and to a standard which will not endanger the lives or property of road users;
73. that the parking area be provided with a permanent surface and be clearly demarcated and accessible. Plans of the parking layout, pavement layerworks and stormwater drainage are to be approved by the Directorate: Infrastructure Services before commencement of construction and that the construction of the parking area be to the standards of the Directorate: Infrastructure Services;
74. that no parking be allowed in the road reserve;

**Wayleaves**

75. that way-leaves / work permits be obtained from the Directorate: Infrastructure Services prior to any excavation / construction work on municipal land or within 3,0m from municipal services located on private property;
76. that wayleaves will only be issued after approval of relevant engineering design drawings;
77. that it is the Developer's responsibility to obtain wayleaves from any other authorities/service provider's who's services may be affected.

**AS-BUILTs**

78. The "*Developer*" shall provide the "*Municipality*" with:
  - a. a complete set of as-built paper plans, signed by a professional registered engineer;

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

- b. a CD/DVD containing the signed as-built plans in an electronic DXF-file format, reflecting compatible layers and formats as will be requested by the “Engineer” and is reflected herewith as Annexure X;
  - c. a completed Asset Verification Sheet in Excell format, reflecting the componitization of municipal services installed as part of the development. The Asset Verification Sheet will have to be according to the IMQS format, as to be supplied by the “Engineer”, and is to be verified as correct by a professional registered engineer;
  - d. a complete set of test results of all internal – and external services (i.e. pressure tests on water - and sewer pipelines as well as densities on road structure and all relevant tests on asphalt), approved and verified by a professional registered engineer;
  - e. Written verification by the developer’s consulting engineer that all professional fees in respect of the planning, design and supervision of any services to be taken over by the “Municipality” are fully paid;
79. All relevant as-built detail, as reflected in the item above, of civil engineering services constructed for the development, must be submitted to the “Engineer” and approved by the “Engineer” before any application for Certificate of Clearance will be supported by the “Engineer”;
80. The Consulting Civil Engineer of the “Developer” shall certify that the location and position of the installed services are in accordance with the plans submitted for each of the services detailed below;
81. All As-built drawings are to be signed by a professional engineer who represents the consulting engineering company responsible for the design and or site supervision of civil engineering services;
82. Section 28 Certification in terms of the Stellenbosch Municipal Land Use Planning By-law shall not be issued unless said services have been inspected by the “Engineer” and written clearance given, by the “Engineer”;

**Subdivision clearance in terms of the Stellenbosch Municipal Land Use Planning By-law**

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

83. It is specifically agreed that the "*Developer*" undertakes to comply with all conditions of approval as laid down by the "*Municipality*" before clearance certificates shall be issued, unless otherwise agreed herein;
84. that the "*Municipality*" reserves the right to withhold any clearance certificate until such time as the "*Developer*" has complied with conditions set out in this document with which he/she is in default. Any failure to pay monies payable in terms of these conditions within 30 (thirty) days after an account has been rendered shall be regarded as a breach of these conditions and the "*Municipality*" reserves the right to withhold any clearance certificate until such time as the amount owing has been paid;
85. that clearance will only be given per phase and the onus is on the "*Developer*" to phase his development accordingly;
86. **The onus will be on the "*Developer*" and or his professional team to ensure that all land-use conditions have been complied with before submitting an application for a subdivision clearance certificate. Verifying documentation (proof of payment in respect of Development Charges, services installation, etc.) must be submitted as part of the application before an application will be accepted by this Directorate;**
87. that any application for Certificate of Clearance will only be supported by the "*Engineer*" once all relevant as-built detail, as reflected in the item "AS-BUILT's" of this document, is submitted to the "*Engineer*" and approved by the "*Engineer*".

**Avoidance of waste, nuisance and risk**

88. Where in the opinion of the "*Municipality*" a nuisance, health or other risk to the public is caused due to construction activities and/or a lack of maintenance of any service, the "*Municipality*" may give the "*Developer*" and or OWNER'S ASSOCIATION written notice to remedy the defect failing which the "*Municipality*" may carry out the work itself or have it carried out, at the cost of the "*Developer*" and or OWNER'S ASSOCIATION.

**Streetlighting**

89. The "*Developer*" will be responsible for the design and construction at his own expense of all internal street lighting services and street lighting on link roads leading to his development (excluding Class 1, 2 and 3 Roads) according to specifications determined by the municipality's Manager: Electrical Services and under the supervision of the consulting engineer, appointed by the "*Developer*";



**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

90. Prior to commencing with the design of street lighting services, the consulting electrical engineer, as appointed by the "*Developer*" must acquaint himself with, and clarify with the municipality's Manager: Electrical Engineering, the standards of materials and design requirements to be complied with and possible cost of connections to existing services;
91. The final design of the complete internal street lighting network of the development must be submitted by the consulting electrical engineer, as appointed by the "*Developer*", to the municipality's Manager: Electrical Engineering for approval before any construction work commences;
92. Any defect with the street lighting services constructed by the "*Developer*" which may occur during the defects liability period of 12 (TWELVE) months and which occurs as a result of defective workmanship and/or materials must be rectified immediately / on the same day the defect was brought to the attention of the consulting electrical engineer, appointed by the "*Developer*". Should the necessary repair work not be done within the said time the "*Municipality*" reserves the right to carry out the repair work at the cost of the "*Developer*";
93. The maintenance and servicing of all private internal street lighting shall be the responsibility and to the cost of the "*Developer*" and or Home Owner's Association.



**Tyrone King Pr Tech Eng**  
**Manager: Development (Infrastructure Services)**



**Shane Chandaka**  
**Director: Infrastructure Services**

16/02/2024

## PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4

## ATTACHMENT X

**Geographic Information System (GIS) data capturing standards**

In drawing up the As-build Plans relating to this development, the consultant must create the following separate layers in ESRI .shp, electronic file format in order for the data to reflect spatially correct.

| Layer name         | Content                                                                                               |
|--------------------|-------------------------------------------------------------------------------------------------------|
| TITLE              | Title information, including any endorsements and references                                          |
| NOTES              | All noted information, both from the owner / surveyor and SG                                          |
| PARENT_PROPLINES   | Parent property lines                                                                                 |
| PARENT_PROPNUM     | Parent erf number (or portion number)                                                                 |
| PROPLINES          | New portion boundaries                                                                                |
| PROPANNO           | New erf numbers                                                                                       |
| SERVLINES          | Servitude polygons                                                                                    |
| SERVANNO           | Servitude type                                                                                        |
| STREET_NAMES       | Road centre lines with street names                                                                   |
| STREET_NUMBERS     | Points with street numbers                                                                            |
| COMPLEX BOUNDARIES | Where applicable, polygon with complex name (mention whether gated or not and if so, where gates are) |
| SUBURB             | Polygon with suburb name, where new suburb / township extension created                               |
| ESTATE             | Where applicable, polygon with estate name (mention whether gated or not and if so, where gates are)  |

When data is provided in a .shp format it is mandatory that the .shx, .dbf, files should accompany the shapefile. The prj file containing the projection information must also accompany the shapefile.

It is important that different geographical elements for the GIS capture process remains separate. That means that political boundaries like wards or suburbs be kept separate from something like rivers. The same applies for engineering data types like water lines, sewer lines, electricity etc. that it is kept separate from one another. When new properties are added as part of a development, a list of erf numbers with its associated SG numbers must be provided in an electronic format like .txt, .xls or .csv format.

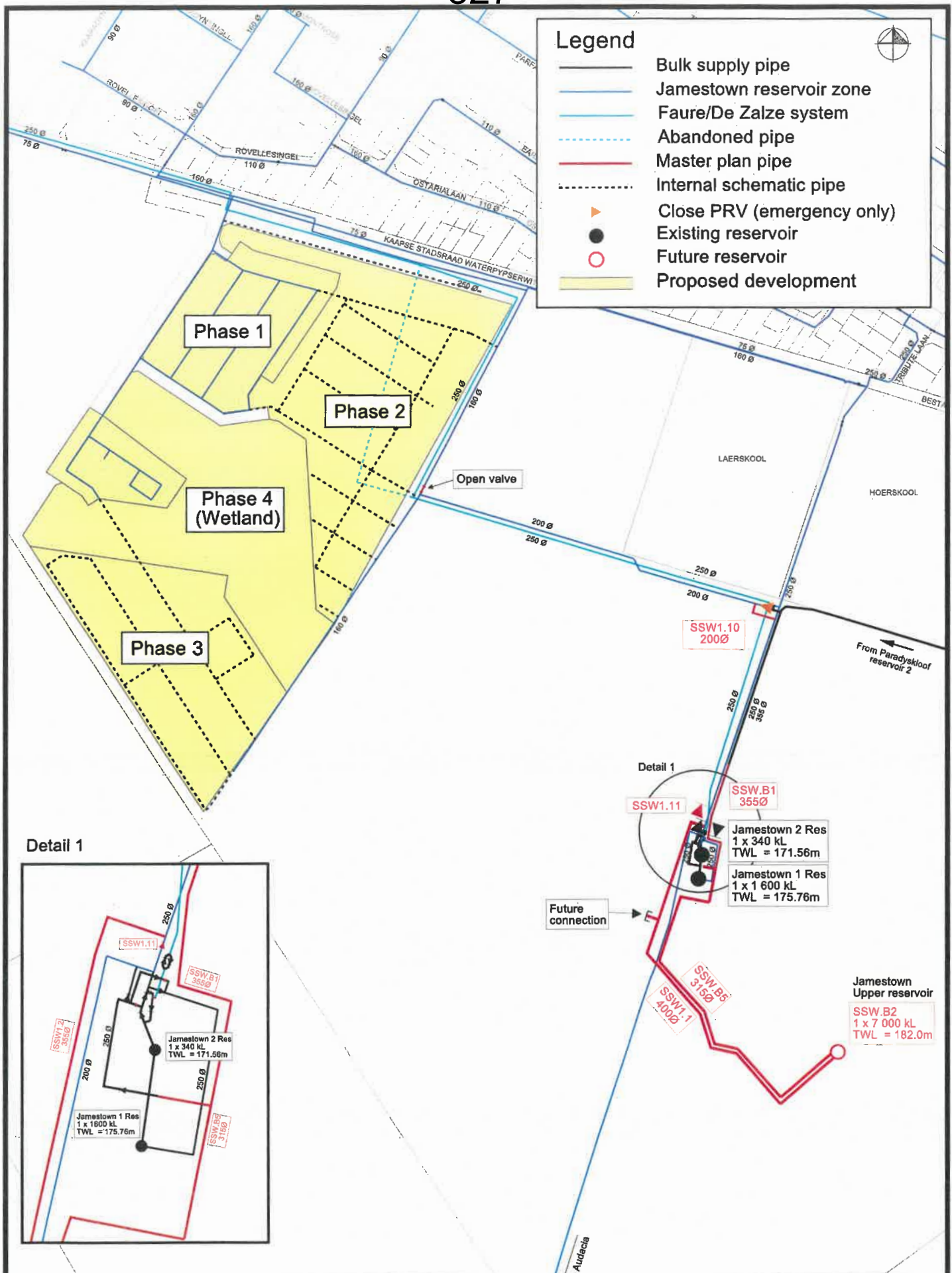
For road layer shapefiles; the road name, the from\_street and to\_street where applicable as well as the start en end street numbers needs to be included as part of the attributes. A rotation field needs to be added to give the street name the correct angle on the map.

In addition to being geo-referenced and in WGS 1984 Geographic Coordinate System, the drawing must be completed using real world coordinates based on the Stellenbosch

**PROPOSED REZONING AND SUBDIVISION OF FARM 527 PORTION 4**

Municipality standard as follows:

- Datum : Hartebeeshoek WGS 84
- Projection : Transverse Mercator
- Central Longitude/Meridian 19
- False easting : 0.00000000
- False northing : 0.00000000
- Central meridian : 19.00000000
- Scale factor : 1.00000000
- Origin latitude : 0.00000000
- Linear unit : Meter



July 2023

Stellenbosch - Portion 4 of Farm 527 - Jamestown

**Figure 2**

Proposed Development  
Portion 4 of Farm 527 - Jamestown  
Water Master Plan





AREA DRAINING TO NO CATCHMENT  
SCALE 1:5000

AREA DRAINING TO CATCHMENT 2  
SCALE 1:5000

AREA DRAINING TO CATCHMENT 1  
SCALE 1:5000

| LEGEND |                            |
|--------|----------------------------|
|        | PROPOSED STORMWATER PIPE   |
|        | 1000mm STORMWATER MANHOLE  |
|        | PROPOSED DOUBLE GRID INLET |
|        | PROPOSED BRICK HEADWALL    |
|        | PROPOSED COMMUNITY AREA    |
|        | PROPOSED RESIDENTIAL       |
|        | PROPOSED PLAY LOTS         |
|        | PROPOSED STREETS           |
|        | PROPOSED SERVITUDE         |
|        | TOTAL DRAINAGE AREA        |

IF CONSTRUCTION DRAWINGS ARE ISSUED UNSIGNED, THE MASTER WITH THE ORIGINAL SIGNATURE OF APPROVAL WILL BE HELD AT THE ZUTARI OFFICE OF THE APPROVER

**ZUTARI**  
IMPACT. ENGINEERED.

**STELLENBOSCH**  
MUNICIPALITY • UMAMPAALA • MUNISIPALITEIT

| REV | DATE     | REVISION DETAILS       | APPROVED        |
|-----|----------|------------------------|-----------------|
| A   | 07/12/23 | ISSUED FOR INFORMATION | C. VAN DER WALT |

|          |      |                      |
|----------|------|----------------------|
| SCALE    | SIZE | PRELIMINARY          |
| AS SHOWN | A0   | NOT FOR CONSTRUCTION |

|          |              |                 |               |
|----------|--------------|-----------------|---------------|
| DRAWN    | A. WASSERMAN | APPROVED        | DATE          |
| DESIGNED | E. JORDAAN   |                 | 07/12/2023    |
| REVIEWED | A.P. ZEEMAN  | C. VAN DER WALT | ECSA 20060271 |

PROJECT  
JAMESTOWN HOUSING DEVELOPMENT  
ON FARM RE/7527, JAMESTOWN

TITLE  
PROPOSED STORMWATER LAYOUT

DRAWING NUMBER



## **ANNEXURE K: COMMENTS FROM THE DEPARTMENT OF TRANSPORT AND PUBLIC WORKS**



## **ANNEXURE L: COMMENTS FROM THE DEPARTMENT OF ENVIRONMENTAL AFFAIRS AND DEVELOPMENT PLANNING**



**Western Cape  
Government**

Department of Environmental Affairs and Development Planning

**Helene Janser**

Directorate: Development Management (Region 2)

Helene.Janser@westerncape.gov.za | Tel: 084 585 2000

**Reference: 15/3/2/12/BS2**

Zutari (Pty) Ltd  
65 York Street  
GEORGE  
6530

**FOR ATTENTION: RUDOLF SCHRODER**

[Rudolf.schroder@zutari.com](mailto:Rudolf.schroder@zutari.com)

**REQUEST FOR PROVINCIAL PLANNING COMMENT: APPLICATION FOR THE REZONING AND SUBDIVISION OF THE REMAINDER OF PORTION 7 OF FARM 527, STELLENBOSCH DIVISION**

1. Your request for comment, dated 12 June 2023 but only received by this Directorate on 22 June 2023, has reference.
2. The intention of the land use application is to obtain municipal approval for the rezoning of the Remainder of Portion 7 of the Farm 527, Stellenbosch from Public Open Space Zone to Subdivisional Area to allow for the following land uses:
  - 253 Conventional Residential Zone stands
  - 9 Multi-unit Residential Zone stands
  - 1 Community Zone stand
  - 4 Public Open Space Zone stands
  - 1 Transport Zone stand
  - Public Roads
3. The aforesaid constitutes Phases 2 and 3 of the Jamestown Integrated Housing Development on the Remainder of Portion 7 of the Farm 527, Stellenbosch and comprises a mix of site and service plots, two-storey walk-ups. GAP housing, high income housing, institutional use and public open space.
4. The subject property is located inside the urban edge of Jamestown and the proposal is consistent with the Municipal Spatial Development Framework, which earmarks the site for 'Mixed Use Community and Residential Infill'.
5. The proposed development is aligned to the provincial spatial agenda, as set out in the PSDF by way of ensuring the efficient use of land and infrastructure in order to contain urban sprawl and prioritise infill, intensification and redevelopment within settlements.



6. As such, this Directorate has no objection to the rezoning and subdivision of the Remainder of Portion 7 of the Farm 527, Stellenbosch as proposed.

**Kobus Munro** Digitally signed by Kobus Munro  
Date: 2023.07.14 12:29:32 +02'00'

**DIRECTOR: DEVELOPMENT MANAGEMENT (REGION 2)**



**ANNEXURE M: ENGINEERING SERVICES REPORT**

# Engineering Services Report

Jamestown Housing Development  
on Farm RE/7/527, Jamestown

**Stellenbosch Municipality**

Submission date: 2023/11/03

Document number: Jamestown Housing Development RE/7/527 Engineering Services Report  
Revision: 0

## Document control record

### Document prepared by:

Zutari (Pty) Ltd  
Reg No 1977/003711/07  
264 Main Street  
Paarl  
South Africa

T +27 21 860 2200  
F +27 21 860 2222  
E [chris.vanderwalt@zutari.com](mailto:chris.vanderwalt@zutari.com)

| Document Control        |             |                                                                    |                         |                                                |                    |
|-------------------------|-------------|--------------------------------------------------------------------|-------------------------|------------------------------------------------|--------------------|
| <b>Project name</b>     |             | Jamestown Housing Development on Farm RE/7/527, Jamestown          |                         |                                                |                    |
| <b>Document number</b>  |             | Jamestown Housing Development RE/7/527 Engineering Services Report | <b>Project number</b>   | 1002169                                        |                    |
| <b>Client</b>           |             | Stellenbosch Municipality                                          |                         |                                                |                    |
| <b>Client contact</b>   |             | L. Vanstavel                                                       | <b>Client reference</b> | Jamestown Housing Development on Farm RE/7/527 |                    |
| <b>Rev</b>              | <b>Date</b> | <b>Revision details/status</b>                                     | <b>Author</b>           | <b>Reviewer</b>                                | <b>Approver</b>    |
| 0                       | 2023/11/03  | For circulation                                                    | Ferdie van Zyl          | Chris van der Walt                             | Chris van der Walt |
|                         |             |                                                                    |                         |                                                |                    |
|                         |             |                                                                    |                         |                                                |                    |
|                         |             |                                                                    |                         |                                                |                    |
| <b>Current revision</b> |             | 0                                                                  |                         |                                                |                    |

| Approval                |                |                           |                    |
|-------------------------|----------------|---------------------------|--------------------|
| <b>Author signature</b> |                | <b>Approver signature</b> |                    |
|                         |                |                           |                    |
| <b>Name</b>             | Ferdie van Zyl | <b>Name</b>               | Chris van der Walt |
| <b>Title</b>            | Civil Engineer | <b>Title</b>              | Associate          |

**All rights reserved** | The information contained herein is confidential and proprietary to Zutari and/or its business partners. It may include personal information of data subjects connected to Zutari and/or our business purpose. To safeguard the information and the competitive position of information owners, the content hereof shall not be used, disclosed, or otherwise processed for any purpose other than the purpose for which it was developed. Users can only rely on the accuracy of the final version of the Report. Processing and disclosure of information is subject to our Privacy Notice and users indemnify Zutari against the consequences of unauthorised use or disclosure. Any concerns may be addressed to the Zutari Information Officer.

## Contents

|                                                       |           |
|-------------------------------------------------------|-----------|
| <b>1 INTRODUCTION .....</b>                           | <b>5</b>  |
| <b>2 Site locality and description.....</b>           | <b>5</b>  |
| <b>3 Description of the proposed development.....</b> | <b>7</b>  |
| 3.1 Proposed development .....                        | 7         |
| 3.2 Geotechnical investigation .....                  | 8         |
| 3.3 Traffic Impact Assessment .....                   | 8         |
| <b>4 POTABLE WATER SUPPLY.....</b>                    | <b>9</b>  |
| 4.1 Impact on bulk water capacity .....               | 9         |
| 4.1.1 Network capacity .....                          | 9         |
| 4.1.2 Bulk supply .....                               | 10        |
| 4.1.3 Master plan items to be implemented .....       | 10        |
| 4.1.4 Minimum items required .....                    | 10        |
| 4.2 Connection to bulk network .....                  | 11        |
| 4.3 Water demand calculation.....                     | 11        |
| 4.4 Internal reticulation .....                       | 12        |
| 4.5 Fire Fighting Requirements .....                  | 13        |
| <b>5 SANITATION.....</b>                              | <b>13</b> |
| 5.1 Impact on bulk sewage.....                        | 13        |
| 5.2 Sewage Yield Calculation.....                     | 14        |
| 5.3 Internal Sewage Reticulation.....                 | 14        |
| <b>6 STORMWATER MANAGEMENT .....</b>                  | <b>15</b> |
| 6.1 Design Philosophy.....                            | 16        |
| 6.2 Rainfall Data .....                               | 16        |
| 6.3 Pre-development Flood Run-off .....               | 17        |
| 6.4 Post-development Flood Run-off.....               | 18        |
| <b>7 ROADS.....</b>                                   | <b>19</b> |
| 7.1 Access .....                                      | 19        |
| 7.2 Internal roads.....                               | 19        |
| 7.3 Parking Facilities .....                          | 19        |
| <b>8 Solid Waste Disposal .....</b>                   | <b>19</b> |
| <b>9 Conclusion .....</b>                             | <b>20</b> |
| <b>10 Bibliography.....</b>                           | <b>20</b> |
| <b>Appendix A: Subdivision and Zoning Plan .....</b>  | <b>21</b> |
| <b>Appendix B: Traffic Impact Assessment .....</b>    | <b>22</b> |

## Appendices

Appendix A: Subdivision and Zoning Plan

Appendix B: Traffic Impact Assessment

## Figures

Figure 1: Portion 7 of Farm 527 Location

Figure 2: Jamestown Housing Development Proposed Subdivision Plan

Figure 3: Local bulk supply network, internal reticulation and proposed upgrades

Figure 4: Local bulk supply network proposed upgrades

Figure 5: Local Sewer Infrastructure

Figure 6: Watersheds and drainage directions

## Tables

Table 1: Potable water demand calculation

Table 2: Sewage yield calculation

Table 3: The various RI storm events and related rainfall depths

Table 4: Pre-development calculation sheet

Table 5: Post-development calculation sheet

Table 6: Combined post-development simulated peak flows

## 1 INTRODUCTION

Zutari (Pty) Ltd is currently appointed on the Stellenbosch Municipality Contract BSM 115/21: A Professional Service Provider to Assemble a Multi-Disciplinary Team of Professionals in to Undertake a Broad Conceptual Urban Design Framework for a Portion of Portion 7 of Farm 527 and Remainder Farm 527, Stellenbosch, and to Obtain Town Planning and Development Rights.

Stellenbosch Municipality has requested a conceptual urban design framework, town plans and development right associated with portion 7 of Farm 527 and the remainder of Farm 527, Stellenbosch, Jamestown. It is Stellenbosch Municipality's intention to rezone the project site for development purposes and release it to the market with specific conditions in a housing typology mix that provides for feasible affordable housing opportunities in this expanding area.

This report addresses the needs of Stellenbosch Municipality regarding the provision of engineering services for Phases 2 and 3 of the Jamestown Housing Development Project. The infrastructure design of the development is based on technical requirements and guidelines as stated in the Design Guidelines and Minimum Standards for Civil Engineering Services (Stellenbosch Municipality, 2015) and the general subdivision/rezoning condition (Stellenbosch Municipality, 2015). Additionally, design considerations are also based on the Guidelines for Human Settlement Planning and Design (Department of Human Settlements, 2019) and the Drainage Manual 6th Edition (SANRAL, 2013).

The level of service for the proposed infrastructure will be to the accepted standard associated with that of the various proposed housing topologies as per the architect's details.

This services report has been compiled based on the following available information:

- The latest Site Development Plan (SDP);
- Traffic Impact Assessment (TIA);

## 2 Site locality and description

The proposed development is situated near the R44 and in close proximity to the Stellenzicht Secondary School. The coordinates of the proposed development is 33°59'0.76"S (latitudinal) 18°50'38.67"E (longitudinal). Figure 1 indicates the locality of the proposed phase 2 and 3 of the Jamestown Housing Development project.

The site slopes to the West and North West to a local valley that runs East to West through the middle of the erf at an average gradient of 3.36%. The highest point is at the Southern Corner at an elevation of 156.0m MAMSL. The lowest point is at the centre of the Western boundary at an elevation of 132.0m MAMSL.



**Figure 1: Portion 7 of Farm 527 Location**



### 3.1 Proposed development

- 248 Conventional Residential Zone stands
- 9 Multi-unit Residential Zone stands
- 1 Community Zone stand
- 1 Public Open Space Zone stand
- 1 Transport Zone stand
- Public Roads

The engineering services required for the development were based on 424 housing opportunities with an average size of 145m<sup>2</sup>. The development will be constructed as per the following two project phases:

- [illegible]

Document number Jamestown Housing Development RE/7/527 Engineering Services Report, Revision 0, Date 2023/11/03

### 3.2 Geotechnical investigation

The developable portion of the site has gentle slopes and will require limited earthworks remodelling for effective stormwater drainage. Based on geotechnical investigations previously undertaken by Kantey and Templer Consulting Engineers, for other developments in the Jamestown area it is Geologically anticipated that the site is situated in terrain composed of and underlain at shallow depth by granites of the Cape Granite Suite.

The granite is typically mantled by sandy and gritty soils of naturally transported origin. This material can be expected to be of unacceptably loose consistency due to reworking during historical agricultural activities.

It is expected that subgrade conditions within the sandy transported soils are typically satisfactory with only re-compaction required to improve conditions to the standards required for road building purposes.

Likewise, it is expected that founding of new buildings will typically require conventional spread footing foundations, however, the depth of founding will probably be of the order of 1,0 – 1,5m due to the presence of the reworked transported soils.

It is expected that groundwater will occur as a seasonally fluctuating perched water table which will rise to ground level during periods of intense rainfall. During the summer months, however, groundwater will not present any untoward problems during either terracing of the site, installation of deep services or construction of foundations.

Therefore, before design and construction of roads, services and building foundations commences, we would recommend that a geotechnical investigation which includes the excavation of machine dug trial holes and in-situ / laboratory testing be undertaken to establish the soil parameters and verify the expectations expressed above thereby confirming subsoil conditions.

### 3.3 Traffic Impact Assessment

Zutari consulting engineers conducted a separate Traffic Impact Assessment (TIA) as per the Stellenbosch Municipality's requirements (See Appendix B). The Traffic impact assessment investigated the impact on the traffic flows in the area. The findings state the requirements in terms of bulk road upgrades. In summary, the following upgrades are recommended:

- R44/Webersvallei Road intersection be upgraded before the additional traffic to/from Phase 2 and 3 Jamestown Residential Development be added.
- Without the Phase 2 and 3 Jamestown Residential Development, the R44 is expected to be operating at capacity (in excess of 1200 vehicles per hour per lane) by 2025. It is therefore recommended that:
  - Future investment be directed to implement a more sustainable mode of transport that reduces commuters' dependency on private vehicles;
  - In addition to the above, an alternative north-south link, connecting the Helderberg Basin and Overberg regions to areas to the north such as Paarl, Wellington and Malmesbury, should be implemented or at least be underway by 2030.
- To improve connectivity, permeability and to enhance the use of both public transport and NMT modes it is recommended that the existing NMT facilities be extended along School Road and Public Transport embayments be provided where buses pick up/drop scholars attending the schools along School Road.
- Once School Road to the east have been upgraded to a surface standard, measures to prevent speeding along School Road should be considered and implemented.

## 4 POTABLE WATER SUPPLY

### 4.1 Impact on bulk water capacity

GLS Consulting engineers were approached to comment on the service integration and impact on the bulk supply network of Jamestown housing development Phases 2 and 3. This section should be read in conjunction with the Water Master Plan (performed for the Stellenbosch Municipality) dated June 2023.

#### 4.1.1 Network capacity

There is insufficient capacity in the existing water reticulation system to accommodate the proposed development.

The existing Jamestown reservoir water distribution zone is supplied under gravity from the Jamestown no 1 reservoir with a Top Water Level (TWL) of 175,76 metres above mean sea level (m a.s.l.). This reservoir supplies bulk water to the existing Jamestown suburbs as well as to De Zalze.

The existing Jamestown no. 1 reservoir can supply water to development up to  $\pm$  the 140 m contour. There is currently an informal settlement in Jamestown above the 140 m contour line (located on phase 3 of the development area), which is supplied with water directly from the bulk water pipeline from the Paradyskloof no. 2 reservoir via a pressure reducing valve (PRV), as shown on Figure 3.

In the Water Master Plan a new higher lying reservoir is proposed for Jamestown with a TWL of  $\pm$  182m a.s.l. This new reservoir will be able to accommodate development up to the 160 m contour line.

The proposed development on portion 4 of Farm 527 in Jamestown is located between the 132 m and 155 m contours and should therefore be supplied from the new higher lying Jamestown reservoir in order to provide sufficient water pressure to the development (the supply from the bulk system via the PRV for the higher lying erven is only a temporary solution and not supported as a permanent solution).

The existing Jamestown reticulation network downstream of the existing Jamestown reservoir site has sufficient capacity in order to accommodate the proposed development. A new connection is however required to the existing 250 mm main supply pipe from the reservoirs in order to by-pass the existing PRV that is supplied from the bulk supply system.

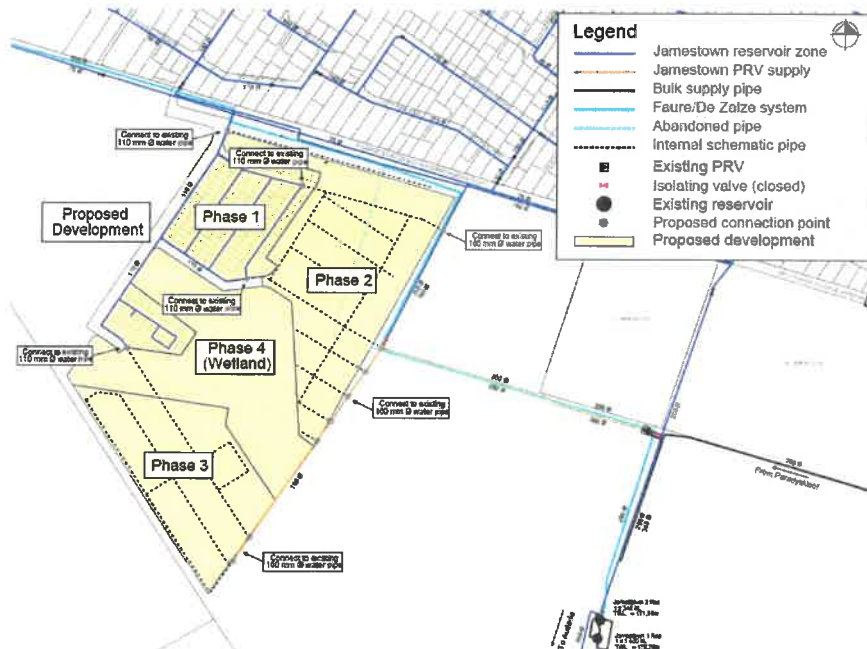


**Figure 3: Local bulk supply network, internal reticulation and proposed upgrades**

Document number Jamestown Housing Development RE/7/527 Engineering Services Report, Revision 0, Date 2023/11/03

#### 4.1.2 Bulk supply

An existing 355 mm Ø bulk supply pipe has been implemented in 2017 from the Paradyskloof no. 2 reservoir (next to the Paradyskloof Water Treatment Plant (WTP)) to the existing Jamestown reservoir site.

This pipeline is however not connected to the existing Jamestown reservoirs and is currently underutilised as it is only used to supply a small informal area within Jamestown with water through the Jamestown PRV. The master plan proposes that the existing 355 mm Ø pipeline should be extended and connected to the proposed new Jamestown Upper reservoir for the development to proceed.

#### 4.1.3 Master plan items to be implemented

The following master plan items are required for the proposed development together with other future developments in the area, as shown on Figure 4.

Bulk supply upgrades:

|                                              |                      |
|----------------------------------------------|----------------------|
| • SSW.B1 : 140 m x 355 mm Ø bulk supply pipe | R 942 000 *          |
| • SSW.B5 : 400 m x 355 mm Ø bulk supply pipe | <u>R 2 140 000 *</u> |
| <b>Total</b>                                 | <b>R 3 082 000 *</b> |

Reservoir upgrades:

|                                                                  |                |
|------------------------------------------------------------------|----------------|
| • SSW.B2 : 7,0 ML Jamestown Upper reservoir (TWL = 182 m a.s.l.) | R 25 511 000 * |
|------------------------------------------------------------------|----------------|

Network supply:

|                                                   |                      |
|---------------------------------------------------|----------------------|
| • SSW1.1 : 330 m x 400 mm Ø network supply pipe   | R 2 194 000 *        |
| • SSW1.2 : 125 m x 355 mm Ø network supply pipe   | R 851 000 *          |
| • SSW1.10 : 10 m x 200 mm Ø inter-connection pipe | R 79 000 *           |
| • SSW1.11 : Install new check valve               | <u>R 214 000 *</u>   |
| <b>Total</b>                                      | <b>R 3 338 000 *</b> |

(\* Including P & G, Contingencies and Fees, but excluding VAT - Year 2022/23 Rand Value. This is a rough estimate, which does not include major unforeseen costs).

Take note that the routes of the proposed pipelines are schematically shown on Figure 4 but have to be finalised subsequent to detail pipeline route investigations.

#### 4.1.4 Minimum items required

The following minimum items are required to accommodate the proposed development in the existing water system:

- Master plan item SSW.B2 is required to augment reservoir storage capacity in the existing Jamestown reservoir water distribution zone,
- Master plan items SSW.B1 & SSW.B5 are required to connect the existing 355 mm Ø bulk supply pipeline from the Paradyskloof no. 2 reservoir to the proposed new Jamestown Upper reservoir for sufficient bulk supply,
- Master plan items SSW1.1, SSW1.2 & SSW1.11 are required to connect the new Jamestown Upper reservoir to the existing Jamestown water distribution network, and
- Master plan item SSW1.10 is required to connect the existing reticulation network of the Jamestown PRV zone to the existing reticulation network of the Jamestown reservoir zone.

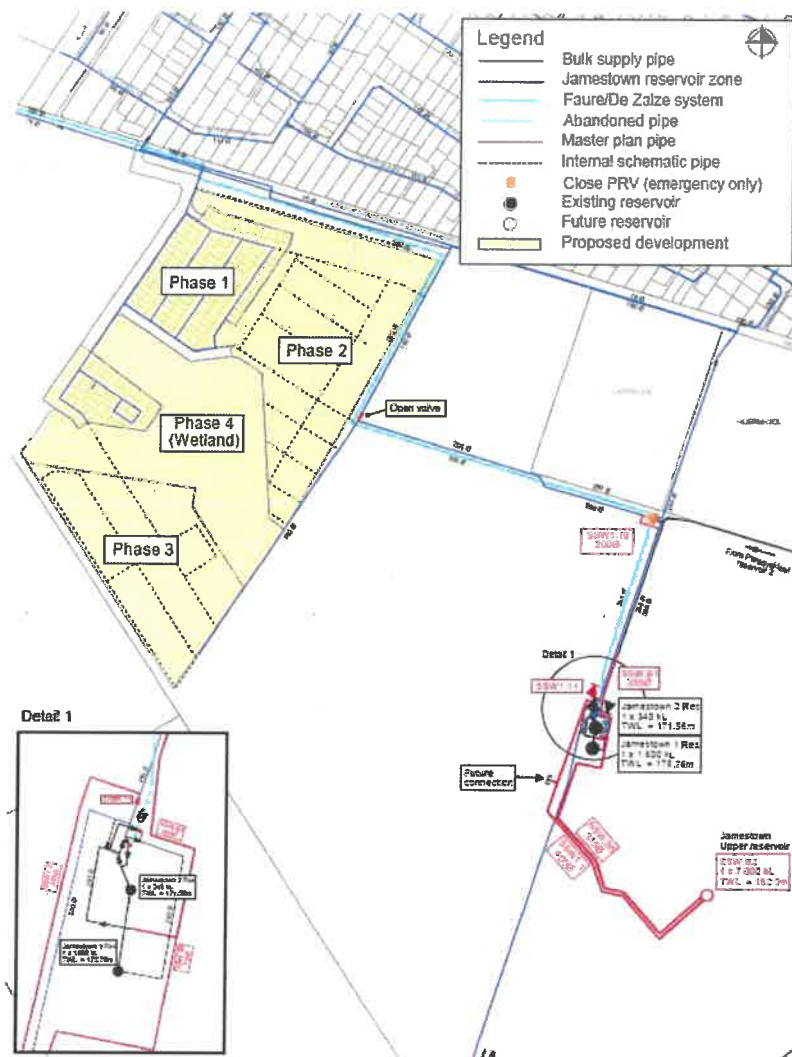


Figure 4: Local bulk supply network proposed upgrades

## 4.2 Connection to bulk network

The master planning indicated that the proposed development area should be accommodated in the existing Jamestown reservoir water distribution zone. The connection to the existing system should be done to the existing 160 mm diameter pipe on the eastern boundary of phases 2 & 3 of the proposed development, and to the existing 110 mm diameter pipes of the first phase of the development, as shown on Figure 3.

The proposed development is situated inside the water priority area.

## 4.3 Water demand calculation

The potable water demand for the proposed development was calculated based on The Redbook, which recommends 0.45 kl/day/unit for Group Housing with an erf size between 130m<sup>2</sup> and 200m<sup>2</sup> and 0.35 kl/day/unit for High Density Flats with an size between 100m<sup>2</sup> and 130m<sup>2</sup>. The potable water calculations are shown in Table 1 below.



Table 1: Potable water demand calculation

| POTABLE WATER DEMAND CALCULATIONS                          |                                      |                 |           | PROJECT:                                      |                               | Jamestown Housing Development Phases 2 & 3 |                    |         |            |
|------------------------------------------------------------|--------------------------------------|-----------------|-----------|-----------------------------------------------|-------------------------------|--------------------------------------------|--------------------|---------|------------|
| <div><div>ZUTARI</div><div>IMPACT. ENGINEERED.</div></div> |                                      |                 |           | Project no:                                   |                               | 1002169                                    |                    |         |            |
|                                                            |                                      |                 |           | Calculated by:                                |                               | FH van Zyl                                 |                    | Rev:    | 0          |
|                                                            |                                      |                 |           | Checked by:                                   |                               | C van der Walt                             |                    | Date:   | 2023/11/03 |
| ANNUAL AVERAGE DAILY WATER DEMAND SCHEDULE                 |                                      |                 |           |                                               |                               |                                            |                    |         |            |
| Item no                                                    | Land use description                 | Amount of Units |           | Unit area (sqm)                               | Water demand rate per day     |                                            | TOTAL DEMAND (l/d) |         |            |
|                                                            |                                      | Qty             | Unit-type |                                               | Rate per unit: litre per unit | Rate by Area: litre per sqm.               |                    |         |            |
|                                                            | <b>Residential</b>                   |                 |           |                                               |                               |                                            |                    |         |            |
| 1                                                          | Conventional Residential Zone Stands | 248             | units     | 180                                           | 450                           |                                            | 111,600            |         |            |
| 2                                                          | Multi-Unit Residential               | 176             | units     | 120                                           | 350                           |                                            | 61,600             |         |            |
|                                                            | <b>Community Facilities</b>          |                 |           |                                               |                               |                                            |                    |         |            |
| 3                                                          | Community Zone                       | 1               | area      | 1100                                          |                               | 24.0                                       | 26,400             |         |            |
| 4                                                          | Public Open Space                    | 1               | area      | 4246                                          |                               | 1.2                                        | 5,095              |         |            |
| 5                                                          | Transport Zone                       | 1               | area      | 516                                           |                               | 24                                         | 12,384             |         |            |
|                                                            |                                      |                 |           |                                               |                               | Subtotal 1                                 | 217,079            |         |            |
|                                                            |                                      |                 |           |                                               |                               | Plus 10% losses                            | 21,708             |         |            |
|                                                            |                                      |                 |           |                                               |                               | Subtotal 2                                 | 238,787            |         |            |
| GENERAL NOTES:                                             |                                      |                 |           | WATER UTILIZATION SUMMARY                     |                               |                                            |                    |         |            |
|                                                            |                                      |                 |           | TOTAL ANNUAL AVERAGE DAILY WATER DEMAND (l/d) |                               |                                            |                    | 238,787 |            |
|                                                            |                                      |                 |           | PEAK FLOW CONDITIONS:                         |                               |                                            |                    |         |            |
|                                                            |                                      |                 |           | Fire Fighting Flow Rate (l/min):              |                               |                                            |                    | 900     |            |
|                                                            |                                      |                 |           | Instantaneous Peak Factor:                    |                               |                                            |                    | 4.5     |            |
|                                                            |                                      |                 |           | Instantaneous Peak Flow, Incl fire (l/s):     |                               |                                            |                    | 27      |            |

From Table 1 it can be concluded that the potable water Annual Average Daily Demand (AADD) for the proposed development is 239 kl/d and the instantaneous peak flow is 27 l/s.

#### 4.4 Internal reticulation

Regarding the water demand calculations in the section above, the approximate reticulation network pipe size for the development was determined.

The minimum diameter required by the Municipality for potable water pipes is 100 mm (Stellenbosch Municipality, 2015). Therefore, the proposed development was modelled with a 110mm diameter pipe network (see Figure 3). For modelling, a 40 m pressure head was assumed at the connection point. Consequently, it was found that a 110 mm diameter internal reticulation network is sufficient for the development with firewater included on the potable water network. However, pressure losses at the connection pipeline are very high if a 110mm diameter pipe is used. It is therefore recommended to install a 160mm pipeline from the municipal connection and reduce the pipe size to 110mm after at least 3 branches into the development. The bulk water meter can be reduced to be a 100mm inline water meter.

The pressures in the model of the proposed development do not fall below the recommended 24 meters of pressure head (CSIR, 2005). The municipal connection (after completed upgrades) does have sufficient supply and pressure to meet the CSIR guideline requirements.

The internal network will consist of HDPE PN12.5 PE 100 pipes which are the minimum requirement (Stellenbosch Municipality, 2015). A layout of the preliminary looped water network model is shown in Figure 3.

It is recommended that water saving mechanisms must be prescribed as part of the title deeds agreements and building guidelines, such as:

- Rainwater harvesting
- Greywater recycling
- Installation of toilets fitted with dual flush systems.
- Aerator nozzles fitted to taps and showers.
- Water-wise irrigation practices, such as the planting of indigenous plants, installation of timers.

## 4.5 Fire Fighting Requirements

According to The Red Book (2019), firefighting flow should be supplied at 15 l/s and 1 bar of pressure at the connection and must be available during peak instantaneous flow. For the proposed development, it is possible to allow for fire flow on the potable water line. Hydrants in the network will be spaced at a maximum of 120 m as per local authority standards (Stellenbosch Municipality, 2015). The necessary firefighting requirements will be included in the design of the development services.

## 5 SANITATION

### 5.1 Impact on bulk sewage

GLS Consulting engineers were also approached to comment on the capacity of the local drainage network for Jamestown housing development Phases 2 and 3. This section should be read in conjunction with the Sewer Master Plan (performed for the Stellenbosch Municipality) dated June 2023.

There is sufficient spare capacity available in the existing sewer reticulation system to accommodate the proposed development.

The master plan indicates that the proposed development was accommodated in the existing Jamestown drainage area. The recommended connections to the existing Jamestown sewer system are to the existing 160 mm Ø outfall sewers of phase 1 of the proposed development area, as shown on Figure 5.

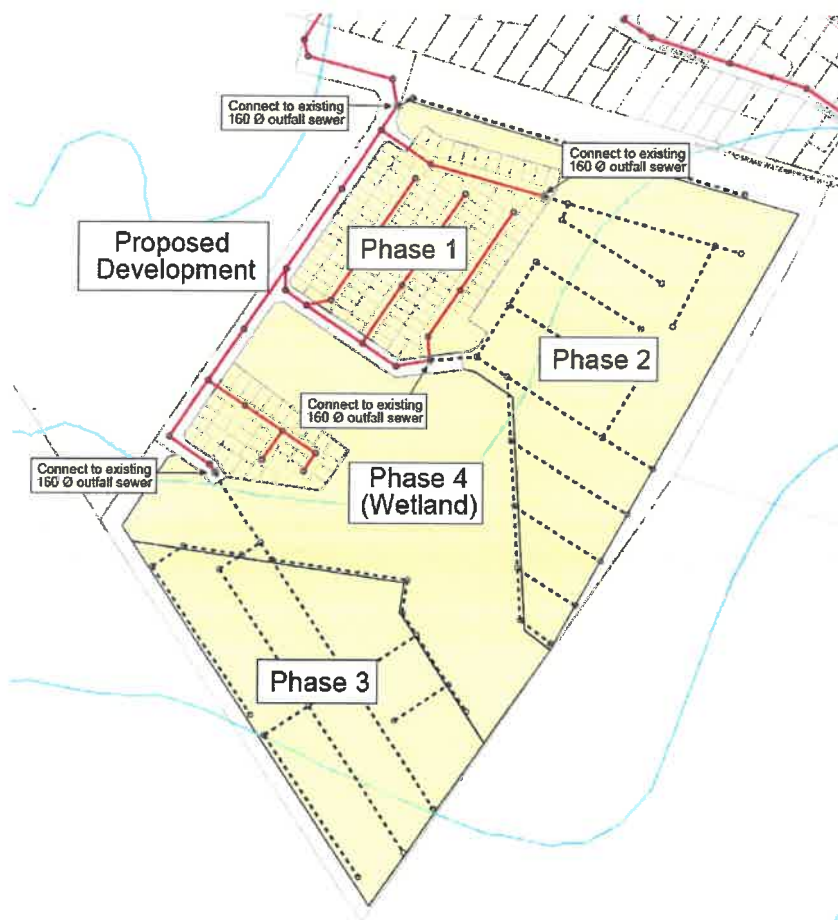


**Figure 5: Local Sewer Infrastructure**

The development will have typical high density residential irrigation demands. Each conventional stand will have a small garden and grass area. Therefore, the percentage of potable water demand which will be converted to sewage yield was estimated as 80%. The value can be compared to the typical 70% value for residential erven with irrigation demand. The houses will however have smaller garden and grass areas compared the standard size erven. Furthermore, the allowance for 80% sewage yield models a worst-case scenario. The calculations for daily sewage yield are shown in Table 2.

| SEWAGE YIELD CALCULATIONS                                                         |                                      |                 |       | PROJECT: Jamestown Housing Development Phases 2 & 3 |                               |                              |                   |         |
|-----------------------------------------------------------------------------------|--------------------------------------|-----------------|-------|-----------------------------------------------------|-------------------------------|------------------------------|-------------------|---------|
|  |                                      |                 |       | Project no:                                         |                               | 1002169                      |                   |         |
|                                                                                   |                                      |                 |       | Calculated by:                                      |                               | FH van Zyl                   |                   |         |
|                                                                                   |                                      |                 |       | Checked by:                                         |                               | C van der Walt               |                   |         |
|                                                                                   |                                      |                 |       | Rev:                                                |                               | 0                            |                   |         |
|                                                                                   |                                      |                 |       | Date:                                               |                               | 2023/11/03                   |                   |         |
| ANNUAL AVERAGE DAILY SEWAGE YIELD SCHEDULE                                        |                                      |                 |       |                                                     |                               |                              |                   |         |
| Item no                                                                           | Land use description                 | Amount of Units |       | Unit area (sqm)                                     | Sewage yield rate per day     |                              | TOTAL YIELD (l/d) |         |
|                                                                                   |                                      | Qty             | type  |                                                     | Rate per unit: litre per unit | Rate by Area: litre per sqm. |                   |         |
|                                                                                   | <b>Residential</b>                   |                 |       |                                                     |                               |                              |                   |         |
| 1                                                                                 | Conventional Residential Zone Stands | 248             | units | 180                                                 | 360                           |                              | 89280             |         |
| 2                                                                                 | Multi-Unit Residential               | 176             | units | 120                                                 | 280                           |                              | 49280             |         |
|                                                                                   | <b>Community Facilities</b>          |                 |       |                                                     |                               |                              |                   |         |
| 3                                                                                 | Community Zone                       | 1               | area  | 1100                                                |                               | 19                           | 21,120            |         |
| 4                                                                                 | Public Open Space                    | 1               | area  | 4246                                                |                               | 1                            | 4,076             |         |
| 5                                                                                 | Transport Zone                       | 1               | area  | 516                                                 |                               | 19                           | 9,907             |         |
| GENERAL NOTES:                                                                    |                                      |                 |       | SEWAGE YIELD SUMMARY                                |                               |                              |                   |         |
|                                                                                   |                                      |                 |       | DAILY SEWAGE YIELD VOLUMES                          |                               |                              |                   |         |
|                                                                                   |                                      |                 |       | Annual Average Daily Dry Weather Flow (l/d)         |                               |                              |                   | 173,663 |
|                                                                                   |                                      |                 |       | Infiltration factor (%)                             |                               |                              |                   | 15.0%   |
|                                                                                   |                                      |                 |       | TOTAL ANNUAL AVERAGE DAILY WET WEATHER FLOW (l/d)   |                               |                              |                   | 199,713 |
|                                                                                   |                                      |                 |       | PEAK FLOW CONDITIONS:                               |                               |                              |                   |         |
|                                                                                   |                                      |                 |       | Instantaneous Peak Factor:                          |                               | 2.5                          |                   |         |
|                                                                                   |                                      |                 |       | Instantaneous Peak Dry Weather Flow (l/s):          |                               | 5.6                          |                   |         |
|                                                                                   |                                      |                 |       | Instantaneous Peak Wet Weather Flow (l/s):          |                               | 5.6                          |                   |         |
| CALCULATION NOTES AND ASSUMPTIONS                                                 |                                      |                 |       |                                                     |                               |                              |                   |         |
| ITEM                                                                              | NOTE / ASSUMPTION                    |                 |       |                                                     |                               |                              |                   |         |
|                                                                                   |                                      |                 |       |                                                     |                               |                              |                   |         |

### 5.3 Internal Sewage Reticulation

According to the Crimp & Bridges Tables the maximum capacity of a 160 mm uPVC pipe at 1:150 slope is 14.1 l/s. Considering the calculated peak sewage flow from the proposed development 10.6l/s, a 160 mm uPVC network is sufficient.

No onsite sewage settling, or treatment will be done. All sewage will be directed towards the municipal bulk sewage network where it will be treated and discharged as per the municipal sewage management plan which has sufficient capacity to treat the raw sewage flow.



## 6 STORMWATER MANAGEMENT

It was observed that there is no municipal stormwater infrastructure to tie into. An existing unlined stormwater furrow/canal cuts through the development site and the municipal burial site downstream. Stormwater passage across the R44 arterial road is by means of a culvert. The run-off is eventually discharged on the Blouklip river/stream downstream. An earth dam is built in the path of the earth furrow on the portion of Farm 527 that is to be developed.

Stormwater generated from the development is considered to be a substantial increase to what is currently generated and the need to attenuate stormwater is deemed necessary. It will be necessary to construct some form of attenuation facility for this site.

At this time there are two possible ways of achieving this, as follows: -

- a) The construction of a stormwater attenuation pond along the lower, western edge of the site to complement the existing dam upstream also to be used for the attenuation of run-off. This will require approval from DWAF. An area of approximately 60m x 60m (or equivalent size) will be required for this pond. Alternatively,
- b) The construction of a bigger stormwater attenuation pond along the lower, western parameter of the site to deal with all run-off from the site whereby the existing dam upstream is not used for the attenuation of run-off. The pond will require an area of 80m x 80m (or equivalent size).

Final details of the new attenuation pond will also depend on the location of the ground water table.

Pipelines carrying stormwater will exceed 365 mm in diameter in accordance with the local authority's requirement for a minimum pipe diameter of 375 mm.

Stormwater leaving the site is proposed to be discharged to the existing unlined furrow/canal in the municipal burial site. Possible improvements in the appearance of the existing unlined furrow/canal can be looked into. Discharge will be limited to the pre-development flood.



**Figure 6: Watersheds and drainage directions**

## 6.1 Design Philosophy

The standard stormwater guidelines for residential developments as per CSIR (2005), and Drainage Manual (SANRAL, 2013), was used for the design of the proposed new internal stormwater system.

Specific attention will be given to the following:

- Stormwater run-off will be calculated using the Rational Method;
- Stormwater run-off will be modelled using PCSWMM software;
- Minor flows: Stormwater will be conveyed to stormwater grid/side inlets and formally piped to safe discharge points / detention dams;
- Major flows: Safe overland flow directed to the proposed detention dam will be allowed for;
- For various recurrence interval (RI) storm event, the peak run-off after development will not exceed the peak run-off prior to development.
- Temporary stormwater management measures will be implemented and adhered to during construction.

## 6.2 Rainfall Data

The Design Rainfall Estimation Program provides the 2 to 200-year recurrence interval (RI) rainfall depths for various duration storm events for a specific longitude and latitude location. The 24-hour duration storm RI rainfall depths are provided in Table 3 below.

**Table 3: The various RI storm events and related rainfall depths**

| Return Period (R) (years) | Rainfall depth (mm) |
|---------------------------|---------------------|
| 2                         | 50.3                |
| 5                         | 67.4                |
| 10                        | 79.7                |
| 20                        | 92.9                |
| 50                        | 111.2               |
| 100                       | 126.1               |
| 200                       | 142.1               |

### 6.3 Pre-development Flood Run-off

The pre-development (greenfield site) stormwater runoff for various storm-events were calculated using the rational method. For the pre-development scenario, the site is considered to be in greenfield condition and all areas drain to a central point. The calculation sheet for the catchment in the pre-development model is shown in Table 4.

Table 4: Pre-development calculation sheet

| FLOOD RUN-OFF CALCULATIONS                                                                                                                                                          |        |                                                           |                | PROJECT: Jamestown HD Phase 2&3                                   |          |                                           |                |          |          |     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----------------------------------------------------------|----------------|-------------------------------------------------------------------|----------|-------------------------------------------|----------------|----------|----------|-----|
|                                                                                                    |        |                                                           |                | Project no: 1002169                                               |          |                                           |                |          |          |     |
|                                                                                                                                                                                     |        |                                                           |                | Catchment Name: (PRE) Rev: 0                                      |          |                                           |                |          |          |     |
|                                                                                                                                                                                     |        |                                                           |                | Calculation Method: Rational Method                               |          |                                           |                |          |          |     |
|                                                                                                                                                                                     |        |                                                           |                | Calculated by: FH van Zyl                                         |          |                                           |                |          |          |     |
|                                                                                                                                                                                     |        |                                                           |                | Date: 2023/11/03                                                  |          |                                           |                |          |          |     |
|                                                                                                                                                                                     |        |                                                           |                | Checked By: C. van der Walt Signed: _____                         |          |                                           |                |          |          |     |
| Date: 2023/11/03                                                                                                                                                                    |        |                                                           |                |                                                                   |          |                                           |                |          |          |     |
| Catchment characteristics                                                                                                                                                           |        |                                                           |                |                                                                   |          |                                           |                |          |          |     |
| Description of catchment: Jamestown HD Phase 2&3                                                                                                                                    |        |                                                           |                |                                                                   |          |                                           |                |          |          |     |
| Name of watercourse (If applicable): N/A                                                                                                                                            |        |                                                           |                |                                                                   |          |                                           |                |          |          |     |
| Physical characteristics                                                                                                                                                            |        |                                                           |                | Meteorological characteristics                                    |          |                                           |                |          |          |     |
| Size of catchment (A): 0.120 km <sup>2</sup>                                                                                                                                        |        |                                                           |                | Rainfall region:                                                  |          |                                           |                |          |          |     |
| Longest watercourse (L): 0.400 km                                                                                                                                                   |        |                                                           |                | Weather Service station:                                          |          |                                           |                |          |          |     |
| Average slope (S <sub>av</sub> ): 0.020 m/m                                                                                                                                         |        |                                                           |                | Weather Service number:                                           |          |                                           |                |          |          |     |
| Dolomitic area (D <sub>5%</sub> ): 0.000 %                                                                                                                                          |        |                                                           |                | Mean annual precipitation (MAP): 685 mm                           |          |                                           |                |          |          |     |
| Area distribution factors                                                                                                                                                           |        |                                                           |                | 2-year return period rainfall (M): 50.3                           |          |                                           |                |          |          |     |
| Rural (α): 1                                                                                                                                                                        |        | Urban (β): 0                                              |                | Lakes (γ): 0.0                                                    |          | Days of thunder per year (R): 5 days/year |                |          |          |     |
| Comments:                                                                                                                                                                           |        |                                                           |                |                                                                   |          |                                           |                |          |          |     |
| Catchment run-off coefficients                                                                                                                                                      |        |                                                           |                |                                                                   |          |                                           |                |          |          |     |
| Rural                                                                                                                                                                               |        |                                                           |                | Urban                                                             |          |                                           |                |          |          |     |
| Surface slope                                                                                                                                                                       | %      | Factor                                                    | C <sub>s</sub> | Description                                                       | %        | Factor                                    | C <sub>s</sub> |          |          |     |
| Vleis and pans                                                                                                                                                                      |        | 0.03                                                      | 0.000          | Lawns in sandy soil, flat grade(<2%)                              |          | 0.10                                      | 0.000          |          |          |     |
| Flat Areas                                                                                                                                                                          | 90.0%  | 0.08                                                      | 0.072          | Lawns in sandy soil, steep grade(>7%)                             |          | 0.20                                      | 0.000          |          |          |     |
| Hilly                                                                                                                                                                               | 10.0%  | 0.16                                                      | 0.016          | Lawns in heavy soil, flat grade(<2%)                              |          | 0.17                                      | 0.000          |          |          |     |
| Steep Areas                                                                                                                                                                         |        | 0.26                                                      | 0.000          | Lawns in heavy soil, steep grade(>7%)                             |          | 0.35                                      | 0.000          |          |          |     |
| Total                                                                                                                                                                               |        | -                                                         | 0.088          | Residential: Houses                                               |          | 0.50                                      | 0.000          |          |          |     |
| Permeability                                                                                                                                                                        | %      | Factor                                                    | C <sub>s</sub> | Residential: Flats                                                |          | 0.70                                      | 0.000          |          |          |     |
| Very permeable                                                                                                                                                                      |        | 0.04                                                      | 0.000          | Light industry                                                    |          | 0.80                                      | 0.000          |          |          |     |
| Permeable                                                                                                                                                                           |        | 0.08                                                      | 0.000          | Heavy industry                                                    |          | 0.90                                      | 0.000          |          |          |     |
| Semi-permeable                                                                                                                                                                      | 100.0% | 0.16                                                      | 0.160          | Business complexes in the city centre                             |          | 0.95                                      | 0.000          |          |          |     |
| Impermeable                                                                                                                                                                         |        | 0.26                                                      | 0.000          | Business complexes in suburban area                               |          | 0.70                                      | 0.000          |          |          |     |
| Total                                                                                                                                                                               |        | -                                                         | 0.160          | Street area                                                       |          | 0.95                                      | 0.000          |          |          |     |
| Vegetation                                                                                                                                                                          | %      | Factor                                                    | C <sub>s</sub> | Maximum Flood                                                     | 0.00%    | 1.00                                      | 0.000          |          |          |     |
| Thick bush and plantation                                                                                                                                                           | 0.0%   | 0.04                                                      | 0.000          | Total (C <sub>2</sub> )                                           | 0.00%    | -                                         | 0              |          |          |     |
| Light bush and farm-lands                                                                                                                                                           | 30.0%  | 0.11                                                      | 0.033          | Notes:                                                            |          |                                           |                |          |          |     |
| Grasslands                                                                                                                                                                          | 50.0%  | 0.21                                                      | 0.105          |                                                                   |          |                                           |                |          |          |     |
| No vegetation                                                                                                                                                                       | 20.0%  | 0.28                                                      | 0.056          |                                                                   |          |                                           |                |          |          |     |
| Total                                                                                                                                                                               |        | -                                                         | 0.194          |                                                                   |          |                                           |                |          |          |     |
| Adjustment of run-off coefficients                                                                                                                                                  |        |                                                           |                |                                                                   |          |                                           |                |          |          |     |
| Return period (years), T                                                                                                                                                            |        |                                                           |                | 2                                                                 | 5        | 10                                        | 20             | 50       | 100      | Max |
| Rural run-off coefficient, C <sub>1</sub><br>(C <sub>1</sub> = C <sub>s</sub> + C <sub>p</sub> + C <sub>r</sub> )                                                                   |        |                                                           |                | 0.442                                                             | 0.442    | 0.442                                     | 0.442          | 0.442    | 0.442    |     |
| Adjustment of above for dolomitic areas, C <sub>1D</sub><br>(= C <sub>1</sub> (1 - D <sub>5%</sub> ) + C <sub>1</sub> D <sub>5%</sub> (Σ (D <sub>factor</sub> × C <sub>s</sub> %))) |        |                                                           |                | 0.442                                                             | 0.442    | 0.442                                     | 0.442          | 0.442    | 0.442    |     |
| Adjustment factor for initial saturation of rural areas, F <sub>i</sub>                                                                                                             |        |                                                           |                | 0.320                                                             | 0.550    | 0.600                                     | 0.670          | 0.830    | 1.000    |     |
| Adjusted rural run-off coefficient, C <sub>1T</sub><br>(= C <sub>1D</sub> × F <sub>i</sub> )                                                                                        |        |                                                           |                | 0.141                                                             | 0.243    | 0.265                                     | 0.296          | 0.367    | 0.442    |     |
| Combined run-off coefficient, C <sub>T</sub><br>(= α C <sub>1T</sub> + β C <sub>2</sub> + γ 1)                                                                                      |        |                                                           |                | 0.141                                                             | 0.243    | 0.265                                     | 0.296          | 0.367    | 0.442    |     |
| Time of concentration (T <sub>c</sub> )                                                                                                                                             |        |                                                           |                |                                                                   |          |                                           |                |          |          |     |
| Overland/Sheet flow                                                                                                                                                                 |        | Defined watercourse                                       |                | Notes:                                                            |          |                                           |                |          |          |     |
| $T_c = \left( \frac{rL}{\sqrt{S_{av}}} \right)^{0.467}$                                                                                                                             |        | $T_c = \left( \frac{0.87L^2}{1000S_{av}} \right)^{0.385}$ |                | Assume small catchment with T <sub>c</sub> = 15 minutes at least. |          |                                           |                |          |          |     |
| hours                                                                                                                                                                               |        | 0.25                                                      |                | hours                                                             |          |                                           |                |          |          |     |
| Flood run-off: Rational method                                                                                                                                                      |        |                                                           |                |                                                                   |          |                                           |                |          |          |     |
| Return Period (years), T                                                                                                                                                            |        |                                                           |                | 2                                                                 | 5        | 10                                        | 20             | 50       | 100      | Max |
| Point rainfall (mm), P <sub>T</sub>                                                                                                                                                 |        |                                                           |                | 8.400                                                             | 11.300   | 13.400                                    | 15.600         | 18.700   | 21.200   |     |
| Point intensity (mm/hour), P <sub>IT</sub> (= P <sub>T</sub> /T <sub>c</sub> )                                                                                                      |        |                                                           |                | 33.600                                                            | 45.200   | 53.600                                    | 62.400         | 74.800   | 84.800   |     |
| Area reduction factor (%), ARF <sub>T</sub>                                                                                                                                         |        |                                                           |                | 100.000%                                                          | 100.000% | 100.000%                                  | 100.000%       | 100.000% | 100.000% |     |
| Average intensity (mm/hour), I <sub>T</sub><br>(= P <sub>IT</sub> × ARF <sub>T</sub> )                                                                                              |        |                                                           |                | 33.600                                                            | 45.200   | 53.600                                    | 62.400         | 74.800   | 84.800   |     |
| Peak flow (m <sup>3</sup> /s)<br>$Q_T = \frac{C_T I_T A}{3.6}$                                                                                                                      |        |                                                           |                | 0.158                                                             | 0.366    | 0.474                                     | 0.616          | 0.915    | 1.249    |     |

## 6.4 Post-development Flood Run-off

The post-development stormwater runoff for various storm-events were also calculated using the rational method. For the post-development scenario, the site is considered to be in developed as per the proposed sub-division plan and all areas drain to a central point. The calculation sheet for the catchment in the pre-development model is shown in Table 5.

Table 5: Post-development calculation sheet

| FLOOD RUN-OFF CALCULATIONS                                                                                                                                                       |   |                                                           |                | PROJECT: Jamestown HD Phase 2&3                                  |          |                                           |                |          |          |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-----------------------------------------------------------|----------------|------------------------------------------------------------------|----------|-------------------------------------------|----------------|----------|----------|-----|
|                                                                                                 |   |                                                           |                | Project no: 1002169                                              |          |                                           |                |          |          |     |
|                                                                                                                                                                                  |   |                                                           |                | Catchment Name: (POST) Rev: 0                                    |          |                                           |                |          |          |     |
|                                                                                                                                                                                  |   |                                                           |                | Calculation Method: Rational Method                              |          |                                           |                |          |          |     |
|                                                                                                                                                                                  |   |                                                           |                | Calculated by: FH van Zyl                                        |          |                                           |                |          |          |     |
|                                                                                                                                                                                  |   |                                                           |                | Date: 2023/11/03                                                 |          |                                           |                |          |          |     |
|                                                                                                                                                                                  |   |                                                           |                | Checked By: C. van der Walt Signed: _____                        |          |                                           |                |          |          |     |
| Date: 2023/11/03                                                                                                                                                                 |   |                                                           |                |                                                                  |          |                                           |                |          |          |     |
| Catchment characteristics                                                                                                                                                        |   |                                                           |                |                                                                  |          |                                           |                |          |          |     |
| Description of catchment: Jamestown HD Phase 2&3                                                                                                                                 |   |                                                           |                |                                                                  |          |                                           |                |          |          |     |
| Name of watercourse (if applicable): N/A                                                                                                                                         |   |                                                           |                |                                                                  |          |                                           |                |          |          |     |
| Physical characteristics                                                                                                                                                         |   |                                                           |                | Meteorological characteristics                                   |          |                                           |                |          |          |     |
| Size of catchment (A): 0.120 km <sup>2</sup>                                                                                                                                     |   |                                                           |                | Rainfall region:                                                 |          |                                           |                |          |          |     |
| Longest watercourse (L): 0.400 km                                                                                                                                                |   |                                                           |                | Weather Service station:                                         |          |                                           |                |          |          |     |
| Average slope (S <sub>av</sub> ): 0.020 m/m                                                                                                                                      |   |                                                           |                | Weather Service number:                                          |          |                                           |                |          |          |     |
| Dolomitic area (D <sub>u</sub> ): 0.000 %                                                                                                                                        |   |                                                           |                | Mean annual precipitation (MAP): 685 mm                          |          |                                           |                |          |          |     |
| Area distribution factors                                                                                                                                                        |   |                                                           |                | 2-year return period rainfall (M): 50.3                          |          |                                           |                |          |          |     |
| Rural (α): 0                                                                                                                                                                     |   | Urban (β): 1                                              |                | Lakes (γ): 0.0                                                   |          | Days of thunder per year (R): 5 days/year |                |          |          |     |
| Comments:                                                                                                                                                                        |   |                                                           |                |                                                                  |          |                                           |                |          |          |     |
| Catchment run-off coefficients                                                                                                                                                   |   |                                                           |                |                                                                  |          |                                           |                |          |          |     |
| Rural                                                                                                                                                                            |   |                                                           |                | Urban                                                            |          |                                           |                |          |          |     |
| Surface slope                                                                                                                                                                    | % | Factor                                                    | C <sub>s</sub> | Description                                                      | %        | Factor                                    | C <sub>s</sub> |          |          |     |
| Vleis and pans                                                                                                                                                                   |   | 0.03                                                      | 0.000          | Lawns in sandy soil, flat grade(<2%)                             |          | 0.10                                      | 0.000          |          |          |     |
| Flat Areas                                                                                                                                                                       |   | 0.08                                                      | 0.000          | Lawns in sandy soil, steep grade(>7%)                            |          | 0.20                                      | 0.000          |          |          |     |
| Hilly                                                                                                                                                                            |   | 0.16                                                      | 0.000          | Lawns in heavy soil, flat grade(<2%)                             | 7.00%    | 0.17                                      | 0.012          |          |          |     |
| Steep Areas                                                                                                                                                                      |   | 0.26                                                      | 0.000          | Lawns in heavy soil, steep grade(>7%)                            |          | 0.35                                      | 0.000          |          |          |     |
| Total                                                                                                                                                                            |   | -                                                         | 0.000          | Residential: Houses                                              | 41.00%   | 0.50                                      | 0.205          |          |          |     |
| Permeability                                                                                                                                                                     | % | Factor                                                    | C <sub>s</sub> | Residential: Flats                                               | 27.00%   | 0.70                                      | 0.189          |          |          |     |
| Very permeable                                                                                                                                                                   |   | 0.04                                                      | 0.000          | Light industry                                                   |          | 0.80                                      | 0.000          |          |          |     |
| Permeable                                                                                                                                                                        |   | 0.08                                                      | 0.000          | Heavy industry                                                   |          | 0.90                                      | 0.000          |          |          |     |
| Semi-permeable                                                                                                                                                                   |   | 0.16                                                      | 0.000          | Business complexes in the city centre                            |          | 0.95                                      | 0.000          |          |          |     |
| Impermeable                                                                                                                                                                      |   | 0.26                                                      | 0.000          | Business complexes in suburban areas                             |          | 0.70                                      | 0.000          |          |          |     |
| Total                                                                                                                                                                            |   | -                                                         | 0.000          | Street area                                                      | 25.00%   | 0.95                                      | 0.238          |          |          |     |
| Vegetation                                                                                                                                                                       | % | Factor                                                    | C <sub>s</sub> | Maximum Flood                                                    |          | 1.00                                      | 0.000          |          |          |     |
| Thick bush and plantation                                                                                                                                                        |   | 0.04                                                      | 0.000          | Total (C <sub>2</sub> )                                          | 100.00%  | -                                         | 0.6434         |          |          |     |
| Light bush and farm-lands                                                                                                                                                        |   | 0.11                                                      | 0.000          | Notes:                                                           |          |                                           |                |          |          |     |
| Grasslands                                                                                                                                                                       |   | 0.21                                                      | 0.000          |                                                                  |          |                                           |                |          |          |     |
| No vegetation                                                                                                                                                                    |   | 0.28                                                      | 0.000          |                                                                  |          |                                           |                |          |          |     |
| Total                                                                                                                                                                            |   | -                                                         | 0.000          |                                                                  |          |                                           |                |          |          |     |
| Adjustment of run-off coefficients                                                                                                                                               |   |                                                           |                |                                                                  |          |                                           |                |          |          |     |
| Return period (years), T                                                                                                                                                         |   |                                                           |                | 2                                                                | 5        | 10                                        | 20             | 50       | 100      | Max |
| Rural run-off coefficient, C <sub>1</sub><br>(C <sub>1</sub> = C <sub>s</sub> + C <sub>p</sub> + C <sub>v</sub> )                                                                |   |                                                           |                | 0.000                                                            | 0.000    | 0.000                                     | 0.000          | 0.000    | 0.000    |     |
| Adjustment of above for dolomitic areas, C <sub>1D</sub><br>(= C <sub>1</sub> (1 - D <sub>u</sub> ) + C <sub>1</sub> D <sub>u</sub> (Σ(D <sub>factor</sub> × C <sub>s4</sub> ))) |   |                                                           |                | 0.000                                                            | 0.000    | 0.000                                     | 0.000          | 0.000    | 0.000    |     |
| Adjustment factor for initial saturation of rural areas, F <sub>i</sub>                                                                                                          |   |                                                           |                | 0.320                                                            | 0.550    | 0.800                                     | 0.670          | 0.830    | 1.000    |     |
| Adjusted rural run-off coefficient, C <sub>1T</sub><br>(= C <sub>1D</sub> × F <sub>i</sub> )                                                                                     |   |                                                           |                | 0.000                                                            | 0.000    | 0.000                                     | 0.000          | 0.000    | 0.000    |     |
| Combined run-off coefficient, C <sub>r</sub><br>(= αC <sub>1T</sub> + βC <sub>2</sub> + γ1)                                                                                      |   |                                                           |                | 0.643                                                            | 0.643    | 0.643                                     | 0.643          | 0.643    | 0.643    |     |
| Time of concentration (T <sub>c</sub> )                                                                                                                                          |   |                                                           |                |                                                                  |          |                                           |                |          |          |     |
| Overland/Sheet flow                                                                                                                                                              |   | Defined watercourse                                       |                | Notes:                                                           |          |                                           |                |          |          |     |
| $T_c = \left( \frac{rL}{\sqrt{S_{av}}} \right)^{0.467}$                                                                                                                          |   | $T_c = \left( \frac{0.87L^2}{1000S_{av}} \right)^{0.385}$ |                | Assume small catchment with T <sub>c</sub> = 15minutes at least. |          |                                           |                |          |          |     |
| hours                                                                                                                                                                            |   | 0.25                                                      |                | hours                                                            |          |                                           |                |          |          |     |
| Flood run-off: Rational method                                                                                                                                                   |   |                                                           |                |                                                                  |          |                                           |                |          |          |     |
| Return Period (years), T                                                                                                                                                         |   |                                                           |                | 2                                                                | 5        | 10                                        | 20             | 50       | 100      | Max |
| Point rainfall (mm), P <sub>T</sub>                                                                                                                                              |   |                                                           |                | 8.400                                                            | 11.300   | 13.400                                    | 15.600         | 18.700   | 21.200   |     |
| Point intensity (mm/hour), P <sub>IT</sub> (= P <sub>T</sub> /T <sub>c</sub> )                                                                                                   |   |                                                           |                | 33.600                                                           | 45.200   | 53.600                                    | 62.400         | 74.800   | 84.800   |     |
| Area reduction factor (%), ARF <sub>T</sub>                                                                                                                                      |   |                                                           |                | 100.000%                                                         | 100.000% | 100.000%                                  | 100.000%       | 100.000% | 100.000% |     |
| Average intensity (mm/hour), I <sub>r</sub><br>(= P <sub>IT</sub> × ARF <sub>T</sub> )                                                                                           |   |                                                           |                | 33.600                                                           | 45.200   | 53.600                                    | 62.400         | 74.800   | 84.800   |     |
| Peak flow (m <sup>3</sup> /s)<br>$Q_T = \frac{C_r I_r A}{3.6}$                                                                                                                   |   |                                                           |                | 0.721                                                            | 0.969    | 1.150                                     | 1.338          | 1.604    | 1.819    |     |



The combined post-development run-off for 1:5, 1:10, 1:20 and 1:50 years recurrence intervals for the development as calculated above is shown in Table 6.

**Table 6: Combined post-development calculated peak flows**

| Recurrence<br>Interval<br>(1: _years) | Peak flows                                           |                                                      |
|---------------------------------------|------------------------------------------------------|------------------------------------------------------|
|                                       | Pre-development<br>(m <sup>3</sup> /s)<br>Greenfield | Combined Post-<br>development<br>(m <sup>3</sup> /s) |
| 5                                     | 0.366                                                | 0.969                                                |
| 10                                    | 0.474                                                | 1.150                                                |
| 20                                    | 0.616                                                | 1.338                                                |
| 50                                    | 0.915                                                | 1.604                                                |

## 7 ROADS

### 7.1 Access

A Traffic Impact Assessment (TIA) was conducted by Zutari attached to this report in Appendix B. Access to the Development will be via the extension of the existing road network. The layout of the roads will be done in accordance with the Guidelines for Human Settlement Planning and Design (commonly known as the Red Book) and the Stellenbosch Zoning Scheme. Bulk external road upgrades required will be implemented as per the findings of the TIA.

### 7.2 Internal roads

The internal road network will have a paved surface as per town planner's details. All civil services will be within the 13.5m to 8m road reserves.

Emphasis will be placed on traffic calming and low speeds by implementing an appropriate geometric road design philosophy. The roads shall have a 2.5% cross fall towards a paved stormwater channel.

Emergency services such as firefighting services and waste removal vehicles would be supplied by the Municipality. All roads will be designed and constructed to accommodate light vehicles as well as occasional usage by heavy vehicles such as fire trucks or delivery trucks.

### 7.3 Parking Facilities

Visitor and general parking areas will be provided along roads within the development as indicated in the TIA. Parking on the erven will be specified by the town planner as required for each house type.

## 8 Solid Waste Disposal

All waste generated from the residential units of the proposed development, will be temporarily stored in storage bins. The municipality will collect all bins from an appropriate refuse areas or individual erven on the transport it to a Waste Disposal Site as determined by the Municipality. The position of the refuse areas (if applicable) will be placed at a practical area with easy access for the Municipal Solid Waste Disposal Trucks of the Municipality. No access control will be used in the development. Stellenbosch Municipality has sufficient capacity available for the development.

## 9 Conclusion

No major issues are foreseen for the proposed development in terms of engineering services. Ample capacity is available for all civil services, given proposed upgrades are facilitated ahead of construction. Detail design will identify and address all other minor issues such as exact connection points and other construction details.

## 10 Bibliography

- CSIR. (2005). *Guidelines for Human Settlement Planning and Design*. Pretoria, South Africa: CSIR Building and Construction Technology.
- CSIR. (2019). *The Neighbourhood Planning and Design Guide*. Pretoria, South Africa: Department of Human Settlements.
- Department of Human Settlements . (2019). *The Neighbourhood Planning and Design Guide*. Pretoria, South Africa: South African Government .
- SANRAL. (2013). *Drainage Manual 6th Edition*. Pretoria: The South African Roads Agency SOC Limited.
- Stellenbosch Municipality. (2015). *SM Design Guidelines and Standard Details Rev 0\_June 2015*. Stellenbosch, Western Cape: Stellenbosch Municipality - Department: ENGINEERING SERVICES DIRECTORATE.
- Stellenbosch Municipality. (2015). *SM Design Guidelines and Standard Details Rev 0\_June 2015*. Stellenbosch, Western Cape: Stellenbosch Municipality - Department: ENGINEERING SERVICES DIRECTORATE.

**STELLENBOSCH**

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

**ANNEXURE N: TRAFFIC IMPACT ASSESSMENT**

Project report

# Traffic Impact Assessment for the Jamestown Residential Development (Phases 2 and 3)

**Stellenbosch Municipality: Department of Housing Development**

Submission date: 2024/01/31

Document number: 1002169-PLN-REP-RU-0003

Revision: 3



# Document control record

**Document prepared by:**

Zutari (Pty) Ltd

Reg No 1977/003711/07

1 Century City Drive  
Waterford Precinct  
Century City  
Cape Town

South Africa

PO Box 494  
Cape Town  
8000  
Docex: DX 204

T +27 21 526 9400

E capetown@zutari.com

Document Control

|                  |            |                                                                                      |                                    |              |                        |                  |
|------------------|------------|--------------------------------------------------------------------------------------|------------------------------------|--------------|------------------------|------------------|
| Project name     |            | Traffic Impact Assessment for the Jamestown Residential Development (Phases 2 and 3) |                                    |              |                        |                  |
| Document number  |            | 1002169-PLN-REP-RU-0003                                                              | Project number                     |              | 1002169                |                  |
| Client           |            | Stellenbosch Municipality: Department of Housing Development                         |                                    |              |                        |                  |
| Client contact   |            | Shaun October                                                                        | Client reference                   |              |                        |                  |
| Rev              | Date       | Revision details/status                                                              | Author                             | Reviewer     | Verifier (if required) | Approver         |
| 0                | 2023/09/22 | Draft                                                                                | Armandt van Straten / Carine Heyns | Carine Heyns | Yolandi Venter         | Jacques Taljaard |
| 1                | 2023/12/01 | Second Draft: NMT Figure added                                                       | Armandt van Straten                | Carine Heyns |                        | Carine Heyns     |
| 2                | 2024/01/25 | Number of Units changed. NMT expansions. Future upgrades identification.             | Armandt van Straten                |              |                        | Carine Heyns     |
| 3                | 2024/02/08 | Address comments received from Stellenbosch Municipality.                            | Armandt van Straten                |              |                        | Carine Heyns     |
| Current revision |            | 3                                                                                    |                                    |              |                        |                  |

| Approval                |                                                                                     |                           |                                                                                       |
|-------------------------|-------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------|
| <b>Author signature</b> |  | <b>Approver signature</b> |  |
| <b>Name</b>             | Armandt van Straten                                                                 | <b>Name</b>               | Carine Heyns                                                                          |
| <b>Title</b>            | Traffic Engineer                                                                    | <b>Title</b>              | Professional Engineer                                                                 |

All rights reserved | The information contained herein is confidential and proprietary to Zutari and/or its business partners. It may include personal information of data subjects connected to Zutari and/or our business purpose. To safeguard the information and the competitive position of information owners, the content hereof shall not be used, disclosed, or otherwise processed for any purpose other than the purpose for which it was developed. Users can only rely on the accuracy of the final version of the Report. Processing and disclosure of information is subject to our Privacy Notice and users indemnify Zutari against the consequences of unauthorised use or disclosure. Any concerns may be addressed to the Zutari Information Officer

Document number 1002169-PLN-REP-RU-0003, Revision number 3, Date 2024/01/31

# Contents

|           |                                                                         |           |
|-----------|-------------------------------------------------------------------------|-----------|
| <b>1</b>  | <b>List of Abbreviations and Definitions.....</b>                       | <b>8</b>  |
| <b>2</b>  | <b>Introduction and Background Information.....</b>                     | <b>8</b>  |
| 2.1       | Objectives.....                                                         | 8         |
| 2.2       | Reference Information.....                                              | 8         |
| 2.3       | Site Location and Description.....                                      | 9         |
| 2.4       | Property Details.....                                                   | 10        |
| <b>3</b>  | <b>Methodology.....</b>                                                 | <b>11</b> |
| <b>4</b>  | <b>Assumptions.....</b>                                                 | <b>12</b> |
| <b>5</b>  | <b>Study Area and Study Intersections.....</b>                          | <b>12</b> |
| <b>6</b>  | <b>Vehicular Traffic and Pedestrian Counts.....</b>                     | <b>17</b> |
| 6.1       | Vehicular Traffic.....                                                  | 18        |
| 6.2       | Pedestrians.....                                                        | 18        |
| <b>7</b>  | <b>Existing NMT.....</b>                                                | <b>19</b> |
| 7.1       | Pedestrian Surveys.....                                                 | 19        |
| 7.2       | Existing NMT facilities.....                                            | 22        |
| 7.3       | NMT Usage.....                                                          | 23        |
| <b>8</b>  | <b>Existing Public Transport.....</b>                                   | <b>24</b> |
| 8.1       | Public Transport Survey Information.....                                | 24        |
| 8.2       | Existing Public Transport Facilities.....                               | 25        |
| 8.3       | Public Transport Usage.....                                             | 26        |
| <b>9</b>  | <b>Proposed Development.....</b>                                        | <b>26</b> |
| 9.1       | Detail of Development.....                                              | 26        |
| 9.2       | Development Traffic.....                                                | 28        |
| 9.2.1     | Trip Generation.....                                                    | 28        |
| 9.2.2     | Trip Distribution and Assignment.....                                   | 29        |
| 9.3       | Access Management.....                                                  | 29        |
| 9.3.1     | Access.....                                                             | 29        |
| <b>10</b> | <b>Impact of Previous Developments.....</b>                             | <b>29</b> |
| <b>11</b> | <b>Future Road Network Planning.....</b>                                | <b>32</b> |
| 11.1      | Jamestown Roads Master Plan 2017.....                                   | 32        |
| 11.2      | Stellenbosch Roads Master Plan (RMP) Update 2018.....                   | 33        |
| 11.2.1    | The Eastern Link Road.....                                              | 33        |
| 11.2.2    | The Western Bypass.....                                                 | 34        |
| 11.2.3    | Five new roads in the Jamestown area – projects SRMP048 to SRMP052..... | 35        |
| 11.3      | Jamestown Roads Masterplan (March 2020).....                            | 37        |
| 11.4      | Western Cape Government R44 Plans: “R44 Safety Project”.....            | 38        |
| 11.4.1    | R44 / Webersvallei Intersection Upgrades.....                           | 38        |
| 11.4.2    | Closure of R44 / School Road Intersection.....                          | 39        |
| <b>12</b> | <b>Network Analysis.....</b>                                            | <b>40</b> |
| 12.1      | Analysis Scenarios.....                                                 | 40        |
| 12.2      | Analysis Criteria.....                                                  | 41        |
| 12.2.1    | Level of Service.....                                                   | 41        |

|                         |                                                                                                                              |           |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------|
| 12.3                    | Traffic Growth .....                                                                                                         | 42        |
| <b>13</b>               | <b>Intersection Analysis .....</b>                                                                                           | <b>43</b> |
| 13.1                    | Scenario 0: Status Quo (2023).....                                                                                           | 43        |
| 13.1.1                  | Mitigation Measures .....                                                                                                    | 45        |
| 13.2                    | Scenario 1 (a): Implementation Year (2025) without Development Traffic .....                                                 | 46        |
| 13.3                    | Scenario 1 (b): Implementation Year (2025) with Development Traffic .....                                                    | 48        |
| 13.4                    | Scenario 2 (a): Five years post implementation (2030) without Development Traffic .....                                      | 49        |
| 13.4.1                  | Mitigation Measures .....                                                                                                    | 51        |
| 13.5                    | Scenario 2 (b): Five Years Post Implementation (2030) with Development Traffic ....                                          | 53        |
| 13.6                    | Scenario 3: Expected 2030 Traffic Year with Development Traffic and Future<br>Development Traffic (future road network)..... | 55        |
| 13.6.1                  | Proposed implementation of future roads .....                                                                                | 58        |
| <b>14</b>               | <b>Non-Motorised Transport .....</b>                                                                                         | <b>59</b> |
| <b>15</b>               | <b>Public Transport .....</b>                                                                                                | <b>61</b> |
| <b>16</b>               | <b>Traffic Calming .....</b>                                                                                                 | <b>61</b> |
| <b>17</b>               | <b>Parking .....</b>                                                                                                         | <b>62</b> |
| <b>18</b>               | <b>Infrastructure Required .....</b>                                                                                         | <b>63</b> |
| <b>19</b>               | <b>Conclusions .....</b>                                                                                                     | <b>65</b> |
| <b>20</b>               | <b>Recommendations .....</b>                                                                                                 | <b>70</b> |
| <b>Appendix A</b> ..... |                                                                                                                              | <b>71</b> |
|                         | Traffic Count Data .....                                                                                                     | 71        |
| <b>Appendix B</b> ..... |                                                                                                                              | <b>76</b> |
|                         | Site Development Plan .....                                                                                                  | 76        |
| <b>Appendix C</b> ..... |                                                                                                                              | <b>77</b> |
|                         | Plans for R44 Upgrades .....                                                                                                 | 77        |
| <b>Appendix D</b> ..... |                                                                                                                              | <b>80</b> |
|                         | Distribution of Development Traffic .....                                                                                    | 80        |
| <b>Appendix E</b> ..... |                                                                                                                              | <b>81</b> |
|                         | Sidra Output .....                                                                                                           | 81        |

## Appendices

Traffic Count Data  
 Site Development Plan  
 Plans for R44 Upgrades  
 Distribution of Development Traffic  
 Sidra Output

## Figures

Figure 1: Jamestown Residential Development Location

Figure 2: Locality of the Jamestown Residential Development

Figure 3: Study Area (Source: Road Network Metropolitan Area: PRoW Plan RD-1.1)

- Figure 4: Unnamed Road, Eastbound
- Figure 5: Blakemore Street, Northbound
- Figure 6: School Road, Westbound
- Figure 7: School Road, Eastbound
- Figure 8: Fresno Street, Northbound
- Figure 9: Webersvallei Road, Eastbound
- Figure 10: R44, Northbound
- Figure 11: R44, Southbound
- Figure 12: Study Intersections
- Figure 13: Traffic and Pedestrian Survey Locations
- Figure 14: AM Peak Pedestrian Movements
- Figure 15: PM Peak Pedestrian Movements
- Figure 16: Existing NMT Facilities throughout Jamestown
- Figure 17: Existing NMT Facilities along School Road, Eastbound
- Figure 18: Existing NMT Facilities along Fresno Street, Northbound
- Figure 19: Taxi and Bus Movements during AM Peak Hour
- Figure 20: Taxi and Bus Movements during PM Peak Hour
- Figure 21: Designated Pick up and Drop off zone on R44
- Figure 22: Jamestown Residential Development
- Figure 23: Locations of previously planned developments (iCE Group 2020)
- Figure 24: Mitigation measure proposed for previously planned developments
- Figure 25: Planned Upgrade to R44/Webersvallei Road Intersection
- Figure 26: Proposed Road linkages to Jamestown as per the 2017 Roads Master Plan (Zutari)
- Figure 27: Approximate location of the proposed Eastern Link Road (Source: Jamestown Roads Masterplan)
- Figure 28: Alignment of the possible future Western Bypass (red dashed line) from 2019 Stellenbosch Roads Master Plan
- Figure 29: Five new road links in Jamestown area as proposed in 2018 Roads Masterplan
- Figure 30: Potential new major links for Jamestown area (source: Jamestown Roads Masterplan March 2020)
- Figure 31: Proposed elevated u-turn facility at current R44/School Street intersection
- Figure 32: Possible New Access Point at Mountain Breeze Restaurant
- Figure 33: Counting Station Locations
- Figure 34: R44 ultimate 3 through lanes
- Figure 35: Proposed Six Lane Layout between R44/Webersvallei Rd and R44/Techno Ave
- Figure 36: Jamestown Future Development
- Figure 37: Implementation of proposed future roads
- Figure 38: NMT Report Proposed NMT Facilities (Source: Non-Motorised Transport Facilities in Jamestown Report March 2020)

Figure 39: Planned and Proposed NMT Sidewalks

Figure 40: Illustrative Road cross sections

Figure 41: NMT facility along School Street

Figure 42: R44 & Webersvallei Road

Figure 43: Webersvallei Road & Fresno Street

Figure 44: R44 & School Road

Figure 45: School Road & Fresno Street

Figure 46: School Road & Blakemore Street

Figure 47: Site Development Plan Phase 1, 2 and 3 (Zutari)

Figure 48: Upgrades to R44 / Webersvallei Intersection

Figure 49: Closure of R44 / School Road Intersection

Figure 50: Six Lane Upgrade between R44 / Webersvallei Road and R44 / Techno Avenue Intersections

Figure 51: Distribution of Development Traffic IN

Figure 52: Distribution of Development Traffic OUT

## Tables

Table 1: Route Hierarchy and Link Capacity

Table 2: Road Classification and Function

Table 3: Intersections control and geometry

Table 4: AM and PM all movements for all study intersections

Table 5: Pedestrian Counts

Table 6: Existing NMT facilities throughout Jamestown

Table 7: Land Use Breakdown

Table 8: Applied Trip Generation Rates

Table 9: Applied trip reduction

Table 10: Generated Trips

Table 11: Previous developments generated trips

Table 12: Roads Masterplan for Jamestown New Major links

Table 13: Summary of analysis scenarios

Table 14: Level of Service (LOS) Definition

Table 15: TMH17 Typical Traffic Growth Rates

Table 16: Traffic Growth Rate

Table 17: Existing (2023) Intersection Analysis Summary (Scenario 0)

Table 18: Detailed analysis of R44 / School Road (Scenario 0)

Table 19: R44 Link Capacity Evaluation (Scenario 0)

Table 20: Detailed Analysis of R44/Webersvallei Road with Mitigation Measures (Scenario 0)

Table 21: Summary of implemented mitigation measures Scenario 1 (a)

Document number 1002169-PLN-REP-RU-0003, Revision number 3, Date 2024/01/31

Table 22: Sidra Results for Scenario 1 (a)

Table 23: R44 Link Capacity Evaluation (Scenario 1 (a))

Table 24: Detailed analysis of R44 / Webersvallei for AM peak hour Scenario 1 (a)

Table 25: Summary of implemented mitigation measures for Scenario 1 (b)

Table 26: Sidra Results for Scenario 1 (b)

Table 27: Summary of implemented mitigation measure for Scenario 2 (a)

Table 28: Sidra Results for Scenario 2 (a)

Table 29: Detailed analysis of R44 / Webersvallei Road (Scenario 2 (a))

Table 30: R44 Link Capacity Evaluation (Scenario 2 (a))

Table 31: Detailed Analysis of R44/Webersvallei Road with 3 through lanes as mitigation (Scenario 2(a))

Table 32: Summary of implemented mitigation measure for Scenario 2 (a)

Table 33: Sidra Results for Scenario 2 (b)

Table 34: Jamestown Future Development Land Use

Table 35: Applied Trip Generation Rates for Phase 4

Table 36: Applied trip reduction for Phase 4

Table 37: Generated Trips for Phase 4

Table 38: Summary of implemented upgrades for Scenario 3

Table 39: Sidra Results for Scenario 3

Table 40: Existing Traffic Calming Measures in Jamestown

Table 41: Comparison of Parking Rates

Table 42: Number of Parking Bays Required and Provided

Table 43: Summary of infrastructure required for 2023 – 2030

Table 44: Summary of infrastructure required for 2030 – beyond

## 1 List of Abbreviations and Definitions

|     |                              |
|-----|------------------------------|
| AMG | Access Management Guidelines |
| CBD | Central Business District    |
| CCT | City of Cape Town            |
| NMT | Non-motorised transport      |
| PT  | Public Transport             |
| TIA | Traffic Impact Assessment    |
| TIS | Traffic Impact Statement     |

## 2 Introduction and Background Information

Zutari (Pty) Ltd is currently appointed on the Stellenbosch Municipality Contract *BSM 115/21: A Professional Service Provider to Assemble a Multi-Disciplinary Team of Professionals in to Undertake a Broad Conceptual Urban Design Framework for a Portion of Portion 7 of Farm 527 and Remainder Farm 527, Stellenbosch, and to Obtain Town Planning and Development Rights.*

Stellenbosch Municipality has requested a conceptual urban design framework, town plans and development right associated with portion 7 of Farm 527 and the remainder of Farm 527, Stellenbosch, Jamestown. It is Stellenbosch Municipality's intention to rezone the project site for development purposes and release it to the market with specific conditions in a housing typology mix that provides for feasible affordable housing opportunities in this expanding area.

### 2.1 Objectives

A Traffic Impact Assessment (TIA) is required to inform the subsequent land use regulatory process.

The primary purpose of this TIA is to examine the implications of trips generated by the proposed rezoning and development of the Jamestown Residential Development (Phases 2 and 3) and to consider the impact this will have on the adjacent road network. Furthermore, it will identify any necessary road network improvements that may be needed.

The Jamestown Residential Development Phases 2 and 3 will hereafter be referred to as "the Development".

### 2.2 Reference Information

Several related reports have been sourced and will be referred to in this TIA. The reference reports are:

- *Jamestown: Development Roads Master Plan & Solutions for School Street*, prepared by Aecom (dated 30/03/2020)
- *Non-Motorised Transport Facilities in Jamestown Draft Report*, prepared by Aecom (dated March 2020)
- *Studies for the Jamestown Road Network Development and Proposals for School Street Summary and hand-over Report*, prepared by Aecom (dated June 2022)
- *Comprehensive Integrated Transport Plan 2016 – 2020 Final Report for Council Approval* (dated 12/02/2016)
- *Review of the Stellenbosch Comprehensive Integrated Transport Plan Stellenbosch CITP 2022 – 2026 Final Draft 2*, prepared by Aecom (dated 13/03/2023)

- *Western Cape Provincial Spatial Development Framework*, prepared by Western Cape Government (March 2014)
- *Stellenbosch Spatial Development Framework Approved by Council*, prepared by Stellenbosch Municipality (dated 11/11/2019)
- Application in Terms of Section 15(2)(a) and 15(2)(d) of Stellenbosch Municipality By-Law on Municipal Land Use Planning, 2015, for the Rezoning and Subdivision of the Remainder of Portion 7 of the Farm 527 Stellenbosch, Motivation Report, prepared by Zutari (dated 12/01/2023)
- *Access Management Guidelines (AMG)*, prepared by Western Cape Government Transport and Public Works (dated 2020)
- *South African Trip Data Manual* Version 1.01, prepared by Committee of Transport Officials (dated September 2013)
- *South African Traffic Impact and Site Traffic Assessment Manual* Version 1.0, prepared by Committee of Transport Officials (dated August 2012)
- *South African Road Traffic Signs Manual (SARTSM)* 3<sup>rd</sup> Edition Volume 3 Traffic Signal Design, prepared by National Department of Transport (dated May 2012)
- *Public Right of Way Plan Road Network Metropolitan Area*, prepared by City of Cape Town (dated August 2013)
- *Stellenbosch Zoning Scheme By-Law*, prepared by Stellenbosch Municipality adopted by council (dated 26/05/2023)
- *City of Cape Town Zoning Scheme Regulations*, prepared by City of Cape Town and Amended in 2019
- *Application for consolidation and rezoning to single residential and general residential of farm 510 remainder portions 52 to 54 and portion 71, Stellenbosch: Revised Traffic Impact Statement*, prepared by iCE Group (Pty) Ltd. (dated 18 June 2020)
- *Application for rezoning, subdivision and consolidation of farm 510 portion 845, Stellenbosch: Revised Traffic Impact Statement*, prepared by iCE Group (Pty) Ltd. (dated 30 July 2020)
- *Application for rezoning and subdivision of farm 510 portion 844, Stellenbosch: Traffic Impact Statement*, prepared by iCE Group (Pty) Ltd. (dated 14 July 2020)

## 2.3 Site Location and Description

Jamestown is a residential area located south of Stellenbosch and bordered by the R44 (MR00027) to the west. All access into and out of the Jamestown is via the R44, which is a Class 2, major arterial. The major function of the R44 is to serve as a north/south (regional) route connecting Strand, Somerset West, Helderberg and Overstrand regions with areas to the north such as Paarl, Wellington and Malmesbury.

The location of the Development is indicated in Figure 1. The properties under consideration are situated on the southern portion of Jamestown and is approximately 10 hectares in extent.



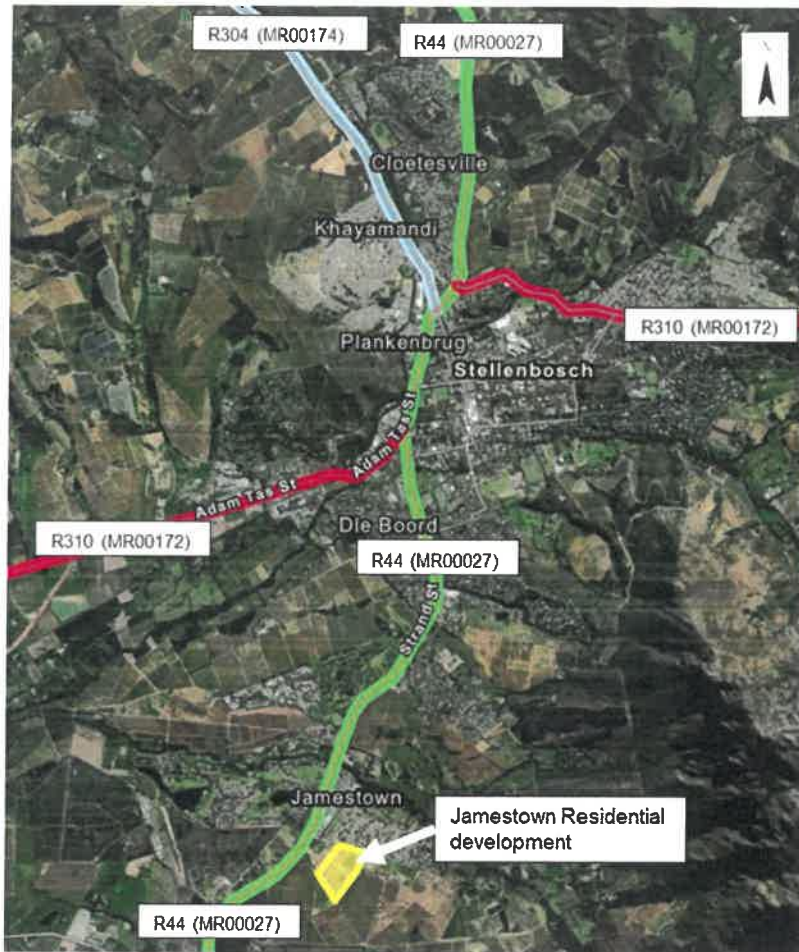


**Figure 1: Jamestown Residential Development Location**

## 2.4 Property Details

The property that the Development will traverse portion 7 of Farm 527, shown in Figure 2. The property currently consists of residential houses that was built as part of Phase 1 of the Jamestown Residential Development, an informal settlement and some undeveloped land.

The residents of the informal settlement will be relocated when Phase 3 of the Jamestown Residential Development is implemented.

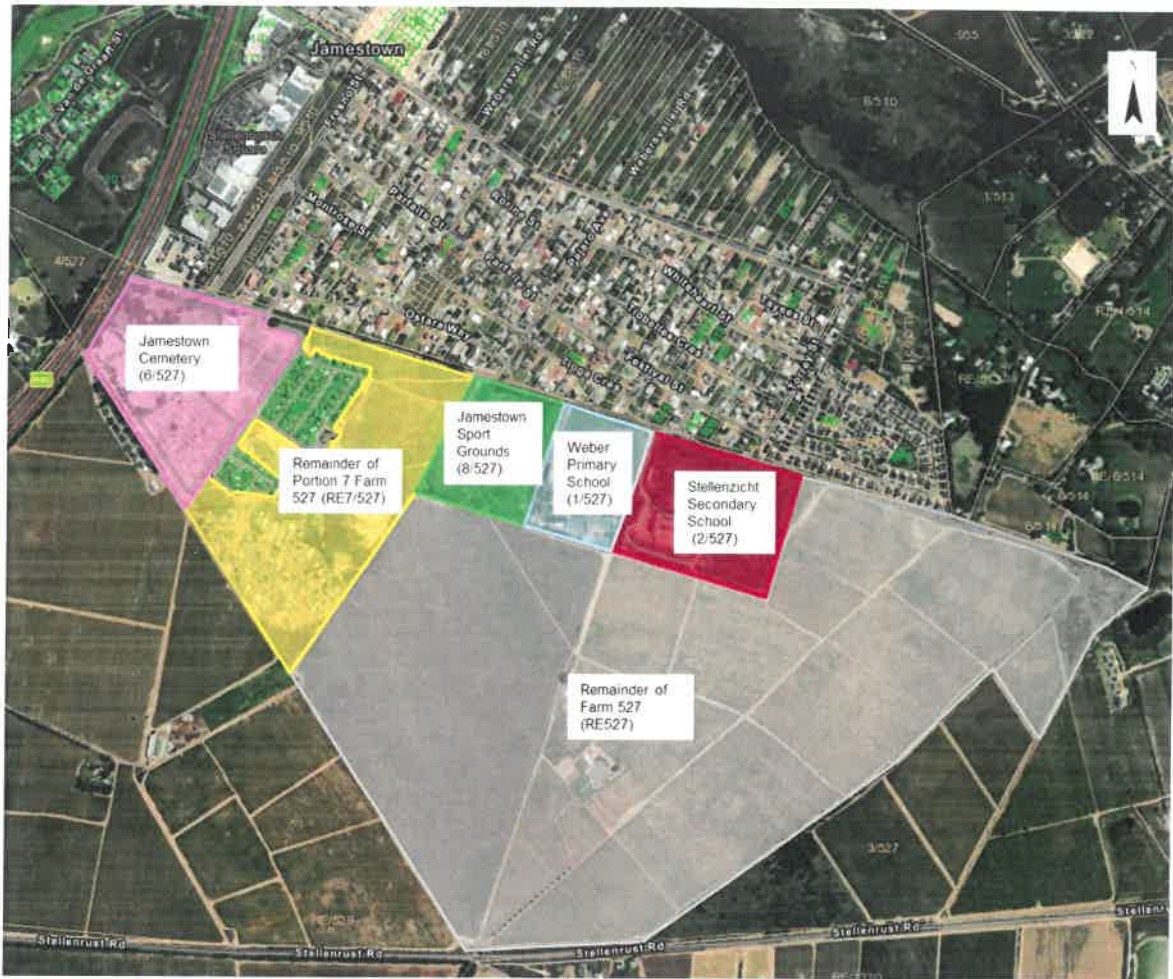


**Figure 2: Locality of the Jamestown Residential Development**

The area is currently zoned as an Agricultural and Rural Zone and an application has been submitted to rezone the area to a Subdivisional Area. In addition, applications have been submitted to rezone the areas of Phase 2 and 3 to the various land portions.

### 3 Methodology

A typical TIA process involves the estimation of additional private vehicle, Public Transport (PT) and non-motorised transport (NMT) trips and the identification and analyses of remedial measures to mitigate potential impacts. This typically requires the construction of new roads and improvements at intersections with the provision of NMT and PT infrastructure. The impact on the external traffic on the road network will be investigated for the study areas as identified in Section 5 of this report.

The following traffic engineering aspects were undertaken while preparing this TIA:

- ▶ Site observations.
- ▶ Traffic counts at five intersections during the AM and PM peak hours.
- ▶ Pedestrian counts at three intersections during the AM and PM peak hours.
- ▶ Gathering of additional background information and reference information.
- ▶ Analysis of the existing traffic conditions and the capacity of the existing road network in the vicinity of the development.
- ▶ The status quo of intersection performance.
- ▶ Trip generation, distribution and assignment calculations.

- ▶ Test the impact of development traffic on intersection performance, considering a number of scenarios.
- ▶ Identify and recommend road upgrades (where necessary) and ensure it ties in with the future roads masterplan for the area.
- ▶ NMT and PT considerations (ensuring there are sufficient PT and NMT facilities within the study area).
- ▶ Access management, taking into consideration sight distance and intersection spacing criteria.
- ▶ Parking assessment.

## 4 Assumptions

The nature of planning work often requires a number of (informed) assumptions to be made. For the purpose of this TIA the following assumptions were made:

- ▶ The assumed development implementation year is 2025
- ▶ By 2025 the School Road intersection with the R44 will be closed and the Webersvallei Road intersection upgraded.
- ▶ At this stage it is unknown what the community portion of the development will consist of, a trip rate of 1 trip per 100m<sup>2</sup> were assumed for the AM and PM peak hour. This is considered to be sufficient as trips attracted/generated by the community component of this development is expected to be internal trips or passer-by trips and not trips to/from external areas.
- ▶ The R44 is a Provincial Road, the Department of Transport and Public Works would therefore be the approving authority of this TIA and the Stellenbosch Municipality the commenting authority.
- ▶ The network attributes and link capacity used to evaluate the model are shown in Table 1:

**Table 1: Route Hierarchy and Link Capacity**

| Route Hierarchy                | Free Flow Speed (km/h) | Capacity (veh/h/ln) |
|--------------------------------|------------------------|---------------------|
| Freeway (Class 1)              | 100                    | 1800                |
| Expressway (Class 2)           | 80                     | 1200                |
| District Distributor (Class 3) | 60                     | 1000                |
| Local Distributor (Class 4)    | 60                     | 800                 |

## 5 Study Area and Study Intersections

The study area of this TIA and the road network classification is shown in Figure 3. This figure also shows the roads and intersections that will be affected by the proposed development.



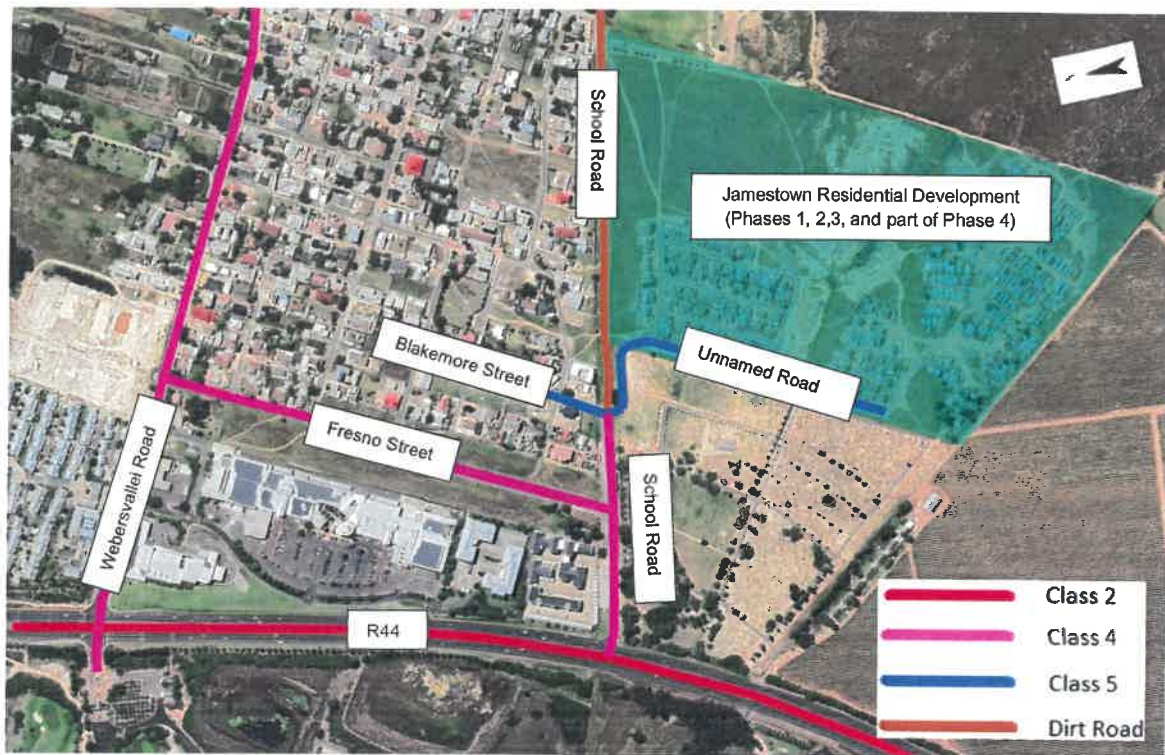


**Figure 3: Study Area (Source: Road Network Metropolitan Area: PRow Plan RD-1.1)**

Table 2 summarises the roads in the immediate vicinity of the Development and their classification (as per the *Jamestown Roads Masterplan*).

**Table 2: Road Classification and Function**

|    | Road                    | Class                  | Geometry                                 |
|----|-------------------------|------------------------|------------------------------------------|
| 1. | R44                     | Class 2 Major Arterial | Dual carriageway, 2 lanes per direction  |
| 2. | Webersvallei Road       | Class 4 Collector      | Single carriageway, 1 lane per direction |
| 3. | Frenso Street           | Class 4 Collector      | Single carriageway, 1 lane per direction |
| 4. | School Road (Dirt Road) | Class 4 Collector      | Single carriageway, 1 lane per direction |
| 5. | Blakemore Street        | Class 5 Local Street   | Single carriageway, 1 lane per direction |
| 6. | Unnamed Road            | Class 5 Local Street   | Single carriageway, 1 lane per direction |

Below are images, showing each road and the roadside development environment.



**Figure 4: Unnamed Road, Eastbound**



**Figure 5: Blakemore Street, Northbound**



**Figure 6: School Road, Westbound**



**Figure 7: School Road, Eastbound**



**Figure 8: Fresno Street, Northbound**



**Figure 9: Webersvallei Road, Eastbound**



**Figure 10: R44, Northbound**



**Figure 11: R44, Southbound**



The intersections indicated in the table below are considered to be the critical intersections that will be impacted by the traffic generated by the Development. The study intersections are shown in Figure 12 and the geometric layout of the intersections are shown in Table 3.

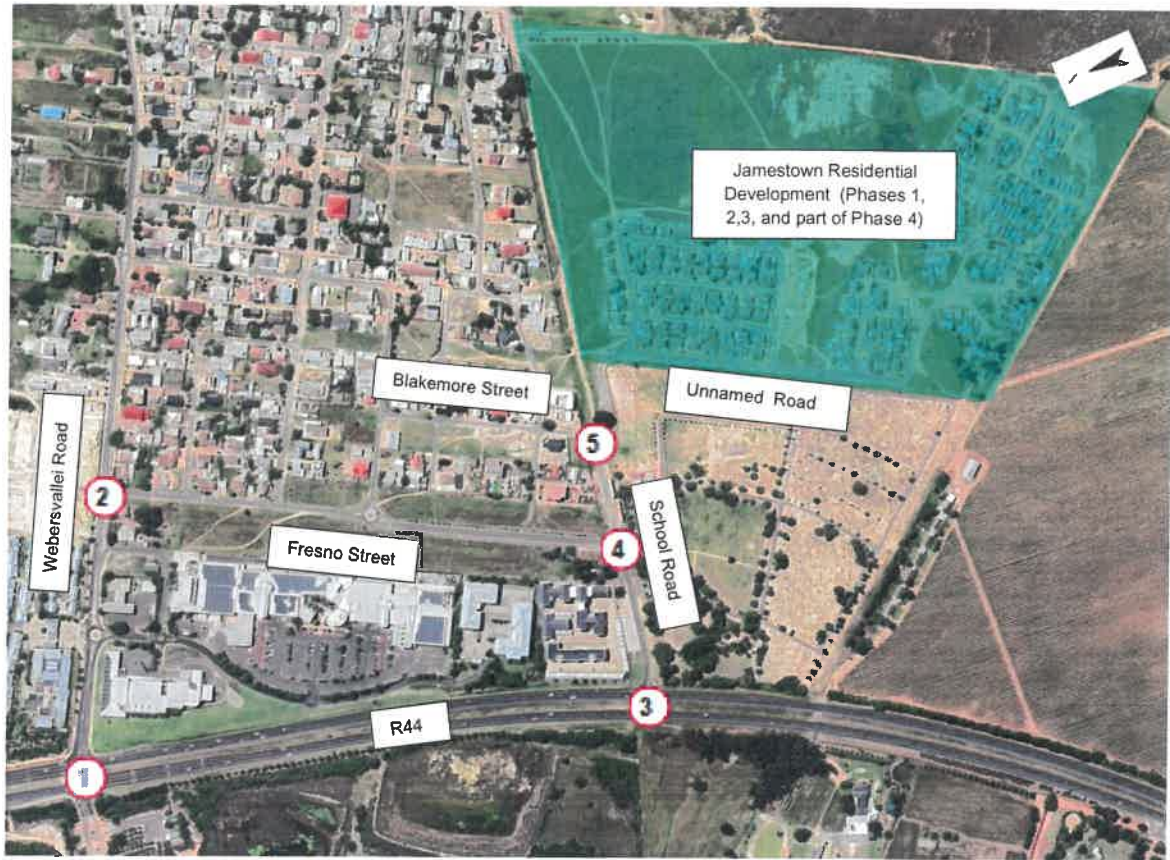


Figure 12: Study Intersections

Table 3: Intersections control and geometry

| Intersecting Roads |     |                   | Intersection Control Type    | Intersection Geometry |
|--------------------|-----|-------------------|------------------------------|-----------------------|
| 1.                 | R44 | Webersvallei Road | Full Signalised Intersection |                       |

| Intersecting Roads |                   |                  | Intersection Control Type            | Intersection Geometry |
|--------------------|-------------------|------------------|--------------------------------------|-----------------------|
| 2.                 | Webersvallei Road | Fresno Street    | Roundabout                           |                       |
| 3.                 | R44               | School Road      | T-Junction stop control on School Rd |                       |
| 4.                 | School Road       | Fresno Street    | T-Junction stop control on School Rd |                       |
| 5.                 | School Road       | Blakemore Street | Full unsignalized Stop controlled    |                       |

## 6 Vehicular Traffic and Pedestrian Counts

Classified traffic and pedestrian counts were conducted at the study intersections on the 2<sup>nd</sup> of August 2023 (a typical weekday) during the following periods:

- ▶ AM Peak Period (06:00 - 09:00)
- ▶ PM Peak Period (15:00 - 18:00)

The figures below indicate the locations where the traffic and pedestrian surveys were undertaken. For the intersections indicated in blue, surveys for both traffic and pedestrians were conducted. The intersections circled in red indicate where classified traffic counts were done.

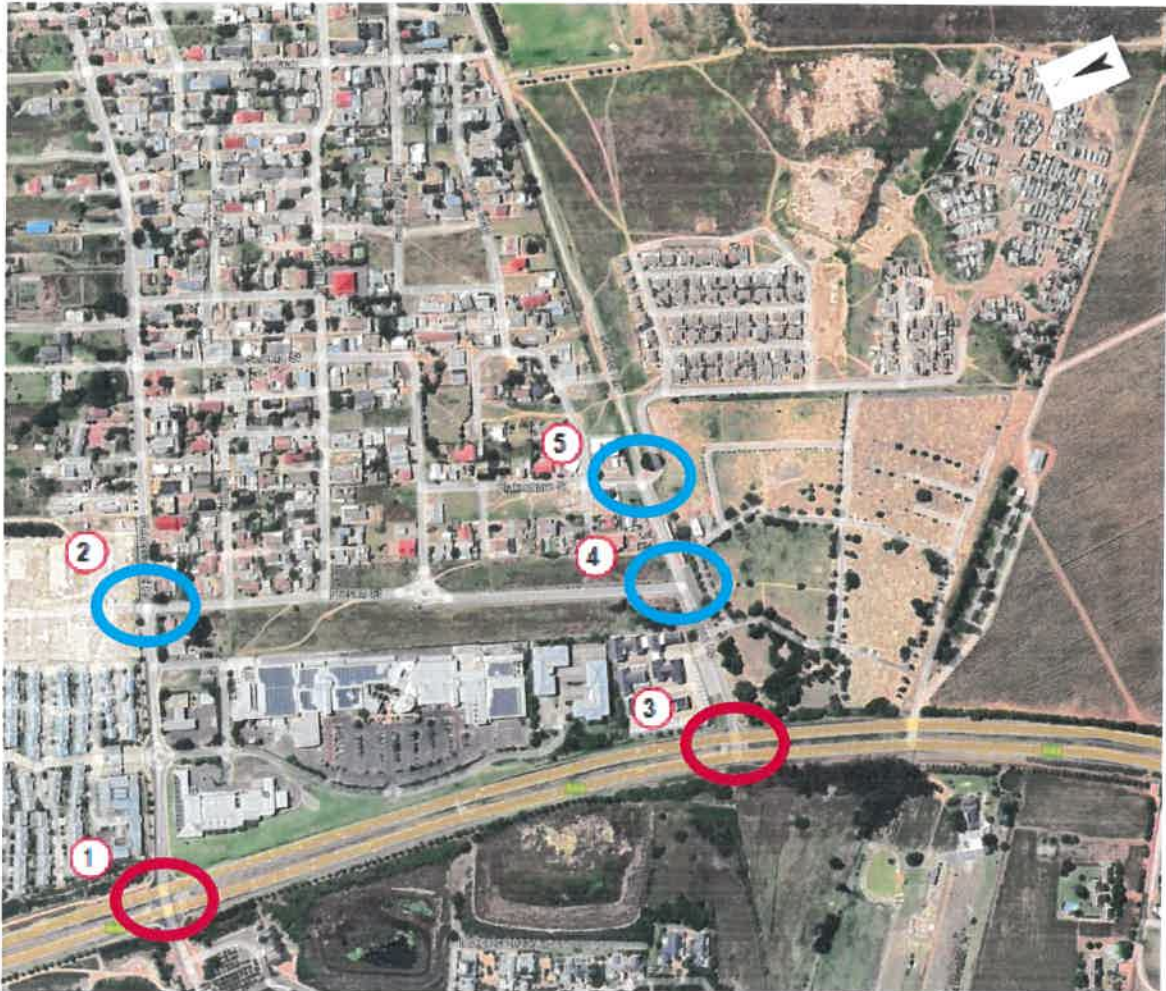


Figure 13: Traffic and Pedestrian Survey Locations



## 6.1 Vehicular Traffic

The AM peak hour for vehicular traffic occurred from 07:00 to 08:00 and the PM peak hour from 16:15-17:15 as shown in the table below. Detailed traffic count data can be found in Appendix A.

**Table 4: AM and PM all movements for all study intersections**

| Time  |       | 1. R44 / Webersvallei Rd. | 2. Webersvallei Rd / Fresno St. | 3. R44 / School Rd. | 4. School Rd. / Fresno St. | 5. School Rd. / Blakemore St. | Total |
|-------|-------|---------------------------|---------------------------------|---------------------|----------------------------|-------------------------------|-------|
| AM    |       |                           |                                 |                     |                            |                               |       |
| 06:00 | 07:00 | 2 315                     | 314                             | 2 084               | 115                        | 109                           | 4 937 |
| 06:15 | 07:15 | 3 011                     | 437                             | 2 729               | 148                        | 133                           | 6 458 |
| 06:30 | 07:30 | 3 517                     | 557                             | 3 242               | 168                        | 149                           | 7 633 |
| 06:45 | 07:45 | 3 746                     | 603                             | 3 414               | 175                        | 139                           | 8 077 |
| 07:00 | 08:00 | 3 823                     | 536                             | 3 458               | 178                        | 129                           | 8 124 |
| 07:15 | 08:15 | 3 786                     | 497                             | 3 368               | 154                        | 113                           | 7 918 |
| 07:30 | 08:30 | 3 595                     | 461                             | 3 109               | 132                        | 95                            | 7 392 |
| 07:45 | 08:45 | 3 403                     | 423                             | 2 916               | 110                        | 82                            | 6 934 |
| 08:00 | 09:00 | 3 181                     | 413                             | 2 687               | 91                         | 67                            | 6 439 |
| PM    |       |                           |                                 |                     |                            |                               |       |
| 15:00 | 16:00 | 3 600                     | 343                             | 2 848               | 81                         | 74                            | 6 946 |
| 15:15 | 16:15 | 3 834                     | 383                             | 3 024               | 89                         | 83                            | 7 413 |
| 15:30 | 16:30 | 4 124                     | 434                             | 3 287               | 117                        | 103                           | 8 065 |
| 15:45 | 16:45 | 4 404                     | 484                             | 3 561               | 124                        | 103                           | 8 676 |
| 16:00 | 17:00 | 4 533                     | 529                             | 3 713               | 142                        | 110                           | 9 027 |
| 16:15 | 17:15 | 4 537                     | 532                             | 3 790               | 164                        | 111                           | 9 134 |
| 16:30 | 17:30 | 4 389                     | 498                             | 3 717               | 152                        | 103                           | 8 859 |
| 16:45 | 17:45 | 4 095                     | 473                             | 3 491               | 146                        | 103                           | 8 308 |
| 17:00 | 18:00 | 3 785                     | 428                             | 3 230               | 131                        | 92                            | 7 666 |

## 6.2 Pedestrians

The AM peak hour for pedestrian movements occurred from 07:15 to 08:15 and the PM peak hour from 16:45-17:45 as shown in the table below.

Table 5: Pedestrian Counts

| Time  |       | 2. Webersvallei Rd / Fresno St. | 4. School Rd. / Fresno St. | 5. School Rd. / Blakemore St. | Total |
|-------|-------|---------------------------------|----------------------------|-------------------------------|-------|
| AM    |       |                                 |                            |                               |       |
| 06:00 | 07:00 | 18                              | 30                         | 39                            | 87    |
| 06:15 | 07:15 | 33                              | 45                         | 58                            | 136   |
| 06:30 | 07:30 | 70                              | 49                         | 69                            | 188   |
| 06:45 | 07:45 | 74                              | 53                         | 76                            | 203   |
| 07:00 | 08:00 | 101                             | 56                         | 77                            | 234   |
| 07:15 | 08:15 | 113                             | 59                         | 78                            | 250   |
| 07:30 | 08:30 | 98                              | 64                         | 78                            | 240   |
| 07:45 | 08:45 | 103                             | 56                         | 75                            | 234   |
| 08:00 | 09:00 | 95                              | 54                         | 66                            | 215   |
| PM    |       |                                 |                            |                               |       |
| 15:00 | 16:00 | 18                              | 81                         | 74                            | 173   |
| 15:15 | 16:15 | 33                              | 80                         | 85                            | 198   |
| 15:30 | 16:30 | 40                              | 91                         | 87                            | 218   |
| 15:45 | 16:45 | 39                              | 89                         | 88                            | 216   |
| 16:00 | 17:00 | 40                              | 91                         | 89                            | 220   |
| 16:15 | 17:15 | 43                              | 96                         | 86                            | 225   |
| 16:30 | 17:30 | 48                              | 95                         | 91                            | 234   |
| 16:45 | 17:45 | 55                              | 96                         | 89                            | 240   |
| 17:00 | 18:00 | 53                              | 84                         | 76                            | 213   |

## 7 Existing NMT

### 7.1 Pedestrian Surveys

As shown in the pedestrian counts (discussed in Section 6) a significant number of pedestrians were counted during the AM and PM peak hours. Figure 14 and Figure 15 show the directional pedestrian volumes and how they travel at the School Road / Fresno Street, School Road / Blakemore Street and Webersvallei Road / Fresno Street intersections respectively.

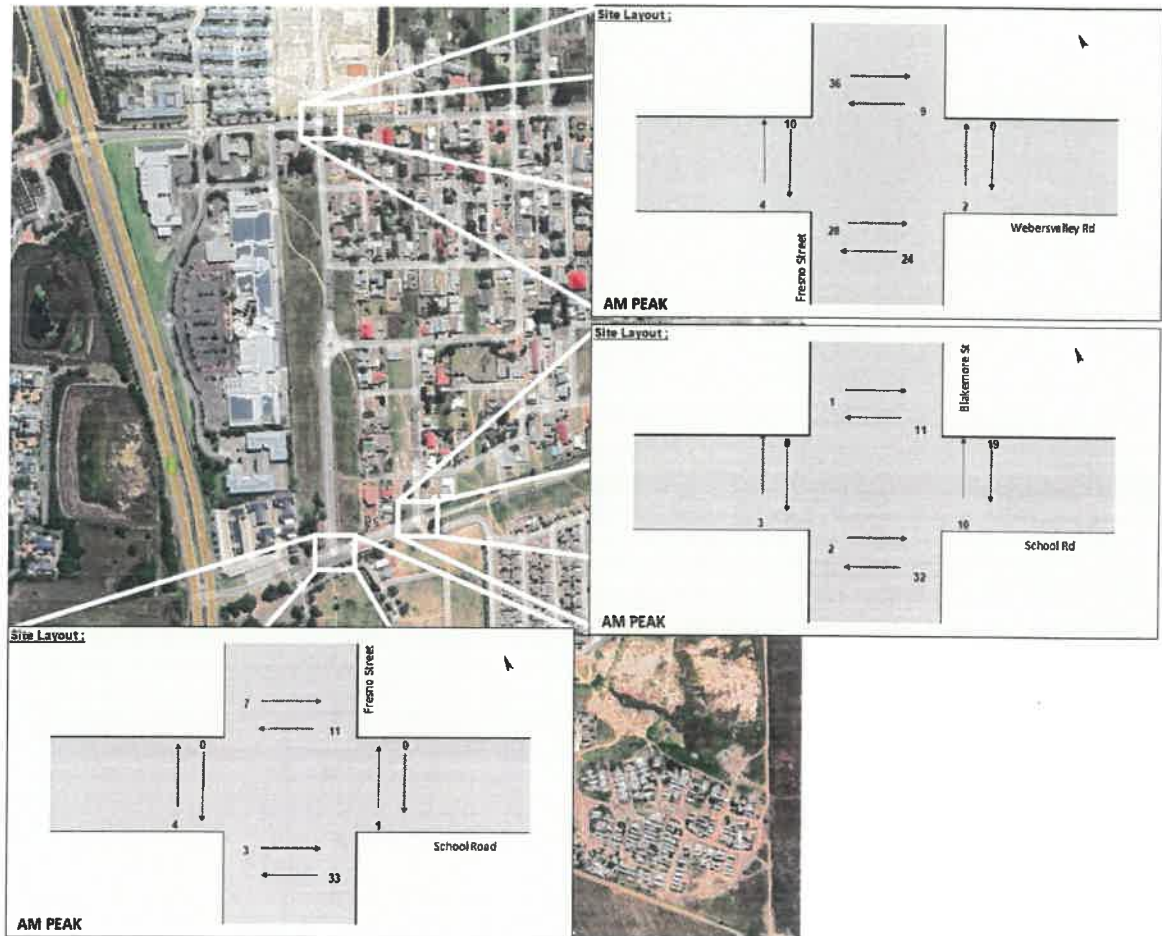


Figure 14: AM Peak Pedestrian Movements

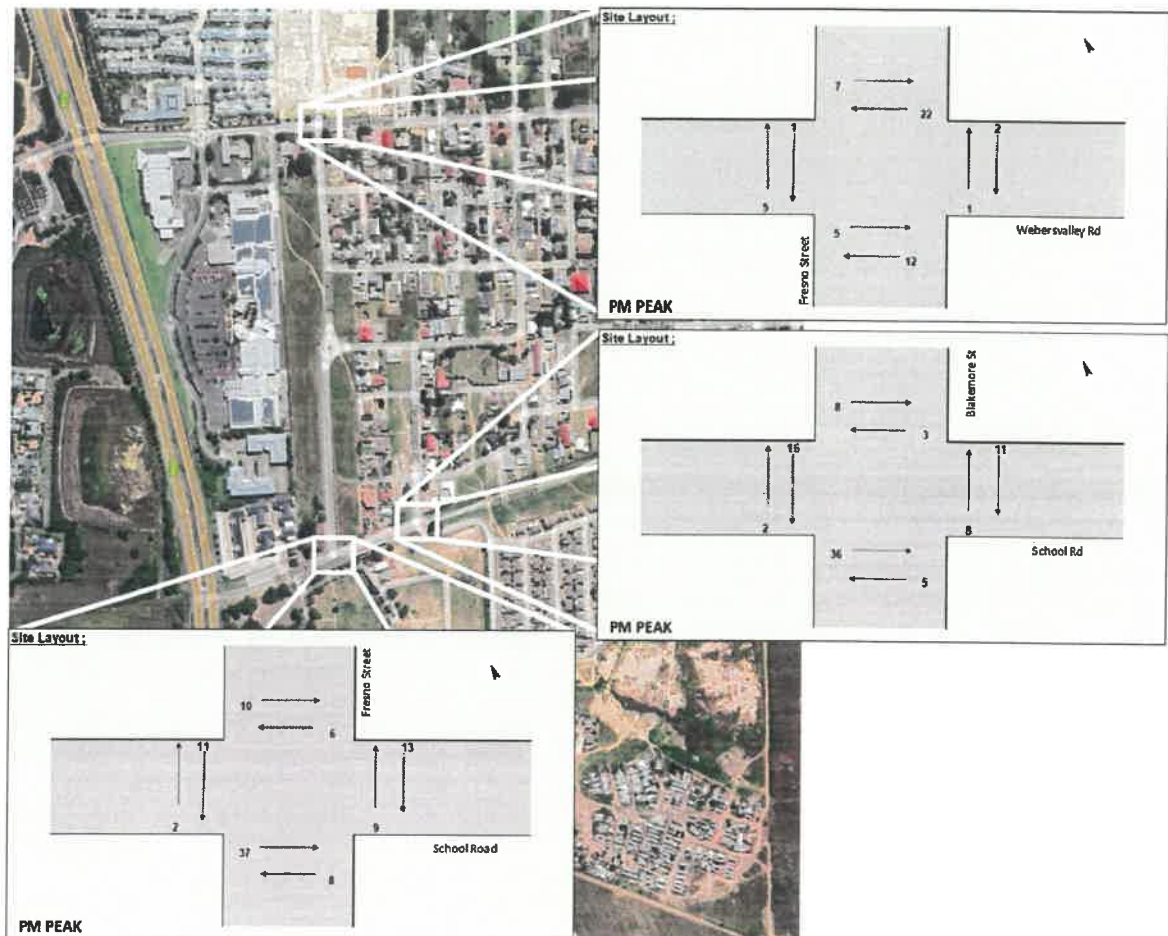


**Figure 15: PM Peak Pedestrian Movements**

From the pedestrian counts:

- In the AM peak hour, the majority of the pedestrians walk along School Road across Blakemore and Fresno Streets heading towards the R44.
- In the PM peak hour, the direction of the pedestrian movements are reversed, pedestrians are walking along School Road from the R44 towards the residential areas.
- It should be noted that, a few pedestrians were observed to cross School Road from Blakemore Street, they appear to be heading into the existing Jamestown Residential Development area.
- At the Webersvallei Road / Fresno Street intersection, a significant number of pedestrians were observed walking along Webersvallei Road in both directions. This was seen during both the AM and PM peak hour. The bidirectional demand could be due to the fact that the land use in the northern part of Jamestown consists of a mix of residential and retail/commercial land uses.



## 7.2 Existing NMT facilities

The existing NMT facilities for Jamestown are shown in Figure 16 and is summarised in Table 6 below. Figure 17 and Figure 18 shows some of the existing NMT facilities along School Road and Fresno Street.

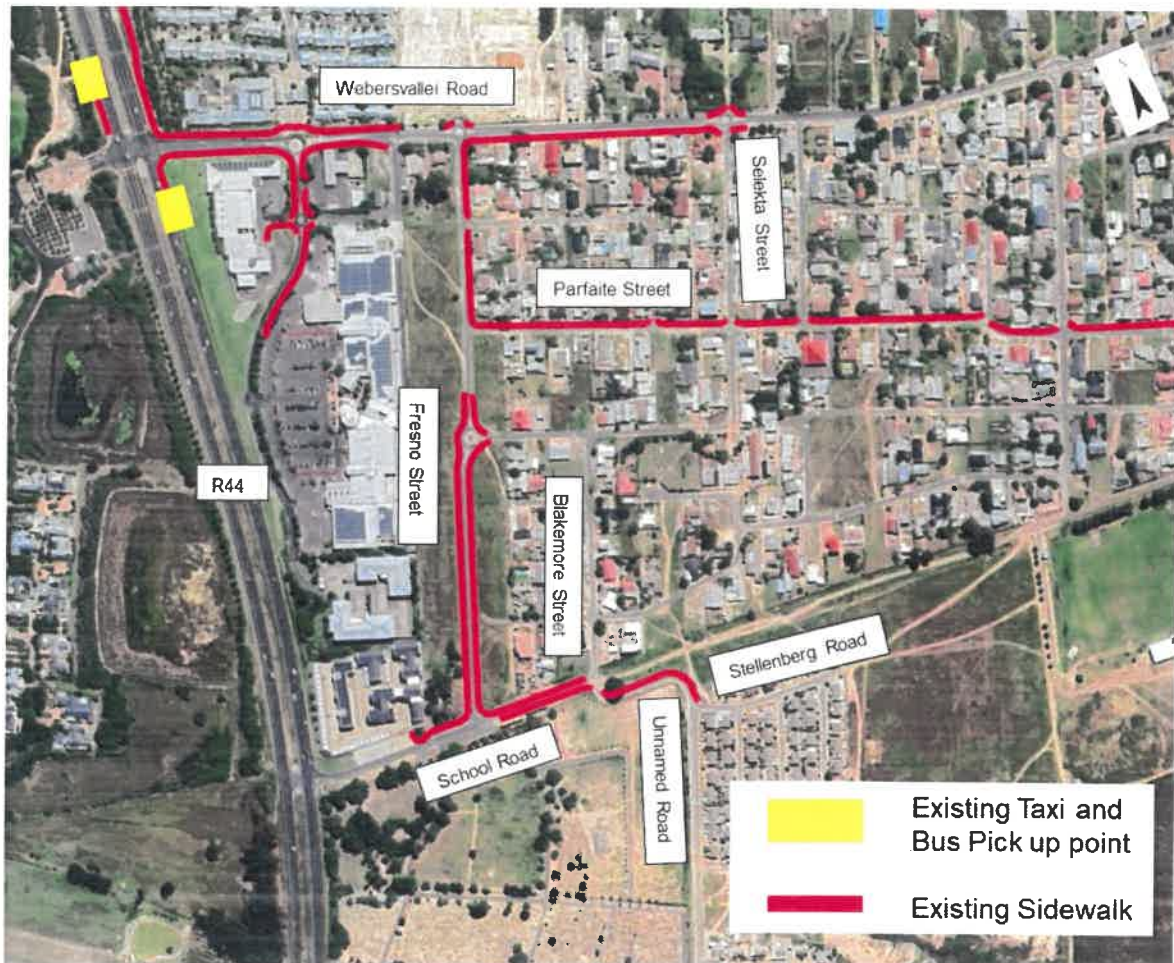


Figure 16: Existing NMT Facilities throughout Jamestown

Table 6: Existing NMT facilities throughout Jamestown

| Road              | Non-Motorised Transport Facilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| R44               | <ul style="list-style-type: none"> <li>Existing Sidewalk between intersection R44 / Webersvallei Road and R44 / Techno Avenue</li> <li>No sidewalk between R44 / Webersvallei Road and R44 / School Road and beyond</li> </ul>                                                                                                                                                                                                                                                                                     |
| Webersvallei Road | <ul style="list-style-type: none"> <li>Short section of Webersvallei Road between intersections R44 / Webersvallei Road and Webersvallei Road / Fresno Street has sidewalk on both sides. Connecting relatively well to the existing taxi and bus pick up and drop off zone</li> <li>Between intersections Webersvallei Road / Fresno Street and Webersvallei Road / Seleka Street sidewalk on one side of the road</li> <li>Webersvallei Road onwards no sidewalks, except at roundabout intersections</li> </ul> |

| Road             | Non-Motorised Transport Facilities                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| School Road      | <ul style="list-style-type: none"> <li>Between intersections R44 / School Road and School Road / Fresno Street only short sidewalk near School Road / Fresno Street intersection</li> <li>Between intersections School Road / Fresno Street and School Road / Blakemore Street sidewalk on both sides on the road</li> <li>After intersection with Blakemore Street School Road continues as dirt road with no sidewalks</li> <li>Figure 17 shows the existing NMT facilities along School Road.</li> </ul> |
| Frenso Street    | <ul style="list-style-type: none"> <li>Between Webersvallei Road / Fresno Street and Fresno Street / Parfaite Street sidewalk on one side</li> <li>Short sections between Fresno Street / Parfaite Street and Frenso Street / Montrose Street no sidewalk</li> <li>Between intersections Fresno Street / Montrose Street and Fresno Street / School Road sidewalk on both sides</li> <li>Figure 18 shows the existing NMT facilities along Fresno Street</li> </ul>                                         |
| Parfaite Street  | <ul style="list-style-type: none"> <li>Sidewalk along entire street</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Blakemore Street | <ul style="list-style-type: none"> <li>No sidewalk</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Unnamed Road     | <ul style="list-style-type: none"> <li>Between intersections School Road / Blakemore Street and Unnamed Road / Stellenberg Road sidewalk on one side</li> <li>No sidewalks further on</li> </ul>                                                                                                                                                                                                                                                                                                            |



Figure 17: Existing NMT Facilities along School Road, Eastbound



Figure 18: Existing NMT Facilities along Fresno Street, Northbound

### 7.3 NMT Usage

The following observations were documented in the *Non-motorised Facilities in Jamestown* report, prepared by Aecom in 2020:

- It has been noted that the existing NMT facilities in Webersvallei Road are used by both pedestrians and cyclists;
- A high number of pedestrians walk along Pajaro Avenue. The majority of pedestrians come from Phase 1 of the Jamestown Residential Development. Possible reasons for the high pedestrian volumes are Pajaro Avenue being a major connection between the southern developments of Jamestown and Webersvallei Road. Pajaro Avenue is a direct and short route between the northern and southern parts of Jamestown. There is also a clinic and small kiosk situated along Pajaro Avenue;
- Pedestrian movements were recorded along School Street, on the formalised segment as well as the informal / unpaved section to the eastern side. School Street is a major access road to the schools situated further east along School Street;

- Pedestrian movements have been observed east of Fresno Street, at the intersection of Fresno Street and Parfaite Street and on the vacant land east of the shopping centre (Stellenbosch Square). The movement relates to pedestrians making their way to the shopping centre or taxi pick-up points in the vicinity of the shopping centre;
- Pedestrians were observed in the vicinity of the schools on School Street (the location of the schools are shown in Figure 2). Scholars are dropped-off / picked-up by bus in School Street. The scholars make their way to and from the bus on foot;
- It should be noted that there are multiple scholars walking over some vacant plots / land to and from the schools in School Street.

## 8 Existing Public Transport

### 8.1 Public Transport Survey Information

Public transport modes serving Jamestown are limited to busses and minibus taxis. There are no train stations located near Jamestown.

Figure 19 and Figure 20 show the minibus taxi and bus movements that were recorded during the AM and PM peak hour traffic counts, respectively. As shown in Figure 19, during the AM peak hour several busses travel along School Road. This is due to the fact that there are two schools located along School Road. During the PM peak hour, the number of busses counted were less compared to the AM peak, which can be expected since schools were already closed at the time of PM peak hour counts.

The taxis were found to be quite busy in the AM peak hour. From the survey information it appears that their operations are mostly focused around the residential areas within Jamestown: along Webersvallei Road, Blakemore Street, etc. A significant number of taxis were counted using the R44, which is expected as there are two dedicated public transport embayment along the R44 (shown in Figure 21). The taxis were found to be equally busy during the AM and PM peak hour.

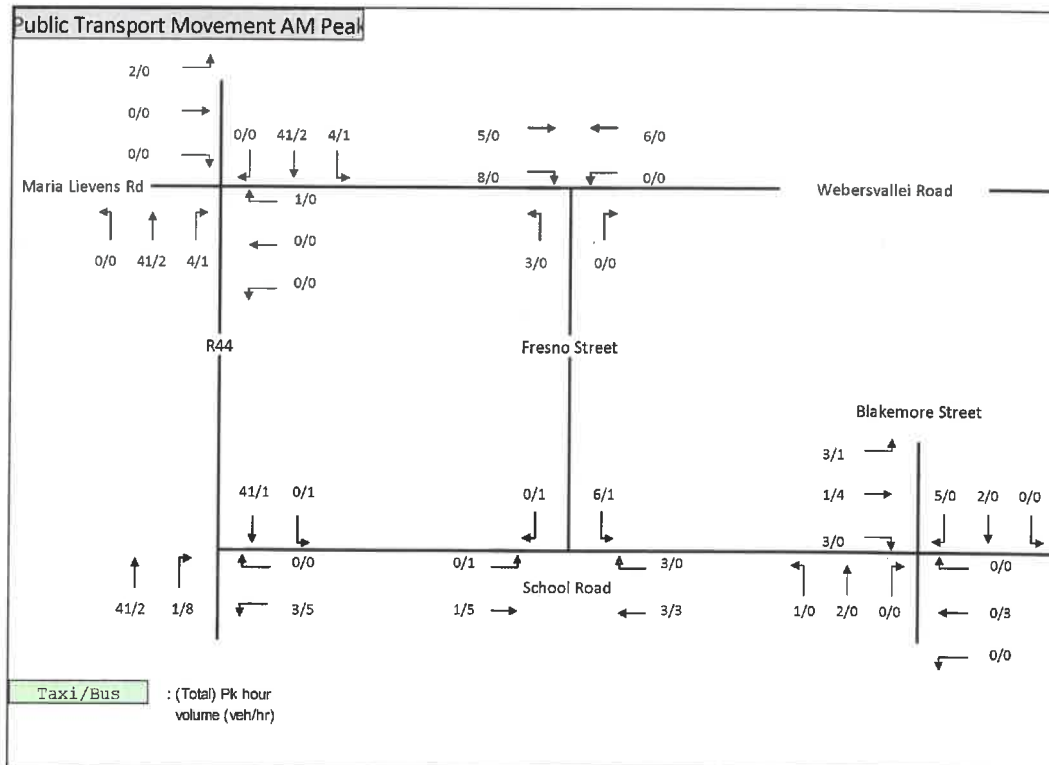


**Figure 19: Taxi and Bus Movements during AM Peak Hour**

Document number 1002169-PLN-REP-RU-0003, Revision number 3, Date 2024/01/31



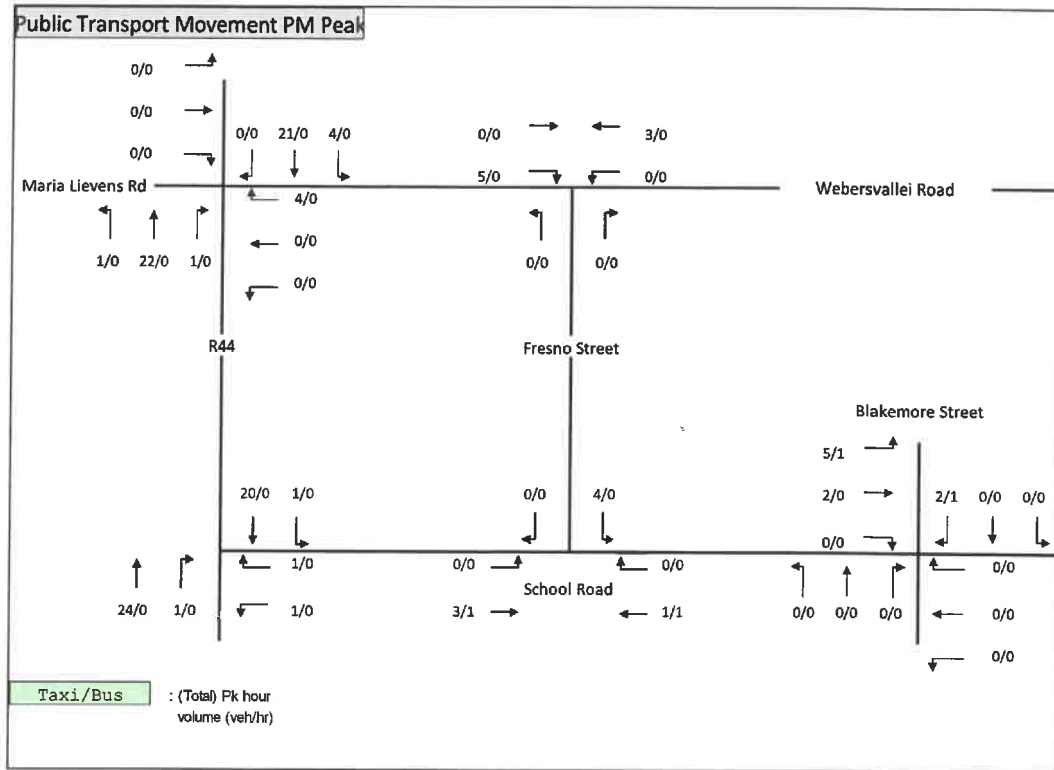


Figure 20: Taxi and Bus Movements during PM Peak Hour

## 8.2 Existing Public Transport Facilities

As mentioned previously there are two dedicated public transport embayments along the R44. These embayments (shown in Figure 21) are located along the northbound and southbound carriageways of the R44 at the R44 / Webersvallei Road intersection. The embayments are relatively well connected to the existing NMT facilities along Webersvallei Road.

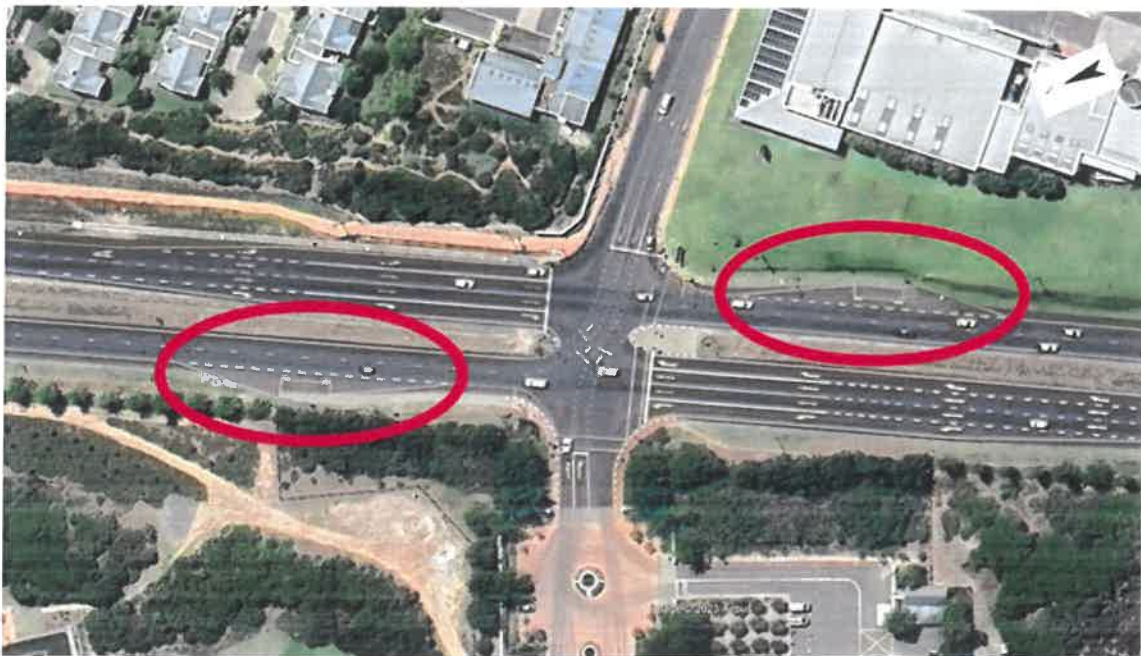


Figure 21: Designated Pick up and Drop off zone on R44



### 8.3 Public Transport Usage

The following observations related to public transport usage were documented in the *Non-motorised Facilities in Jamestown* report, prepared by Aecom in 2020:

- Minibus taxis stop for drop-off and pick-up at the bus-stops along the R44;
- Multiple minibus taxis have been observed at the intersection of School Street and the R44;
- Minibus taxis access Jamestown to pick-up and drop-off passengers along most of the streets (as confirmed by a Jamestown resident), taxis were observed especially on Pajaro Avenue and Festival Street;
- School buses use the internal roads of Jamestown to and from School Street to the school drop-off and pick-up points.

## 9 Proposed Development

### 9.1 Detail of Development

Figure 22 below shows the extent of the Jamestown Residential Development expansion. It comprises of 4 phases, consisting of residential and community land uses:

- ▶ Phase 1 of the Jamestown Residential Development is completed and the trips generated by this phase of the Development are included in the 2023 background traffic.
- ▶ Phase 2 and 3 are in the planning phase and the assumed implementation year is 2025. This TIA considers the impact of Phases 2 and 3.
- ▶ Phase 4 is a future expansion of the Jamestown Residential Development on portion 7 of Farm 527 and the Remainder of Farm 527. The impact of the trips to/from Phase 4 will be considered in Section 13.6.

Table 7 shows a breakdown of the land use per phase and Figure 22 shows the extent of each phase.

Most of the Phase 2 and 3 Development will consist of subsidised residential housing, single storey houses and multi-storey flats. A small portion of the development was assigned to mixed community usage. As said, the impact of Phases 2 and 3 will be considered in this TIA. Future phases will be considered in a separate TIA.

The Site Development Plan is shown in Appendix B.

Table 7: Land Use Breakdown

| Phase | Status    | Erf Type        | Zone               | Land Use Type      | Number of Units | Area (m <sup>2</sup> ) |
|-------|-----------|-----------------|--------------------|--------------------|-----------------|------------------------|
| 1     | Completed | Subsidy Housing | Conventional Res   | Residential        | 150             | 20,779                 |
|       |           | Play Lot        | Public Open Space  | Public Open Space  | 3               | 1,850                  |
| 2     | Planned   | Subsidy Housing | Conventional Res   | Residential        | 167             | -                      |
|       |           | Open Space      | Public Open Space  | Public Open Space  | -               |                        |
|       |           | Creche          | Community          | Community          | 1               | 665                    |
| 3     | Planned   | Subsidy Housing | Conventional Res   | Residential        | 107             | -                      |
|       |           | Open Space      | Public Open Space  | Public Open Space  | -               |                        |
| 4     | Planned   | GAP Housing     | Conventional Res   | Residential        | 420             | 63,000                 |
|       |           | Subsidy Housing | Conventional Res   | Residential        | 624             | 74,880                 |
|       |           | Market Housing  | Conventional Res   | Residential        | 601             | 108,180                |
|       |           | Open Space      | Public Open Space  | Public Open Space  | -               | TBD                    |
|       |           | Taxi Rank       | Transport Facility | Transport Facility | -               | TBD                    |



Figure 22: Jamestown Residential Development

## 9.2 Development Traffic

### 9.2.1 Trip Generation

Trip generation rates were obtained from the South African Committee of Transport Officials (COTO) Trip Data Manual, TMH 17, Volume 1 (2013). The trip generation rates used are shown in the table below.

**Table 8: Applied Trip Generation Rates**

| Phase | Land Use        | COTO Code | Trip Rate |    | AM Directional Split |            | PM Directional Split |            |
|-------|-----------------|-----------|-----------|----|----------------------|------------|----------------------|------------|
|       |                 |           | AM        | PM | AM In (%)            | AM Out (%) | PM In (%)            | PM Out (%) |
| 2     | Subsidy Housing | 210       | 1         | 1  | 25                   | 75         | 70                   | 70         |
|       | Community       | -         | 1         | 1  | 85                   | 15         | 20                   | 20         |
| 3     | Subsidy Housing | 210       | 1         | 1  | 25                   | 75         | 70                   | 70         |

The TMH17 trip reduction rates for mixed use development, very low vehicle ownership and for development in the vicinity of a transit node were applied to the trip generation rates. The reasons for applying the reduction factors being:

- 1) The Development consists of more than one land use namely residential and community.
- 2) The Development consists of social and GAP housing and caters for households with lower than average and very low income. It is therefore unlikely that residents of this development will all own and rely on the use of private cars, it is expected that they will predominantly use public transport and/or non-motorised transport .
- 3) The area is well served by minibus taxis with formal public transport stops provided within 500m from the Development.

The COTO Trip reduction factors are shown in Table 9.

**Table 9: Applied trip reduction**

| Land Use        | Reduction Factors     |                   |              |                 |
|-----------------|-----------------------|-------------------|--------------|-----------------|
|                 | Mixed Use Development | Vehicle Ownership | Transit node | Total Reduction |
| Subsidy Housing | 10%                   | 70%               | 15%          | 77%             |
| Community       | 20%                   | 30%               | 15%          | 52%             |

Based on the trip generation rates, trip reduction rates and proposed land used, it is estimated that the development will generate the following trips as shown in Table 10.

Table 10: Generated Trips

| Phase        | Land Use                | GLA [m <sup>2</sup> ] or No. Units | AM        |           | PM        |           |
|--------------|-------------------------|------------------------------------|-----------|-----------|-----------|-----------|
|              |                         |                                    | IN        | OUT       | IN        | OUT       |
| 2            | Subsidy Housing         | 216                                | 10        | 29        | 27        | 12        |
|              | Community               | 665                                | 3         | 1         | 1         | 3         |
|              | <b>Subtotal Phase 2</b> |                                    | 13        | 30        | 28        | 15        |
| 3            | Subsidy Housing         | 151                                | 7         | 19        | 18        | 8         |
|              | <b>Subtotal Phase 3</b> |                                    | 7         | 19        | 18        | 8         |
| <b>Total</b> |                         | <b>1524</b>                        | <b>20</b> | <b>49</b> | <b>46</b> | <b>23</b> |

### 9.2.2 Trip Distribution and Assignment

The trips generated by the Development were distributed onto the existing road network. The 2023 traffic counts were used to assign the trips generated (and attracted) to the Development, to the road network. The assumed trip distribution is shown in Appendix D.

The assignment exercise was based on the following assumptions:

- ▶ **Incoming traffic:** It was assumed that 40% of the trips attracted to the Jamestown Residential Development will be generated north of the development (Stellenbosch side), accessing the development from the R44 and 50% will be generated south of the development (Somerset West side), accessing the development from the R44. The remainder of the traffic (10%) is assumed to be generated by neighboring developments (north and northwest of Jamestown), coming from Webersvallei Street and Blakemore Street.
- ▶ **Outgoing traffic:** It was assumed that the majority of the outgoing traffic would head north, towards Stellenbosch, and south, towards Somerset West. 50% of the outgoing traffic was distributed to Stellenbosch and 40% was distributed to Somerset West. The remaining 10% was equally distributed to Webersvallei Street and Blakemore Street.

## 9.3 Access Management

### 9.3.1 Access

Access to the Development will be via the extension of the existing road network. The layout of the roads will be done in accordance with Guidelines for Human Settlement Planning and Design (commonly known as the Red Book) and the Stellenbosch Zoning Scheme.

The Site Development Plan (SDP) is shown in Appendix B. The internal roads of Phases 2 and 3 will be Class 5 roads with a road reserve width of 8m. The diagrams below illustrate the nature of the roads.

## 10 Impact of Previous Developments

At the time of preparing this TIA, three other developments had submitted Traffic Impact Statements (TISs) to the Stellenbosch Municipality for approval. It was therefore necessary to take trips to/from these developments into account and consider the overall impact on the road network. The three developments that will be considered in this TIA are listed below:



- ▶ Farm 510/52-54 & 71 ("Kreefgat") – Construction in progress
- ▶ Farm 510/845 ("The James") - Planned
- ▶ Farm 510/844 (will be referred to as "Stellenpark Res") - Planned

Figure 23 shows the locations of these developments. Table 11 shows the number trips each development will generate, as determined by their respective TIS. As shown, a total of 175 trips (47 IN and 128 OUT) will be generated in the AM peak and 175 trips (121 IN and 54 OUT) will be generated in the PM peak hour.

To account for these developments, the potential peak hour traffic generated by each of these developments, as shown in Table 11, were added to the background traffic. For the purpose of this TIA, it was assumed that all of these developments will be completed by 2025. More detail on how these developments were incorporated into this TIA is described in Section 12.

**Table 11: Previous developments generated trips**

| Development                        | AM        |            | PM         |           |
|------------------------------------|-----------|------------|------------|-----------|
|                                    | IN        | OUT        | IN         | OUT       |
| "Kreefgat"                         | 19        | 46         | 44         | 21        |
| "The James"                        | 16        | 46         | 43         | 19        |
| "Stellenpark Res"<br>(Erf 510/844) | 12        | 36         | 34         | 14        |
| <b>Total</b>                       | <b>47</b> | <b>128</b> | <b>121</b> | <b>54</b> |



**Figure 23: Locations of previously planned developments (iCE Group 2020)**

All three reference TISs recommended the following upgrades as mitigation measures to relief congestion:

- ▶ Upgrade the existing intersection layout of the R44 / Webersville Street signalised intersection. Figure 24 shows a schematic drawing of the proposed upgrades.
- ▶ Optimisation of the signal timings to improve traffic until further upgrades are required.

The upgrading of the R44 / Webersvallei intersection recommended in the previous TISs, has in fact also been earmarked by the Western Cape Government (WCG) in their "R44 Safety Project" as an intersection needing upgrades. Detailed design drawings of the proposed upgrades have been completed, as shown in Figure 25. The design drawing can also be found in Appendix C: Figure 48.

The upgrades have been separated into 3 parts:

- Part 1: A dedicated left turn lane on Webersvallei Road
- Part 2: Northbound carriageway: Additional right turning lane on the southern approach and an additional receiving lane on the northern leg.
- Part 3: Southbound carriageway: Additional right tuning lane on the northern approach and an additional receiving lane on the southern leg.

As part of the proposed upgrades at the Webersvallei Road / R44 intersection, Part 1, indicated in Figure 24, is already in the process of being constructed.

For the purposes of this TIA, the R44 / Webersvallei Road signalised intersection was modelled using optimised signal timings. It was further assumed that the proposed R44 / Webersvallei Road upgrades (as proposed in the previous TISs) will be completed by 2025.



**Figure 24: Mitigation measure proposed for previously planned developments**

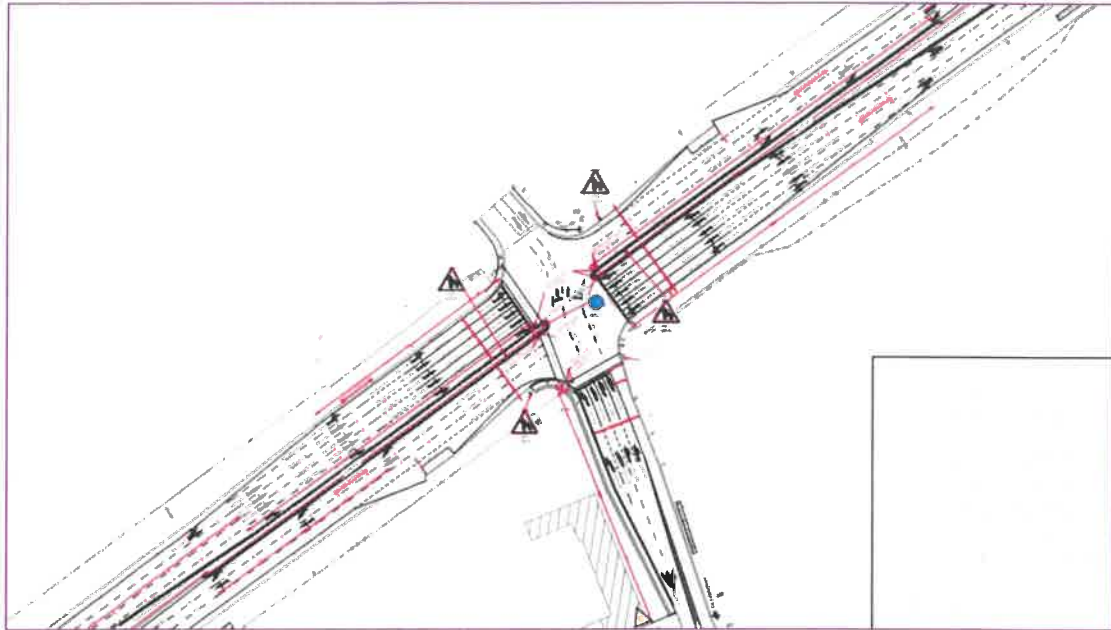


**Figure 25: Planned Upgrade to R44/Webersvallei Road Intersection**

## 11 Future Road Network Planning

In addition to the R44 upgrades discussed in Section 10, there are several more planning investigations that have been undertaken in the vicinity of Jamestown. These are described briefly in the subsequent paragraphs (note that the status of these proposals is unknown).

### 11.1 Jamestown Roads Master Plan 2017

Messrs Zutari, previously Aurecon, completed a conceptual Roads Master Plan (RMP) for Jamestown in June 2017.

This document made two proposals for new linkages to the Jamestown area (indicated with yellow dashed lines in Figure 26):

- A north south link (Class 4 Collector Street) from Jamestown (Webersvallei Road) to Blaauwklippen Road (basically the northwards extension of Torrey Street) and
- The southwards extension of Pajaro Street (also Class 4 Collector) to link up with Stellenrust Road.



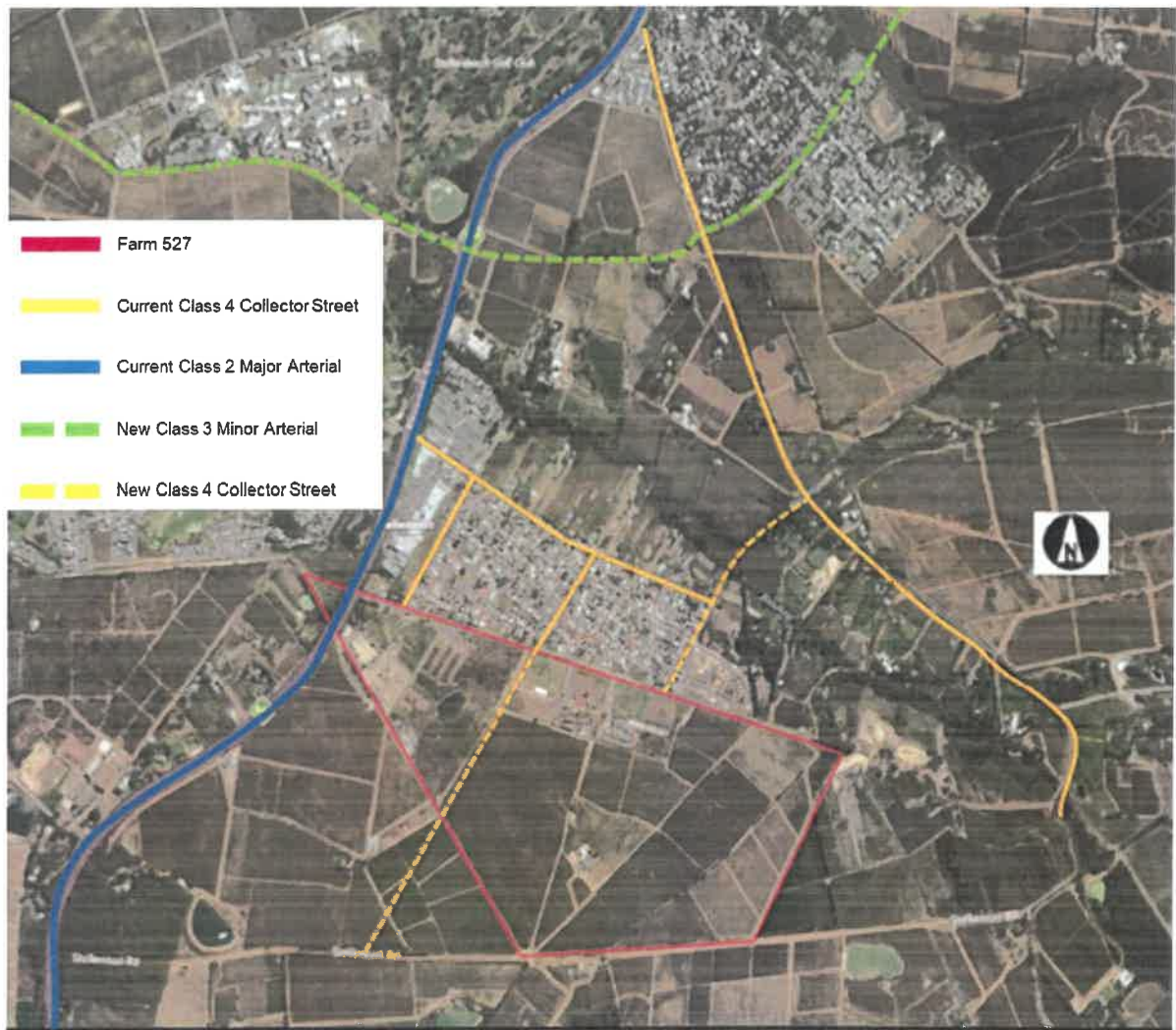


Figure 26: Proposed Road linkages to Jamestown as per the 2017 Roads Master Plan (Zutari)

## 11.2 Stellenbosch Roads Master Plan (RMP) Update 2018

Messrs WSP completed the Stellenbosch Roads Master Plan (2018 Update) in August 2019. This investigation included the application of the existing Cape Town EMME/4 Metropolitan Transport model. Several long-term land use scenarios (developed by the City of Cape Town) were used to develop a 2040 Transport Demand Modelling Scenario for Stellenbosch. The 2040 scenario included all feasible developments extracted from information provided by Stellenbosch Municipality.

The Stellenbosch RMP includes reference to the following roads which are relevant for Jamestown:

### 11.2.1 The Eastern Link Road

This route has a long history. It was proposed many years ago as the north/south link, with the main aim of providing a new link into Stellenbosch midtown as a supplement to the R44. It was originally planned to link to Marais Street west of the Jan Marais Park, and to eventually link with Helshoogte Road, just south of Idas Valley. However, the original route has two major constraints, namely, passing the Stellenbosch College (originally Denneoord) and crossing the Coetzenburg sports grounds.

Due to the sensitivity of the area, this route is opposed by many, which led to it being excluded from planning investigations despite its strong merits from a traffic and transport viewpoint. The 2019 Stellenbosch RMP did include a variation of the route in the EMME/4 modelling, from the R44 eastwards,



following the existing Wildebosch Street in Paradyskloof, then the so-called Van Rhee extension, and linking up with Pastorie Street at the Eerste River.

Figure 27 shows the approximate location of the route included in the 2019 Stellenbosch RMP. It was mentioned that the “phased implementation of the Paradyskloof-Trumali portion (south of Brandwacht) would have immediate benefits due to access restrictions on the R44 and proposed residential developments in the area”. In the short term, due to safety issues at the R44/Paradyskloof intersection, the so-called Schuilplaats link (just east of the R44, indicated in blue in Figure 27) between Paradyskloof and Trumali is being implemented to serve the Paradyskloof area.

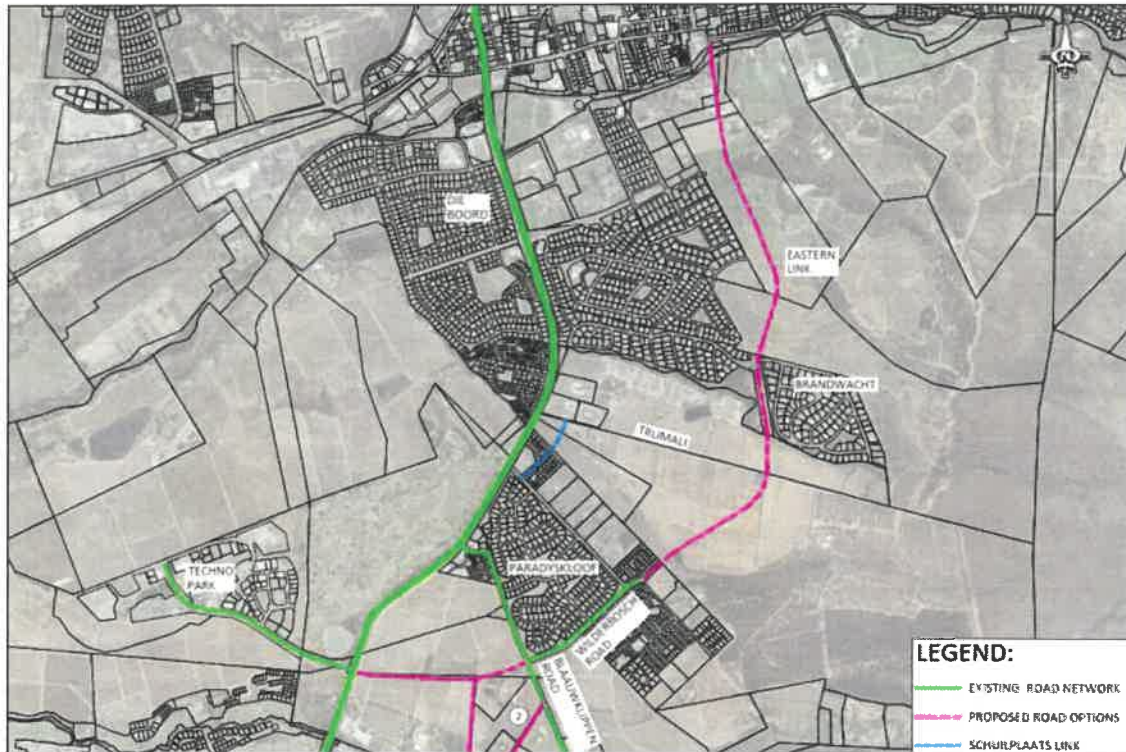


**Figure 27: Approximate location of the proposed Eastern Link Road (Source: Jamestown Roads Masterplan)**

For this TIA, only the southern end of the route is of importance as it passes from the R44/Techno Avenue intersection eastwards to the existing Blaauwklippen/Wildebosch intersection, through the defined Jamestown area. As such it provides an opportunity to link Jamestown to the north to both the R44, Blaauwklippen Road and eventually the CBD of Stellenbosch.

### 11.2.2 The Western Bypass

In the Stellenbosch area, especially in the vicinity of Jamestown, it also has to serve as a commuter route bringing workers from the southern suburbs and Somerset West to employment opportunities in Stellenbosch and to regions in the north.

However, as shown in Section 10 R44 is under major pressure and experience capacity issues in the AM and PM peak hours. A parallel route on the western side past Stellenbosch has the potential to relieve the R44 of commuter traffic, serving the longer distance traffic. A presentation of a possible alignment for such a route (see dotted red/green lines) is shown in Figure 28 below – from the 2019 Stellenbosch Roads Master Plan. Such a route will be highly sensitive to environmental concerns - investigations into this have been commissioned.

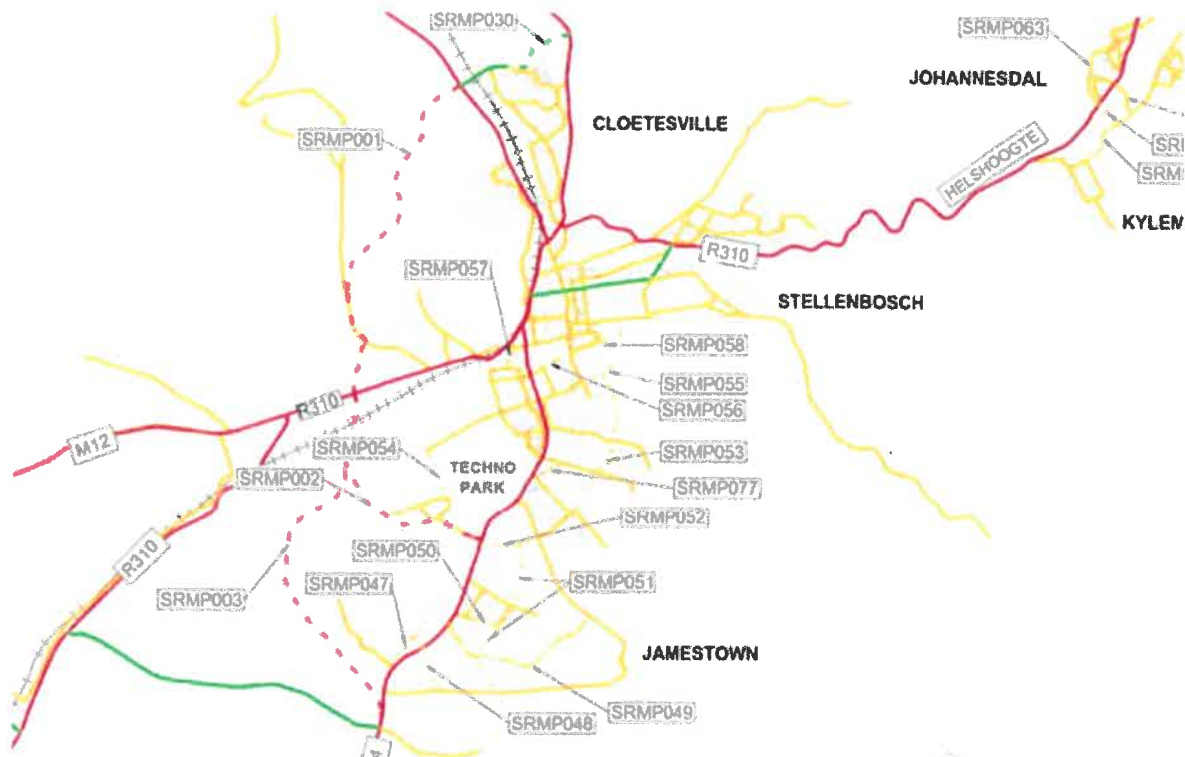


**Figure 28: Alignment of the possible future Western Bypass (red dashed line) from 2019 Stellenbosch Roads Master Plan**

The importance of the Western Bypass to the Jamestown area depends on the option that is selected. The first (longer) option mentioned above, will change the function of the R44 where it passes Jamestown and that could have a significant impact on how access from Jamestown to the R44 is treated. For this reason, it is considered crucial that the planning process with respect to a possible Western Bypass proceeds and that the end result is confirmed.

### 11.2.3 Five new roads in the Jamestown area – projects SRMP048 to SRMP052

The five new roads are illustrated in Figure 29 (from Stellenbosch RMP) and have been described as follows (all proposed to be Class 4 Collector Streets):

**SRMP048 – R44/Stellenrust Road link** – Realignment of Stellenrust Road to the R44 with a possible link onto a proposed new road west of the R44 (SRMP047) and the closure of the unsafe access on the R44. This has been included in the Access Proposals (Section 2 below) as Route 8.

**SRMP049 – New Jamestown Road** – New Jamestown access road linking existing and proposed residential developments south to the R44 and north to Blaauwklippen Road. This is the major road from the previous Jamestown Roads Master Plan, shown in Figure 2.6 above. The link with the R44 (just south of the cemetery) is not possible in view of the Minister's final decision wrt the R44 upgrade (Aug 2019).

**SRMP050 – School Road** – School Road upgrade from R44 – pending finalisation of PGWC planned U-Turn facility near the R44/School Road intersection. This is the formalisation of School Street that is not possible considering the provincial upgrading of the R44 and the requirements of the City of Cape Town water servitude.



**SRMP051 – Pajaro Avenue** – Extend Pajaro Avenue northwards to intersect with the proposed Eastern Link Road (see below Figure 2.7) and southwards to link with Stellenrust Road. Provides link between Jamestown and Paradyskloof. This proposal is supported for further investigation and is included as Routes 1 and 6 in Section 2 below.

**SRMP052 – Eastern Link Road (Wildebosch South)** – The extension of Wildebosch Road to link onto Techno Avenue at the R44 (Portion of Eastern Link). This link has a long history (was previously referred to as the north/south link) and it is agreed that the planning and design should proceed and be formalised.

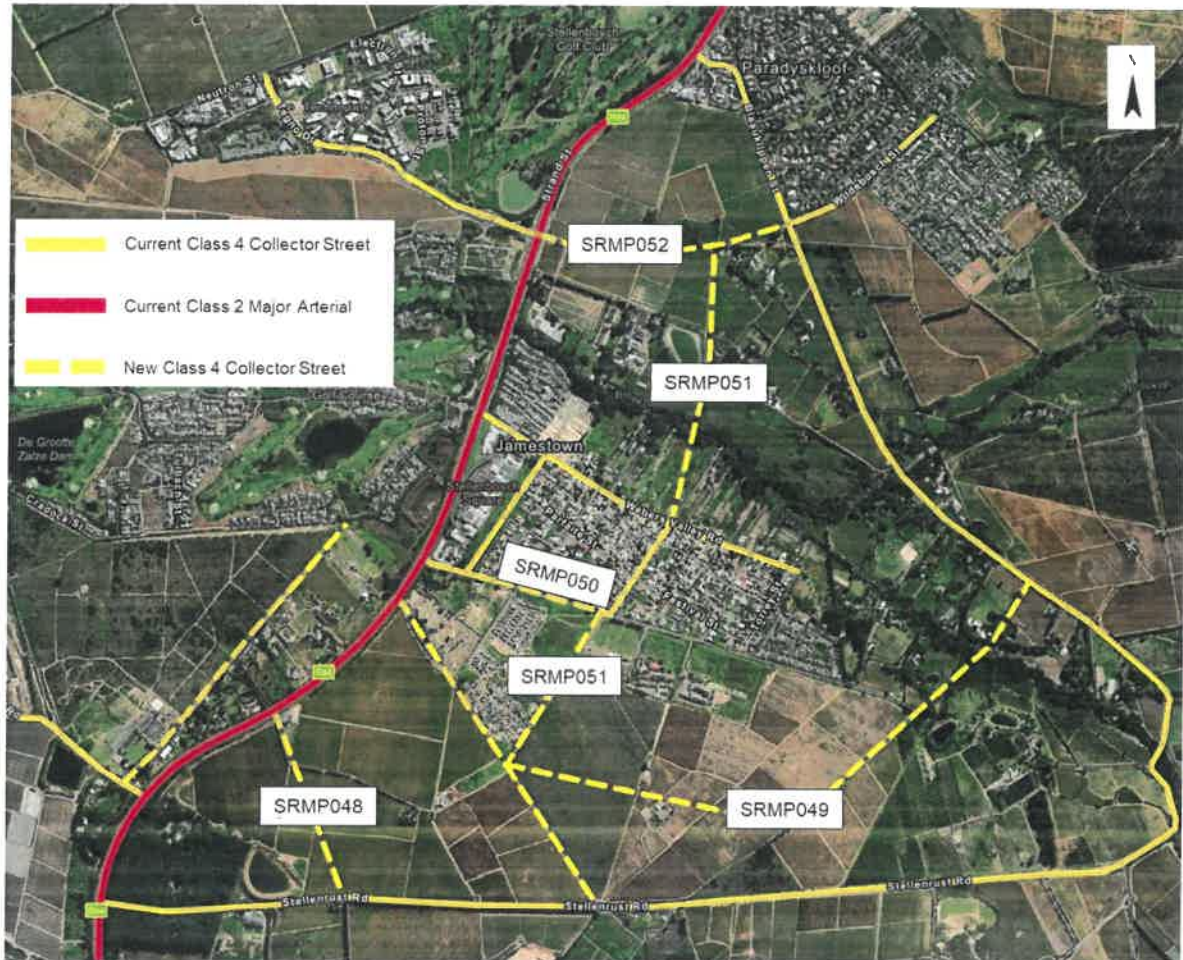


Figure 29: Five new road links in Jamestown area as proposed in 2018 Roads Masterplan

### 11.3 Jamestown Roads Masterplan (March 2020)

Messrs Aecom completed a conceptual Roads Master Plan (RMP) for Jamestown in June 2017.

They concluded that access from the area Jamestown to the R44 will be limited to Webersvallei Road and the Left/In Left/Out (LILO) at Mountain Breeze. New options of linking Jamestown to the external road network have been suggested and more can be defined. The proposed new network includes several potential roads linking the Jamestown area to Blaauwklippen and Stellenrust Roads, and through these routes also link with the R44/Stellenbosch/Somerset West, these routes are discussed in Table 12.

**Table 12: Roads Masterplan for Jamestown New Major links**

| Route | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1     | Potential north to south link from Jamestown (intersection of Webersvallei Road / Pajaro Street, which is currently a mini roundabout) northwards to link with the portion of the future Eastern Link Road between the R44 and Blaauwklippen Road. Requires a portion of the portion of the Eastern Link Road to be constructed if it is to fulfil any linking function for Jamestown. It crosses the Blouklip Spruit and passes just east of existing dam to the north of the Spruit, on the Blaauwklippen wine farm.  |
| 2     | This is an alternative northern link from Pajaro Street, slightly east of Route 1, largely along the boundary of existing properties, and linking directly with Blaauwklippen in the north. It also crosses the Blouklip Spruit. No portion of the future Eastern Link is required, and it can provide an immediate northern link from Jamestown to Blaauwklippen Road.                                                                                                                                                 |
| 3     | Is the shortest new route planned, linking the northern part of Jamestown to an existing route (Blaauwklippen Road). It links the current eastern end of Webersvallei Road with Blaauwklippen Road and crosses the Blouklip Spruit.                                                                                                                                                                                                                                                                                     |
| 4     | This a southern link from the southern end of Torrey Street, slightly over and past the Stellenzicht Secondary School sport grounds, over the Stellenzicht farm to link with Stellenrust Road in the south. It only crosses Stellenbosch Municipality farmlands (mostly vineyards), making it the easiest of all linking routes to construct. Some impact on the sports grounds of the Stellenzicht Secondary School is likely, and it depends on how smooth the bends at the southern end of Torrey Street have to be. |
| 5     | An east to west link between the extended Torrey Street in the east, to the Jamestown cemetery in the west, located just on the southern side of the two schools. This route could be further extended eastwards up to Blaauwklippen Road.                                                                                                                                                                                                                                                                              |
| 6     | This is the southwards extension of Pajaro Street to link in the south with Route 8, which forms a new link between the R44 and Stellenrust Road.                                                                                                                                                                                                                                                                                                                                                                       |
| 7     | Is a southern link from the south-eastern corner of the shopping mall to Stellenrust Road, with the main function of serving planned new developments on the southern side of Jamestown. The first portion in effect will be part of School Street, which is now planned adjacent to the water line servitude.                                                                                                                                                                                                          |
| 8     | This is a potential short east/west link road between the Mountain Breeze LILO with the R44, and Stellenrust Road. It is included due to the potential of the Mountain Breeze LILO to become a full intersection in view of the minister's requirement that two median breaks should remain on the R44. It also has the potential to become the realigned Stellenrust Road, alleviating the need for the existing problematic intersection of Stellenrust Road and the R44.                                             |

Worth noting is the Wilderbosch Road extension north and south is currently being implemented and is currently in the planning phase. It is planned to first construct the northern part of the extension then the southern part towards the R44 / Techno Avenue intersection. Furthermore, an extension between Adam Tas Road and Techno Avenue is also currently in the detailed design phase. These links will assist in reducing the high traffic volumes experienced on the R44. Although an indication was given as to the most suitable future routes, it was concluded that at least one new northern and southern link from/to Jamestown are justified.



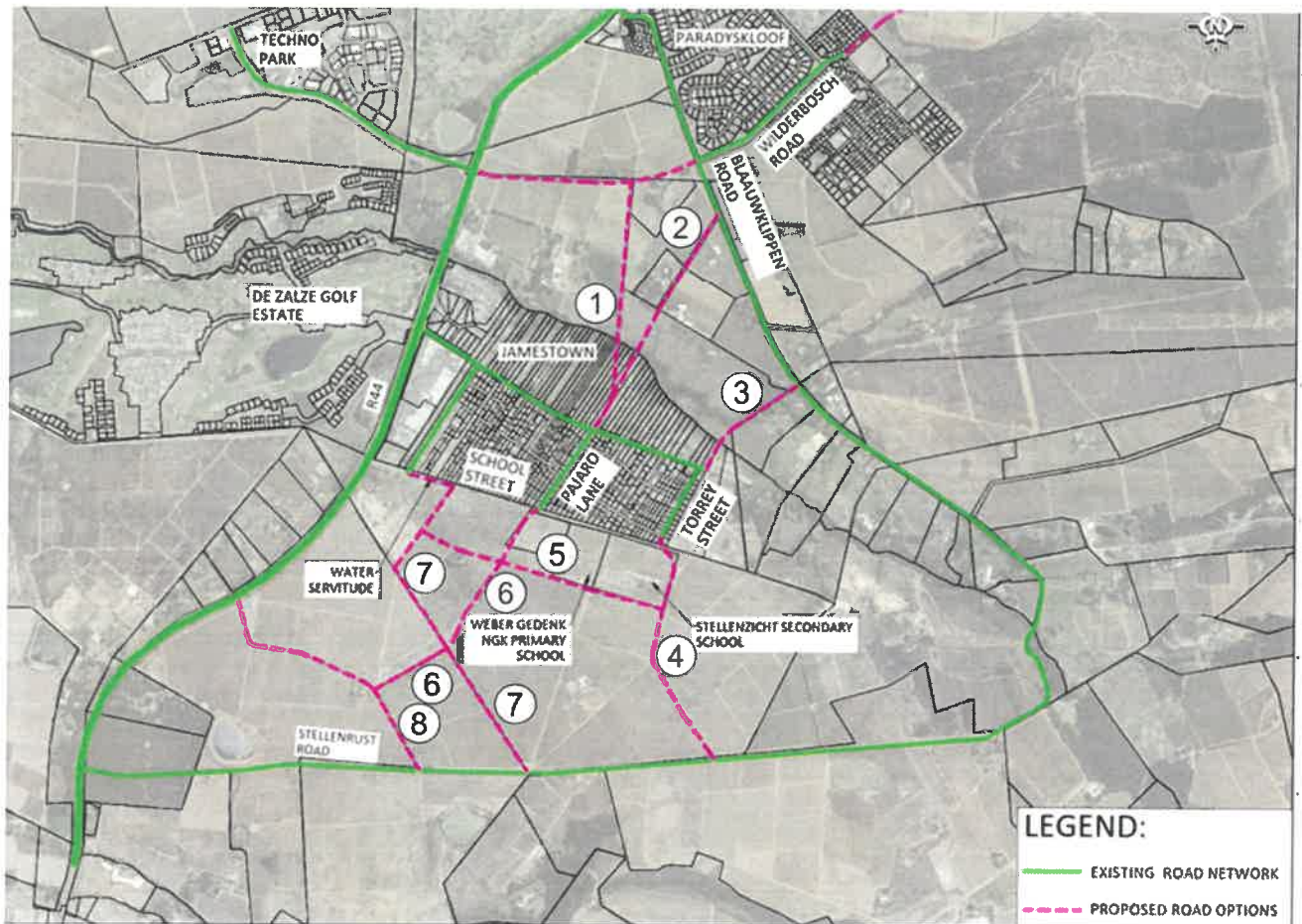


Figure 30: Potential new major links for Jamestown area (source: Jamestown Roads Masterplan March 2020)

## 11.4 Western Cape Government R44 Plans: “R44 Safety Project”

The Western Cape Government: Department of Transport and Public Works (DTPW) initiated a process to upgrade the Safety and Level of Service of the R44 between Steynsrust Road (km 20.15) in Somerset West and Van Rhee de Street (km 33.00) in Stellenbosch.

Messrs Kantey & Templer has been appointed by DTPW to undertake the Conceptual Planning of this section of the R44.

The proposals for the R44, which will have an impact on Jamestown are summarised:

- 20 median breaks on this section of the R44 to be closed.
- Road improvements at the R44/Webersvallei Road intersection.
- The current intersection of School Street and the R44 will be closed and replaced by a grade separated U-turn facility.

### 11.4.1 R44 / Webersvallei Intersection Upgrades

The detailed design drawing for the upgrade of the R44 / Webersvallei Road intersection is shown in Figure 25 and can also be found Appendix C: Figure 48. As mentioned in Section 10, upgrading of this intersection has been proposed in all three previously planned developments for Jamestown and the intersection is currently in the process of being upgraded. Upgrades to this intersection will assist in

accommodating the high traffic volumes travelling north and south on the R44, by adding between 30 to 40% additional capacity to this intersection.

As mentioned previously, the upgrades to the R44 / Webervallei intersection will be considered as a potential mitigation measure, however it was assumed that the upgrades to the entire intersection will only be completed by 2025. As a temporary mitigation measure the signal phase timings will be optimised to relief congestion as much as possible till the upgrades are completed.

#### 11.4.2 Closure of R44 / School Road Intersection

The closure of the R44 / School Road intersection is currently in the conceptual planning phase, as shown in Figure 31 and Appendix C: Figure 49. Important to note is this concept proposes that Jamestown only have one major access from the R44, namely at the existing signalised intersection with Webersvallei Road. A second access to the southern part of the Jamestown area is possible approximately 800 metres south of the existing School Street intersection (Mountain Breeze Restaurant). The location of this new intersection is shown in Figure 32. The only other links with the R44 will be at Blaauwklippen Road (to the north) and the LILO with Stellenrust Road (in the south).

The closure of the R44 / School Road intersection will be considered as a potential mitigation measure if it is required. However, it is unlikely that the closure of the R44 / School Road intersection will be implemented in the next five years. Thus, for the purpose of this TIA it is assumed that if this closure is to be implemented it will only be by 2030.

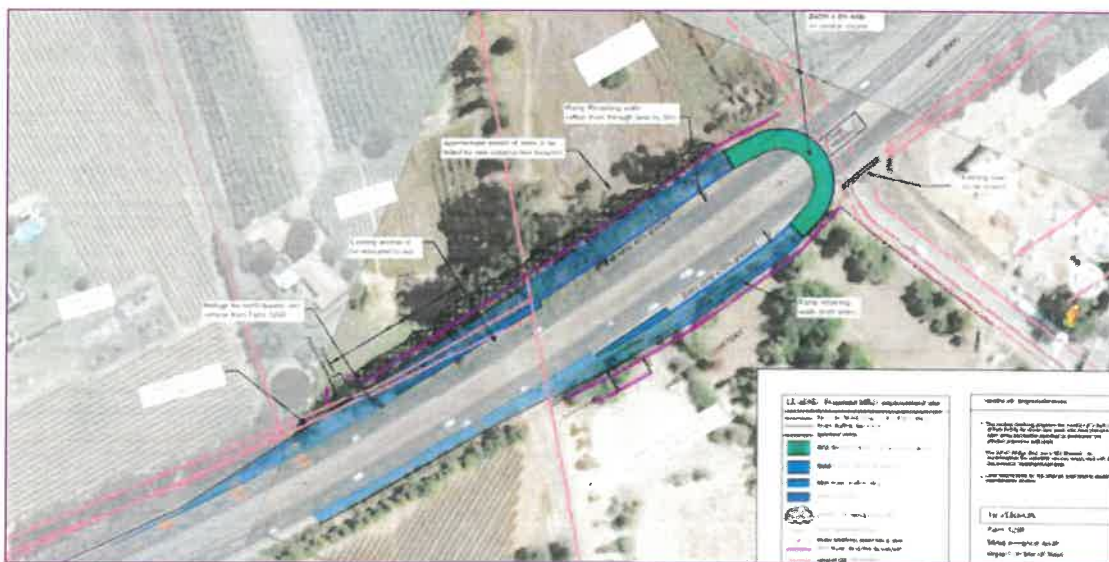


**Figure 31: Proposed elevated u-turn facility at current R44/School Street intersection**



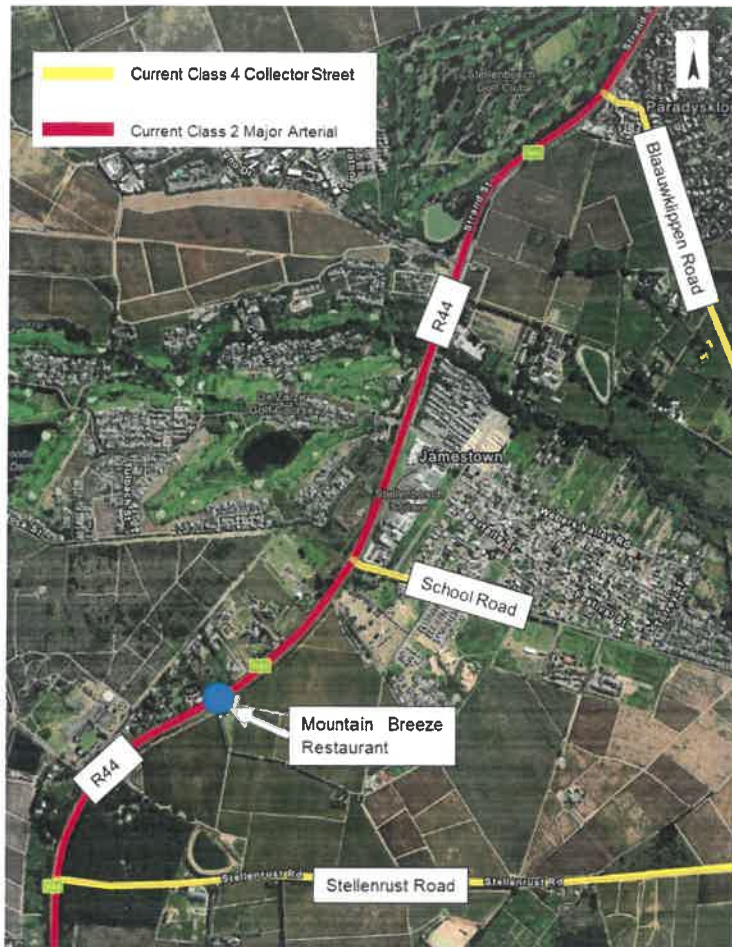


Figure 32: Possible New Access Point at Mountain Breeze Restaurant

## 12 Network Analysis

### 12.1 Analysis Scenarios

This study will analyse the key intersections for the following scenarios, as summarised in Table 13 below:

Table 13: Summary of analysis scenarios

| Scenario       | Description                                            | Traffic                                                                                                                                                 | Road Network                                                                                                 |
|----------------|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Scenario 0     | Status Quo (2023)                                      | 2023 Existing Traffic Conditions                                                                                                                        | Existing road network. Optimised signal timings.                                                             |
| Scenario 1 (a) | Implementation Year (2025) without development traffic | 2025 Traffic (Existing traffic adjusted with growth rate of 2 percent per annum over two-year period)<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res | Future road network: Upgraded R44 / Webersvallei Street intersection is completed. Optimised signal timings. |

| Scenario       | Description                                                                       | Traffic                                                                                                                                                                                                            | Road Network                                                                                                                                                                                                                 |
|----------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Scenario 1 (b) | <b>Implementation Year (2025) with development traffic</b>                        | Existing traffic conditions adjusted with growth rate of 2 percent per annum over two-year period<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res<br>+ Planned development traffic (Phases 2 and 3).             | Future road network:<br>Upgraded R44 / Webersvallei Street intersection is completed.<br>Optimised signal timings.                                                                                                           |
| Scenario 2 (a) | <b>Five years Post Implementation (2030) without development traffic</b>          | Existing traffic conditions adjusted with growth rate of 2 percent per annum over seven-year period without the planned development.<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res                             | Future road network:<br>Upgraded R44 / Webersvallei Street intersection is completed.<br>Optimised signal timings.<br>Closure of R44 / School Road intersection.                                                             |
| Scenario 2 (b) | <b>Five years Post Implementation (2030) with development traffic</b>             | Existing traffic conditions adjusted with growth rate of 2 percent per annum over seven-year period<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res<br>+ Planned development traffic (Phases 2 and 3).           | Future road network:<br>Upgraded R44 / Webersvallei Street intersection is completed.<br>Additional proposed 3 <sup>rd</sup> through lane on R44.<br>Optimised signal timings.<br>Closure of R44 / School Road intersection. |
| Scenario 3     | <b>Five years Post Implementation (2030) with all planned development traffic</b> | The existing traffic is adjusted with growth rate of 2 percent per annum over seven-year period<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res<br>+ All planned development traffic added (Phases 2, 3, and 4). | Future road network:<br>Upgraded R44 / Webersvallei Street intersection is completed.<br>Additional proposed 3 <sup>rd</sup> through lane on R44.<br>Closure of R44 / School Road intersection.                              |

## 12.2 Analysis Criteria

The impact on capacity and intersection operation were analysed using **SIDRA Intersection 9.1 Plus** software (hereafter referred to as Sidra), reporting on the following aspects:

- ▶ Level-of-Service (LOS, see Table 14 for details);
- ▶ Average Delay per Vehicle (Seconds); and
- ▶ Degree of Saturation (v/c ratio).

### 12.2.1 Level of Service

The intersections analysed in this report have been measured according to “Level of Service”. (LOS) with LOS A being the best condition with lower average delay and LOS F being the worst, usually indicating that the intersection is currently operating over capacity.



Table 14: Level of Service (LOS) Definition

| Level of Service (LOS) | Intersection Type                               |                                    |
|------------------------|-------------------------------------------------|------------------------------------|
|                        | Signals & Traffic Circles<br>(Delay in Seconds) | Sign Control<br>(Delay in Seconds) |
| A                      | $d < 10$                                        | $d < 10$                           |
| B                      | $10 < d < 20$                                   | $10 < d < 15$                      |
| C                      | $20 < d < 35$                                   | $15 < d < 25$                      |
| D                      | $35 < d < 55$                                   | $25 < d < 35$                      |
| E                      | $55 < d < 80$                                   | $35 < d < 50$                      |
| F                      | $80 < d$                                        | $50 < d$                           |

The acceptable level of service for intersections is generally accepted to be LOC D. LOS E and F represent unstable conditions with longer queues and higher than tolerable delays. With LOS E and F most cycles fail to clear their associated queues and the queue length increases with each progressive cycle.

## 12.3 Traffic Growth

In order to estimate the future traffic conditions, it was necessary to apply a growth rate to the existing (2023) traffic. The TMH 17 provides typical growth rates, shown in Table 15:

Table 15: TMH17 Typical Traffic Growth Rates

| Development Area                | Growth Rate |
|---------------------------------|-------------|
| Low growth areas                | 0 – 3%      |
| Average growth areas            | 3 – 4%      |
| Above average growth areas      | 4 – 6%      |
| Fast growing areas              | 6 – 8%      |
| Exceptionally high growth areas | >8%         |

A 2% growth rate was calculated using data from the Western Cape Government's counting stations located along the R44 in the vicinity of Jamestown. The historical traffic count data were accessed using the Road Network Information System (RNIS).

Figure 33 shows the locations of the counting stations relative to the Development. From these stations traffic count data for 2009 and 2018 were used to determine a growth rate for this area. Table 16 shows the calculation for the average growth rate. Based on the RNIS data a 2% growth rate was applied to estimate the future background traffic.

Table 16: Traffic Growth Rate

| Station | Leg | 2009 AADT | 2018 AADT | Growth Rate | Average Growth Rate |
|---------|-----|-----------|-----------|-------------|---------------------|
| 29      | A   | 25 102    | 31 221    | 2%          | 2%                  |
| 29      | C   | 31 934    | 37 944    | 2%          |                     |
| 30      | A   | 33 365    | 38 649    | 2%          |                     |
| 30      | C   | 35 476    | 40 175    | 1%          |                     |



Figure 33: Counting Station Locations

## 13 Intersection Analysis

The intersections listed in Table 2 were analysed using Sidra to determine the level of service (LOS) at each study intersection. Initially the existing geometric layouts and signal timing settings were used.

Where the LOS was considered to be unacceptable, mitigation measures will be proposed and tested. The detailed Sidra results can be found in Appendix E.

### 13.1 Scenario 0: Status Quo (2023)

Existing traffic conditions, as counted during the traffic survey, with existing road network was modelled in this scenario. For this scenario optimised signal timings were assumed for the R44 / Webersvallei Road intersection, with a maximum cycle time of 120 sec. The existing weekday AM and PM peak hour LOS for each intersection are indicated in Table 17.

Table 17: Existing (2023) Intersection Analysis Summary (Scenario 0)

|         | Intersection                         | Ave. Delay [s] | v/c Ratio | Overall LOS    | South | East | North | West |
|---------|--------------------------------------|----------------|-----------|----------------|-------|------|-------|------|
| AM PEAK | 1. R44 / Webersvallei Road           | 37.6           | 0.93      | D              | D     | E    | B     | E    |
|         | 2. Webersvallei Road / Fresno Street | 5.4            | 0.217     | A              | A     | A    | -     | A    |
|         | 3. R44 / School Road                 | 41.9           | 1.138     | F <sup>1</sup> | -     | F    | -     | -    |
|         | 4. School Road / Fresno Street       | 3.7            | 0.048     | A <sup>1</sup> | -     | -    | A     | -    |
|         | 5. School Road / Blakemore Street    | 13.3           | 0.116     | B              | C     | C    | A     | B    |

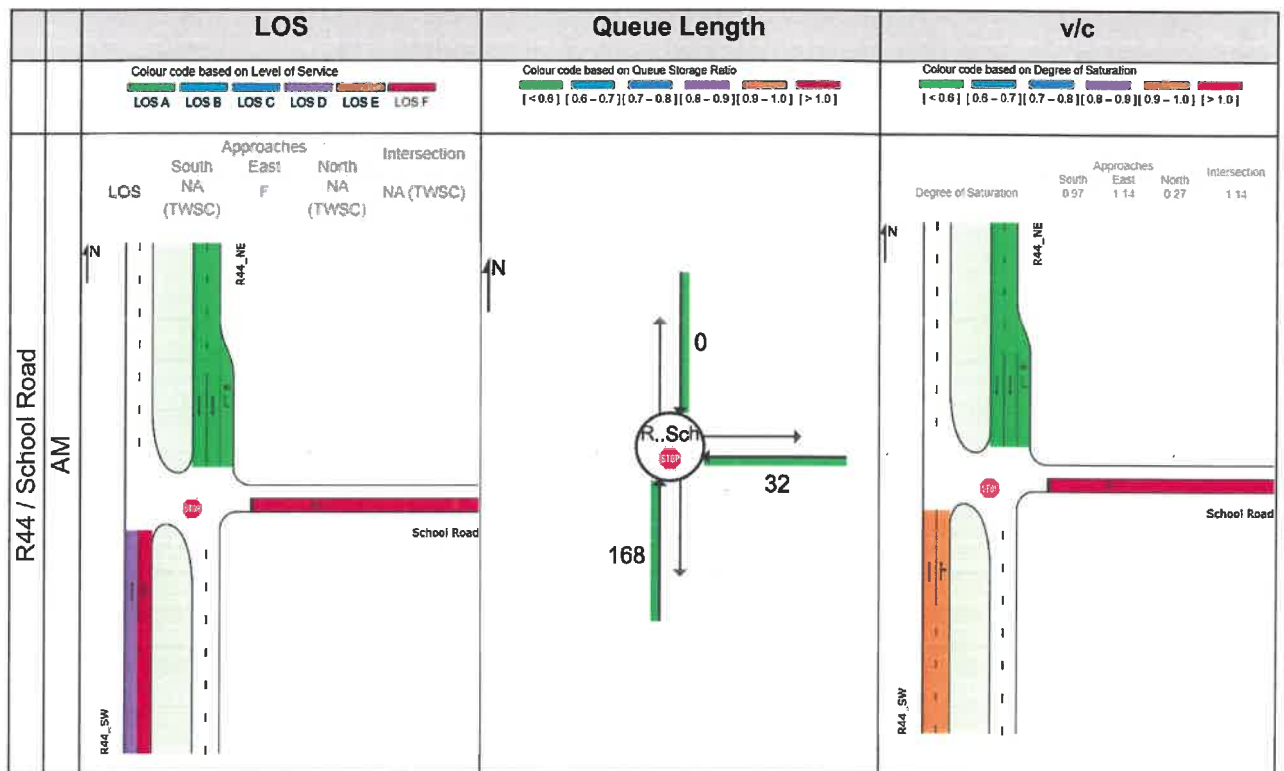
<sup>1</sup> Overall LOS based on the worst performing approach to the intersection.

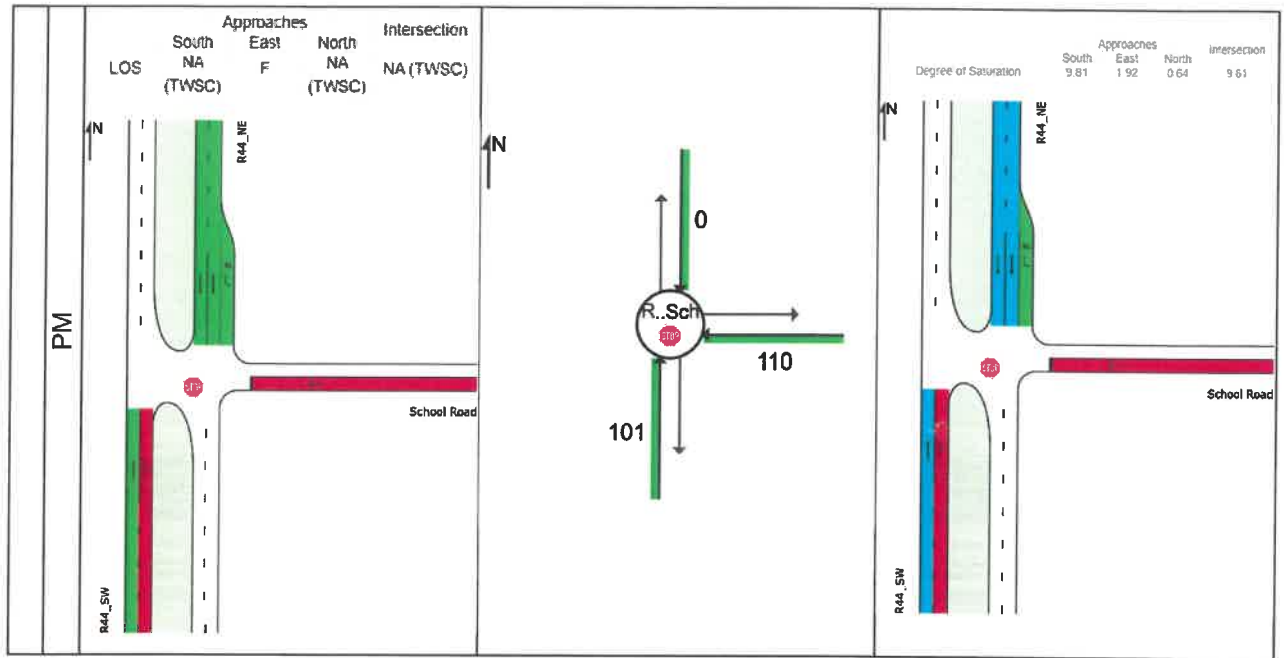
|         | Intersection                      | Ave. Delay [s] | v/c Ratio | Overall LOS    | South | East | North | West |
|---------|-----------------------------------|----------------|-----------|----------------|-------|------|-------|------|
| PM PEAK | R44 / Webersvallei Road           | 64.9           | 1.02      | E              | B     | F    | F     | E    |
|         | Webersvallei Road / Fresno Street | 5.5            | 0.190     | A              | A     | A    | -     | A    |
|         | R44 / School Road                 | 149.2          | 9.806     | F <sup>1</sup> | -     | F    | -     | -    |
|         | School Road / Fresno Street       | 4.6            | 0.055     | A <sup>1</sup> | -     | A    | -     | -    |
|         | School Road / Blakemore Street    | 12.5           | 0.09      | B              | C     | -    | B     | B    |

From the Sidra analysis results it is noted:

- **R44 / Webersvallei Road:** Even with the optimised signal timings this intersection operates at capacity. A LOS of D was determined for the AM and E for PM peak hour. The poor performance at this intersection is however temporary since upgrades to this intersection (See Appendix C: Figure 48) are underway.
- **Webersvallei Road / Fresno Street:** A level of service of A was determined for AM and PM peak hour. Overall, the intersection operates well.
- **R44 / School Road:** A LOS of F was determined for AM and PM peak hours. The poor LOS indicates that the intersection is at capacity, Table 18 shows a detailed analysis of this intersection. A mitigation measure, to resolve the poor LOS, will be discussed in Section 13.1.1.

Table 18: Detailed analysis of R44 / School Road (Scenario 0)





- **School Road / Fresno Street:** A LOS of A was determined for both the AM and PM peak hour. This intersections operates well.
- **School Road / Blakemore Street:** A LOS of B was determined for the AM and PM peak hours respectively and overall the intersection operates well.
- Evaluating the link volume along the R44 (Table 19) shows that the R44 operates close to its capacity in the AM and PM peak hours:

**Table 19: R44 Link Capacity Evaluation (Scenario 0)**

|     | Expected Link Volume         |                             | Link Capacity  |
|-----|------------------------------|-----------------------------|----------------|
|     | Northbound                   | Southbound                  |                |
| R44 | 2221 veh/hr (1110 veh/hr/ln) | 2362 veh/h (1181 veh/hr/ln) | 1200 veh/hr/ln |

### 13.1.1 Mitigation Measures

From the Sidra results, it is clear that the R44 / Webersvallei Road intersection upgrades are deemed necessary as this intersection operates close to/at capacity during the AM and PM peak hours. As discussed in Section 11.4, this intersection is in the process of being upgraded, a detailed drawing can be found in Appendix C: Figure 48. As mentioned previously, it was assumed that the upgrades to this intersection will be completed by 2025.

The Sidra results also show that the R44 / School Road intersection operates under very poor conditions. In discussions with Province, they have shared a concept drawing showing the complete closure of the R44 / School Road intersection (refer to Section 11.4). The proposed closure is part of the WCG's "R44 Safety Project" aimed at improving safety along the R44. It is unclear when the closure of School Road will be implemented, it was therefore assumed that the closure would be implemented after 2025 but before 2030. Province and Stellenbosch Municipality is however still in the process of discussing the future layout of this intersection. Thus, no temporary mitigation measure will be recommended for this intersection at this stage.

The impact of these measures, on the existing traffic situation were tested in Sidra and the results shown in Table 20.

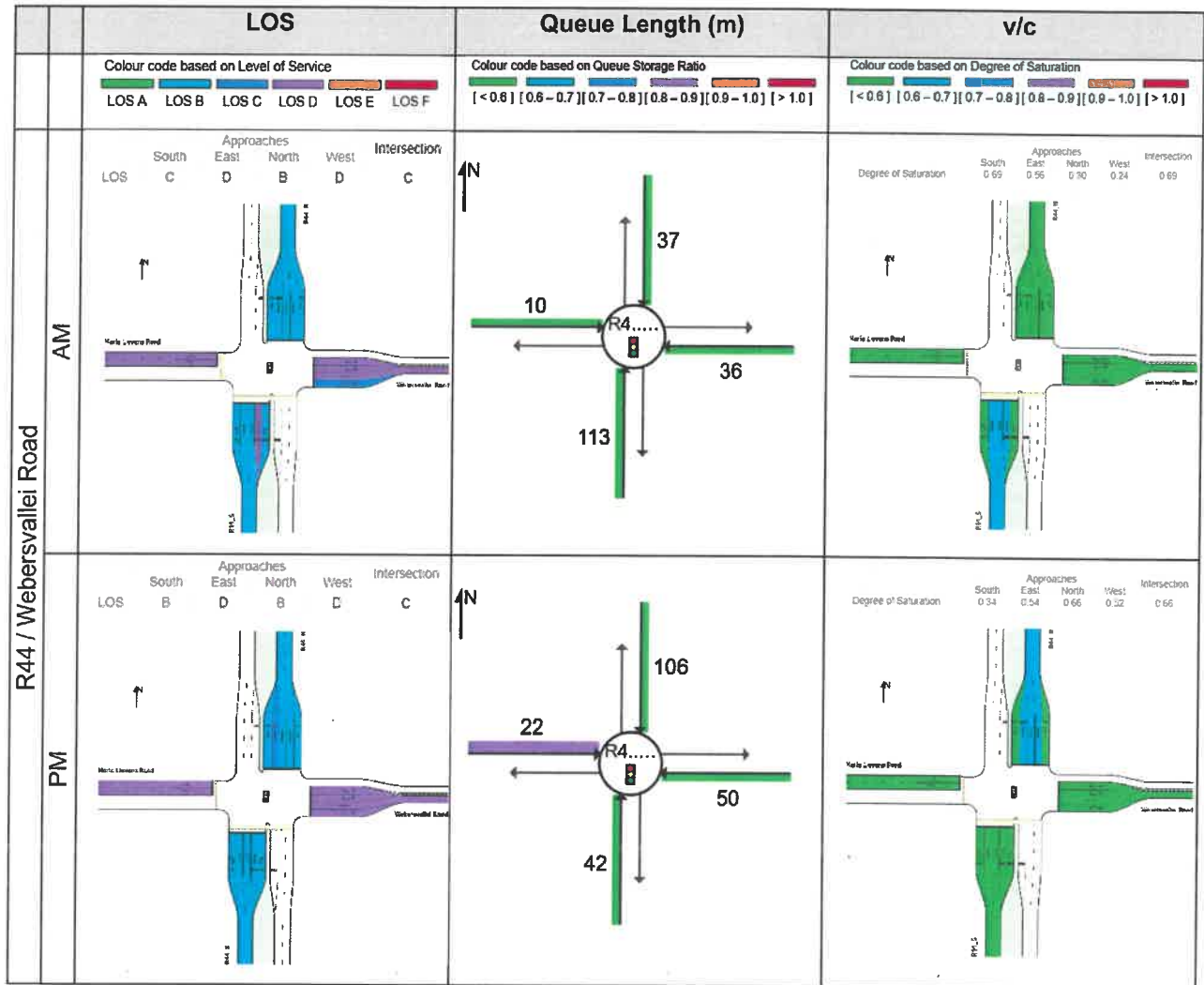
From the results shown in Table 20:

- **R44 / Webersvallei Road:** With the proposed upgrades (Optimisation of R44/Webersvallei signal timings and upgrades to the R44 / Webersvallei intersection see Section 10 and 11.4.1),



even with the additional right turning traffic from the converted R44 / School Road intersection, provides much needed relief to the traffic conditions experienced at this intersection. Thus, this TIA follows suite for the recommendations made for the previous developments and deems the implementation of the proposed upgrades necessary, to accomodate the existing background traffic.

**Table 20: Detailed Analysis of R44/Webersvallei Road with Mitigation Measures (Scenario 0)**



### 13.2 Scenario 1 (a): Implementation Year (2025) without Development Traffic

A 2% annual growth rate was applied to the 2023 background traffic to estimate the 2025 background traffic. By 2025 “Kreefgat”, “The James” and “Stellenpark Res” will be completed, trips generated and attracted by these developments were added to the escalated background traffic.

Table 21 summarises the mitigation measures that are assumed to be implemented by 2025.

Table 21: Summary of implemented mitigation measures Scenario 1 (a)

| Intersection               | Mitigation Measure(s)                                                                                                          |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 1. R44 / Webersvallei Road | Optimised signalised timings. (Maximum cycle time of 120 sec)<br><br>Improvements at the R44 / Webersvallei Road intersection. |

Using the expected 2025 traffic volumes and assuming the road network has been upgraded, the study intersections were analysed in Sidra. The results are summarised in Table 22.

Table 22: Sidra Results for Scenario 1 (a)

|         | Intersection                         | Ave. Delay [s] | v/c Ratio | Overall LOS    | South | East | North | West |
|---------|--------------------------------------|----------------|-----------|----------------|-------|------|-------|------|
| AM PEAK | 1. R44 / Webersvallei Road           | 44.1           | 0.78      | D              | E     | D    | B     | D    |
|         | 2. Webersvallei Road / Fresno Street | 6.7            | 0.31      | A              | A     | A    | A     | A    |
|         | 3. R44 / School Road                 | 137            | 1.16      | F <sup>2</sup> | F     | F    | A     | -    |
|         | 4. School Road / Fresno Street       | 6.1            | 0.14      | A <sup>2</sup> | -     | -    | A     | -    |
|         | 5. School Road / Blakemore Street    | 13.2           | 0.119     | B              | C     | C    | A     | B    |
| PM PEAK | 1 R44 / Webersvallei Road            | 23.9           | 0.77      | C              | B     | D    | C     | D    |
|         | 2. Webersvallei Road / Fresno Street | 6.0            | 0.27      | A              | A     | A    | A     | A    |
|         | 3. R44 / School Road                 | 160.8          | 10.15     | F <sup>2</sup> | F     | F    | A     | -    |
|         | 4. School Road / Fresno Street       | 6.0            | 0.089     | A <sup>2</sup> | -     | A    | -     | -    |
|         | 5. School Road / Blakemore Street    | 12.5           | 0.092     | B              | C     | -    | B     | B    |

From the Sidra analysis results it is noted that:

- The intersections, Webersvallei Road / Fresno Street, School Road / Fresno Street and School Road / Blakemore Street, still operate at acceptable LOS during the AM and PM peak hours.
- **R44 / Webersvallei Road:** The upgraded R44 / Webersvallei Road intersection (Optimisation of R44/Webersvallei signal timings and at grade upgrades to the R44 / Webersvallei intersection see Appendix C: Figure 48) operates at acceptable LOS D and C during the AM and PM peak hours respectively. It is noted from Table 22, the southern and eastern approach both operate under LOS E conditions, experience maximum average queue lengths of 135m and 52m respectively. The delays experienced on these approaches are on average 58 sec for the southern approach and 56.9 sec for the eastern approach. Overall, the intersection still operates at acceptable LOS. A detailed analysis of this intersection is shown in Table 24.
- **R44 / School Road:** The R44 / School Road still operates at very poor LOS F during the AM peak hour and the PM peak hour.
- Evaluating the link volume along the R44 (Table 23), shows that the R44 is expected to operate at/close to its capacity in the AM and PM peak hours:

<sup>2</sup> Overall LOS based on the worst performing approach to the intersection

Table 23: R44 Link Capacity Evaluation (Scenario 1 (a))

|     | Expected Link Volume        |                             | Link Capacity  |
|-----|-----------------------------|-----------------------------|----------------|
|     | Northbound                  | Southbound                  |                |
| R44 | 2445 veh/h (1222 veh/hr/ln) | 2686 veh/h (1343 veh/hr/ln) | 1200 veh/hr/ln |

Table 24: Detailed analysis of R44 / Webersvallei for AM peak hour Scenario 1 (a)

|                         |    | LOS                                                                                 | Queue Length (m)                                                                                                        | v/c                                                                                                                      |
|-------------------------|----|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
|                         |    | Colour code based on Level of Service<br>LOS A LOS B LOS C LOS D LOS E LOS F        | Colour code based on Queue Storage Ratio<br>[ < 0.6 ] [ 0.6 – 0.7 ] [ 0.7 – 0.8 ] [ 0.8 – 0.9 ] [ 0.9 – 1.0 ] [ > 1.0 ] | Colour code based on Degree of Saturation<br>[ < 0.6 ] [ 0.6 – 0.7 ] [ 0.7 – 0.8 ] [ 0.8 – 0.9 ] [ 0.9 – 1.0 ] [ > 1.0 ] |
| R44 / Webersvallei Road | AM |                                                                                     |                                                                                                                         |                                                                                                                          |
|                         |    | <p>Approaches: South, East, North, West, Intersection</p> <p>LOS: E, D, B, D, D</p> | <p>Approaches: South, East, North, West, Intersection</p> <p>Queue Length (m): 9, 39, 41, 123</p>                       | <p>Approaches: South, East, North, West, Intersection</p> <p>Degree of Saturation: 0.78, 0.64, 0.35, 0.22, 0.78</p>      |

### 13.3 Scenario 1 (b): Implementation Year (2025) with Development Traffic

The Phase 2 and 3 Jamestown Development trips were added to the expected 2025 background traffic. The previous planned developments namely “Kreefgat”, “The James” and “Stellenpark Res” and the trips they generate/attract were also added. The intersections were modelled with the mitigation measures previously recommended in place.

A summary of the mitigation measures implemented in this scenario are shown in Table 25. The results of the Sidra analysis are summarised in Table 26.

Table 25: Summary of implemented mitigation measures for Scenario 1 (b)

| Intersection               | Mitigation Measure(s)                                                                                                          |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| 1. R44 / Webersvallei Road | Optimised signalised timings. (Maximum cycle time of 120 sec)<br><br>Road improvements at the R44 / Webersvallei intersection. |

Table 26: Sidra Results for Scenario 1 (b)

|         | Intersection                      | Ave. Delay [s] | v/c Ratio | Overall LOS    | South | East | North | West |
|---------|-----------------------------------|----------------|-----------|----------------|-------|------|-------|------|
| AM PEAK | R44 / Webersvallei Road           | 47.4           | 0.78      | D              | E     | D    | B     | D    |
|         | Webersvallei Road / Fresno Street | 6.8            | 0.31      | A              | A     | A    | A     | A    |
|         | R44 / School Road                 | 145.5          | 1.19      | F <sup>3</sup> | F     | F    | A     | -    |
|         | School Road / Fresno Street       | 5.8            | 0.16      | A <sup>3</sup> | -     | -    | A     | -    |
|         | School Road / Blakemore Street    | 13.9           | 0.199     | B              | C     | C    | A     | B    |
| PM PEAK | R44 / Webersvallei Road           | 24.2           | 0.78      | C              | B     | D    | C     | D    |
|         | Webersvallei Road / Fresno Street | 6.1            | 0.29      | A              | A     | A    | A     | A    |
|         | R44 / School Road                 | 164.9          | 10.14     | F <sup>3</sup> | F     | F    | A     | -    |
|         | School Road / Fresno Street       | 5.9            | 0.12      | A <sup>3</sup> | -     | -    | A     | -    |
|         | School Road / Blakemore Street    | 15.5           | 0.245     | C              | D     | -    | B     | B    |

From the Sidra results it is noted:

- The intersections, Webersvallei Road / Fresno Street, School Road / Fresno Street and School Road / Blakemore Street, still operate under acceptable conditions. However it should be noted that the conditions at School Road / Blakemore Street intersection has reduced to LOS C during the PM peak hours.
- **R44 / Webersvallei Road:** Still operates at acceptable LOS during the AM and PM peak hours.
- **R44 / School Road:** Still operates at unacceptable LOS F during the AM peak hour and PM peak hour.

### 13.4 Scenario 2 (a): Five years post implementation (2030) without Development Traffic

The future (2030) traffic conditions, 5 years after the development has been implemented, was evaluated. The 2030 traffic was estimated by escalating the 2025 background traffic volumes by 2% over a 5-year period. The trips to/from planned developments, "Kreefgat:", "The James" and "Stellenpark Res" were added to the escalated background traffic. It was assumed that the mitigation measures proposed in Section 11.4 and 13.1.1 have been implemented by 2030.

<sup>3</sup> Overall LOS based on the worst performing approach to the intersection



A summary of the mitigation measures implemented thus far is shown in Table 27. Using the expected traffic volumes, the study intersections were analysed in SIDRA. The result of the SIDRA analysis is summarised in Table 28.

**Table 27: Summary of implemented mitigation measure for Scenario 2 (a)**

| Intersection               | Mitigation Measure(s)                                                                                                     |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------|
| 1. R44 / Webersvallei Road | Optimised signalised timings. (Maximum cycle time of 120 sec)<br><br>Improvements at the R44 / Webersvallei intersection. |
| 3. R44 / School Road       | Intersection is closed in 2030, as planned by the WCG.                                                                    |

**Table 28: Sidra Results for Scenario 2 (a)**

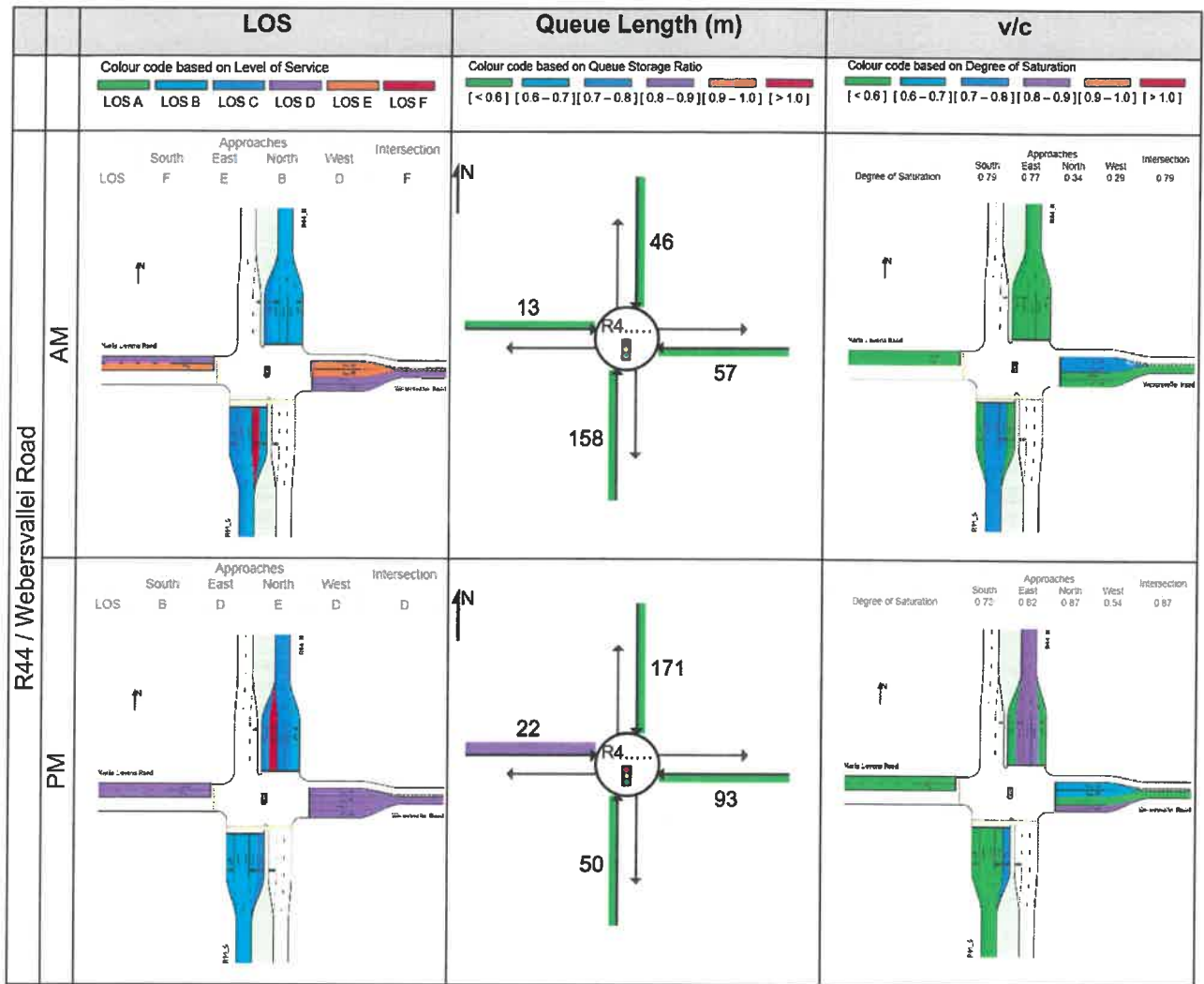
|         | Intersection                      | Ave. Delay [s] | v/c Ratio | Overall LOS    | South | East | North | West |
|---------|-----------------------------------|----------------|-----------|----------------|-------|------|-------|------|
| AM PEAK | R44 / Webersvallei Road           | 95.8           | 0.79      | F              | F     | E    | B     | D    |
|         | Webersvallei Road / Fresno Street | 7.1            | 0.36      | A              | A     | A    | A     | A    |
|         | School Road / Fresno Street       | 7.3            | 0.127     | A <sup>4</sup> | -     | -    | A     | -    |
|         | School Road / Blakemore Street    | 13.3           | 0.133     | B              | C     | C    | A     | B    |
| PM PEAK | R44 / Webersvallei Road           | 50.3           | 0.87      | D              | B     | D    | E     | D    |
|         | Webersvallei Road / Fresno Street | 6.3            | 0.33      | A              | A     | A    | A     | A    |
|         | School Road / Fresno Street       | 6.5            | 0.061     | A <sup>4</sup> | -     | -    | A     | -    |
|         | School Road / Blakemore Street    | 12.6           | 0.102     | B              | C     | -    | B     | B    |

From the Sidra analysis results it is noted:

- The intersections, Webersvallei Road / Fresno Street, School Road / Fresno Street and School Road / Blakemore Street, still operate at acceptable LOS.
- **R44 / Webersvallei Road** with optimised signal timings and upgrades at the R44 / Webersvallei intersection (refer to Appendix C: Figure 48) was found to operate at LOS F conditons during the AM peak hour and LOS C during the PM peak hour, LOS F is considered to be unacceptable. Table 29 shows a detailed analysis for this intersection The southern approach has 3 through lanes which merge into 2 lanes 145m north of the intersection, creating a bottleneck and subsequent delays in excess of 439.1 sec. Mitigation measures will be discussed in the section that follows.

<sup>4</sup> Overall LOS based on the worst performing approach to the intersection

Table 29: Detailed analysis of R44 / Webersvallei Road (Scenario 2 (a))



- Evaluating the link volume along the R44 (Table 21), shows that the R44 is expected to operate above its capacity in the AM and PM peak hours:

Table 30: R44 Link Capacity Evaluation (Scenario 2 (a))

|     | Expected Link Volume        |                             | Link Capacity  |
|-----|-----------------------------|-----------------------------|----------------|
|     | Northbound                  | Southbound                  |                |
| R44 | 2698 veh/h (1349 veh/hr/ln) | 2860 veh/h (1430 veh/hr/ln) | 1200 veh/hr/ln |

### 13.4.1 Mitigation Measures

In addition to the R44/Webersvallei Road intersection upgrades proposed in the previous TISs (signal optimisation, dedicated left turn lane on Webersvallei approach and additional through lanes on both R44 approaches, see Section 10) and in this TIA (closure of the R44 / School Road intersection, see Section 13.1.1) further upgrades are proposed as per the UDS proposal, shown in Figure 35:

- The short lanes along the R44 been extended to provide 3 lanes per direction between the intersections of R44 / Webersvallei Road and R44 / Techno Avenue. (Also see Appendix C: Figure 50)
- In addition, the short lane downstream of the R44/Webersvallei intersection, heading south should be extended to the, planned to be closed, R44 / School Road intersection.

- Lane configuration changes on the Webersvalle Road approach to the R44 / Webersvalle Road intersection.

Figure 34 shows the ultimate 3 lane layout of the R44 / Webersvalle Road intersection.

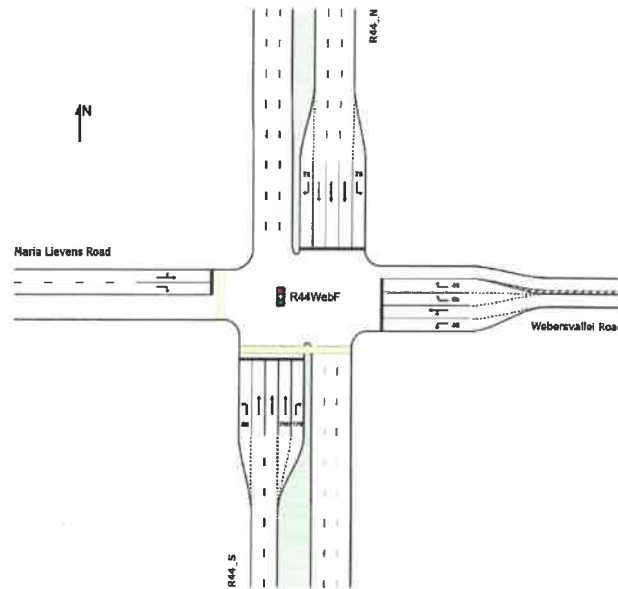


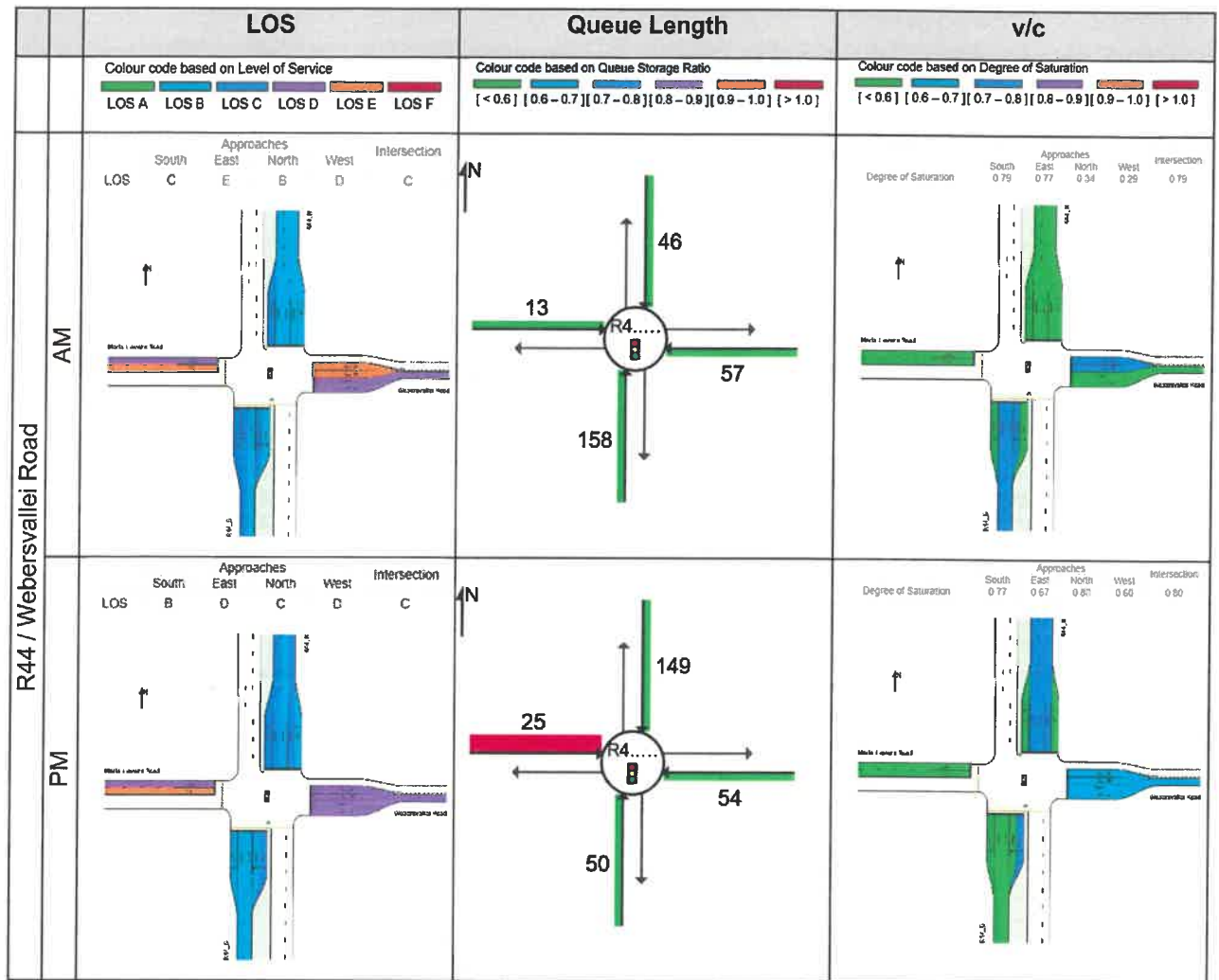
**Figure 34: R44 ultimate 3 through lanes**

Table 31 shows the detailed analysis of the implemented mitigation measures. As shown, the proposed upgrades, improve the LOS from F in the AM and LOS D in the PM peak hour to LOS C for the AM and PM peak hour. Extending the short lane downstream of the R44 / Webersvalle Road intersection heading south, provides much needed addition capacity on the R44.



**Figure 35: Proposed Six Lane Layout between R44/Webersvalle Rd and R44/Techno Ave**

Table 31: Detailed Analysis of R44/Webersvallei Road with 3 through lanes as mitigation (Scenario 2(a))



### 13.5 Scenario 2 (b): Five Years Post Implementation (2030) with Development Traffic

The Phase 2 and 3 Jamestown Development trips were added to the future 2030 traffic conditions: It was assumed that the mitigation measures proposed in Section 13.4.1 have been implemented by 2030. A summary of mitigation measures, assumed to be implemented thus far is shown in Table 32. The result of the SIDRA analysis is summarised in Table 33.

Table 32: Summary of implemented mitigation measure for Scenario 2 (a)

| Intersection               | Mitigation Measure(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. R44 / Webersvallei Road | <p>Optimised signalised timings. (Maximum cycle time of 120 sec)</p> <p>Road improvements at the R44 / Webersvallei Road intersection.</p> <p>Three through lanes on the southbound carriageway from Techno Avenue to closed R44 / School Road.</p> <p>Three through lanes on the northbound carriageway from the R44/Webersvalley Road intersection to the R44 / Techno Avenue intersection.</p> <p>Webersvallei Road approach to the R44/Webersvallei Road intersection: improved lane configuration.</p> |
| 3. R44 / School Road       | Intersection is closed as planned by the WCG.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

Table 33: Sidra Results for Scenario 2 (b)

|         | Intersection                      | Ave. Delay [s] | v/c Ratio | Overall LOS    | South | East | North | West |
|---------|-----------------------------------|----------------|-----------|----------------|-------|------|-------|------|
| AM PEAK | R44 / Webersvallei Road           | 27.6           | 0.81      | C              | C     | E    | B     | D    |
|         | Webersvallei Road / Fresno Street | 7.3            | 0.39      | A              | A     | A    | A     | A    |
|         | School Road / Fresno Street       | 7.2            | 0.14      | A <sup>5</sup> | -     | -    | A     | -    |
|         | School Road / Blakemore Street    | 14.0           | 0.208     | B              | C     | C    | A     | B    |
| PM PEAK | R44 / Webersvallei Road           | 27.8           | 0.87      | C              | B     | D    | C     | D    |
|         | Webersvallei Road / Fresno Street | 6.4            | 0.36      | A              | A     | A    | B     | A    |
|         | School Road / Fresno Street       | 6.7            | 0.092     | A <sup>5</sup> | -     | -    | A     | -    |
|         | School Road / Blakemore Street    | 15.4           | 0.251     | C              | D     | -    | B     | B    |

From the Sidra analysis results it is noted:

- The intersections, Webersvallei Road / Fresno Street, School Road / Fresno Street and School Road / Blakemore Street, still operate under acceptable conditions.
- **R44 / Webersvallei Road:** was found to operate under LOS C conditons for the AM peak hour and for the PM peak hours, indicating this intersection is operating at acceptable conditions.

<sup>5</sup> Overall LOS based on the worst performing approach to the intersection



### 13.6 Scenario 3: Expected 2030 Traffic Year with Development Traffic and Future Development Traffic (future road network)

In addition to the Phase 2 and 3 Jamestown Residential Development, “Kreefgat:”, “The James” and “Stellenpark Res, there are more development planned for the Jamestown area, shown in Figure 36. A breakdown of the land use is shown in Table 34.

At this stage the timing of these developments is unknown. It is considered that it will happen in the medium term, i.e. 10 to 15 years from now. Thus, this scenario acts as a: “What if scenario” for the implementation of the Jamestown Phase 4 Development.

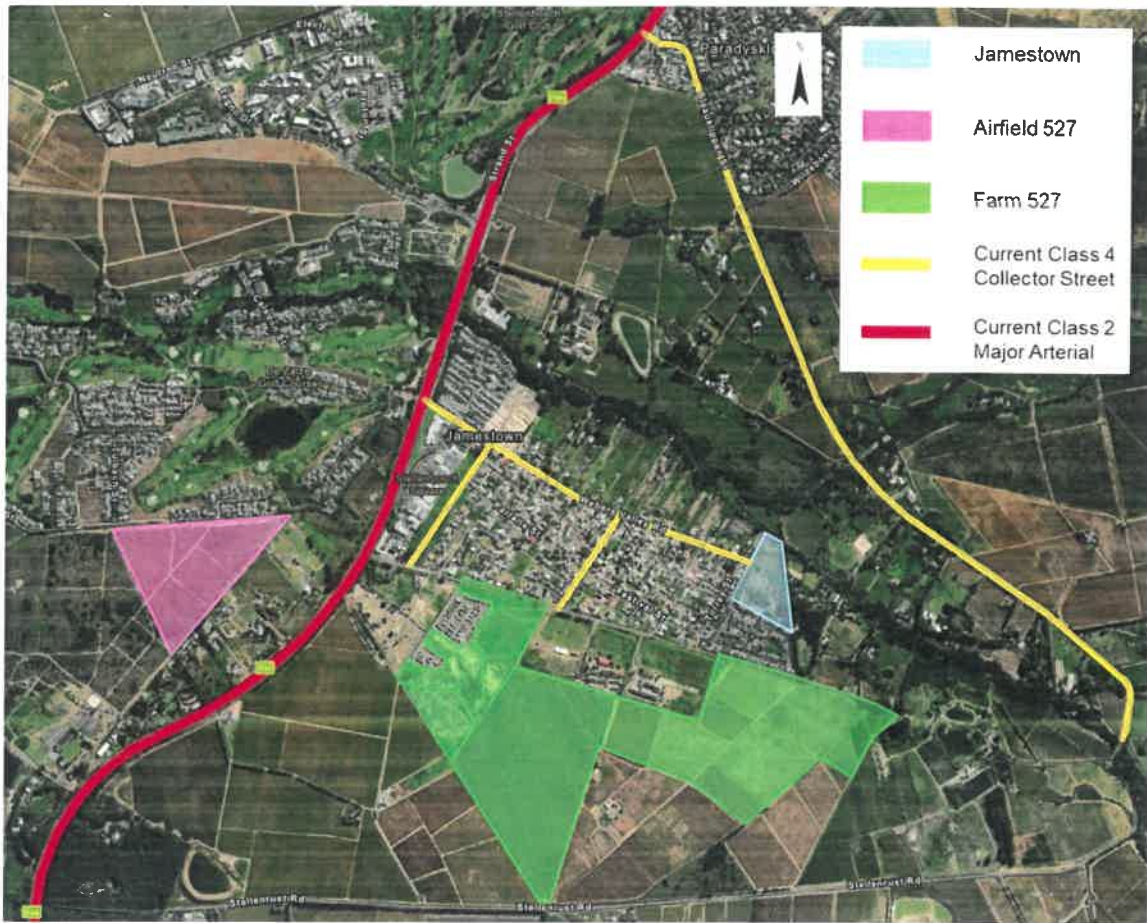


**Figure 36: Jamestown Future Development**

**Table 34: Jamestown Future Development Land Use**

| Development               | Proposed Land Use                                                                                                                                                                                                              |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Jamestown Phase 4 (Green) | Residential: <ul style="list-style-type: none"> <li>• Breaking New Ground (BNG) – 624 units</li> <li>• GAP Housing – 420 units</li> <li>• Market Housing – 601 units</li> <li>• Total of 1645 new residential units</li> </ul> |
| Airfield (Purple)         | Unknown at this stage                                                                                                                                                                                                          |
| Jamestown (Blue)          | Unknown at this stage                                                                                                                                                                                                          |
| Development C             | Unknown at this stage                                                                                                                                                                                                          |

The total trip generation of these land uses has been calculated by using the COTO TMH 17 trip generation rates and the applicable reduction factors. It can be summarised as the following number of new trips during the morning and afternoon peak hours:

**Table 35: Applied Trip Generation Rates for Phase 4**

| Phase | Land Use        | COTO Code | Trip Rate |    | AM Directional Split |            | PM Directional Split |            |
|-------|-----------------|-----------|-----------|----|----------------------|------------|----------------------|------------|
|       |                 |           | AM        | PM | AM In (%)            | AM Out (%) | PM In (%)            | PM Out (%) |
| 4     | GAP Housing     | 210       | 1         | 1  | 25                   | 75         | 70                   | 30         |
|       | Subsidy Housing | 210       | 1         | 1  | 25                   | 75         | 70                   | 30         |
|       | Market Housing  | 210       | 1         | 1  | 25                   | 75         | 70                   | 30         |

**Table 36: Applied trip reduction for Phase 4**

| Land Use        | Reduction Factors     |                   |              |                 |
|-----------------|-----------------------|-------------------|--------------|-----------------|
|                 | Mixed Use Development | Vehicle Ownership | Transit node | Total Reduction |
| GAP Housing     | 10%                   | 70%               | 15%          | 77%             |
| Subsidy Housing | 10%                   | 70%               | 15%          | 77%             |
| Market Housing  | 10%                   | 40%               | 15%          | 54%             |

**Table 37: Generated Trips for Phase 4**

| Phase | Land Use        | No. Units   | AM         |            | PM         |            |
|-------|-----------------|-------------|------------|------------|------------|------------|
|       |                 |             | IN         | OUT        | IN         | OUT        |
| 4     | GAP Housing     | 420         | 25         | 73         | 68         | 29         |
|       | Subsidy Housing | 624         | 36         | 108        | 101        | 43         |
|       | Market Housing  | 601         | 69         | 207        | 194        | 83         |
|       | <b>Total</b>    | <b>1645</b> | <b>130</b> | <b>388</b> | <b>363</b> | <b>155</b> |

The trips to and from Phase 2, 3 and 4 of the Development were added to the expected 2030 background traffic, with the three previously planned developments. A summary of the assumed implemented mitigation measures is shown in Table 38. The study intersections were analysed in Sidra. The results are summarised in Table 39.

Table 38: Summary of implemented upgrades for Scenario 3

| Intersection               | Mitigation Measure(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. R44 / Webersvallei Road | <p>Optimised signal timings. (Maximum cycle time of 120 sec)</p> <p>Road improvements at the R44 / Webersvallei Road intersection.</p> <p>Three through lanes on the southbound carriageway from Techno Avenue to closed R44 / School Road.</p> <p>Three through lanes on the northbound carriageway from the R44/Webersvallei Road intersection to the R44 / Techno Avenue intersection.</p> <p>Webersvallei Road approach to the R44/Webersvallei Road intersection: improved lane configuration.</p> |
| 3. R44 / School Road       | Intersection is closed as planned by the WCG.                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

Table 39: Sidra Results for Scenario 3

|         | Intersection                      | Ave. Delay [s] | v/c Ratio | Overall LOS    | South | East | North | West |
|---------|-----------------------------------|----------------|-----------|----------------|-------|------|-------|------|
| AM PEAK | R44 / Webersvallei Road           | 81.1           | 1.10      | F              | F     | E    | C     | D    |
|         | Webersvallei Road / Fresno Street | 10.8           | 0.806     | B              | B     | A    | B     | A    |
|         | School Road / Fresno Street       | 7.8            | 0.289     | B <sup>6</sup> | -     | -    | B     | -    |
|         | School Road / Blakemore Street    | 126.7          | 1.149     | F              | F     | C    | A     | B    |
| PM PEAK | R44 / Webersvallei Road           | 59.8           | 1.19      | E              | E     | E    | D     | E    |
|         | Webersvallei Road / Fresno Street | 7.3            | 0.579     | A              | A     | A    | B     | A    |
|         | School Road / Fresno Street       | 7.1            | 0.346     | A <sup>6</sup> | -     | -    | A     | -    |
|         | School Road / Blakemore Street    | 412.6          | 2.480     | F              | F     | -    | C     | B    |

From the Sidra analysis results it is noted:

- The intersections, Webersvallei Road / Fresno Street and School Road / Fresno Street, still operate at acceptable conditions.
- **School Road / Blakemore Street:** The LOS at this intersection is unacceptable (LOS F in AM and PM peak hours). From the results it is clear that this single intersection will not be sufficient to support the additional trips generated by Jamestown Phase 4 development.
- **R44 / Webersvallei Road:** This intersection (With 3 through lanes along the R44, see Appendix C: Figure 50) operates at LOS F in the AM peak hours and LOS E in the PM peak hours, this is considered to be unacceptable.

Potential mitigation measures to accommodate the future developments in Jamestown as well as future traffic growth are discussed in the section that follows.

<sup>6</sup> Overall LOS based on the worst performing approach to the intersection



### 13.6.1 Proposed implementation of future roads

Should Phase 4 of the Jamestown Residential Development, or any of the other future planned developments, go ahead, measures to relieve congestion on the R44 should be considered. In this section, reference will be made to the future road network planning for the Jamestown area, see Section 10. Where this TIA will identify links that could potentially be key in accommodating future development and the relieve of congestion on the R44.

Figure 37 shows the proposed future road network, see Section 11.3 and Figure 30, according to the Jamestown Roads Masterplan (March 2020) with the entire Jamestown Development overlayed. From Figure 37, it is clear that some of the links proposed in the masterplan fall within the boundaries of the development and will have to be implemented, in full or partially, along with the Jamestown Phase 4 Development namely:

- ▶ Link 5
- ▶ Link 7
- ▶ Link 6 (Partially)
- ▶ Link 4

In addition, this TIA has also identified the following key links, indicated in red in Figure 37, to also be considered, for mitigating congestion on the R44 and at the R44 / Webersvallei intersection:

- ▶ Link 2
- ▶ Link 6 (Full)
- ▶ Link 8

These links will provide additional access to the north and south of Jamestown, relieving the R44 and the R44 / Webersvallei intersection of some traffic. Furthermore, providing a secondary access to Jamestown from the R44. It is proposed to further investigate the implementation of these links.

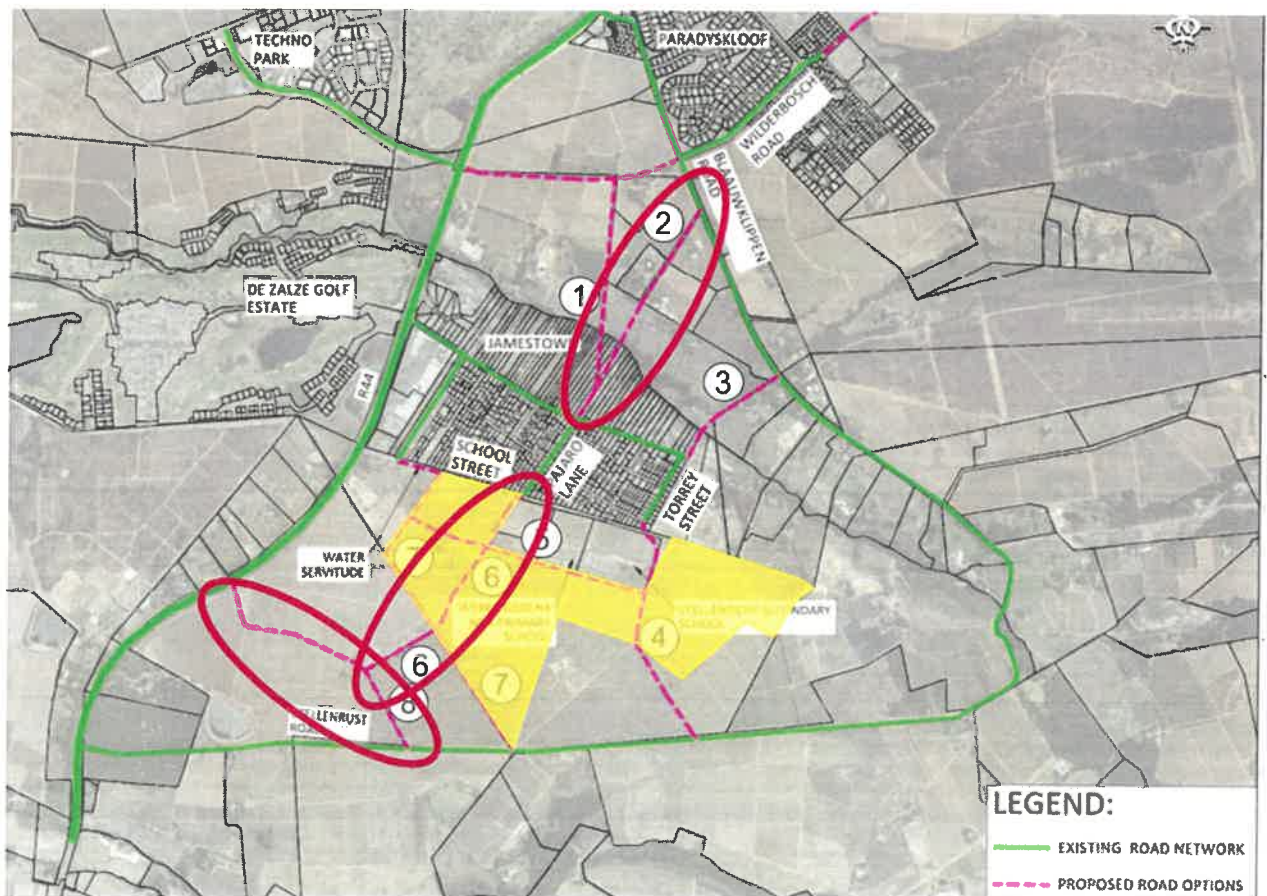


**Figure 37: Implementation of proposed future roads**

## 14 Non-Motorised Transport

NMT facilities for Jamestown which were proposed, as shown in Figure 38, in the *Non-motorised Facilities in Jamestown* report and not implemented to date include:

- The construction of an NMT link for pedestrians and cyclists on the R44 between the Webersvallei Road intersection with the R44 and the School Street intersection with the R44. A 0.5km long and 3m wide multi-use pathway is suggested on the eastern side of the R44. This proposal will also enable NMT access to Stellenbosch Square;
- The construction of 3m wide, Class 2 NMT sidewalk along the northern side of Webersvallei Road between Fresno Street and Torrey Street. The sidewalk has been partially constructed at the roundabouts;
- The upgrading of pedestrian crossings at the intersection of Webersvallei Road and the R44.
- 3 m wide sidewalks along Pajaro Avenue
- Torrey Street a 3 m wide sidewalk was also proposed
- Construct a 3 m wide NMT Sidewalk adjacent to School Street on the water servitude from Fresno Street to Torrey Street. Also prevent any vehicles access on the water servitude.

Considering the number of pedestrians counted during the pedestrian survey and how close the Development will be to schools, the existing NMT network should be expanded to include some or all of the above. Especially the NMT facilities proposed adjacent to School Street.

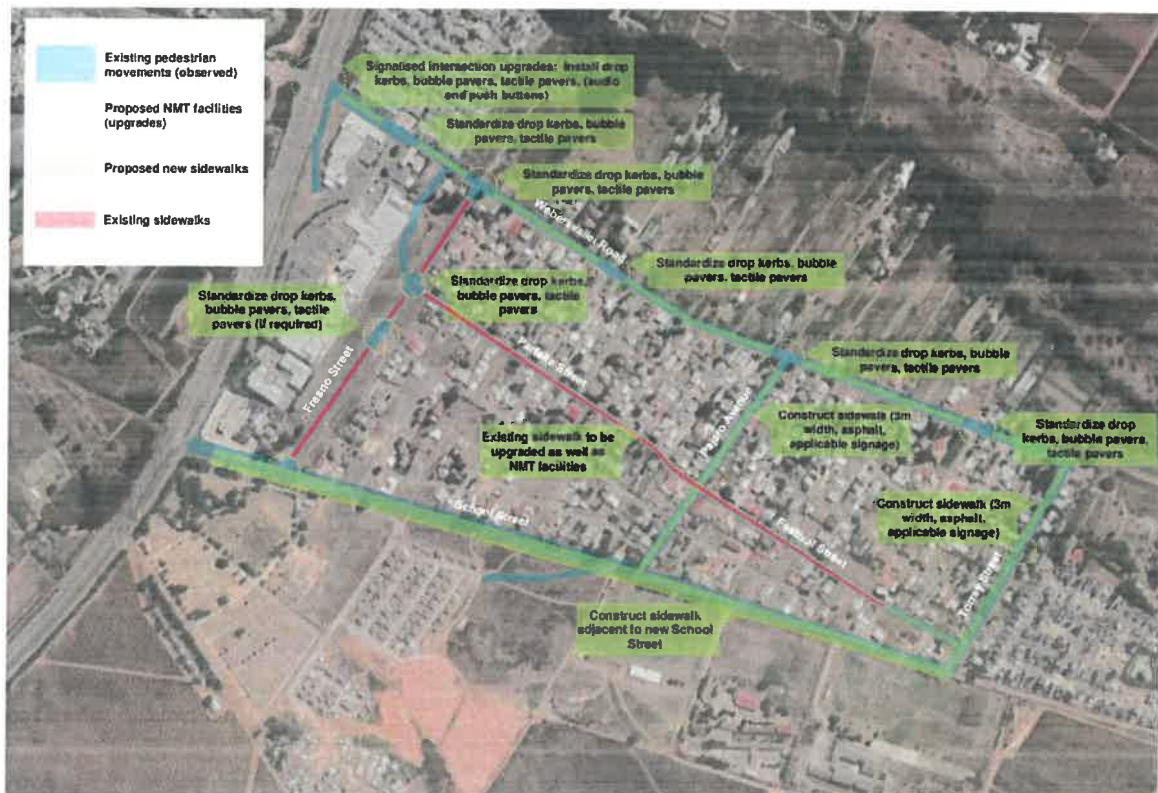


Figure 38: NMT Report Proposed NMT Facilities (Source: Non-Motorised Transport Facilities in Jamestown Report March 2020)



Regarding the planned future developments and roads additional NMT facilities have to be considered. Figure 39 shows the existing, previously planned, NMT Report 2020 proposed, the future roads proposed by the Jamestown roads masterplan 2020 and the new/future proposed NMT sidewalks. As shown in Figure 39, it is proposed that the slightly disjointed sidewalk facilities along Frenso Street be complete along the entire Frenso Street. A small section along School Road is also proposed all the way from the planned development access road to the R44, since a lot of pedestrians were surveyed to move along School Road to the R44.

As for the future planned development NMT facilities should be considered very carefully since this area will predominantly serve the lower income populace. Consequently, as shown in Figure 39, a reasonable amount of NMT facilities is proposed. Especially, around and to the schools for learners walking to school and back home. The proposals made for the future road network are in fact supported by those made in the *Non-motorised Facilities in Jamestown(2020)* report.

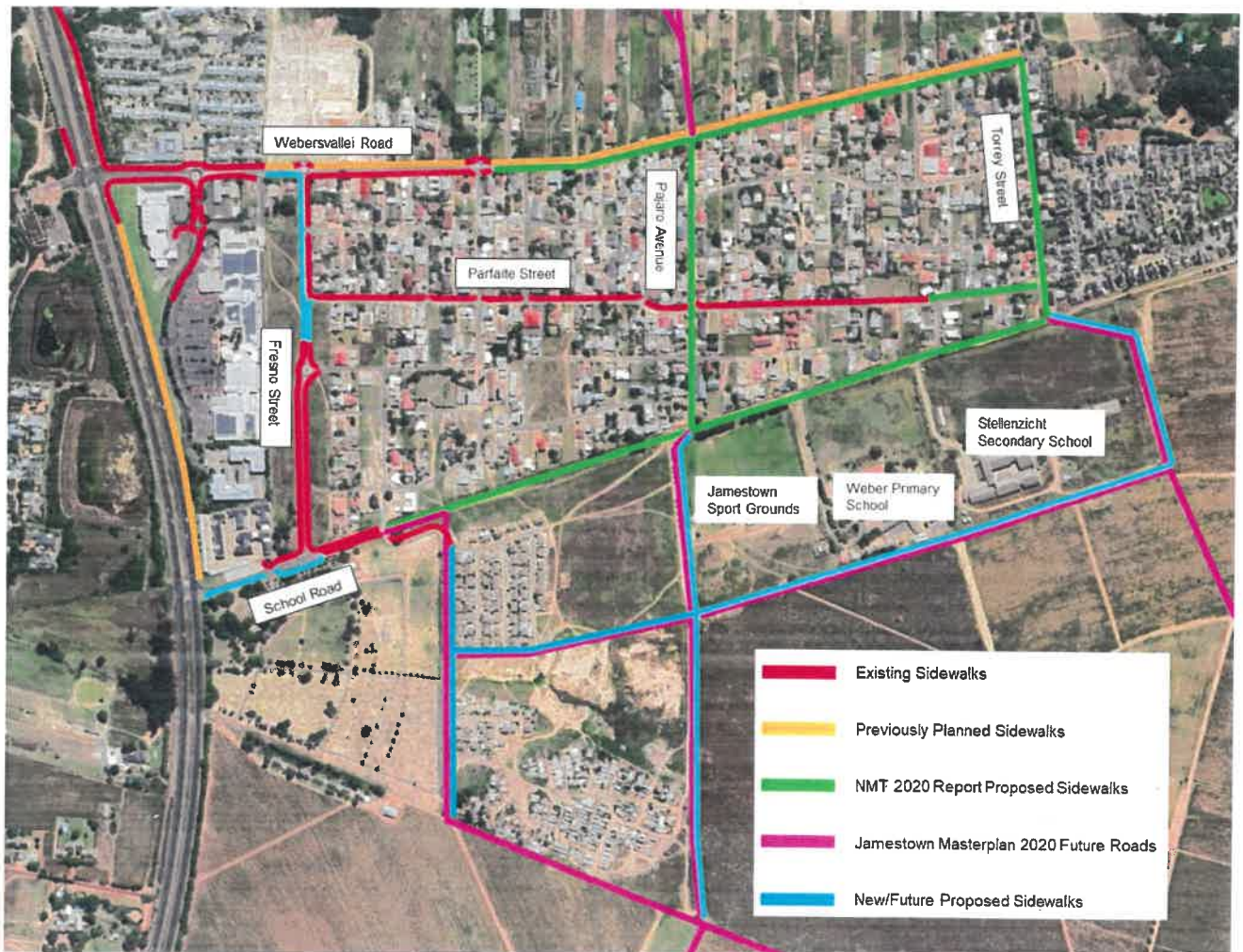


**Figure 39: Planned and Proposed NMT Sidewalks**

The internal roads of the Development will make provision for NMT by providing either a sidewalk along internal streets or creating shared spaces where vehicles and pedestrians/cyclist share the roadway. The proposed road cross sections are shown in Figure 40. Along School Street a separate NMT facility will be provided as shown in Figure 41.

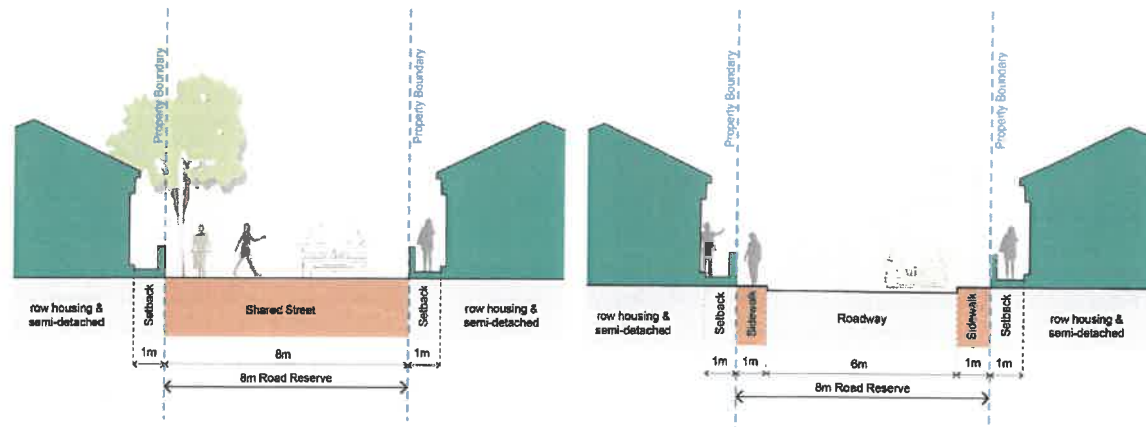


Figure 40: Illustrative Road cross sections

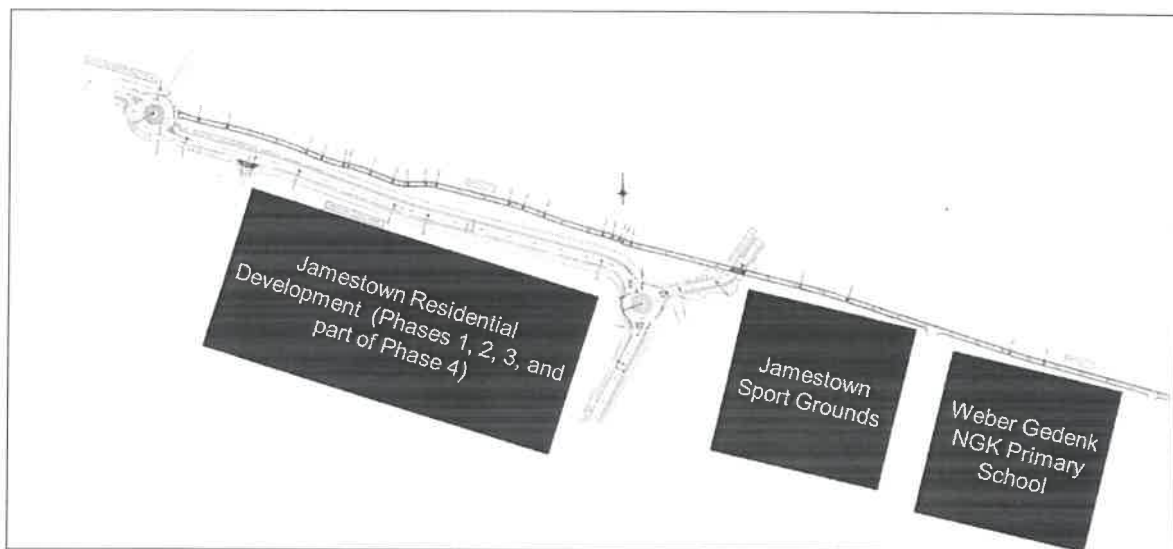


Figure 41: NMT facility along School Street

## 15 Public Transport

Considering how active minibus taxis and buses are in the vicinity of the Development, it is proposed that public transport stops (in lane or indented) be provided on roads in the vicinity of the Development. A taxi rank will be built as part of Phase 4 of the Development.

## 16 Traffic Calming

Currently there are a variety of different traffic calming measurements put in place in Jamestown, these are summarised in Table 40.

Table 40: Existing Traffic Calming Measures in Jamestown

| Road                    | Traffic Calming Measures                                                             |
|-------------------------|--------------------------------------------------------------------------------------|
| Frenso Street           | <ul style="list-style-type: none"> <li>• Roundabout</li> <li>• Speed bump</li> </ul> |
| Webersvallei Road       | <ul style="list-style-type: none"> <li>• Multiple Roundabouts</li> </ul>             |
| Development Access Road | <ul style="list-style-type: none"> <li>• Multiple Speed bumps</li> </ul>             |

Should School Road be extended and upgraded to a surfaced standard to the east, measures to prevent speeding along School Road should be considered and implemented.

## 17 Parking

The single dwelling unit plots will be big enough to park at least 1 vehicle. The Development will cater for people with low to very low vehicle ownership. Thus, the number of off-street parking bays determined using the Stellenbosch Zoning Scheme is a very conservative calculation. Based on the nature of the development, reduced parking rates, in line with the PT1 rates provided in the CCT Zoning Scheme 2019 Amendment, can possibly be applied. Table 41 and Table 42 show the comparison between the different rates and the subsequent number of parking bays as per the Stellenbosch Zoning Scheme and the CCT Zoning Scheme requirements.

**Table 41: Comparison of Parking Rates**

| Phase | Land Use Type                             | Stellenbosch Zoning Scheme: Normal Parking | City of Cape Town Zoning Scheme (2019 Amendment): PT1 Areas <sup>7</sup> |
|-------|-------------------------------------------|--------------------------------------------|--------------------------------------------------------------------------|
|       |                                           | Rate                                       | Rate                                                                     |
| 2     | Subsidy Housing (assumed 1 bedroom units) | 1 bay per dwelling unit                    | 1 bay per dwelling unit                                                  |
|       | Community                                 | 2 bays per 100m <sup>2</sup>               | 1.5 bays per 100m <sup>2</sup>                                           |
| 3     | Subsidy Housing (assumed 1 bedroom units) | 1 bay per dwelling unit                    | 1 bay per dwelling unit                                                  |

**Table 42: Number of Parking Bays Required and Provided**

| Phase        | Land Use Type                             | Unit               | Stellenbosch Zoning Scheme: Normal Parking | City of Cape Town Zoning Scheme (2019 Amendment): PT1 Areas <sup>7</sup> | Number of Bays Provided |
|--------------|-------------------------------------------|--------------------|--------------------------------------------|--------------------------------------------------------------------------|-------------------------|
|              |                                           |                    | Number of Bays                             | Number of Bays                                                           |                         |
| 2            | Subsidy Housing (assumed 1 bedroom units) | 167 Units          | 167                                        | 167                                                                      | On site (167)           |
|              | Community                                 | 665 m <sup>2</sup> | 13                                         | 10                                                                       | To be designed          |
| 3            | Subsidy Housing (assumed 1 bedroom units) | 107 Units          | 107                                        | 107                                                                      | On site (107)           |
| <b>Total</b> |                                           |                    | <b>287</b>                                 | <b>287</b>                                                               |                         |

<sup>7</sup> PT 1 areas refer to areas where the use of public transport is promoted, but where the City of Cape Town considers the provision of public transport inadequate or where the use of motor vehicles is limited.

## 18 Infrastructure Required

Table 43 shows a summary of infrastructure required per scenario and per year. The underlined text highlights the infrastructure that has been added in each scenario.

**Table 43: Summary of infrastructure required for 2023 – 2030**

| Scenario    | Traffic                                                                                                               | Infrastructure Impact(s)                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Reference                                                                                                                                |
|-------------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2023</b> |                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                          |
| 0           | Existing                                                                                                              | <ul style="list-style-type: none"> <li>None</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                          |
| <b>2025</b> |                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                          |
| 1 (a)       | 2023 Traffic escalated to 2025<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res                                      | <ul style="list-style-type: none"> <li><u>Upgrade of the R44 / Webersvallei Road intersection completed. (as proposed in previous development TISs)</u></li> </ul>                                                                                                                                                                                                                                                                                                                              | Appendix C: Figure 48                                                                                                                    |
| 1 (b)       | 2023 Traffic escalated to 2025<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res<br>+ Planned Jamestown Phase 2 and 3 | <ul style="list-style-type: none"> <li>Upgraded R44 / Webersvallei Road intersection completed. (as proposed in previous development TISs)</li> </ul>                                                                                                                                                                                                                                                                                                                                           | Appendix C: Figure 48                                                                                                                    |
| <b>2030</b> |                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                          |
| 2 (a)       | 2023 Traffic escalated to 2030<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res                                      | <ul style="list-style-type: none"> <li><u>Closure of R44 / School Road intersection.</u></li> <li>Upgrade of the R44 / Webersvallei Road intersection completed. (as proposed in previous development TISs)</li> <li><u>Three through lanes on the southbound carriageway from Techno Avenue to closed R44 / School Road.</u></li> <li><u>Three through lanes on the northbound carriageway from the R44/Webersvallei Road intersection to the R44 / Techno Avenue intersection.</u></li> </ul> | Appendix C: Figure 49<br><br>Appendix C: Figure 48<br><br>Appendix C: Figure 50 and Figure 34<br><br>Appendix C: Figure 50 and Figure 34 |
| 2 (b)       | 2023 Traffic escalated to 2030<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res<br>+ Planned Jamestown Phase 2 and 3 | <ul style="list-style-type: none"> <li>Closure of R44 / School Road.</li> <li>Upgrade of the R44 / Webersvallei Road intersection completed (as proposed in previous development TISs)</li> <li>Three through lanes on the southbound carriageway from Techno Avenue to closed R44 / School Road.</li> <li>Three through lanes on the northbound carriageway from the</li> </ul>                                                                                                                | Appendix C: Figure 49<br><br>Appendix C: Figure 48<br><br>Appendix C: Figure 50 and Figure 34<br><br>Appendix C: Figure 50 and Figure 34 |

|  |  |                                                                             |  |
|--|--|-----------------------------------------------------------------------------|--|
|  |  | R44/Webersvallei Road intersection to the R44 / Techno Avenue intersection. |  |
|--|--|-----------------------------------------------------------------------------|--|

It should be noted that:

- The R44 itself are congested and operating close to its capacity without any additional development traffic added to the network.
- The Jamestown Phase 2 and 3 development traffic constitutes less than 2% of the overall traffic along the R44. The further upgrading of the R44 / Webersvallei Road intersection is caused by growth in background traffic.
- Upgrades required are a result of the growth in background traffic and not as a result of the Jamestown Development traffic.
- Before Phase 4 of the Jamestown Development can be implemented (or any other development in addition to the developments considered in this TIA), an alternative north-south link road may be needed. This will relief congestion on the R44.
- Considering that this development will predominantly consist of subsidy housing and GAP housing it can be assumed that the majority of the residents will be relying on PT and NMT modes. This development therefore triggers the provision of additional NMT and PT infrastructure such as:
  - The extension of existing NMT facilities within Jamestown (Figure 39)
  - The extension of existing NMT facilities along School Road (Figure 41)
  - Provision of public transport embayments where buses pick up/drop scholars attending the schools along School Road.
  - A taxi rank to support the usage of PT (will be provided with Phase 4)

Table 44 summarises the potential infrastructure required for 2030 and beyond, when the Jamestown Phase 4, or others, are also implemented. Also shown in Table 44, are links this TIA considers to be key to be implemented along with the Jamestown Phase 4 development.

**Table 44: Summary of infrastructure required for 2030 – beyond**

| Scenario             | Traffic                                                                                                                    | Infrastructure Impact(s)                                                                                                                                                                                                                                                                                                                                                                                                                                | Reference                                                                                                                                |
|----------------------|----------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2030 – Beyond</b> |                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                          |
| 3                    | 2023 Traffic sscaled to 2030<br>+ Kreefgat<br>+ The James<br>+ Stellenpark Res<br>+ All planned Jamestown Phase 2, 3 and 4 | <ul style="list-style-type: none"> <li>• Closure of R44 / School Road.</li> <li>• Upgraded R44 / Webersvallei intersection completed. (Proposed in previous developments TISs)</li> <li>• Three through lanes on the southbound carriageway from Techno Avenue to closed R44 /School Road.</li> <li>• Three through lanes on the northbound carriageway from the R44/Webersvallei Road intersection to the R44 / Techno Avenue intersection.</li> </ul> | Appendix C: Figure 49<br><br>Appendix C: Figure 48<br><br>Appendix C: Figure 50 and Figure 34<br><br>Appendix C: Figure 50 and Figure 34 |



| Implementation of future roads                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <p>Some of the links proposed in the Jamestown Roads Masterplan (March 2020) will have to be implemented partially or in full at the time when Jamestown Phase 4 is developed. The following links fall within the boundaries of the development:</p> <ul style="list-style-type: none"> <li>▶ Link 5</li> <li>▶ Link 7</li> <li>▶ Link 6 (partial)</li> <li>▶ Link 4</li> </ul> <p>In addition, this TIA has also identified the following key links to be considered, these are necessary to relieve congestion on the R44 and at the R44 / Webersvallei Road intersection:</p> <ul style="list-style-type: none"> <li>▶ Link 2</li> <li>▶ Link 6 (Full)</li> <li>▶ Link 8</li> </ul> | Figure 37 (See Section 13.6.1) |

It should be noted, that the feasibility of these links were not tested in this TIA as it falls outside the scope of a TIA.

## 19 Conclusions

The primary purpose of this TIA was to examine the implications of trips generated by the proposed Jamestown Residential Development and the impact this will have on the adjacent road network. This assessment identified any necessary road network improvements that may be needed to accommodate the additional traffic.

Conclusions made in this report are summarised in the table form below.

|                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Site Location & Description | Jamestown is a residential area located south of Stellenbosch and bordered by the R44 (MR00027) to the west. All access into and out of the Jamestown is via the R44, which is a Class 2, major arterial.                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Property Details            | <p>The property under consideration is situated on the southern portion of Jamestown and is approximately 10 hectares in extent.</p> <p>The property that the Development will traverse is portion 7 of Farm 527. The property currently consists of residential houses that was built as part of Phase 1 of the Jamestown Residential Development, an informal settlement and some undeveloped land.</p> <p>The area is currently zoned as an Agricultural and Rural Zone and an application has been submitted to rezone the area to a Subdivisional Area. In addition, applications have been submitted to rezone the areas of Phase 2 and 3 to the various land portions.</p> |
| Road Network                | <p>The road network in the immediate vicinity of the proposed development consists of the following roads:</p> <ul style="list-style-type: none"> <li>▶ R44 (Class 2 Major Arterial)</li> <li>▶ Webersvallei Road (Class 4 Collector)</li> <li>▶ Fresno Street (Class 4 Collector)</li> <li>▶ School Road (Class 4 Collector)</li> <li>▶ Blakemore Street (Class 5 Local Street)</li> <li>▶ Unname Road (Class 5 Local Street)</li> </ul>                                                                                                                                                                                                                                         |



|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Study Intersections          | <p>The critical intersections which will be impacted by the traffic generated by the development are:</p> <ul style="list-style-type: none"> <li>▶ R44 / Webersvallei Road</li> <li>▶ R44 / School Road</li> <li>▶ Webersvallei Road / Fresno Street</li> <li>▶ School Road / Fresno Street</li> <li>▶ School Road / Blakemore Street</li> </ul> <p>These intersections were analysed in SIDRA Intersection 9.1 Plus.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Traffic Counts               | <p>Traffic counts were conducted at the study intersections on the 9<sup>th</sup> of February 2023 (a typical weekday) during the following periods:</p> <ul style="list-style-type: none"> <li>▶ AM Peak Period (06:00 - 09:00)</li> <li>▶ PM Peak Period (15:00 - 18:00)</li> </ul> <p>The AM peak hour occurred from 7:00 to 8:00 and the PM peak hour from 16:15-17:15.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Growth Rate                  | <p>To estimate the future background traffic, a growth rate of 2% was applied to the 2023 background traffic. This growth rate was calculated using historical traffic count data collected from counting stations located on the R44 situated close to the Jamestown Residential Development from the Western Cape Government's Road Network Information System (RNIS) database.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Proposed Development         | <p>Trip generation rates and trip reduction rates were obtained from the South African Committee of Transport Officials (COTO) Trip Data Manual, TMH 17, Volume 1 (2013). The trip generation rates used are shown in the table below.</p> <p>In the morning (AM peak hour) the development will generate 69 trips (20 in and 49 out). In the afternoon (PM peak hour) the development will generate 69 trips (46 trips in and 23 trips out).</p> <p>The trips generated by the proposed development were distributed onto the existing and future road network.</p>                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Site Access                  | <p>Access to the Development will be via the extension of the existing road network. The layout of the roads will be done in accordance with the Guidelines for Human Settlement Planning and Design (commonly known as the Red Book) and the Stellenbosch Zoning Scheme.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Previous Developments        | <p>Three previously planned development were considered for this TIA. Their trips were included were applicable.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Future Road Network Planning | <p>There are several more planning investigations that have been undertaken in the vicinity of Jamestown. The documents and its recommendations (with specific reference to Jamestown) are:</p> <ul style="list-style-type: none"> <li>▶ Jamestown Roads Master Plan (2017): <ul style="list-style-type: none"> <li>• A north south link (Class 4 Collector Street) from Jamestown (Webersvallei Road) to Blaauwklippen Road (basically the northwards extension of Torrey Street)</li> <li>• The southwards extension of Pajaro Street (also Class 4 Collector) to link up with Stellenrust Road.</li> </ul> </li> <li>▶ Stellenbosch Roads Master Plan (RMP) Update 2018 <ul style="list-style-type: none"> <li>• Eastern Link Road</li> <li>• Western Bypass</li> <li>• 5 new roads in the Jamestown area</li> </ul> </li> <li>▶ Jamestown Road Masterplan (2020)</li> </ul> <p>This TIA has identified multiple key links for the future developments in Jamestown (See Section 13.6.1).</p> |

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Analysis<br>Scenarios | <p>In preparing this report the key intersections were analysed in Sidra for the following scenarios:</p> <ul style="list-style-type: none"> <li>▶ Scenario 0 - 2023 Existing Traffic conditions</li> <li>▶ Scenario 1 (a) - 2025 Implementation Year without development traffic <ul style="list-style-type: none"> <li>• 2025 Traffic (Existing traffic adjusted with growth rate of 2 percent per annum over two-year period) + previous planned developments</li> <li>• Future road network: Upgrading of R44 / Webersvallei Street intersection.</li> </ul> </li> <li>▶ Scenario 1 (b) - 2025 Implementation Year with development traffic <ul style="list-style-type: none"> <li>• Existing traffic conditions adjusted with growth rate of 2 percent per annum over two-year period + previous planned developments + planned development traffic (Phases 2 and 3).</li> <li>• Future road network: Upgrading of R44 / Webersvallei Street intersection.</li> </ul> </li> <li>▶ Scenario 2 (a) - Five-year Post Implementation Year (2030) without development traffic (with mitigation measures implemented) <ul style="list-style-type: none"> <li>• Existing traffic conditions adjusted with growth rate of 2 percent per annum over seven year period without the planned development. + previous planned developments</li> <li>• Future road network: Closure of the R44 / School Road intersection and upgrading of R44 / Webersvallei Street intersection.</li> </ul> </li> <li>▶ Scenario 2 (b) - Five-year Post Implementation Year (2031) with development traffic (with mitigation measures implemented) <ul style="list-style-type: none"> <li>• Existing traffic conditions adjusted with growth rate of 2 percent per annum over seven year period+ previous planned developments + planned development traffic (Phases 2 and 3).</li> <li>• Future road network: Closure of the R44 / School Road intersection and upgrading of R44 / Webersvallei Street intersection with with proposed 3<sup>rd</sup> lane on R44 (between Techno Avenue and closed School Road)</li> </ul> </li> <li>▶ Scenario 3 - Five-year Post Implementation Year (2031) with all planned development traffic (with mitigation measures implemented) <ul style="list-style-type: none"> <li>• The existing traffic is adjusted with growth rate of 2 percent per annum over seven year period + previous planned developments + all planned development traffic added (Phases 2, 3, and 4).</li> <li>• Future road network: closure of the R44 / School Road intersection and upgrading of R44 / Webersvallei Street intersection with proposed 3<sup>rd</sup> lane on R44 (between Techno Avenue and closed School Road)</li> </ul> </li> </ul> |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Intersection Analysis | <p><b>Scenario 0</b></p> <p>Intersections along the R44 (R44 / School Road and R44 / Webersvallei Road) operate close to capacity. All other intersections operate at acceptable LOS.</p> <p>Proposed mitigation measures (as per the Western Cape Government: DTPW project to upgrade the Safety and Level of Service of the R44):</p> <ul style="list-style-type: none"> <li>• Closure of intersection between the R44 and School Road is considered <ul style="list-style-type: none"> <li>◦ No temporary mitigation measures recommended</li> </ul> </li> <li>• Improvements at the R44/Webersvallei Road intersections</li> </ul> <p>With proposed mitigation measures in place all intersections operate at acceptable LOS.</p> <p><b>Scenario 1 a</b></p> <p>All intersections operate at acceptable LOS.</p> <p><b>Scenario 1 b</b></p> <p>All intersections operate at acceptable LOS.</p> <p><b>Scenario 2a</b></p> <p>Closure of R44 / School Road implemented by 2030.</p> <p>The R44 / Webersvallei Road intersection operates at LOS F and D in the AM and PM peak hours respectively. All other intersections operate at acceptable LOS.</p> <p>Proposed mitigation measures:</p> <ul style="list-style-type: none"> <li>• A 3<sup>rd</sup> through lane to be added to the R44 Northbound and Southbound carriageways between the intersections of R44 / Techno Avenue and the now closed R44 / School Road.</li> </ul> <p>With the proposed mitigation measures in place, the intersection operates under LOS C in the AM peak hour and the PM peak hour.</p> <p><b>Scenario 2b</b></p> <p>The R44 / Webersvallei Road intersection operates at LOS C in the AM and PM peak hours.</p> <p>The performance of the R44/Webersvallei Road intersection is not majorly effected by the Jamestown Development traffic as the LOS remained unchanged when just the background traffic was modelled (Scenario 2a).</p> <p>All other intersections operate at acceptable LOS.</p> <p><b>Scenario 3</b></p> <p>The R44 / Webersvallei Road intersection operates at poor LOS F in the AM and LOS E in the PM peak hours.</p> <p>The School Road/Blakemore Street intersection operates at LOS F in the AM and PM peak hours.</p> <p>The LOS at these two intersections is considered to be unacceptable and should Phase 4 of the Jamestown residential development, or others, be implemented:</p> <ul style="list-style-type: none"> <li>► Measures to reduce the R44 traffic and relieve congestion should be considered <ul style="list-style-type: none"> <li>• This TIA has identified multiple new key links to be provided as proposed in the Jamestown Roads Masterplan (2020).</li> </ul> </li> <li>► The School Road/Blakemore Street intersection may need upgrading</li> </ul> <p>All other intersections operate at acceptable LOS.</p> |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

|                 |                                                                                                                                                                                                                                                                                       |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| NMT and PT      | <p>NMT and PT are prominent modes of transport in the Jamestown community. Although there are both PT and NMT facilities in the vicinity of the Development these are disconnected and somewhat isolated.</p> <p>A taxi rank will be built as part of Phase 4 of the Development.</p> |
| Traffic Calming | <p>Should School Road be extended and upgraded to a surfaced road to the east, measures to prevent speeding along School Road should be considered and implemented.</p>                                                                                                               |
| Parking         | <p>The require number of parking bays was calculated using the Stellenbosch Zoning Scheme By-Law. It should be noted the number of parking bays recommended are very conservative and more accurate requirement will be recommended when the flats reach the design phase.</p>        |

## 20 Recommendations

This TIA is in support of the Phase 2 and 3 Jamestown Residential Development however, after reviewing all the information presented in this report the following recommendations are made:

1. It is recommended that the current upgrade of the R44/Webersvallei Road intersection be completed before the additional traffic to/from Phase 2 and 3 Jamestown Residential Development be added (See Appendix C: Figure 48).
2. The R44 / School Road intersection may in future be closed as per WCG's planning (See Appendix C: Figure 49). However, Province and Stellenbosch Municipality is still in the process of discussing the future layout of this intersection.
3. Due to the growth in background traffic it is recommended that the R44 cross section should have three lanes between Webersvallei Road and Techno Avenue on the northbound carriageway. It is anticipated that this will be needed by 2030. On the southbound carriageway 3 through lane should be provided between Techno Avenue and the, planned to be closed, R44 / School Road intersection (See Appendix C: Figure 50 and Figure 34 ).
4. The R44 is expected to operate at capacity (in excess of 1200 vehicles per hour per lane) by 2030. To accommodate the growth in background traffic and future developments in Jamestown (Phase 4, Airfield, etc. see Section 13.6). It is recommended that:
  - 4.1. The planned extension of the Wilderbosch Road and the Techno Avenue extension to Adam Tas Road be continued and implemented. These links will assist in reducing the congestion on the R44.
  - 4.2. Future investment be directed to implement a more sustainable mode of transport that reduces commuters' dependency on private vehicles;
  - 4.3. In addition to the above, an alternative north-south link, connecting the Helderberg Basin and Overberg regions to areas to the north such as Paarl, Wellington and Malmesbury, should be implemented or at least be underway by 2030. This TIA has identified the following future links proposed by the Jamestown Roads Masterplan (2020) to be key, which should be investigated further (See Section 13.6.1):
    - Two north to south links: Link 6 and Link 2
    - One east to west link, which will also act as a secondary access to Jamestown: Link 8
5. To improve connectivity, permeability and to enhance the use of both public transport and NMT modes it is recommended that the existing NMT facilities be extended along School Road and public transport embayments be provided where buses pick up/drop scholars attending the schools along School Road. Where not yet implemented, the NMT network should be expanded as proposed in the Non-Motorised Transport Facilities in Jamestown Report dated March 2020.
6. Once School Road to the east have been upgraded to a surface standard, measures to prevent speeding along School Road should be considered and implemented.

# Appendix A

## Traffic Count Data

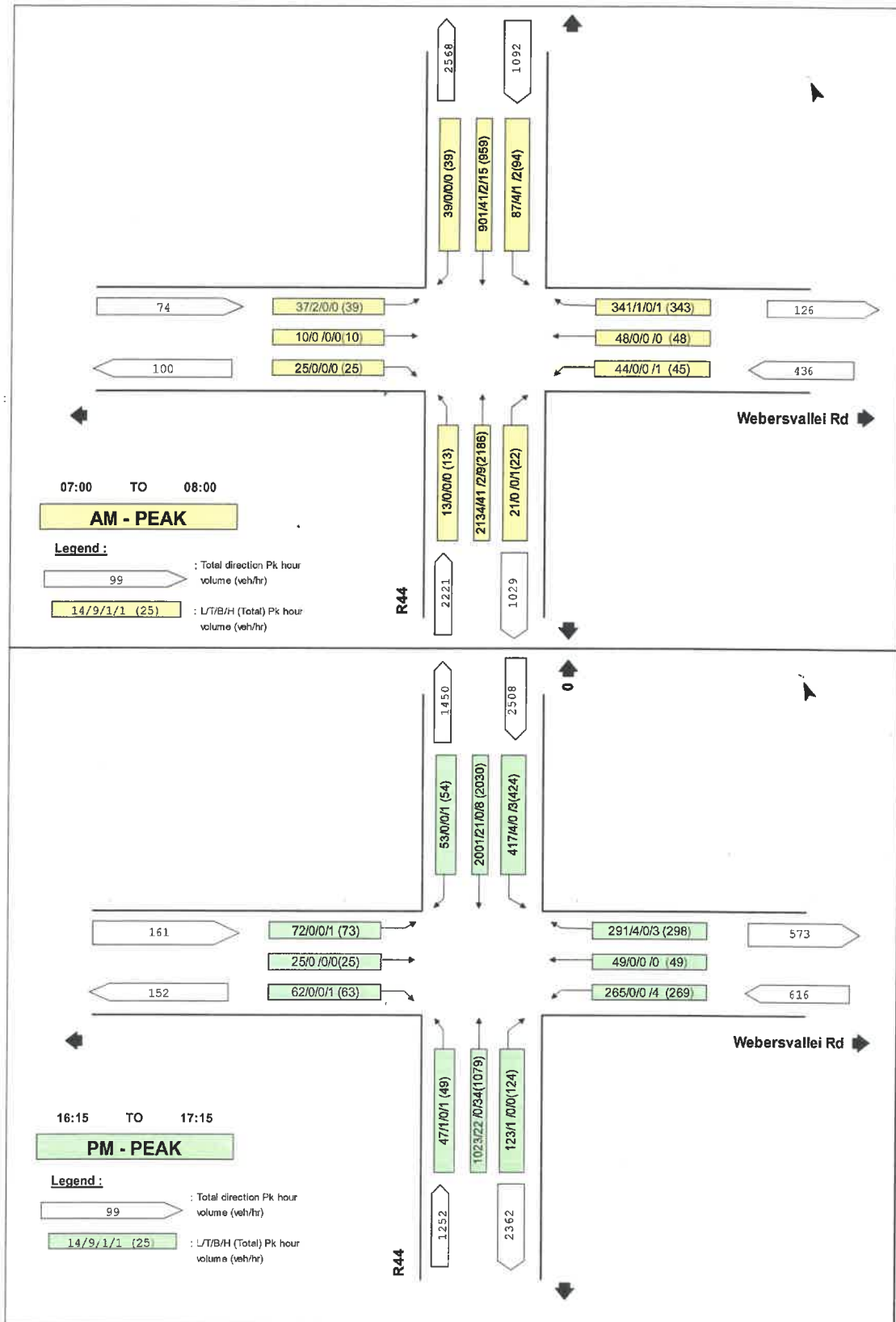


**Figure 42: R44 & Webersvallei Road**

Document number 1002169-PLN-REP-RU-0003, Revision number 3, Date 2024/01/31

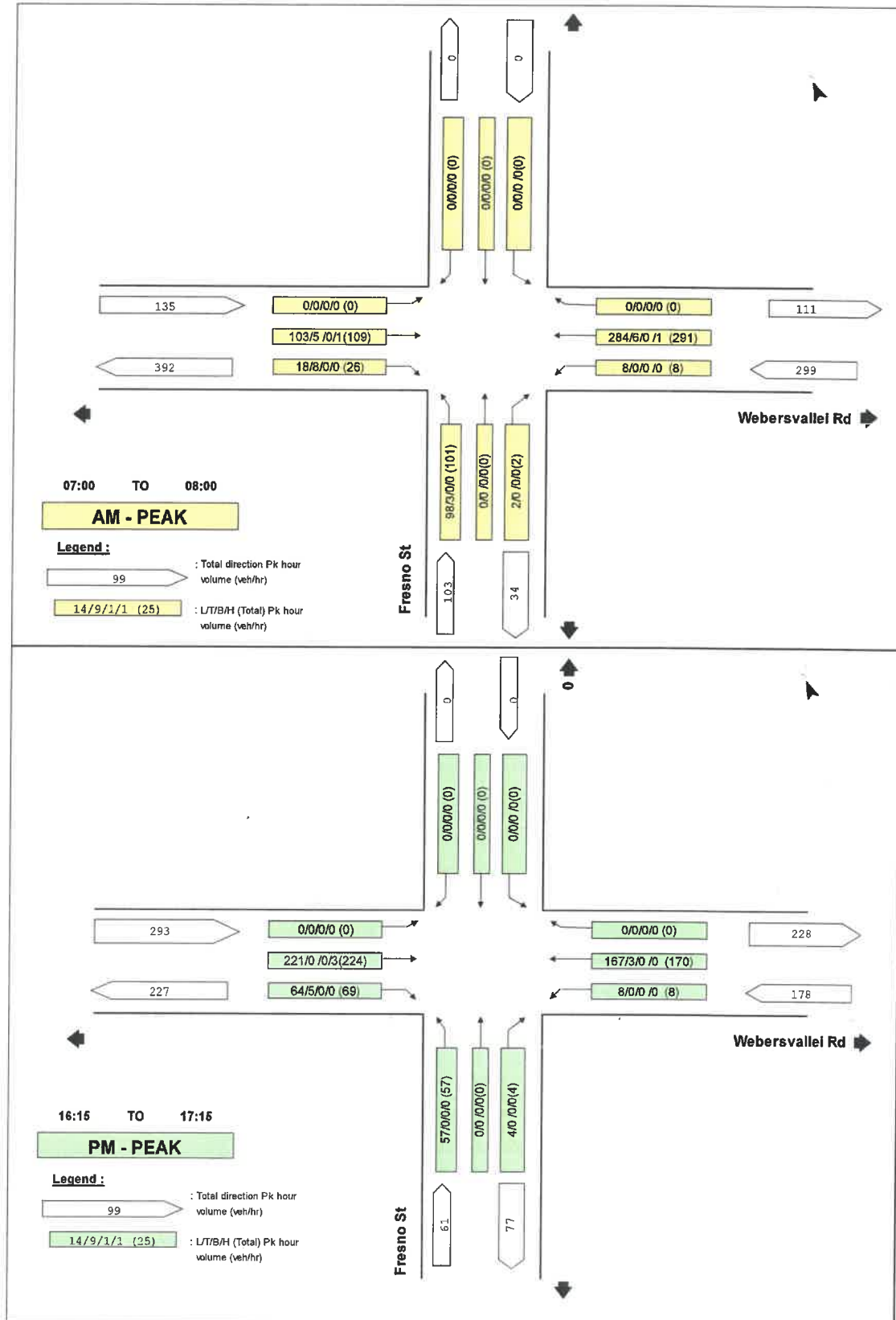


Figure 43: Webersvallei Road &amp; Fresno Street



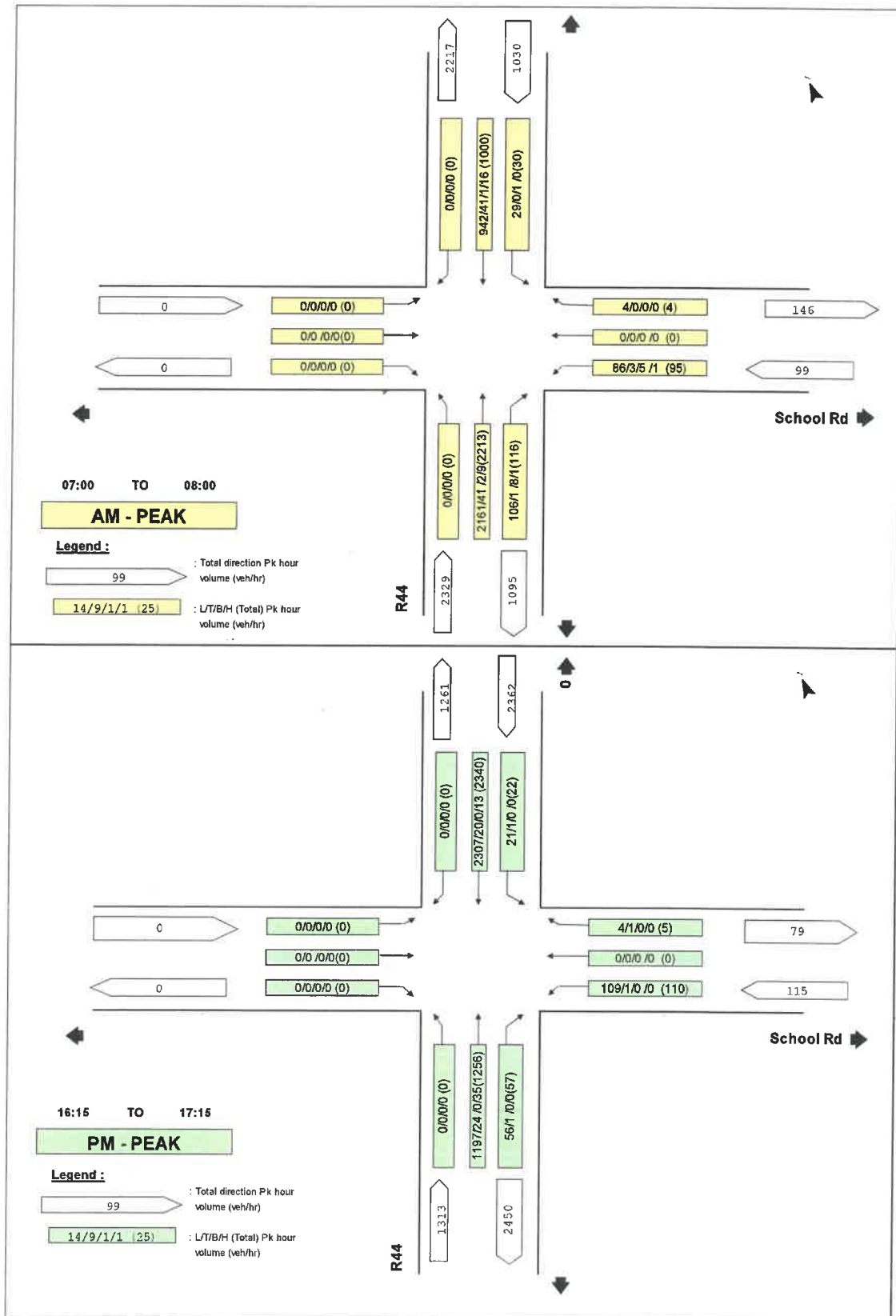


Figure 44: R44 &amp; School Road

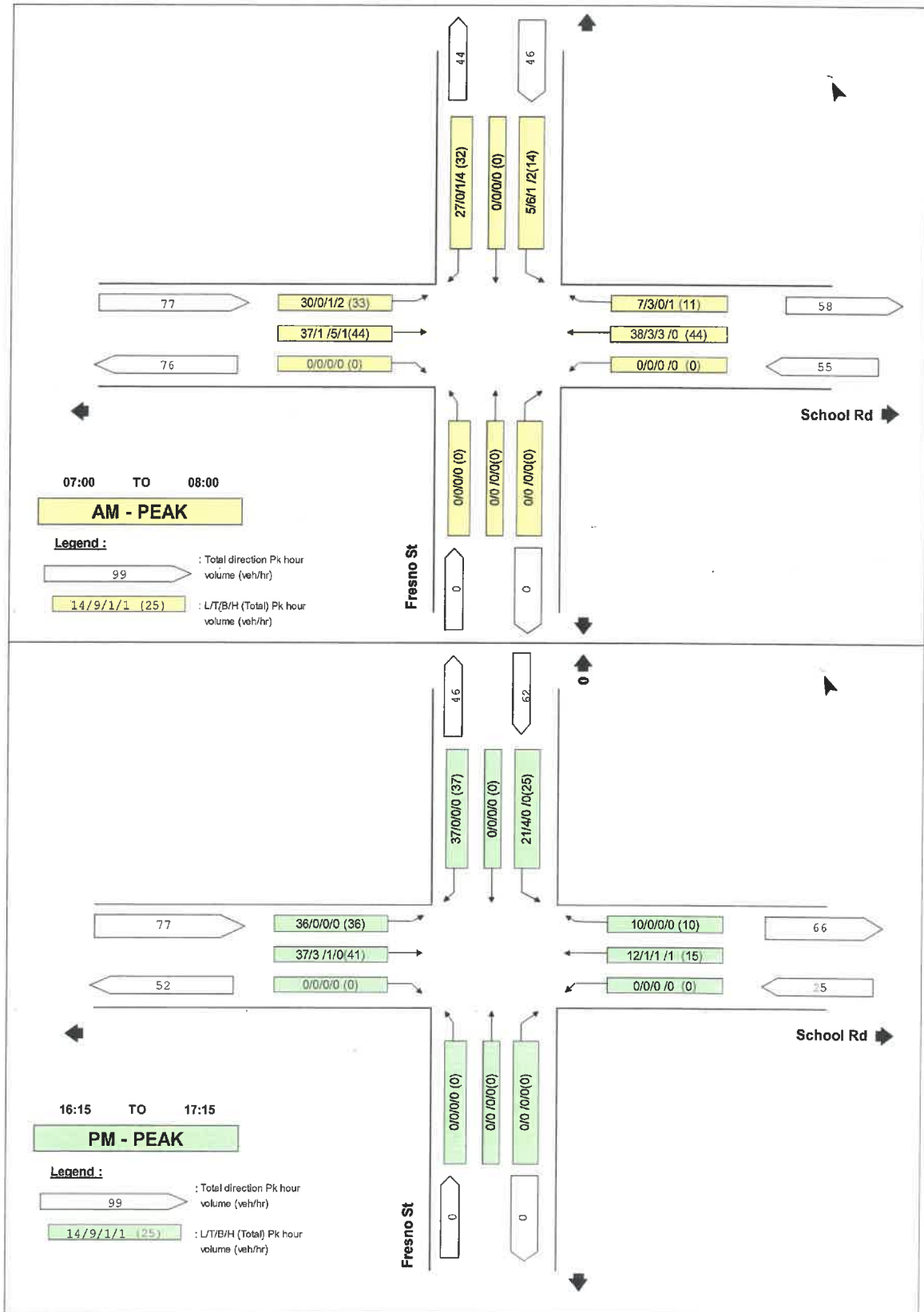


Figure 45: School Road &amp; Fresno Street

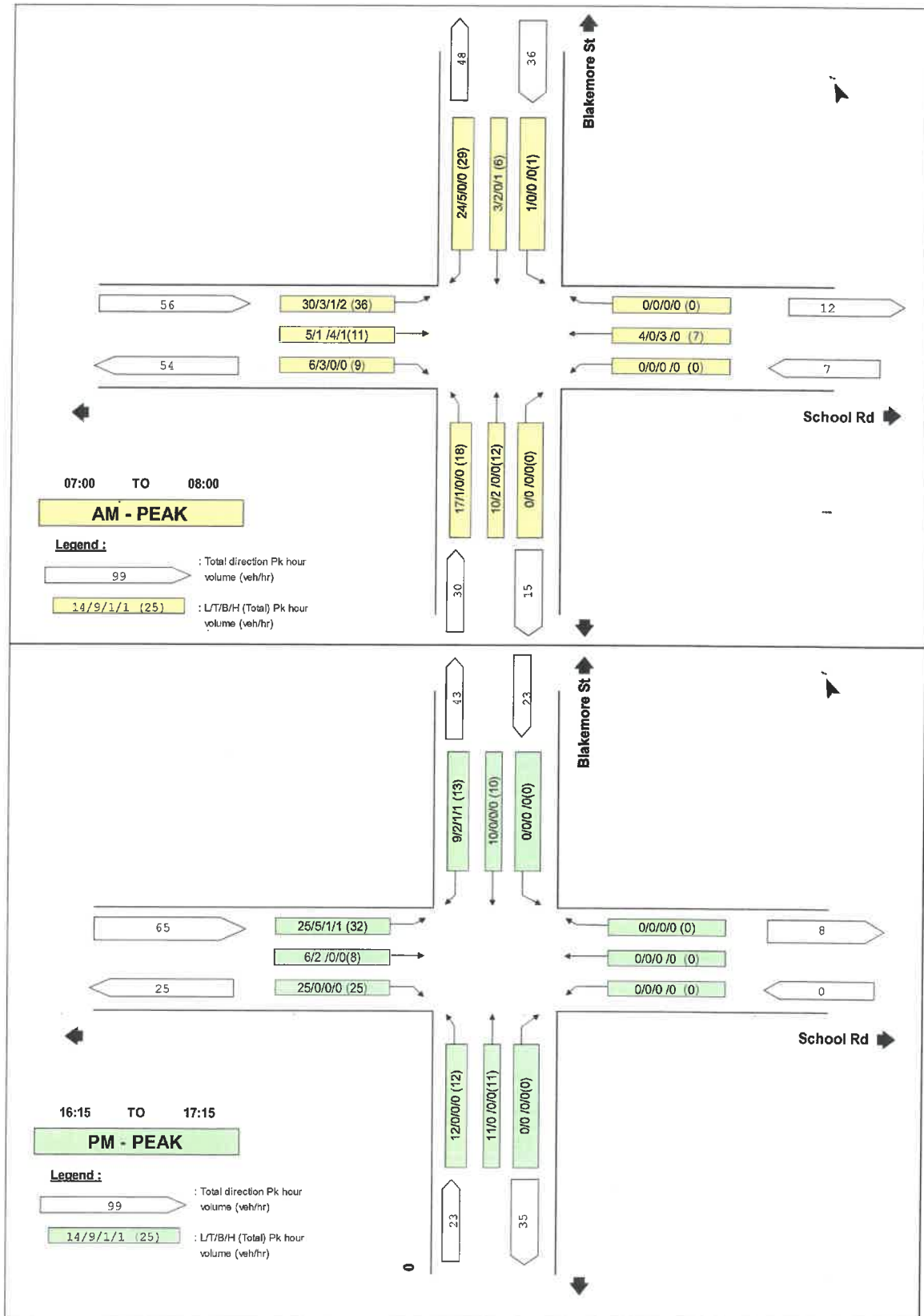


Figure 46: School Road &amp; Blakemore Street



# Appendix C

## Plans for R44 Upgrades

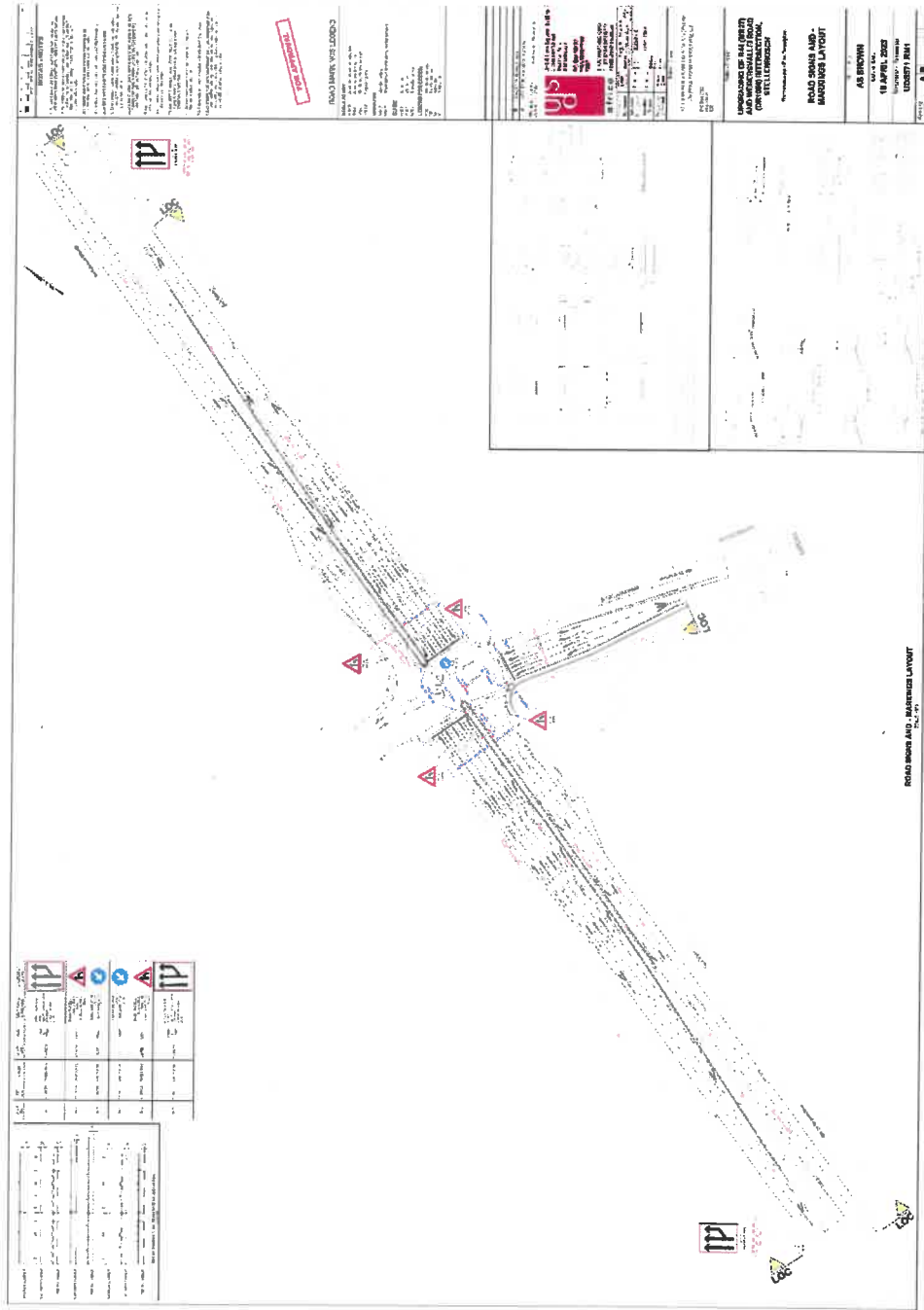


Figure 48: Upgrades to R44 / Webersvallei Intersection

Document number 1002169-PLN-REP-RU-0003, Revision number 3, Date 2024/01/31



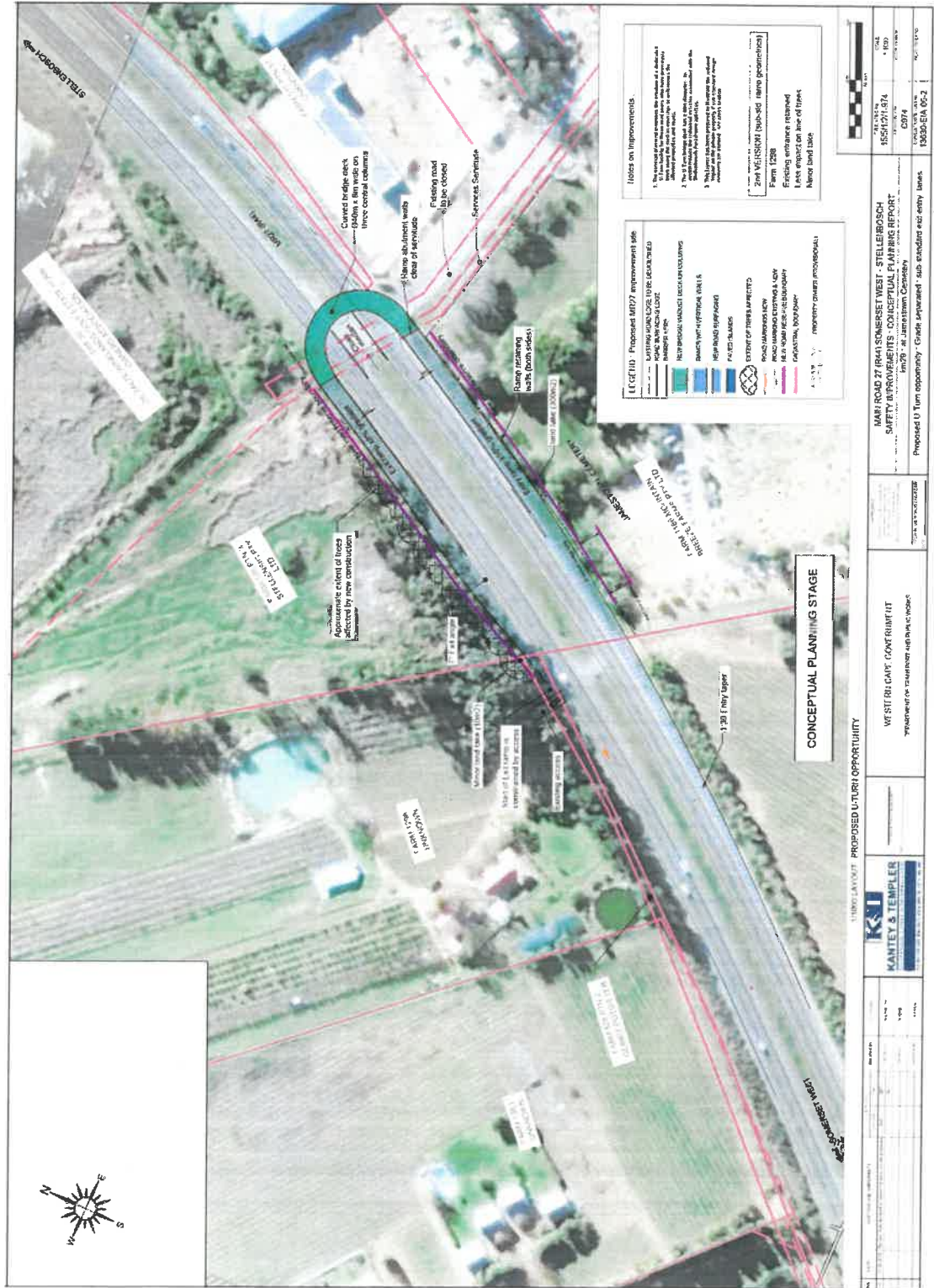


**Figure 49: Closure of R44 / School Road Intersection**

Document number 1002169-PLN-REP-RU-0003, Revision number 3, Date 2024/01/31



Figure 50: Six Lane Upgrade between R44 / Webersvallei Road and R44 / Techno Avenue Intersections

Document number 1002169-PLN-REP-RU-0003, Revision number 3, Date 2024/01/31



## Appendix D

### Distribution of Development Traffic

AM & PM IN

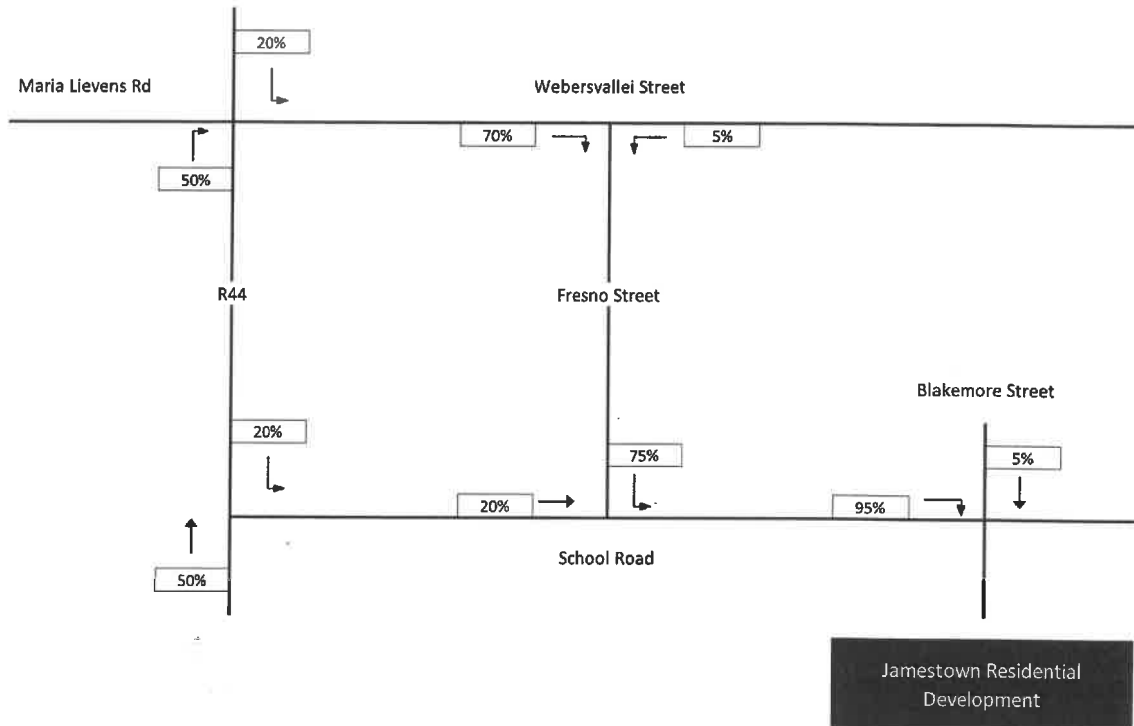


Figure 51: Distribution of Development Traffic IN

AM & PM OUT

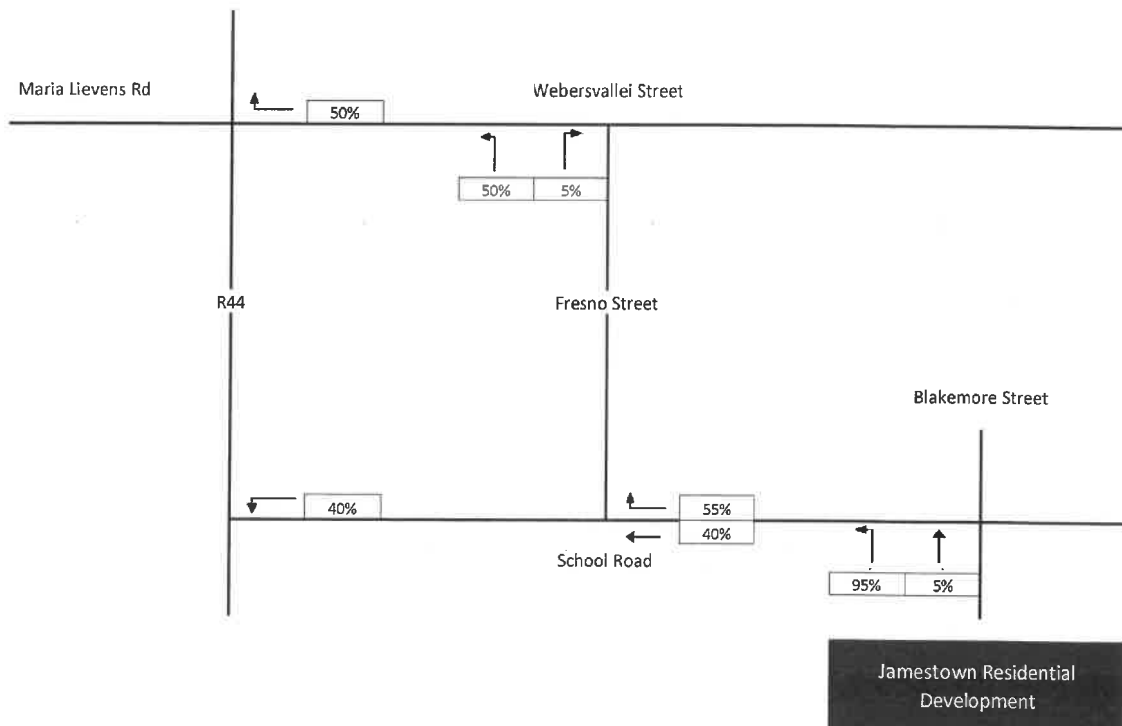


Figure 52: Distribution of Development Traffic OUT

## Appendix E

### Sidra Output

In diversity there is beauty and  
there is strength.

MAYA ANGELOU

**Document Prepared by:**

Zutari (Pty) Ltd  
Reg No 1977/003711/07  
1 Century City Drive  
Waterford Precinct  
Century City  
Cape Town  
South Africa  
PO Box 494  
Cape Town  
8000  
Docex: DX 204

**T** +27 21 526 9400

**E** capetown@zutari.com  
**W** zutari.com

## LANE SUMMARY

**Site: R44Web [R44 X Webersvallei Rd AM (Site Folder: Scenario 0 - Base Year - AM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Current AM Peak.

Site Category: Base Year

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |     |               |     |                   |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|-----|---------------|-----|-------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |     | Arrival Flows |     | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total HV ] |     | [ Total HV ]  |     |                   |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %   | veh/h         | %   | veh/h             | v/c       | %          | sec         |                  |                   | m      |             | m           | %         | %            |
| South: R44_S             |              |     |               |     |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 14           | 0.0 | 14            | 0.0 | 1192              | 0.011     | 100        | 25.6        | LOS C            | 0.3               | 2.0    | Short       | 90          | 0.0       | NA           |
| Lane 2                   | 1154         | 0.5 | 1154          | 0.5 | 1238 <sup>1</sup> | 0.933     | 100        | 46.4        | LOS D            | 70.8              | 497.9  | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 1147         | 0.5 | 1147          | 0.5 | 1230 <sup>1</sup> | 0.933     | 100        | 44.0        | LOS D            | 70.5              | 495.7  | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 23           | 4.5 | 23            | 4.5 | 810               | 0.029     | 100        | 31.0        | LOS C            | 0.4               | 2.8    | Short       | 120         | 0.0       | NA           |
| Approach                 | 2338         | 0.5 | 2338          | 0.5 |                   | 0.933     |            | 44.9        | LOS D            | 70.8              | 497.9  |             |             |           |              |
| East: Webersvallei Road  |              |     |               |     |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 98           | 1.1 | 98            | 1.1 | 327               | 0.299     | 100        | 49.7        | LOS D            | 5.1               | 35.7   | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 181          | 0.3 | 181           | 0.3 | 255               | 0.708     | 100        | 64.3        | LOS E            | 10.4              | 73.2   | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 181          | 0.3 | 181           | 0.3 | 255               | 0.708     | 100        | 64.3        | LOS E            | 10.4              | 73.2   | Short       | 40          | 0.0       | NA           |
| Approach                 | 459          | 0.5 | 459           | 0.5 |                   | 0.708     |            | 61.2        | LOS E            | 10.4              | 73.2   |             |             |           |              |
| North: R44_N             |              |     |               |     |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 99           | 3.2 | 99            | 3.2 | 1362              | 0.073     | 100        | 9.7         | LOS A            | 1.5               | 10.7   | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 505          | 1.8 | 505           | 1.8 | 1237              | 0.408     | 100        | 11.0        | LOS B            | 14.1              | 99.9   | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 505          | 1.8 | 505           | 1.8 | 1237              | 0.408     | 100        | 11.0        | LOS B            | 14.1              | 99.9   | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 41           | 0.0 | 41            | 0.0 | 270               | 0.152     | 100        | 33.7        | LOS C            | 1.5               | 10.4   | Short       | 75          | 0.0       | NA           |
| Approach                 | 1149         | 1.8 | 1149          | 1.8 |                   | 0.408     |            | 11.7        | LOS B            | 14.1              | 99.9   |             |             |           |              |
| West: Maria Lievens Road |              |     |               |     |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 52           | 0.0 | 52            | 0.0 | 182               | 0.283     | 100        | 58.0        | LOS E            | 2.9               | 20.3   | Full        | 25          | 0.0       | 0.0          |
| Lane 2                   | 26           | 0.0 | 26            | 0.0 | 210               | 0.125     | 100        | 62.7        | LOS E            | 1.5               | 10.5   | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 78           | 0.0 | 78            | 0.0 |                   | 0.283     |            | 59.6        | LOS E            | 2.9               | 20.3   |             |             |           |              |
| All Vehicles             | 4024         | 0.9 | 4024          | 0.9 |                   | 0.933     |            | 37.6        | LOS D            | 70.8              | 497.9  |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akcelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov.            | L2 | T1 | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|----|-------|-----|-------|-----------|------------|--------------|--------------|
| From S To Exit: | W  | N  | E  |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 14 | -  | -  | 14    | 0.0 | 1192  | 0.011     | 100        | 0.0          | 2            |

|          |    |      |    |      |     |                   |       |     |     |    |
|----------|----|------|----|------|-----|-------------------|-------|-----|-----|----|
| Lane 2   | -  | 1154 | -  | 1154 | 0.5 | 1238 <sup>1</sup> | 0.933 | 100 | NA  | NA |
| Lane 3   | -  | 1147 | -  | 1147 | 0.5 | 1230 <sup>1</sup> | 0.933 | 100 | NA  | NA |
| Lane 4   | -  | -    | 23 | 23   | 4.5 | 810               | 0.029 | 100 | 0.0 | 3  |
| Approach | 14 | 2301 | 23 | 2338 | 0.5 |                   | 0.933 |     |     |    |

**East: Webersvallei Road**

| Mov.     | L2 | T1 | R2  | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|-----|-------|-----|-------|-------|-------|--------|------|
| From E   |    |    |     |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | S  | W  | N   |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 47 | 51 | -   | 98    | 1.1 | 327   | 0.299 | 100   | 0.0    | 2    |
| Lane 2   | -  | -  | 181 | 181   | 0.3 | 255   | 0.708 | 100   | NA     | NA   |
| Lane 3   | -  | -  | 181 | 181   | 0.3 | 255   | 0.708 | 100   | 60.8   | 2    |
| Approach | 47 | 51 | 361 | 459   | 0.5 |       | 0.708 |       |        |      |

**North: R44\_N**

| Mov.     | L2 | T1   | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|------|----|-------|-----|-------|-------|-------|--------|------|
| From N   |    |      |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | E  | S    | W  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 99 | -    | -  | 99    | 3.2 | 1362  | 0.073 | 100   | 0.0    | 2    |
| Lane 2   | -  | 505  | -  | 505   | 1.8 | 1237  | 0.408 | 100   | NA     | NA   |
| Lane 3   | -  | 505  | -  | 505   | 1.8 | 1237  | 0.408 | 100   | NA     | NA   |
| Lane 4   | -  | -    | 41 | 41    | 0.0 | 270   | 0.152 | 100   | 0.0    | 3    |
| Approach | 99 | 1009 | 41 | 1149  | 1.8 |       | 0.408 |       |        |      |

**West: Maria Lievens Road**

| Mov.     | L2 | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|----|-------|-----|-------|-------|-------|--------|------|
| From W   |    |    |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | N  | E  | S  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 41 | 11 | -  | 52    | 0.0 | 182   | 0.283 | 100   | NA     | NA   |
| Lane 2   | -  | -  | 26 | 26    | 0.0 | 210   | 0.125 | 100   | NA     | NA   |
| Approach | 41 | 11 | 26 | 78    | 0.0 |       | 0.283 |       |        |      |

Total %HV Deg. Satn (v/c)

All Vehicles 4024 0.9 0.933

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

**Merge Analysis**

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane % | Flow Rate veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-------------------------|-----------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-------------------------|-----------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

**Variable Demand Analysis**

|  | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|

**South: R44\_S**

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |

**East: Webersvallei Road**

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

|                          |     |     |     |     |
|--------------------------|-----|-----|-----|-----|
| Lane 2                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3                   | 0.0 | 0.0 | 0.0 | 0.0 |
| North: R44_N             |     |     |     |     |
| Lane 1                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4                   | 0.0 | 0.0 | 0.0 | 0.0 |
| West: Maria Lievens Road |     |     |     |     |
| Lane 1                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2                   | 0.0 | 0.0 | 0.0 | 0.0 |

## LANE SUMMARY

 **Site: WebFres [Webersvallei Rd X Fresno St AM (Site Folder: Scenario 0 - Base Year - AM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current AM Peak.

Site Category: Base Year

Roundabout

| Lane Use and Performance        |                 |          |                 |          |       |           |            |             |                  |                   |          |             |             |                        |
|---------------------------------|-----------------|----------|-----------------|----------|-------|-----------|------------|-------------|------------------|-------------------|----------|-------------|-------------|------------------------|
|                                 | Demand Flows    |          | Arrival Flows   |          | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |          | Lane Config | Lane Length | Cap. Prob. Adj. Block. |
|                                 | [ Total veh/h ] | [ HV % ] | [ Total veh/h ] | [ HV % ] | veh/h | v/c       | %          | sec         |                  | [ Veh ]           | [ Dist ] |             | m           | % %                    |
| <b>South: Fresno Street</b>     |                 |          |                 |          |       |           |            |             |                  |                   |          |             |             |                        |
| Lane 1 <sup>d</sup>             | 108             | 0.0      | 108             | 0.0      | 987   | 0.110     | 100        | 6.7         | LOS A            | 0.6               | 3.9      | Full        | 160         | 0.0 0.0                |
| Approach                        | 108             | 0.0      | 108             | 0.0      |       | 0.110     |            | 6.7         | LOS A            | 0.6               | 3.9      |             |             |                        |
| <b>East: Webersvallei Rd_SE</b> |                 |          |                 |          |       |           |            |             |                  |                   |          |             |             |                        |
| Lane 1 <sup>d</sup>             | 315             | 0.3      | 315             | 0.3      | 1450  | 0.217     | 100        | 5.0         | LOS A            | 1.2               | 8.3      | Full        | 220         | 0.0 0.0                |
| Approach                        | 315             | 0.3      | 315             | 0.3      |       | 0.217     |            | 5.0         | LOS A            | 1.2               | 8.3      |             |             |                        |
| <b>West: Webersvallei Rd_NW</b> |                 |          |                 |          |       |           |            |             |                  |                   |          |             |             |                        |
| Lane 1 <sup>d</sup>             | 142             | 0.7      | 142             | 0.7      | 1625  | 0.087     | 100        | 5.4         | LOS A            | 0.5               | 3.5      | Full        | 130         | 0.0 0.0                |
| Approach                        | 142             | 0.7      | 142             | 0.7      |       | 0.087     |            | 5.4         | LOS A            | 0.5               | 3.5      |             |             |                        |
| All Vehicles                    | 565             | 0.4      | 565             | 0.4      |       | 0.217     |            | 5.4         | LOS A            | 1.2               | 8.3      |             |             |                        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

| Approach Lane Flows (veh/h)     |     |     |       |     |            |           |            |              |              |  |
|---------------------------------|-----|-----|-------|-----|------------|-----------|------------|--------------|--------------|--|
| <b>South: Fresno Street</b>     |     |     |       |     |            |           |            |              |              |  |
| Mov.                            | L2  | R2  | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From S To Exit:                 | W   | E   |       |     | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                          | 106 | 2   | 108   | 0.0 | 987        | 0.110     | 100        | NA           | NA           |  |
| Approach                        | 106 | 2   | 108   | 0.0 |            | 0.110     |            |              |              |  |
| <b>East: Webersvallei Rd_SE</b> |     |     |       |     |            |           |            |              |              |  |
| Mov.                            | L2  | T1  | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From E To Exit:                 | S   | W   |       |     | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                          | 8   | 306 | 315   | 0.3 | 1450       | 0.217     | 100        | NA           | NA           |  |
| Approach                        | 8   | 306 | 315   | 0.3 |            | 0.217     |            |              |              |  |
| <b>West: Webersvallei Rd_NW</b> |     |     |       |     |            |           |            |              |              |  |
| Mov.                            | T1  | R2  | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From W To Exit:                 | E   | S   |       |     | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                          | 115 | 27  | 142   | 0.7 | 1625       | 0.087     | 100        | NA           | NA           |  |



|          |     |    |     |     |       |
|----------|-----|----|-----|-----|-------|
| Approach | 115 | 27 | 142 | 0.7 | 0.087 |
|----------|-----|----|-----|-----|-------|

| Total | %HV | Deg.Satn (v/c) |
|-------|-----|----------------|
|-------|-----|----------------|

|              |     |     |       |
|--------------|-----|-----|-------|
| All Vehicles | 565 | 0.4 | 0.217 |
|--------------|-----|-----|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Oposing Flow Rate % veh/h pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|---------------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|---------------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

| Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|---------------------------|----------------------------|---------------------------------------|--------------------------|
|---------------------------|----------------------------|---------------------------------------|--------------------------|

South: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

East: Webersvallei Rd\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

West: Webersvallei Rd\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:17

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site: R44Sch [R44 X School Rd AM (Site Folder: Scenario 0 - Base Year - AM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current AM Peak.

Site Category: Base Year

Stop (Two-Way)

| Lane Use and Performance |               |      |               |      |      |           |            |             |                  |                   |          |             |             |           |              |
|--------------------------|---------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|----------|-------------|-------------|-----------|--------------|
|                          | Demand Flows  |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |          | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total veh/h | HV % | [ Total veh/h | HV % |      |           |            |             |                  | [ Veh             | Dist ] m |             |             |           |              |
| South: R44_SW            |               |      |               |      |      |           |            |             |                  |                   |          |             |             |           |              |
| Lane 1                   | 1894          | 0.5  | 1894          | 0.5  | 1944 | 0.974     | 100        | 27.4        | LOS D            | 0.0               | 0.0      | Full        | 2600        | 0.0       | 0.0          |
| Lane 2                   | 558           | 2.1  | 558           | 2.1  | 572  | 0.974     | 100        | 151.6       | LOS F            | 58.6              | 417.2    | Full        | 2600        | 0.0       | 0.0          |
| Approach                 | 2452          | 0.9  | 2452          | 0.9  |      | 0.974     |            | 55.6        | NA               | 58.6              | 417.2    |             |             |           |              |
| East: School Road        |               |      |               |      |      |           |            |             |                  |                   |          |             |             |           |              |
| Lane 1                   | 104           | 6.1  | 104           | 6.1  | 92   | 1.138     | 100        | 152.4       | LOS F            | 10.7              | 79.1     | Full        | 270         | 0.0       | 0.0          |
| Approach                 | 104           | 6.1  | 104           | 6.1  |      | 1.138     |            | 152.4       | LOS F            | 10.7              | 79.1     |             |             |           |              |
| North: R44_NE            |               |      |               |      |      |           |            |             |                  |                   |          |             |             |           |              |
| Lane 1                   | 32            | 3.3  | 32            | 3.3  | 1814 | 0.017     | 100        | 5.6         | LOS A            | 0.0               | 0.0      | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 526           | 1.7  | 526           | 1.7  | 1929 | 0.273     | 100        | 0.1         | LOS A            | 0.0               | 0.0      | Full        | 580         | 0.0       | 0.0          |
| Lane 3                   | 526           | 1.7  | 526           | 1.7  | 1929 | 0.273     | 100        | 0.1         | LOS A            | 0.0               | 0.0      | Full        | 580         | 0.0       | 0.0          |
| Approach                 | 1084          | 1.7  | 1084          | 1.7  |      | 0.273     |            | 0.3         | NA               | 0.0               | 0.0      |             |             |           |              |
| All Vehicles             | 3640          | 1.3  | 3640          | 1.3  |      | 1.138     |            | 41.9        | NA               | 58.6              | 417.2    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

South: R44\_SW

| Mov.            | T1   | R2  | Total | %HV | Cap.<br>veh/h | Deg. Satn<br>v/c | Lane Util.<br>% | Prob. SL Ov.<br>% | Ov. Lane No. |
|-----------------|------|-----|-------|-----|---------------|------------------|-----------------|-------------------|--------------|
| From S To Exit: | N    | E   |       |     |               |                  |                 |                   |              |
| Lane 1          | 1894 | -   | 1894  | 0.5 | 1944          | 0.974            | 100             | NA                | NA           |
| Lane 2          | 436  | 122 | 558   | 2.1 | 572           | 0.974            | 100             | NA                | NA           |
| Approach        | 2329 | 122 | 2452  | 0.9 |               | 0.974            |                 |                   |              |

East: School Road

| Mov.            | L2  | R2 | Total | %HV | Cap.<br>veh/h | Deg. Satn<br>v/c | Lane Util.<br>% | Prob. SL Ov.<br>% | Ov. Lane No. |
|-----------------|-----|----|-------|-----|---------------|------------------|-----------------|-------------------|--------------|
| From E To Exit: | S   | N  |       |     |               |                  |                 |                   |              |
| Lane 1          | 100 | 4  | 104   | 6.1 | 92            | 1.138            | 100             | NA                | NA           |
| Approach        | 100 | 4  | 104   | 6.1 |               | 1.138            |                 |                   |              |

North: R44\_NE

| Mov.<br>From N<br>To Exit: | L2   | T1   | Total | %HV   | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util. SL | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|------|------|-------|-------|---------------|---------------------|------------------|----------------------|--------------------|
| Lane 1                     | 32   | -    | 32    | 3.3   | 1814          | 0.017               | 100              | 0.0                  | 2                  |
| Lane 2                     | -    | 526  | 526   | 1.7   | 1929          | 0.273               | 100              | NA                   | NA                 |
| Lane 3                     | -    | 526  | 526   | 1.7   | 1929          | 0.273               | 100              | NA                   | NA                 |
| Approach                   | 32   | 1053 | 1084  | 1.7   |               | 0.273               |                  |                      |                    |
| Total %HV Deg.Satn (v/c)   |      |      |       |       |               |                     |                  |                      |                    |
| All Vehicles               | 3640 | 1.3  |       | 1.138 |               |                     |                  |                      |                    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% | Flow Rate<br>veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane<br>Flow<br>Rate<br>veh/h | Capacity<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------|--------------------|--------------------------------|------------------------|-----------------------------|-------------------------------|-------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------|--------------------|--------------------------------|------------------------|-----------------------------|-------------------------------|-------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                   | Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand<br>to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|-------------------|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|
| South: R44_SW     |                                    |                                     |                                                   |                                   |
| Lane 1            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| Lane 2            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| East: School Road |                                    |                                     |                                                   |                                   |
| Lane 1            | 0.0                                | 6.3                                 | 248.9                                             | NA                                |
| North: R44_NE     |                                    |                                     |                                                   |                                   |
| Lane 1            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| Lane 2            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| Lane 3            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |

## LANE SUMMARY

**Site:** SchFres [School Rd X Fresno St AM (Site Folder: Scenario 0 - Base Year - AM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current AM Peak.

Site Category: Base Year

Stop (Two-Way)

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |       |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|-------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |       | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [Total       | HV]  | [Total        | HV]  |      |           |            |             |                  | [Veh              | Dist] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |           |            |             |                  | veh/h             | v/c   |             |             |           |              |
| East: School Road_SE     |              |      |               |      |      |           |            |             |                  |                   |       |             |             |           |              |
| Lane 1                   | 58           | 7.3  | 58            | 7.3  | 1785 | 0.032     | 100        | 1.2         | LOS A            | 0.1               | 0.5   | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 58           | 7.3  | 58            | 7.3  |      | 0.032     |            | 1.2         | NA               | 0.1               | 0.5   |             |             |           |              |
| North: Fresno Street     |              |      |               |      |      |           |            |             |                  |                   |       |             |             |           |              |
| Lane 1                   | 48           | 17.4 | 48            | 17.4 | 1016 | 0.048     | 100        | 8.9         | LOS A            | 0.2               | 1.3   | Full        | 240         | 0.0       | 0.0          |
| Approach                 | 48           | 17.4 | 48            | 17.4 |      | 0.048     |            | 8.9         | LOS A            | 0.2               | 1.3   |             |             |           |              |
| West: School Road_NW     |              |      |               |      |      |           |            |             |                  |                   |       |             |             |           |              |
| Lane 1                   | 81           | 11.7 | 81            | 11.7 | 1771 | 0.046     | 100        | 2.4         | LOS A            | 0.0               | 0.0   | Full        | 150         | 0.0       | 0.0          |
| Approach                 | 81           | 11.7 | 81            | 11.7 |      | 0.046     |            | 2.4         | NA               | 0.0               | 0.0   |             |             |           |              |
| All Vehicles             | 187          | 11.8 | 187           | 11.8 |      | 0.048     |            | 3.7         | NA               | 0.2               | 1.3   |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Approach Lane Flows (veh/h) |    |    |       |      |            |           |            |              |              |  |
|-----------------------------|----|----|-------|------|------------|-----------|------------|--------------|--------------|--|
| <b>East: School Road_SE</b> |    |    |       |      |            |           |            |              |              |  |
| Mov.                        | T1 | R2 | Total | %HV  |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From E To Exit:             | W  | N  |       |      | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                      | 46 | 12 | 58    | 7.3  | 1785       | 0.032     | 100        | NA           | NA           |  |
| Approach                    | 46 | 12 | 58    | 7.3  |            | 0.032     |            |              |              |  |
| <b>North: Fresno Street</b> |    |    |       |      |            |           |            |              |              |  |
| Mov.                        | L2 | R2 | Total | %HV  |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From N To Exit:             | E  | W  |       |      | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                      | 15 | 34 | 48    | 17.4 | 1016       | 0.048     | 100        | NA           | NA           |  |
| Approach                    | 15 | 34 | 48    | 17.4 |            | 0.048     |            |              |              |  |
| <b>West: School Road_NW</b> |    |    |       |      |            |           |            |              |              |  |
| Mov.                        | L2 | T1 | Total | %HV  |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From W To Exit:             | N  | E  |       |      | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                      | 35 | 46 | 81    | 11.7 | 1771       | 0.046     | 100        | NA           | NA           |  |

|          |    |    |    |      |       |
|----------|----|----|----|------|-------|
| Approach | 35 | 46 | 81 | 11.7 | 0.046 |
|----------|----|----|----|------|-------|

|       |     |                 |
|-------|-----|-----------------|
| Total | %HV | Deg. Satn (v/c) |
|-------|-----|-----------------|

|              |     |      |       |
|--------------|-----|------|-------|
| All Vehicles | 187 | 11.8 | 0.048 |
|--------------|-----|------|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Opposing Flow Rate %veh/h pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|---------------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|---------------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|  | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|

East: School Road\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

North: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

West: School Road\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:18

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extension.sip9

## LANE SUMMARY

**Site:** SchAcc [School Rd X Access Road AM (Site Folder: Scenario 0 - Base Year - AM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current AM Peak.

Site Category: Base Year

Stop (All-Way)

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | Queue             |        |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| South: Access Road       |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 32           | 0.0  | 32            | 0.0  | 403  | 0.078     | 100        | 15.5        | LOS C            | 0.3               | 1.8    | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 32           | 0.0  | 32            | 0.0  |      | 0.078     |            | 15.5        | LOS C            | 0.3               | 1.8    |             |             |           |              |
| East: School Road_SE     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 7            | 42.9 | 7             | 42.9 | 419  | 0.018     | 100        | 16.5        | LOS C            | 0.1               | 0.5    | Full        | 400         | 0.0       | 0.0          |
| Approach                 | 7            | 42.9 | 7             | 42.9 |      | 0.018     |            | 16.5        | LOS C            | 0.1               | 0.5    |             |             |           |              |
| North: Blakemore Street  |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 38           | 2.8  | 38            | 2.8  | 760  | 0.050     | 100        | 8.8         | LOS A            | 0.1               | 1.0    | Full        | 50          | 0.0       | 0.0          |
| Approach                 | 38           | 2.8  | 38            | 2.8  |      | 0.050     |            | 8.8         | LOS A            | 0.1               | 1.0    |             |             |           |              |
| West: School Road_NW     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 59           | 14.3 | 59            | 14.3 | 507  | 0.116     | 100        | 14.5        | LOS B            | 0.4               | 3.0    | Full        | 260         | 0.0       | 0.0          |
| Approach                 | 59           | 14.3 | 59            | 14.3 |      | 0.116     |            | 14.5        | LOS B            | 0.4               | 3.0    |             |             |           |              |
| All Vehicles             | 136          | 9.3  | 136           | 9.3  |      | 0.116     |            | 13.3        | LOS B            | 0.4               | 3.0    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

**South: Access Road**

| Mov.            | L2 | T1 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From S To Exit: | W  | N  |       |     |      |           |            |              |              |
| Lane 1          | 19 | 13 | 32    | 0.0 | 403  | 0.078     | 100        | NA           | NA           |
| Approach        | 19 | 13 | 32    | 0.0 |      | 0.078     |            |              |              |

**East: School Road\_SE**

| Mov.            | T1 | Total | %HV  | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|-------|------|------|-----------|------------|--------------|--------------|
| From E To Exit: | W  |       |      |      |           |            |              |              |
| Lane 1          | 7  | 7     | 42.9 | 419  | 0.018     | 100        | NA           | NA           |
| Approach        | 7  | 7     | 42.9 |      | 0.018     |            |              |              |

**North: Blakemore Street**

| Mov.            | L2 | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From N To Exit: | E  | S  | W  |       |     |      |           |            |              |              |
| Lane 1          | 1  | 6  | 31 | 38    | 2.8 | 760  | 0.050     | 100        | NA           | NA           |



|          |   |   |    |    |     |       |
|----------|---|---|----|----|-----|-------|
| Approach | 1 | 6 | 31 | 38 | 2.8 | 0.050 |
|----------|---|---|----|----|-----|-------|

**West: School Road\_NW**

| Mov.     | L2 | T1 | R2 | Total | %HV  | Cap.  | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|----|----|-------|------|-------|-------|-------|-------|------|
| From W   |    |    |    |       |      | veh/h | Satn  | Util. | SL    | Lane |
| To Exit: | N  | E  | S  |       |      |       | v/c   | %     | %     | No.  |
| Lane 1   | 38 | 12 | 9  | 59    | 14.3 | 507   | 0.116 | 100   | NA    | NA   |
| Approach | 38 | 12 | 9  | 59    | 14.3 |       | 0.116 |       |       |      |

| Total | %HV | Deg. | Satn (v/c) |
|-------|-----|------|------------|
|-------|-----|------|------------|

|              |     |     |       |
|--------------|-----|-----|-------|
| All Vehicles | 136 | 9.3 | 0.116 |
|--------------|-----|-----|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

**Merge Analysis**

| Exit Lane Number | Short Lane Length | Percent Opng in Lane | Opposing Flow Rate | Critical Gap | Follow-up Headway | Lane Capacity | Deg. Satn | Min. Delay | Merge Delay |
|------------------|-------------------|----------------------|--------------------|--------------|-------------------|---------------|-----------|------------|-------------|
|                  | m                 | %                    | veh/h              | pcu/h        | sec               | sec           | veh/h     | veh/h      | sec         |

There are no Exit Short Lanes for Merge Analysis at this Site.

**Variable Demand Analysis**

|                         | Initial Queued Demand | Residual Queued Demand | Time for Residual Demand to Clear | Duration of Oversatn |
|-------------------------|-----------------------|------------------------|-----------------------------------|----------------------|
|                         | veh                   | veh                    | sec                               | sec                  |
| South: Access Road      |                       |                        |                                   |                      |
| Lane 1                  | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| East: School Road_SE    |                       |                        |                                   |                      |
| Lane 1                  | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| North: Blakemore Street |                       |                        |                                   |                      |
| Lane 1                  | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| West: School Road_NW    |                       |                        |                                   |                      |
| Lane 1                  | 0.0                   | 0.0                    | 0.0                               | 0.0                  |



## LANE SUMMARY

**Site: R44Webl [R44 X Webersvallei Rd AM (Site Folder: Scenario 0 - Base Year - AM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

2023 AM Peak.

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|-------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |                   |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |                   |           |            |             |                  |                   |        |             |             |           |              |
| South: R44_S             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 14           | 0.0  | 14            | 0.0  | 1064              | 0.013     | 100        | 18.9        | LOS B            | 0.3               | 2.0    | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 765          | 0.5  | 765           | 0.5  | 1114 <sup>1</sup> | 0.686     | 100        | 19.8        | LOS B            | 26.1              | 183.4  | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 768          | 0.5  | 768           | 0.5  | 1119              | 0.686     | 100        | 16.2        | LOS B            | 26.2              | 184.2  | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 768          | 0.5  | 768           | 0.5  | 1119              | 0.686     | 100        | 35.4        | LOS D            | 26.2              | 184.2  | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 33           | 32.3 | 33            | 32.3 | 682               | 0.048     | 100        | 12.8        | LOS B            | 0.5               | 4.9    | Short       | 120         | 0.0       | NA           |
| Approach                 | 2347         | 0.9  | 2347          | 0.9  |                   | 0.686     |            | 23.6        | LOS C            | 26.2              | 184.2  |             |             |           |              |
| East: Webersvallei Road  |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 47           | 2.2  | 47            | 2.2  | 570               | 0.083     | 100        | 31.7        | LOS C            | 1.6               | 11.6   | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 51           | 0.0  | 51            | 0.0  | 372               | 0.136     | 100        | 36.6        | LOS D            | 2.1               | 14.5   | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 180          | 0.3  | 180           | 0.3  | 320               | 0.562     | 100        | 49.7        | LOS D            | 8.4               | 58.8   | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 181          | 0.3  | 181           | 0.3  | 322               | 0.562     | 100        | 49.6        | LOS D            | 8.4               | 59.1   | Short       | 40          | 0.0       | NA           |
| Approach                 | 459          | 0.5  | 459           | 0.5  |                   | 0.562     |            | 46.3        | LOS D            | 8.4               | 59.1   |             |             |           |              |
| North: R44_N             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 99           | 3.2  | 99            | 3.2  | 1278              | 0.077     | 100        | 10.6        | LOS B            | 1.5               | 10.7   | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 336          | 1.8  | 336           | 1.8  | 1110              | 0.303     | 100        | 11.9        | LOS B            | 8.4               | 59.8   | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 336          | 1.8  | 336           | 1.8  | 1110              | 0.303     | 100        | 11.9        | LOS B            | 8.4               | 59.8   | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 336          | 1.8  | 336           | 1.8  | 1110              | 0.303     | 100        | 12.7        | LOS B            | 8.4               | 59.8   | Short       | 145         | 0.0       | NA           |
| Lane 5                   | 41           | 0.0  | 41            | 0.0  | 412               | 0.100     | 100        | 17.5        | LOS B            | 0.7               | 4.9    | Short       | 70          | 0.0       | NA           |
| Approach                 | 1149         | 1.8  | 1149          | 1.8  |                   | 0.303     |            | 12.2        | LOS B            | 8.4               | 59.8   |             |             |           |              |
| West: Maria Lievens Road |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 52           | 0.0  | 52            | 0.0  | 219               | 0.236     | 100        | 46.7        | LOS D            | 2.4               | 16.5   | Full        | 25          | 0.0       | 0.0          |
| Lane 2                   | 26           | 0.0  | 26            | 0.0  | 250               | 0.105     | 100        | 51.8        | LOS D            | 1.2               | 8.6    | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 78           | 0.0  | 78            | 0.0  |                   | 0.236     |            | 48.4        | LOS D            | 2.4               | 16.5   |             |             |           |              |
| All Vehicles             | 4034         | 1.1  | 4034          | 1.1  |                   | 0.686     |            | 23.4        | LOS C            | 26.2              | 184.2  |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov. | L2 | T1 | R2 | Total | %HV | Deg. | Lane | Prob. | Ov. |
|------|----|----|----|-------|-----|------|------|-------|-----|
|------|----|----|----|-------|-----|------|------|-------|-----|

| From S<br>To Exit: | W  | N    | E  |      |      | Cap.<br>veh/h     | Satn<br>v/c | Util.<br>% | SL Ov.<br>% | Lane<br>No. |
|--------------------|----|------|----|------|------|-------------------|-------------|------------|-------------|-------------|
| Lane 1             | 14 | -    | -  | 14   | 0.0  | 1064              | 0.013       | 100        | 0.0         | 2           |
| Lane 2             | -  | 765  | -  | 765  | 0.5  | 1114 <sup>1</sup> | 0.686       | 100        | NA          | NA          |
| Lane 3             | -  | 768  | -  | 768  | 0.5  | 1119              | 0.686       | 100        | NA          | NA          |
| Lane 4             | -  | 768  | -  | 768  | 0.5  | 1119              | 0.686       | 100        | 0.0         | 3           |
| Lane 5             | -  | -    | 33 | 33   | 32.3 | 682               | 0.048       | 100        | 0.0         | 4           |
| Approach           | 14 | 2301 | 33 | 2347 | 0.9  |                   | 0.686       |            |             |             |

## East: Webersvallei Road

| Mov.               | L2 | T1 | R2  | Total | %HV |               | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|--------------------|----|----|-----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| From E<br>To Exit: | S  | W  | N   |       |     | Cap.<br>veh/h |                     |                    |                      |                    |
| Lane 1             | 47 | -  | -   | 47    | 2.2 | 570           | 0.083               | 100                | 0.0                  | 2                  |
| Lane 2             | -  | 51 | -   | 51    | 0.0 | 372           | 0.136               | 100                | NA                   | NA                 |
| Lane 3             | -  | -  | 180 | 180   | 0.3 | 320           | 0.562               | 100                | 0.0                  | 2                  |
| Lane 4             | -  | -  | 181 | 181   | 0.3 | 322           | 0.562               | 100                | 40.6                 | 3                  |
| Approach           | 47 | 51 | 361 | 459   | 0.5 |               | 0.562               |                    |                      |                    |

## North: R44\_N

| Mov.               | L2 | T1   | R2 | Total | %HV |               | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|--------------------|----|------|----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| From N<br>To Exit: | E  | S    | W  |       |     | Cap.<br>veh/h |                     |                    |                      |                    |
| Lane 1             | 99 | -    | -  | 99    | 3.2 | 1278          | 0.077               | 100                | 0.0                  | 2                  |
| Lane 2             | -  | 336  | -  | 336   | 1.8 | 1110          | 0.303               | 100                | NA                   | NA                 |
| Lane 3             | -  | 336  | -  | 336   | 1.8 | 1110          | 0.303               | 100                | NA                   | NA                 |
| Lane 4             | -  | 336  | -  | 336   | 1.8 | 1110          | 0.303               | 100                | 0.0                  | 3                  |
| Lane 5             | -  | -    | 41 | 41    | 0.0 | 412           | 0.100               | 100                | 0.0                  | 4                  |
| Approach           | 99 | 1009 | 41 | 1149  | 1.8 |               | 0.303               |                    |                      |                    |

## West: Maria Lievens Road

| Mov.               | L2 | T1 | R2 | Total | %HV |               | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|--------------------|----|----|----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| From W<br>To Exit: | N  | E  | S  |       |     | Cap.<br>veh/h |                     |                    |                      |                    |
| Lane 1             | 41 | 11 | -  | 52    | 0.0 | 219           | 0.236               | 100                | NA                   | NA                 |
| Lane 2             | -  | -  | 26 | 26    | 0.0 | 250           | 0.105               | 100                | NA                   | NA                 |
| Approach           | 41 | 11 | 26 | 78    | 0.0 |               | 0.236               |                    |                      |                    |

| Total        | %HV  | Deg. | Satn (v/c) |
|--------------|------|------|------------|
| All Vehicles | 4034 | 1.1  | 0.686      |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

## Merge Analysis

|                                                  | Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Oppng in<br>Lane<br>% veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane<br>Capacity<br>Flow<br>Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |     |
|--------------------------------------------------|------------------------|------------------------------|----------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------------|---------------------|----------------------|-----------------------|-----|
| South Exit: R44_S<br>Merge Type: <b>Priority</b> |                        |                              |                                        |                                |                        |                             |                                           |                     |                      |                       |     |
| Exit Short Lane                                  | 3                      | 140                          | 0.0                                    | 363                            | 366                    | 3.03                        | 2.02                                      | 336                 | 1409                 | 0.239                 | 0.6 |
| Merge Lane                                       | 2                      | -                            | 100.0                                  | Merge Lane is not Opposed      |                        |                             | 363                                       | 1800                | 0.202                | 0.0                   |     |
| North Exit: R44_N<br>Merge Type: <b>Priority</b> |                        |                              |                                        |                                |                        |                             |                                           |                     |                      |                       |     |
| Exit Short Lane                                  | 3                      | 145                          | 0.0                                    | 949                            | 951                    | 3.01                        | 2.01                                      | 768                 | 801                  | 0.959                 | 2.4 |
| Merge Lane                                       | 2                      | -                            | 100.0                                  | Merge Lane is not Opposed      |                        |                             | 949                                       | 1800                | 0.527                | 0.0                   |     |

| Variable Demand Analysis        |                             |                              |                                            |                            |
|---------------------------------|-----------------------------|------------------------------|--------------------------------------------|----------------------------|
|                                 | Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand<br>to Clear | Duration<br>of<br>Oversatn |
|                                 | veh                         | veh                          | sec                                        | sec                        |
| <b>South: R44_S</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>East: Webersvallei Road</b>  |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>North: R44_N</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>West: Maria Lievens Road</b> |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Thursday, 15 February 2024 12:30:26

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site: R44Web [R44 X Webersvallei Rd PM (Site Folder: Scenario 0 - Base Year - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current PM Peak.

Site Category: Base Year

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |                    |             |                    |             |                   |           |            |             |                  |                   |               |             |             |           |                   |
|--------------------------|--------------------|-------------|--------------------|-------------|-------------------|-----------|------------|-------------|------------------|-------------------|---------------|-------------|-------------|-----------|-------------------|
|                          | Demand Flows       |             | Arrival Flows      |             | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |               | Lane Config | Lane Length | Cap. Adj. | Prob. Block.      |
|                          | [ Total<br>veh/h ] | [ HV<br>% ] | [ Total<br>veh/h ] | [ HV<br>% ] |                   |           |            |             |                  | [ Veh ]           | [ Dist<br>m ] |             |             |           |                   |
| South: R44_S             |                    |             |                    |             |                   |           |            |             |                  |                   |               |             |             |           |                   |
| Lane 1                   | 52                 | 2.0         | 52                 | 2.0         | 1159              | 0.044     | 100        | 14.2        | LOS B            | 1.1               | 7.9           | Short       | 90          | 0.0       | NA                |
| Lane 2                   | 568                | 3.2         | 568                | 3.2         | 1210              | 0.469     | 100        | 12.1        | LOS B            | 17.0              | 122.3         | Full        | 2500        | 0.0       | 0.0               |
| Lane 3                   | 568                | 3.2         | 568                | 3.2         | 1210              | 0.469     | 100        | 12.1        | LOS B            | 17.0              | 122.3         | Full        | 2500        | 0.0       | 0.0               |
| Lane 4                   | 131                | 0.0         | 131                | 0.0         | 243               | 0.537     | 100        | 40.8        | LOS D            | 5.4               | 37.5          | Short       | 120         | 0.0       | NA                |
| Approach                 | 1318               | 2.8         | 1318               | 2.8         |                   | 0.537     |            | 15.0        | LOS B            | 17.0              | 122.3         |             |             |           |                   |
| East: Webersvallei Road  |                    |             |                    |             |                   |           |            |             |                  |                   |               |             |             |           |                   |
| Lane 1                   | 335                | 1.3         | 335                | 1.3         | 340 <sup>1</sup>  | 0.985     | 100        | 116.3       | LOS F            | 27.1              | 192.0         | Short       | 40          | 0.0       | NA                |
| Lane 2                   | 157                | 1.0         | 157                | 1.0         | 272               | 0.576     | 100        | 102.0       | LOS F            | 8.9               | 62.6          | Full        | 110         | 0.0       | 56.3 <sup>8</sup> |
| Lane 3                   | 157                | 1.0         | 157                | 1.0         | 272               | 0.576     | 100        | 59.7        | LOS E            | 8.9               | 62.6          | Short       | 40          | 0.0       | NA                |
| Approach                 | 648                | 1.1         | 648                | 1.1         |                   | 0.985     |            | 99.2        | LOS F            | 27.1              | 192.0         |             |             |           |                   |
| North: R44_N             |                    |             |                    |             |                   |           |            |             |                  |                   |               |             |             |           |                   |
| Lane 1                   | 446                | 0.7         | 446                | 0.7         | 1386              | 0.322     | 100        | 22.9        | LOS C            | 8.4               | 59.2          | Short       | 70          | 0.0       | NA                |
| Lane 2                   | 940                | 0.4         | 940                | 0.4         | 921 <sup>1</sup>  | 1.020     | 100        | 96.3        | LOS F            | 83.4              | 585.8         | Full        | 650         | 0.0       | 0.0               |
| Lane 3                   | 1197               | 0.4         | 1197               | 0.4         | 1174 <sup>1</sup> | 1.020     | 100        | 93.4        | LOS F            | 102.3             | 718.5         | Full        | 650         | 0.0       | 14.1              |
| Lane 4                   | 57                 | 1.9         | 57                 | 1.9         | 745               | 0.076     | 100        | 45.1        | LOS D            | 1.0               | 7.0           | Short       | 75          | 0.0       | NA                |
| Approach                 | 2640               | 0.5         | 2640               | 0.5         |                   | 1.020     |            | 81.4        | LOS F            | 102.3             | 718.5         |             |             |           |                   |
| West: Maria Lievens Road |                    |             |                    |             |                   |           |            |             |                  |                   |               |             |             |           |                   |
| Lane 1                   | 103                | 1.0         | 103                | 1.0         | 167               | 0.620     | 100        | 61.7        | LOS E            | 6.1               | 43.3          | Full        | 25          | 0.0       | 55.5              |
| Lane 2                   | 66                 | 1.6         | 66                 | 1.6         | 149               | 0.446     | 100        | 67.5        | LOS E            | 4.0               | 28.1          | Full        | 25          | 0.0       | 15.7              |
| Approach                 | 169                | 1.2         | 169                | 1.2         |                   | 0.620     |            | 64.0        | LOS E            | 6.1               | 43.3          |             |             |           |                   |
| All Vehicles             | 4776               | 1.2         | 4776               | 1.2         |                   | 1.020     |            | 64.9        | LOS E            | 102.3             | 718.5         |             |             |           |                   |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes.

Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

<sup>8</sup> Probability of Blockage has been set on the basis of a queue that overflows from a short lane.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov.            | L2 | T1 | R2 | Total | %HV | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|----|-------|-----|-----------|------------|--------------|--------------|
| From S To Exit: | W  | N  | E  |       |     | veh/h     | v/c        | %            | %            |

|          |    |      |     |      |     |      |       |     |     |    |
|----------|----|------|-----|------|-----|------|-------|-----|-----|----|
| Lane 1   | 52 | -    | -   | 52   | 2.0 | 1159 | 0.044 | 100 | 0.0 | 2  |
| Lane 2   | -  | 568  | -   | 568  | 3.2 | 1210 | 0.469 | 100 | NA  | NA |
| Lane 3   | -  | 568  | -   | 568  | 3.2 | 1210 | 0.469 | 100 | NA  | NA |
| Lane 4   | -  | -    | 131 | 131  | 0.0 | 243  | 0.537 | 100 | 0.0 | 3  |
| Approach | 52 | 1136 | 131 | 1318 | 2.8 |      | 0.537 |     |     |    |

## East: Webersvallei Road

| Mov.     | L2  | T1 | R2  | Total | %HV | Cap.             | Deg.  | Lane  | Prob.  | Ov.  |
|----------|-----|----|-----|-------|-----|------------------|-------|-------|--------|------|
| From E   |     |    |     |       |     |                  |       |       |        |      |
| To Exit: | S   | W  | N   |       |     | veh/h            | Satn  | Util. | SL Ov. | Lane |
|          |     |    |     |       |     |                  | v/c   | %     | %      | No.  |
| Lane 1   | 283 | 52 | -   | 335   | 1.3 | 340 <sup>1</sup> | 0.985 | 100   | 100.0  | 2    |
| Lane 2   | -   | -  | 157 | 157   | 1.0 | 272              | 0.576 | 100   | NA     | NA   |
| Lane 3   | -   | -  | 157 | 157   | 1.0 | 272              | 0.576 | 100   | 46.1   | 2    |
| Approach | 283 | 52 | 314 | 648   | 1.1 |                  | 0.985 |       |        |      |

## North: R44\_N

| Mov.     | L2  | T1   | R2 | Total | %HV | Cap.              | Deg.  | Lane  | Prob.  | Ov.  |
|----------|-----|------|----|-------|-----|-------------------|-------|-------|--------|------|
| From N   |     |      |    |       |     |                   |       |       |        |      |
| To Exit: | E   | S    | W  |       |     | veh/h             | Satn  | Util. | SL Ov. | Lane |
|          |     |      |    |       |     |                   | v/c   | %     | %      | No.  |
| Lane 1   | 446 | -    | -  | 446   | 0.7 | 1386              | 0.322 | 100   | 0.0    | 2    |
| Lane 2   | -   | 940  | -  | 940   | 0.4 | 921 <sup>1</sup>  | 1.020 | 100   | NA     | NA   |
| Lane 3   | -   | 1197 | -  | 1197  | 0.4 | 1174 <sup>1</sup> | 1.020 | 100   | NA     | NA   |
| Lane 4   | -   | -    | 57 | 57    | 1.9 | 745               | 0.076 | 100   | 0.0    | 3    |
| Approach | 446 | 2137 | 57 | 2640  | 0.5 |                   | 1.020 |       |        |      |

## West: Maria Lievens Road

| Mov.     | L2 | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|----|-------|-----|-------|-------|-------|--------|------|
| From W   |    |    |    |       |     |       |       |       |        |      |
| To Exit: | N  | E  | S  |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
|          |    |    |    |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 77 | 26 | -  | 103   | 1.0 | 167   | 0.620 | 100   | NA     | NA   |
| Lane 2   | -  | -  | 66 | 66    | 1.6 | 149   | 0.446 | 100   | NA     | NA   |
| Approach | 77 | 26 | 66 | 169   | 1.2 |       | 0.620 |       |        |      |

Total %HV Deg. Satn (v/c)

All Vehicles 4776 1.2 1.020

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

## Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane % | Flow Rate veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-------------------------|-----------------|--------------------------|------------------|-----------------------|----------------------|----------------|---------------|----------------|-----------------|
|------------------|---------------------|-------------------------|-----------------|--------------------------|------------------|-----------------------|----------------------|----------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial Queued Demand | Residual Queued Demand | Time for Residual Demand to Clear | Duration of Oversatn |
|-----------------------|------------------------|-----------------------------------|----------------------|
| veh                   | veh                    | sec                               | sec                  |

## South: R44\_S

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |

## East: Webersvallei Road

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |

## North: R44\_N

|        |     |      |      |     |
|--------|-----|------|------|-----|
| Lane 1 | 0.0 | 0.0  | 0.0  | 0.0 |
| Lane 2 | 0.0 | 9.3  | 36.4 | NA  |
| Lane 3 | 0.0 | 11.9 | 36.4 | NA  |
| Lane 4 | 0.0 | 0.0  | 0.0  | 0.0 |

## West: Maria Lievens Road

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |

---

**SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)**

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:20

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9



## LANE SUMMARY

**Site:** WebFres [Webersvallei Rd X Fresno St PM (Site Folder: Scenario 0 - Base Year - PM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current PM Peak.

Site Category: Base Year

Roundabout

| Lane Use and Performance        |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                        |
|---------------------------------|-----------------|----------|-----------------|----------|-------|-----------|------------|-------------|------------------|-------------------|------------|-------------|-------------|------------------------|
|                                 | Demand Flows    |          | Arrival Flows   |          | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |            | Lane Config | Lane Length | Cap. Prob. Adj. Block. |
|                                 | [ Total veh/h ] | [ HV % ] | [ Total veh/h ] | [ HV % ] | veh/h | v/c       | %          | sec         |                  | [ Veh ]           | [ Dist ] m |             | m           | % %                    |
| <b>South: Fresno Street</b>     |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                        |
| Lane 1 <sup>d</sup>             | 64              | 0.0      | 64              | 0.0      | 1092  | 0.059     | 100        | 6.0         | LOS A            | 0.3               | 2.0        | Full        | 160         | 0.0 0.0                |
| Approach                        | 64              | 0.0      | 64              | 0.0      |       | 0.059     |            | 6.0         | LOS A            | 0.3               | 2.0        |             |             |                        |
| <b>East: Webersvallei Rd_SE</b> |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                        |
| Lane 1 <sup>d</sup>             | 187             | 0.0      | 187             | 0.0      | 1267  | 0.148     | 100        | 5.2         | LOS A            | 0.7               | 5.2        | Full        | 220         | 0.0 0.0                |
| Approach                        | 187             | 0.0      | 187             | 0.0      |       | 0.148     |            | 5.2         | LOS A            | 0.7               | 5.2        |             |             |                        |
| <b>West: Webersvallei Rd_NW</b> |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                        |
| Lane 1 <sup>d</sup>             | 308             | 1.0      | 308             | 1.0      | 1624  | 0.190     | 100        | 5.5         | LOS A            | 1.1               | 8.0        | Full        | 130         | 0.0 0.0                |
| Approach                        | 308             | 1.0      | 308             | 1.0      |       | 0.190     |            | 5.5         | LOS A            | 1.1               | 8.0        |             |             |                        |
| All Vehicles                    | 560             | 0.6      | 560             | 0.6      |       | 0.190     |            | 5.5         | LOS A            | 1.1               | 8.0        |             |             |                        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

**South: Fresno Street**

| Mov.            | L2 | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|-------|-----|-------|-----------|------------|--------------|--------------|
| From S To Exit: | W  | E  |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 60 | 4  | 64    | 0.0 | 1092  | 0.059     | 100        | NA           | NA           |
| Approach        | 60 | 4  | 64    | 0.0 |       | 0.059     |            |              |              |

**East: Webersvallei Rd\_SE**

| Mov.            | L2 | T1  | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|-----|-------|-----|-------|-----------|------------|--------------|--------------|
| From E To Exit: | S  | W   |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 8  | 179 | 187   | 0.0 | 1267  | 0.148     | 100        | NA           | NA           |
| Approach        | 8  | 179 | 187   | 0.0 |       | 0.148     |            |              |              |

**West: Webersvallei Rd\_NW**

| Mov.            | T1  | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|-----|----|-------|-----|-------|-----------|------------|--------------|--------------|
| From W To Exit: | E   | S  |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 236 | 73 | 308   | 1.0 | 1624  | 0.190     | 100        | NA           | NA           |



|                          |     |     |     |       |       |
|--------------------------|-----|-----|-----|-------|-------|
| Approach                 | 236 | 73  | 308 | 1.0   | 0.190 |
| Total %HV Deg.Satn (v/c) |     |     |     |       |       |
| All Vehicles             | 560 | 0.6 |     | 0.190 |       |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis   |                     |                       |                            |                          |                  |                       |                      |                     |               |                |                 |
|------------------|---------------------|-----------------------|----------------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|
| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Opposing Flow Rate % veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |

There are no Exit Short Lanes for Merge Analysis at this Site.

| Variable Demand Analysis |                           |                            |                                       |                          |
|--------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
|                          | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
| South: Fresno Street     |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| East: Webersvallei Rd_SE |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: Webersvallei Rd_NW |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:20

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extension.sip9

## LANE SUMMARY

 **Site: R44Sch [R44 X School Rd PM (Site Folder: Scenario 0 - Base Year - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current PM Peak.

Site Category: Base Year

Stop (Two-Way)

| Lane Use and Performance |              |      |               |      |      |           |                |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|-----------|----------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util.     | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |                |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |           |                |             |                  |                   |        |             |             |           |              |
| South: R44_SW            |              |      |               |      |      |           |                |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 1322         | 2.8  | 1322          | 2.8  | 1915 | 0.690     | 7 <sup>5</sup> | 2.4         | LOS A            | 0.0               | 0.0    | Full        | 2600        | 0.0       | 0.0          |
| Lane 2                   | 60           | 0.0  | 60            | 0.0  | 6    | 9.806     | 100            | 8152.1      | LOS F            | 35.7              | 249.9  | Full        | 2600        | 0.0       | 0.0          |
| Approach                 | 1382         | 2.7  | 1382          | 2.7  |      | 9.806     |                | 356.2       | NA               | 35.7              | 249.9  |             |             |           |              |
| East: School Road        |              |      |               |      |      |           |                |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 121          | 0.0  | 121           | 0.0  | 63   | 1.919     | 100            | 878.7       | LOS F            | 39.0              | 272.8  | Full        | 270         | 0.0       | 5.3          |
| Approach                 | 121          | 0.0  | 121           | 0.0  |      | 1.919     |                | 878.7       | LOS F            | 39.0              | 272.8  |             |             |           |              |
| North: R44_NE            |              |      |               |      |      |           |                |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 23           | 0.0  | 23            | 0.0  | 1857 | 0.012     | 100            | 5.5         | LOS A            | 0.0               | 0.0    | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 1247         | 0.5  | 1247          | 0.5  | 1943 | 0.642     | 100            | 0.4         | LOS A            | 0.0               | 0.0    | Full        | 580         | 0.0       | 0.0          |
| Lane 3                   | 1247         | 0.5  | 1247          | 0.5  | 1943 | 0.642     | 100            | 0.4         | LOS A            | 0.0               | 0.0    | Full        | 580         | 0.0       | 0.0          |
| Approach                 | 2518         | 0.5  | 2518          | 0.5  |      | 0.642     |                | 0.5         | NA               | 0.0               | 0.0    |             |             |           |              |
| All Vehicles             | 4021         | 1.3  | 4021          | 1.3  |      | 9.806     |                | 149.2       | NA               | 39.0              | 272.8  |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

**5** Lane under-utilisation found by the program

### Approach Lane Flows (veh/h)

**South: R44\_SW**

| Mov.            | T1   | R2 | Total | %HV | Cap. veh/h | Deg. Satn v/c | Lane Util. %   | Prob. SL Ov. % | Ov. Lane No. |
|-----------------|------|----|-------|-----|------------|---------------|----------------|----------------|--------------|
| From S To Exit: | N    | E  |       |     |            |               |                |                |              |
| Lane 1          | 1322 | -  | 1322  | 2.8 | 1915       | 0.690         | 7 <sup>5</sup> | NA             | NA           |
| Lane 2          | -    | 60 | 60    | 0.0 | 6          | 9.806         | 100            | NA             | NA           |
| Approach        | 1322 | 60 | 1382  | 2.7 |            | 9.806         |                |                |              |

**East: School Road**

| Mov.            | L2  | R2 | Total | %HV | Cap. veh/h | Deg. Satn v/c | Lane Util. % | Prob. SL Ov. % | Ov. Lane No. |
|-----------------|-----|----|-------|-----|------------|---------------|--------------|----------------|--------------|
| From E To Exit: | S   | N  |       |     |            |               |              |                |              |
| Lane 1          | 116 | 5  | 121   | 0.0 | 63         | 1.919         | 100          | NA             | NA           |
| Approach        | 116 | 5  | 121   | 0.0 |            | 1.919         |              |                |              |

## North: R44\_NE

| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | Total | %HV   | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util. SL<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|-------|-------|---------------|---------------------|-----------------------|----------------------|--------------------|
| Lane 1                     | 23      | -       | 23    | 0.0   | 1857          | 0.012               | 100                   | 0.0                  | 2                  |
| Lane 2                     | -       | 1247    | 1247  | 0.5   | 1943          | 0.642               | 100                   | NA                   | NA                 |
| Lane 3                     | -       | 1247    | 1247  | 0.5   | 1943          | 0.642               | 100                   | NA                   | NA                 |
| Approach                   | 23      | 2495    | 2518  | 0.5   |               | 0.642               |                       |                      |                    |
| Total %HV Deg.Satn (v/c)   |         |         |       |       |               |                     |                       |                      |                    |
| All Vehicles               | 4021    | 1.3     |       | 9.806 |               |                     |                       |                      |                    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

5 Lane under-utilisation found by the program

## Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% | Opposing<br>Flow Rate<br>veh/h pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------|--------------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------|--------------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand<br>to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|

## South: R44\_SW

|        |     |      |         |     |
|--------|-----|------|---------|-----|
| Lane 1 | 0.0 | 0.0  | 0.0     | 0.0 |
| Lane 2 | 0.0 | 26.9 | 15850.6 | NA  |

## East: School Road

|        |     |      |        |    |
|--------|-----|------|--------|----|
| Lane 1 | 0.0 | 29.0 | 1654.8 | NA |
|--------|-----|------|--------|----|

## North: R44\_NE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |

## LANE SUMMARY

 **Site: SchFres [School Rd X Fresno St PM (Site Folder: Scenario 0 - Base Year - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current PM Peak.

Site Category: Base Year

Stop (Two-Way)

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |           |            |             |                  | veh/h             | v/c    |             |             |           |              |
| East: School Road_SE     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 26           | 8.0  | 26            | 8.0  | 1760 | 0.015     | 100        | 2.3         | LOS A            | 0.1               | 0.4    | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 26           | 8.0  | 26            | 8.0  |      | 0.015     |            | 2.3         | NA               | 0.1               | 0.4    |             |             |           |              |
| North: Fresno Street     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 65           | 0.0  | 65            | 0.0  | 1176 | 0.055     | 100        | 8.0         | LOS A            | 0.2               | 1.4    | Full        | 240         | 0.0       | 0.0          |
| Approach                 | 65           | 0.0  | 65            | 0.0  |      | 0.055     |            | 8.0         | LOS A            | 0.2               | 1.4    |             |             |           |              |
| West: School Road_NW     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 81           | 1.3  | 81            | 1.3  | 1890 | 0.043     | 100        | 2.6         | LOS A            | 0.0               | 0.0    | Full        | 150         | 0.0       | 0.0          |
| Approach                 | 81           | 1.3  | 81            | 1.3  |      | 0.043     |            | 2.6         | NA               | 0.0               | 0.0    |             |             |           |              |
| All Vehicles             | 173          | 1.8  | 173           | 1.8  |      | 0.055     |            | 4.6         | NA               | 0.2               | 1.4    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Approach Lane Flows (veh/h) |    |    |       |     |            |           |            |              |              |  |
|-----------------------------|----|----|-------|-----|------------|-----------|------------|--------------|--------------|--|
| <b>East: School Road_SE</b> |    |    |       |     |            |           |            |              |              |  |
| Mov.                        | T1 | R2 | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From E To Exit:             | W  | N  |       |     | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                      | 16 | 11 | 26    | 8.0 | 1760       | 0.015     | 100        | NA           | NA           |  |
| Approach                    | 16 | 11 | 26    | 8.0 |            | 0.015     |            |              |              |  |
| <b>North: Fresno Street</b> |    |    |       |     |            |           |            |              |              |  |
| Mov.                        | L2 | R2 | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From N To Exit:             | E  | W  |       |     | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                      | 26 | 39 | 65    | 0.0 | 1176       | 0.055     | 100        | NA           | NA           |  |
| Approach                    | 26 | 39 | 65    | 0.0 |            | 0.055     |            |              |              |  |
| <b>West: School Road_NW</b> |    |    |       |     |            |           |            |              |              |  |
| Mov.                        | L2 | T1 | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From W To Exit:             | N  | E  |       |     | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                      | 38 | 43 | 81    | 1.3 | 1890       | 0.043     | 100        | NA           | NA           |  |

|          |    |    |    |     |       |
|----------|----|----|----|-----|-------|
| Approach | 38 | 43 | 81 | 1.3 | 0.043 |
|----------|----|----|----|-----|-------|

|       |     |                |
|-------|-----|----------------|
| Total | %HV | Deg.Satn (v/c) |
|-------|-----|----------------|

|              |     |     |       |
|--------------|-----|-----|-------|
| All Vehicles | 173 | 1.8 | 0.055 |
|--------------|-----|-----|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Opposing Flow Rate %veh/h pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|---------------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|---------------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

| Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|---------------------------|----------------------------|---------------------------------------|--------------------------|
|---------------------------|----------------------------|---------------------------------------|--------------------------|

East: School Road\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

North: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

West: School Road\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:21

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site:** SchAcc [School Rd X Access Road PM (Site Folder: Scenario 0 - Base Year - PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Current PM Peak.

Site Category: Base Year

Stop (All-Way)

| Lane Use and Performance |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |       |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec         |                  |                   | m      |             | m           | %         | %            |
| South: Access Road       |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 24           | 0.0  | 24            | 0.0  | 314   | 0.077     | 100        | 18.3        | LOS C            | 0.3               | 1.8    | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 24           | 0.0  | 24            | 0.0  |       | 0.077     |            | 18.3        | LOS C            | 0.3               | 1.8    |             |             |           |              |
| North: Blakemore Street  |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 24           | 8.7  | 24            | 8.7  | 571   | 0.042     | 100        | 10.5        | LOS B            | 0.1               | 1.0    | Full        | 50          | 0.0       | 0.0          |
| Approach                 | 24           | 8.7  | 24            | 8.7  |       | 0.042     |            | 10.5        | LOS B            | 0.1               | 1.0    |             |             |           |              |
| West: School Road_NW     |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 68           | 3.1  | 68            | 3.1  | 760   | 0.090     | 100        | 11.1        | LOS B            | 0.3               | 1.9    | Full        | 260         | 0.0       | 0.0          |
| Approach                 | 68           | 3.1  | 68            | 3.1  |       | 0.090     |            | 11.1        | LOS B            | 0.3               | 1.9    |             |             |           |              |
| All Vehicles             | 117          | 3.6  | 117           | 3.6  |       | 0.090     |            | 12.5        | LOS B            | 0.3               | 1.9    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

South: Access Road

| Mov.            | L2 | T1 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From S To Exit: | W  | N  |       |     |      |           |            |              |              |
| Lane 1          | 13 | 12 | 24    | 0.0 | 314  | 0.077     | 100        | NA           | NA           |
| Approach        | 13 | 12 | 24    | 0.0 |      | 0.077     |            |              |              |

North: Blakemore Street

| Mov.            | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From N To Exit: | S  | W  |       |     |      |           |            |              |              |
| Lane 1          | 11 | 14 | 24    | 8.7 | 571  | 0.042     | 100        | NA           | NA           |
| Approach        | 11 | 14 | 24    | 8.7 |      | 0.042     |            |              |              |

West: School Road\_NW

| Mov.            | L2 | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From W To Exit: | N  | E  | S  |       |     |      |           |            |              |              |
| Lane 1          | 34 | 8  | 26 | 68    | 3.1 | 760  | 0.090     | 100        | NA           | NA           |
| Approach        | 34 | 8  | 26 | 68    | 3.1 |      | 0.090     |            |              |              |

Total %HV Deg. Satn (v/c)



All Vehicles 117 3.6 0.090

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis   |                   |                       |           |              |                   |                |               |           |            |             |  |
|------------------|-------------------|-----------------------|-----------|--------------|-------------------|----------------|---------------|-----------|------------|-------------|--|
| Exit Lane Number | Short Lane Length | Percent Oppng in Lane | Flow Rate | Critical Gap | Follow-up Headway | Lane Flow Rate | Lane Capacity | Deg. Satn | Min. Delay | Merge Delay |  |
|                  | m                 | % veh/h               | pcu/h     | sec          | sec               | veh/h          | veh/h         | v/c       | sec        | sec         |  |

There are no Exit Short Lanes for Merge Analysis at this Site.

| Variable Demand Analysis |                       |                        |                                   |                      |
|--------------------------|-----------------------|------------------------|-----------------------------------|----------------------|
|                          | Initial Queued Demand | Residual Queued Demand | Time for Residual Demand to Clear | Duration of Oversatn |
|                          | veh                   | veh                    | sec                               | sec                  |
| South: Access Road       |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| North: Blakemore Street  |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| West: School Road_NW     |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:22

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliverables\10 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9



## LANE SUMMARY

 Site: R44Web1 [R44 X Webersvallei Rd PM (Site Folder: Scenario 0 - Base Year - PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

2023 PM Peak.

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                        |      |
|--------------------------|--------------|------|---------------|------|-------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|------------------------|------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. Adj. Block. |      |
|                          | [ Total      | HV ] | [ Total       | HV ] |                   |           |            |             |                  | [ Veh             | Dist.] |             |             | %                      | %    |
|                          | veh/h        | %    | veh/h         | %    |                   |           |            |             |                  | veh/h             | v/c    |             |             | %                      | sec  |
| South: R44_S             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                        |      |
| Lane 1                   | 52           | 2.0  | 52            | 2.0  | 1067              | 0.048     | 100        | 15.1        | LOS B            | 1.1               | 7.6    | Short       | 80          | 0.0                    | NA   |
| Lane 2                   | 379          | 3.2  | 379           | 3.2  | 1120              | 0.338     | 100        | 11.6        | LOS B            | 9.5               | 68.4   | Full        | 2500        | 0.0                    | 0.0  |
| Lane 3                   | 379          | 3.2  | 379           | 3.2  | 1120              | 0.338     | 100        | 11.6        | LOS B            | 9.5               | 68.4   | Full        | 2500        | 0.0                    | 0.0  |
| Lane 4                   | 379          | 3.2  | 379           | 3.2  | 1120              | 0.338     | 100        | 13.3        | LOS B            | 9.5               | 68.4   | Short       | 200         | 0.0                    | NA   |
| Lane 5                   | 131          | 0.0  | 131           | 0.0  | 387               | 0.337     | 100        | 17.7        | LOS B            | 2.4               | 17.0   | Short       | 120         | 0.0                    | NA   |
| Approach                 | 1318         | 2.8  | 1318          | 2.8  |                   | 0.338     |            | 12.8        | LOS B            | 9.5               | 68.4   |             |             |                        |      |
| East: Webersvallei Road  |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                        |      |
| Lane 1                   | 283          | 1.5  | 283           | 1.5  | 542 <sup>1</sup>  | 0.522     | 100        | 40.9        | LOS D            | 11.6              | 81.9   | Short       | 40          | 0.0                    | NA   |
| Lane 2                   | 52           | 0.0  | 52            | 0.0  | 353               | 0.146     | 100        | 41.4        | LOS D            | 2.1               | 15.0   | Full        | 110         | 0.0                    | 0.0  |
| Lane 3                   | 156          | 1.0  | 156           | 1.0  | 290               | 0.539     | 100        | 51.0        | LOS D            | 7.3               | 51.9   | Short       | 65          | 0.0                    | NA   |
| Lane 4                   | 157          | 1.0  | 157           | 1.0  | 292               | 0.539     | 100        | 50.8        | LOS D            | 7.4               | 52.1   | Short       | 40          | 0.0                    | NA   |
| Approach                 | 648          | 1.1  | 648           | 1.1  |                   | 0.539     |            | 45.8        | LOS D            | 11.6              | 81.9   |             |             |                        |      |
| North: R44_N             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                        |      |
| Lane 1                   | 446          | 0.7  | 446           | 0.7  | 1300              | 0.343     | 100        | 13.8        | LOS B            | 8.5               | 59.5   | Short       | 70          | 0.0                    | NA   |
| Lane 2                   | 653          | 0.4  | 653           | 0.4  | 988 <sup>1</sup>  | 0.660     | 100        | 17.3        | LOS B            | 21.6              | 151.5  | Full        | 650         | 0.0                    | 0.0  |
| Lane 3                   | 753          | 0.4  | 753           | 0.4  | 1140              | 0.660     | 100        | 15.2        | LOS B            | 24.7              | 173.7  | Full        | 650         | 0.0                    | 0.0  |
| Lane 4                   | 732          | 0.4  | 732           | 0.4  | 1108 <sup>1</sup> | 0.660     | 100        | 25.3        | LOS C            | 24.0              | 168.7  | Short       | 145         | 0.0                    | NA   |
| Lane 5                   | 57           | 1.9  | 57            | 1.9  | 809               | 0.070     | 100        | 19.9        | LOS B            | 0.9               | 6.6    | Short       | 70          | 0.0                    | NA   |
| Approach                 | 2640         | 0.5  | 2640          | 0.5  |                   | 0.660     |            | 18.4        | LOS B            | 24.7              | 173.7  |             |             |                        |      |
| West: Maria Lievens Road |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                        |      |
| Lane 1                   | 103          | 1.0  | 103           | 1.0  | 200               | 0.516     | 100        | 49.5        | LOS D            | 5.0               | 35.1   | Full        | 25          | 0.0                    | 36.0 |
| Lane 2                   | 66           | 1.6  | 66            | 1.6  | 225               | 0.295     | 100        | 53.9        | LOS D            | 3.2               | 22.7   | Full        | 25          | 0.0                    | 0.0  |
| Approach                 | 169          | 1.2  | 169           | 1.2  |                   | 0.516     |            | 51.2        | LOS D            | 5.0               | 35.1   |             |             |                        |      |
| All Vehicles             | 4776         | 1.2  | 4776          | 1.2  |                   | 0.660     |            | 21.7        | LOS C            | 24.7              | 173.7  |             |             |                        |      |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov. | L2 | T1 | R2 | Total | %HV | Deg. | Lane | Prob. | Ov. |
|------|----|----|----|-------|-----|------|------|-------|-----|
|------|----|----|----|-------|-----|------|------|-------|-----|

| From S<br>To Exit:               | W       | N       | E       |       |     | Cap.<br>veh/h     | Satn<br>v/c         | Util.<br>%         | SL Ov.<br>%          | Lane<br>No.        |
|----------------------------------|---------|---------|---------|-------|-----|-------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                           | 52      | -       | -       | 52    | 2.0 | 1067              | 0.048               | 100                | 0.0                  | 2                  |
| Lane 2                           | -       | 379     | -       | 379   | 3.2 | 1120              | 0.338               | 100                | NA                   | NA                 |
| Lane 3                           | -       | 379     | -       | 379   | 3.2 | 1120              | 0.338               | 100                | NA                   | NA                 |
| Lane 4                           | -       | 379     | -       | 379   | 3.2 | 1120              | 0.338               | 100                | 0.0                  | 3                  |
| Lane 5                           | -       | -       | 131     | 131   | 0.0 | 387               | 0.337               | 100                | 0.0                  | 4                  |
| Approach                         | 52      | 1136    | 131     | 1318  | 2.8 |                   | 0.338               |                    |                      |                    |
| <b>East: Webersvallei Road</b>   |         |         |         |       |     |                   |                     |                    |                      |                    |
| Mov.<br>From E<br>To Exit:       | L2<br>S | T1<br>W | R2<br>N | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                           | 283     | -       | -       | 283   | 1.5 | 542 <sup>1</sup>  | 0.522               | 100                | 71.6                 | 2                  |
| Lane 2                           | -       | 52      | -       | 52    | 0.0 | 353               | 0.146               | 100                | NA                   | NA                 |
| Lane 3                           | -       | -       | 156     | 156   | 1.0 | 290               | 0.539               | 100                | 0.0                  | 2                  |
| Lane 4                           | -       | -       | 157     | 157   | 1.0 | 292               | 0.539               | 100                | 29.1                 | 3                  |
| Approach                         | 283     | 52      | 314     | 648   | 1.1 |                   | 0.539               |                    |                      |                    |
| <b>North: R44_N</b>              |         |         |         |       |     |                   |                     |                    |                      |                    |
| Mov.<br>From N<br>To Exit:       | L2<br>E | T1<br>S | R2<br>W | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                           | 446     | -       | -       | 446   | 0.7 | 1300              | 0.343               | 100                | 0.0                  | 2                  |
| Lane 2                           | -       | 653     | -       | 653   | 0.4 | 988 <sup>1</sup>  | 0.660               | 100                | NA                   | NA                 |
| Lane 3                           | -       | 753     | -       | 753   | 0.4 | 1140              | 0.660               | 100                | NA                   | NA                 |
| Lane 4                           | -       | 732     | -       | 732   | 0.4 | 1108 <sup>1</sup> | 0.660               | 100                | 18.7                 | 3                  |
| Lane 5                           | -       | -       | 57      | 57    | 1.9 | 809               | 0.070               | 100                | 0.0                  | 4                  |
| Approach                         | 446     | 2137    | 57      | 2640  | 0.5 |                   | 0.660               |                    |                      |                    |
| <b>West: Maria Lievens Road</b>  |         |         |         |       |     |                   |                     |                    |                      |                    |
| Mov.<br>From W<br>To Exit:       | L2<br>N | T1<br>E | R2<br>S | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                           | 77      | 26      | -       | 103   | 1.0 | 200               | 0.516               | 100                | NA                   | NA                 |
| Lane 2                           | -       | -       | 66      | 66    | 1.6 | 225               | 0.295               | 100                | NA                   | NA                 |
| Approach                         | 77      | 26      | 66      | 169   | 1.2 |                   | 0.516               |                    |                      |                    |
| <b>Total %HV Deg. Satn (v/c)</b> |         |         |         |       |     |                   |                     |                    |                      |                    |
| All Vehicles                     | 4776    | 1.2     |         |       |     |                   | 0.660               |                    |                      |                    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

| Merge Analysis       |                  |                        |                           |                                   |     |                     |                          |                         |                        |                  |                   |                    |
|----------------------|------------------|------------------------|---------------------------|-----------------------------------|-----|---------------------|--------------------------|-------------------------|------------------------|------------------|-------------------|--------------------|
|                      | Exit Lane Number | Short Lane Length<br>m | Percent Opng in Lane<br>% | Opposing Flow Rate<br>veh/h pcu/h |     | Critical Gap<br>sec | Follow-up Headway<br>sec | Lane Flow Rate<br>veh/h | Lane Capacity<br>veh/h | Deg. Satn<br>v/c | Min. Delay<br>sec | Merge Delay<br>sec |
| South Exit: R44_S    |                  |                        |                           |                                   |     |                     |                          |                         |                        |                  |                   |                    |
| Merge Type: Priority |                  |                        |                           |                                   |     |                     |                          |                         |                        |                  |                   |                    |
| Exit Short Lane      | 3                | 140                    | 0.0                       | 819                               | 821 | 3.01                | 2.00                     | 732                     | 941                    | 0.777            | 1.8               | 6.4                |
| Merge Lane           | 2                | -                      | 100.0                     | Merge Lane is not Opposed         |     |                     |                          | 819                     | 1800                   | 0.455            | 0.0               | 0.0                |
| North Exit: R44_N    |                  |                        |                           |                                   |     |                     |                          |                         |                        |                  |                   |                    |
| Merge Type: Priority |                  |                        |                           |                                   |     |                     |                          |                         |                        |                  |                   |                    |
| Exit Short Lane      | 3                | 145                    | 0.0                       | 536                               | 543 | 3.05                | 2.03                     | 379                     | 1209                   | 0.313            | 1.0               | 1.6                |
| Merge Lane           | 2                | -                      | 100.0                     | Merge Lane is not Opposed         |     |                     |                          | 536                     | 1800                   | 0.298            | 0.0               | 0.0                |

| Variable Demand Analysis        |                             |                              |                                            |                            |
|---------------------------------|-----------------------------|------------------------------|--------------------------------------------|----------------------------|
|                                 | Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand<br>to Clear | Duration<br>of<br>Oversatn |
|                                 | veh                         | veh                          | sec                                        | sec                        |
| <b>South: R44_S</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>East: Webersvallei Road</b>  |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>North: R44_N</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>West: Maria Lievens Road</b> |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |

**SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)**

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Thursday, 15 February 2024 12:30:27

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site: R44Web1 [R44 X Webersvallei Rd AM\_IY2025 - Planned  
(Site Folder: Scenario 1a - Implementation Year 2025 - AM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 AM Peak.

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|-------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |                   |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |                   |           |            |             |                  |                   |        |             |             |           |              |
| South: R44_S             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 15           | 0.0  | 15            | 0.0  | 975               | 0.015     | 100        | 21.4        | LOS C            | 0.3               | 2.1    | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 795          | 0.5  | 795           | 0.5  | 1020 <sup>1</sup> | 0.779     | 100        | 24.1        | LOS C            | 28.4              | 199.9  | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 799          | 0.5  | 799           | 0.5  | 1026              | 0.779     | 100        | 19.1        | LOS B            | 28.6              | 200.8  | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 799          | 0.5  | 799           | 0.5  | 1026              | 0.779     | 100        | 139.0       | LOS F            | 28.6              | 200.8  | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 39           | 2.7  | 39            | 2.7  | 766               | 0.051     | 100        | 13.3        | LOS B            | 0.6               | 4.6    | Short       | 120         | 0.0       | NA           |
| Approach                 | 2447         | 0.5  | 2447          | 0.5  |                   | 0.779     |            | 59.8        | LOS E            | 28.6              | 200.8  |             |             |           |              |
| East: Webersvallei Road  |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 69           | 1.5  | 69            | 1.5  | 636               | 0.109     | 100        | 27.1        | LOS C            | 2.1               | 14.7   | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 53           | 0.0  | 53            | 0.0  | 414               | 0.127     | 100        | 31.3        | LOS C            | 1.9               | 13.2   | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 230          | 0.2  | 230           | 0.2  | 362               | 0.636     | 100        | 45.5        | LOS D            | 9.6               | 67.0   | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 232          | 0.2  | 232           | 0.2  | 364               | 0.636     | 100        | 45.4        | LOS D            | 9.6               | 67.3   | Short       | 40          | 0.0       | NA           |
| Approach                 | 584          | 0.4  | 584           | 0.4  |                   | 0.636     |            | 42.0        | LOS D            | 9.6               | 67.3   |             |             |           |              |
| North: R44_N             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 121          | 2.6  | 121           | 2.6  | 1222              | 0.099     | 100        | 11.2        | LOS B            | 1.9               | 13.3   | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 353          | 1.8  | 353           | 1.8  | 1017              | 0.347     | 100        | 13.4        | LOS B            | 9.0               | 63.7   | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 353          | 1.8  | 353           | 1.8  | 1017              | 0.347     | 100        | 13.4        | LOS B            | 9.0               | 63.7   | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 353          | 1.8  | 353           | 1.8  | 1017              | 0.347     | 100        | 14.3        | LOS B            | 9.0               | 63.7   | Short       | 145         | 0.0       | NA           |
| Lane 5                   | 43           | 0.0  | 43            | 0.0  | 391               | 0.110     | 100        | 19.7        | LOS B            | 0.8               | 5.5    | Short       | 70          | 0.0       | NA           |
| Approach                 | 1223         | 1.8  | 1223          | 1.8  |                   | 0.347     |            | 13.7        | LOS B            | 9.0               | 63.7   |             |             |           |              |
| West: Maria Lievens Road |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 54           | 0.0  | 54            | 0.0  | 247               | 0.218     | 100        | 41.1        | LOS D            | 2.2               | 15.2   | Full        | 25          | 0.0       | 0.0          |
| Lane 2                   | 27           | 0.0  | 27            | 0.0  | 278               | 0.098     | 100        | 46.3        | LOS D            | 1.1               | 8.0    | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 81           | 0.0  | 81            | 0.0  |                   | 0.218     |            | 42.8        | LOS D            | 2.2               | 15.2   |             |             |           |              |
| All Vehicles             | 4336         | 0.8  | 4336          | 0.8  |                   | 0.779     |            | 44.1        | LOS D            | 28.6              | 200.8  |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov. | L2 | T1 | R2 | Total | %HV | Deg. | Lane | Prob. | Ov. |
|------|----|----|----|-------|-----|------|------|-------|-----|
|------|----|----|----|-------|-----|------|------|-------|-----|

| From S<br>To Exit: | W  | N    | E  |      |     | Cap.<br>veh/h     | Satn<br>v/c | Util.<br>% | SL Ov.<br>% | Lane<br>No. |
|--------------------|----|------|----|------|-----|-------------------|-------------|------------|-------------|-------------|
| Lane 1             | 15 | -    | -  | 15   | 0.0 | 975               | 0.015       | 100        | 0.0         | 2           |
| Lane 2             | -  | 795  | -  | 795  | 0.5 | 1020 <sup>1</sup> | 0.779       | 100        | NA          | NA          |
| Lane 3             | -  | 799  | -  | 799  | 0.5 | 1026              | 0.779       | 100        | NA          | NA          |
| Lane 4             | -  | 799  | -  | 799  | 0.5 | 1026              | 0.779       | 100        | 5.4         | 3           |
| Lane 5             | -  | -    | 39 | 39   | 2.7 | 766               | 0.051       | 100        | 0.0         | 4           |
| Approach           | 15 | 2394 | 39 | 2447 | 0.5 |                   | 0.779       |            |             |             |

## East: Webersvallei Road

| Mov.               | L2 | T1 | R2  | Total | %HV |               | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|--------------------|----|----|-----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| From E<br>To Exit: | S  | W  | N   |       |     | Cap.<br>veh/h |                     |                    |                      |                    |
| Lane 1             | 69 | -  | -   | 69    | 1.5 | 636           | 0.109               | 100                | 0.0                  | 2                  |
| Lane 2             | -  | 53 | -   | 53    | 0.0 | 414           | 0.127               | 100                | NA                   | NA                 |
| Lane 3             | -  | -  | 230 | 230   | 0.2 | 362           | 0.636               | 100                | 8.2                  | 2                  |
| Lane 4             | -  | -  | 232 | 232   | 0.2 | 364           | 0.636               | 100                | 52.9                 | 3                  |
| Approach           | 69 | 53 | 462 | 584   | 0.4 |               | 0.636               |                    |                      |                    |

## North: R44\_N

| Mov.               | L2  | T1   | R2 | Total | %HV |               | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|--------------------|-----|------|----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| From N<br>To Exit: | E   | S    | W  |       |     | Cap.<br>veh/h |                     |                    |                      |                    |
| Lane 1             | 121 | -    | -  | 121   | 2.6 | 1222          | 0.099               | 100                | 0.0                  | 2                  |
| Lane 2             | -   | 353  | -  | 353   | 1.8 | 1017          | 0.347               | 100                | NA                   | NA                 |
| Lane 3             | -   | 353  | -  | 353   | 1.8 | 1017          | 0.347               | 100                | NA                   | NA                 |
| Lane 4             | -   | 353  | -  | 353   | 1.8 | 1017          | 0.347               | 100                | 0.0                  | 3                  |
| Lane 5             | -   | -    | 43 | 43    | 0.0 | 391           | 0.110               | 100                | 0.0                  | 4                  |
| Approach           | 121 | 1059 | 43 | 1223  | 1.8 |               | 0.347               |                    |                      |                    |

## West: Maria Lievens Road

| Mov.               | L2 | T1 | R2 | Total | %HV |               | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|--------------------|----|----|----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| From W<br>To Exit: | N  | E  | S  |       |     | Cap.<br>veh/h |                     |                    |                      |                    |
| Lane 1             | 43 | 11 | -  | 54    | 0.0 | 247           | 0.218               | 100                | NA                   | NA                 |
| Lane 2             | -  | -  | 27 | 27    | 0.0 | 278           | 0.098               | 100                | NA                   | NA                 |
| Approach           | 43 | 11 | 27 | 81    | 0.0 |               | 0.218               |                    |                      |                    |

|              | Total | %HV | Deg.Satn (v/c) |
|--------------|-------|-----|----------------|
| All Vehicles | 4336  | 0.8 | 0.779          |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

## Merge Analysis

| Merge Analysis                            |                        |                              |                                       |                                |                        |                             |                               |                   |                     |                      |                       |       |
|-------------------------------------------|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------|-------------------|---------------------|----------------------|-----------------------|-------|
|                                           | Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane<br>Flow<br>Rate<br>veh/h | Capacity<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |       |
| South Exit: R44_S<br>Merge Type: Priority |                        |                              |                                       |                                |                        |                             |                               |                   |                     |                      |                       |       |
| Exit Short Lane                           | 3                      | 140                          | 0.0                                   | 380                            | 384                    | 3.03                        | 2.02                          | 353               | 1391                | 0.254                | 0.6                   | 0.9   |
| Merge Lane                                | 2                      | -                            | 100.0                                 | Merge Lane is not Opposed      |                        |                             |                               | 380               | 1800                | 0.211                | 0.0                   | 0.0   |
| North Exit: R44_N<br>Merge Type: Priority |                        |                              |                                       |                                |                        |                             |                               |                   |                     |                      |                       |       |
| Exit Short Lane                           | 3                      | 145                          | 0.0                                   | 1031                           | 1033                   | 3.01                        | 2.00                          | 799               | 714                 | 1.119                | 2.9                   | 119.9 |
| Merge Lane                                | 2                      | -                            | 100.0                                 | Merge Lane is not Opposed      |                        |                             |                               | 1031              | 1800                | 0.573                | 0.0                   | 0.0   |

| Variable Demand Analysis |                             |                              |                                            |                            |
|--------------------------|-----------------------------|------------------------------|--------------------------------------------|----------------------------|
|                          | Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand<br>to Clear | Duration<br>of<br>Oversatn |
|                          | veh                         | veh                          | sec                                        | sec                        |
| South: R44_S             |                             |                              |                                            |                            |
| Lane 1                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| East: Webersvallei Road  |                             |                              |                                            |                            |
| Lane 1                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| North: R44_N             |                             |                              |                                            |                            |
| Lane 1                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| West: Maria Lievens Road |                             |                              |                                            |                            |
| Lane 1                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Thursday, 15 February 2024 12:30:28

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9



## LANE SUMMARY

**Site:** WebFresl [Webersvallei Rd X Fresno St AM\_IY2025 (Site Folder: Scenario 1a - Implementation Year 2025 - AM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 AM Peak.

Site Category: Future Conditions 1

Roundabout

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |      |             |             |            |        |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|------|-------------|-------------|------------|--------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |      | Lane Config | Lane Length | Cap. Prob. |        |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  |                   |      |             |             |            |        |
|                          | veh/h        | %    | veh/h         | %    |      | veh/h     | v/c        |             |                  | %                 | sec  |             |             | [ Veh      | Dist ] |
| South: Fresno Street     |              |      |               |      |      |           |            |             |                  |                   |      |             |             |            |        |
| Lane 1 <sup>d</sup>      | 159          | 4.0  | 159           | 4.0  | 899  | 0.177     | 100        | 7.2         | LOS A            | 1.0               | 7.1  | Full        | 160         | 0.0        | 0.0    |
| Approach                 | 159          | 4.0  | 159           | 4.0  |      | 0.177     |            | 7.2         | LOS A            | 1.0               | 7.1  |             |             |            |        |
| East: Webersvallei Rd_SE |              |      |               |      |      |           |            |             |                  |                   |      |             |             |            |        |
| Lane 1 <sup>d</sup>      | 327          | 0.3  | 327           | 0.3  | 1075 | 0.305     | 100        | 6.3         | LOS A            | 1.8               | 12.5 | Full        | 220         | 0.0        | 0.0    |
| Approach                 | 327          | 0.3  | 327           | 0.3  |      | 0.305     |            | 6.3         | LOS A            | 1.8               | 12.5 |             |             |            |        |
| North: RoadName          |              |      |               |      |      |           |            |             |                  |                   |      |             |             |            |        |
| Lane 1 <sup>d</sup>      | 48           | 0.0  | 48            | 0.0  | 1002 | 0.048     | 100        | 8.9         | LOS A            | 0.2               | 1.6  | Full        | 500         | 0.0        | 0.0    |
| Approach                 | 48           | 0.0  | 48            | 0.0  |      | 0.048     |            | 8.9         | LOS A            | 0.2               | 1.6  |             |             |            |        |
| West: Webersvallei Rd_NW |              |      |               |      |      |           |            |             |                  |                   |      |             |             |            |        |
| Lane 1 <sup>d</sup>      | 301          | 3.5  | 301           | 3.5  | 1603 | 0.188     | 100        | 6.5         | LOS A            | 1.2               | 8.7  | Full        | 130         | 0.0        | 0.0    |
| Approach                 | 301          | 3.5  | 301           | 3.5  |      | 0.188     |            | 6.5         | LOS A            | 1.2               | 8.7  |             |             |            |        |
| All Vehicles             | 836          | 2.1  | 836           | 2.1  |      | 0.305     |            | 6.7         | LOS A            | 1.8               | 12.5 |             |             |            |        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

**South: Fresno Street**

| Mov.     | L2  | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL | Ov. | Ov. Lane No. |
|----------|-----|----|----|-------|-----|------|-----------|------------|----------|-----|--------------|
| From S   |     |    |    |       |     |      |           |            |          |     |              |
| To Exit  | W   | N  | E  |       |     |      |           |            |          |     |              |
| Lane 1   | 155 | 2  | 2  | 159   | 4.0 | 899  | 0.177     | 100        | NA       | NA  |              |
| Approach | 155 | 2  | 2  | 159   | 4.0 |      | 0.177     |            |          |     |              |

**East: Webersvallei Rd\_SE**

| Mov.     | L2 | T1  | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL | Ov. | Ov. Lane No. |
|----------|----|-----|-------|-----|------|-----------|------------|----------|-----|--------------|
| From E   |    |     |       |     |      |           |            |          |     |              |
| To Exit  | S  | W   |       |     |      |           |            |          |     |              |
| Lane 1   | 8  | 319 | 327   | 0.3 | 1075 | 0.305     | 100        | NA       | NA  |              |
| Approach | 8  | 319 | 327   | 0.3 |      | 0.305     |            |          |     |              |

**North: RoadName**



| Mov.                             | T1  | R2  | Total | %HV   |               | Deg.          | Lane        | Prob.       | Ov.         |
|----------------------------------|-----|-----|-------|-------|---------------|---------------|-------------|-------------|-------------|
| From N<br>To Exit:               | S   | W   |       |       | Cap.<br>veh/h | Satn<br>v/c   | Util.<br>%  | SL Ov.<br>% | Lane<br>No. |
| Lane 1                           | 5   | 43  | 48    | 0.0   | 1002          | 0.048         | 100         | NA          | NA          |
| Approach                         | 5   | 43  | 48    | 0.0   |               | 0.048         |             |             |             |
| <b>West: Webersvallei Rd_NW</b>  |     |     |       |       |               |               |             |             |             |
| Mov.                             | L2  | T1  | R2    | Total | %HV           |               | Deg.        | Lane        | Prob.       |
| From W<br>To Exit:               | N   | E   | S     |       |               | Cap.<br>veh/h | Satn<br>v/c | Util.<br>%  | SL Ov.<br>% |
| Lane 1                           | 18  | 119 | 164   | 301   | 3.5           | 1603          | 0.188       | 100         | NA          |
| Approach                         | 18  | 119 | 164   | 301   | 3.5           |               | 0.188       |             |             |
| <b>Total %HV Deg. Satn (v/c)</b> |     |     |       |       |               |               |             |             |             |
| All Vehicles                     | 836 | 2.1 |       | 0.305 |               |               |             |             |             |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane<br>Flow<br>Rate<br>veh/h | Lane<br>Capacity<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------|---------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------|---------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

| Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand<br>to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|

South: Fresno Street

Lane 1 0.0 0.0 0.0 0.0

East: Webersvallei Rd\_SE

Lane 1 0.0 0.0 0.0 0.0

North: RoadName

Lane 1 0.0 0.0 0.0 0.0

West: Webersvallei Rd\_NW

Lane 1 0.0 0.0 0.0 0.0

## LANE SUMMARY

**Site:** SchFresF [School Rd X Fresno St AM\_IY2025 (Site Folder: Scenario 1a - Implementation Year 2025 - AM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

**Implementation Year 2025 AM Peak.**

**Site Category: Future Conditions 1**

**Stop (Two-Way)**

| Lane Use and Performance |              |      |               |      |      |            |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|------------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Degr. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |            |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |            |            |             |                  | veh/h             | v/c    |             |             | %         | sec          |
| East: School Road_SE     |              |      |               |      |      |            |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 61           | 6.9  | 61            | 6.9  | 1808 | 0.034      | 100        | 1.2         | LOS A            | 0.1               | 0.5    | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 61           | 6.9  | 61            | 6.9  |      | 0.034      |            | 1.2         | NA               | 0.1               | 0.5    |             |             |           |              |
| North: Fresno Street     |              |      |               |      |      |            |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 159          | 9.3  | 159           | 9.3  | 1110 | 0.143      | 100        | 8.3         | LOS A            | 0.5               | 4.1    | Full        | 240         | 0.0       | 0.0          |
| Approach                 | 159          | 9.3  | 159           | 9.3  |      | 0.143      |            | 8.3         | LOS A            | 0.5               | 4.1    |             |             |           |              |
| West: School Road_NW     |              |      |               |      |      |            |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 32           | 0.0  | 32            | 0.0  | 1878 | 0.017      | 100        | 4.2         | LOS A            | 0.0               | 0.0    | Full        | 150         | 0.0       | 0.0          |
| Approach                 | 32           | 0.0  | 32            | 0.0  |      | 0.017      |            | 4.2         | NA               | 0.0               | 0.0    |             |             |           |              |
| All Vehicles             | 252          | 7.5  | 252           | 7.5  |      | 0.143      |            | 6.1         | NA               | 0.5               | 4.1    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Approach Lane Flows (veh/h) |    |     |       |     |       |           |            |          |          |  |
|-----------------------------|----|-----|-------|-----|-------|-----------|------------|----------|----------|--|
| <b>East: School Road_SE</b> |    |     |       |     |       |           |            |          |          |  |
| Mov.                        | T1 | R2  | Total | %HV |       |           |            |          |          |  |
| From E                      |    |     |       |     | Cap.  | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |  |
| To Exit:                    | W  | N   |       |     | veh/h | v/c       | %          | %        | No.      |  |
| Lane 1                      | 48 | 13  | 61    | 6.9 | 1808  | 0.034     | 100        | NA       | NA       |  |
| Approach                    | 48 | 13  | 61    | 6.9 |       | 0.034     |            |          |          |  |
| <b>North: Fresno Street</b> |    |     |       |     |       |           |            |          |          |  |
| Mov.                        | L2 | R2  | Total | %HV |       |           |            |          |          |  |
| From N                      |    |     |       |     | Cap.  | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |  |
| To Exit:                    | E  | W   |       |     | veh/h | v/c       | %          | %        | No.      |  |
| Lane 1                      | 46 | 113 | 159   | 9.3 | 1110  | 0.143     | 100        | NA       | NA       |  |
| Approach                    | 46 | 113 | 159   | 9.3 |       | 0.143     |            |          |          |  |
| <b>West: School Road_NW</b> |    |     |       |     |       |           |            |          |          |  |
| Mov.                        | L2 | T1  | Total | %HV |       |           |            |          |          |  |
| From W                      |    |     |       |     | Cap.  | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |  |
| To Exit:                    | N  | E   |       |     | veh/h | v/c       | %          | %        | No.      |  |
| Lane 1                      | 24 | 7   | 32    | 0.0 | 1878  | 0.017     | 100        | NA       | NA       |  |

|          |    |   |    |     |       |
|----------|----|---|----|-----|-------|
| Approach | 24 | 7 | 32 | 0.0 | 0.017 |
|----------|----|---|----|-----|-------|

|       |     |                |
|-------|-----|----------------|
| Total | %HV | Deg.Satn (v/c) |
|-------|-----|----------------|

|              |     |     |       |
|--------------|-----|-----|-------|
| All Vehicles | 252 | 7.5 | 0.143 |
|--------------|-----|-----|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Opng in Lane | Opposing Flow Rate % veh/h pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|----------------------|----------------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|
|------------------|---------------------|----------------------|----------------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

| Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|---------------------------|----------------------------|---------------------------------------|--------------------------|
|---------------------------|----------------------------|---------------------------------------|--------------------------|

East: School Road\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

North: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

West: School Road\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 17:26:58

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extension.sip9

## LANE SUMMARY

**Site:** SchAccl [School Rd X Access Road AM\_IY2025 (Site Folder: Scenario 1a - Implementation Year 2025 - AM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 AM Peak.

Site Category: Future Conditions 1

Stop (All-Way)

| Lane Use and Performance       |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
|--------------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|------------|--------|
|                                | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. |        |
|                                | [ Total      | HV ] | [ Total       | HV ] |       |           |            |             |                  | [ Veh             | Dist ] |             |             | Adj.       | Block. |
|                                | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec         |                  |                   | m      |             | m           | %          | %      |
| <b>South: Access Road</b>      |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                         | 33           | 0.0  | 33            | 0.0  | 408   | 0.080     | 100        | 15.5        | LOS C            | 0.3               | 1.8    | Full        | 100         | 0.0        | 0.0    |
| Approach                       | 33           | 0.0  | 33            | 0.0  |       | 0.080     |            | 15.5        | LOS C            | 0.3               | 1.8    |             |             |            |        |
| <b>East: School Road_SE</b>    |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                         | 7            | 42.9 | 7             | 42.9 | 419   | 0.018     | 100        | 16.5        | LOS C            | 0.1               | 0.5    | Full        | 400         | 0.0        | 0.0    |
| Approach                       | 7            | 42.9 | 7             | 42.9 |       | 0.018     |            | 16.5        | LOS C            | 0.1               | 0.5    |             |             |            |        |
| <b>North: Blakemore Street</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                         | 39           | 2.7  | 39            | 2.7  | 769   | 0.051     | 100        | 8.7         | LOS A            | 0.1               | 1.0    | Full        | 50          | 0.0        | 0.0    |
| Approach                       | 39           | 2.7  | 39            | 2.7  |       | 0.051     |            | 8.7         | LOS A            | 0.1               | 1.0    |             |             |            |        |
| <b>West: School Road_NW</b>    |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                         | 60           | 14.0 | 60            | 14.0 | 506   | 0.119     | 100        | 14.6        | LOS B            | 0.4               | 3.0    | Full        | 260         | 0.0        | 0.0    |
| Approach                       | 60           | 14.0 | 60            | 14.0 |       | 0.119     |            | 14.6        | LOS B            | 0.4               | 3.0    |             |             |            |        |
| All Vehicles                   | 139          | 9.1  | 139           | 9.1  |       | 0.119     |            | 13.2        | LOS B            | 0.4               | 3.0    |             |             |            |        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

**South: Access Road**

| Mov.     | L2 | T1 | Total | %HV | Cap.  | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|-------|------|
| From S   |    |    |       |     | veh/h | Satn  | Util. | SL    | Lane |
| To Exit: | W  | N  |       |     |       | v/c   | %     | %     | No.  |
| Lane 1   | 20 | 13 | 33    | 0.0 | 408   | 0.080 | 100   | NA    | NA   |
| Approach | 20 | 13 | 33    | 0.0 |       | 0.080 |       |       |      |

**East: School Road\_SE**

| Mov.     | T1 | Total | %HV  | Cap.  | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|-------|------|-------|-------|-------|-------|------|
| From E   |    |       |      | veh/h | Satn  | Util. | SL    | Lane |
| To Exit: | W  |       |      |       | v/c   | %     | %     | No.  |
| Lane 1   | 7  | 7     | 42.9 | 419   | 0.018 | 100   | NA    | NA   |
| Approach | 7  | 7     | 42.9 |       | 0.018 |       |       |      |

**North: Blakemore Street**

| Mov.     | L2 | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|----|----|-------|-----|-------|-------|-------|-------|------|
| From N   |    |    |    |       |     | veh/h | Satn  | Util. | SL    | Lane |
| To Exit: | E  | S  | W  |       |     |       | v/c   | %     | %     | No.  |
| Lane 1   | 1  | 6  | 32 | 39    | 2.7 | 769   | 0.051 | 100   | NA    | NA   |

|                           |     |     |    |       |       |            |               |              |                |              |  |
|---------------------------|-----|-----|----|-------|-------|------------|---------------|--------------|----------------|--------------|--|
| Approach                  | 1   | 6   | 32 | 39    | 2.7   |            | 0.051         |              |                |              |  |
| West: School Road_NW      |     |     |    |       |       |            |               |              |                |              |  |
| Mov.                      | L2  | T1  | R2 | Total | %HV   |            |               |              |                |              |  |
| From W To Exit:           | N   | E   | S  |       |       | Cap. veh/h | Deg. Satn v/c | Lane Util. % | Prob. SL Ov. % | Ov. Lane No. |  |
| Lane 1                    | 39  | 12  | 9  | 60    | 14.0  | 506        | 0.119         | 100          | NA             | NA           |  |
| Approach                  | 39  | 12  | 9  | 60    | 14.0  |            | 0.119         |              |                |              |  |
| Total %HV Deg. Satn (v/c) |     |     |    |       |       |            |               |              |                |              |  |
| All Vehicles              | 139 | 9.1 |    |       | 0.119 |            |               |              |                |              |  |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis   |                     |                         |                 |                          |                  |                       |                      |                |               |                |                 |
|------------------|---------------------|-------------------------|-----------------|--------------------------|------------------|-----------------------|----------------------|----------------|---------------|----------------|-----------------|
| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane % | Flow Rate veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |

There are no Exit Short Lanes for Merge Analysis at this Site.

| Variable Demand Analysis |                           |                            |                                       |                          |
|--------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
|                          | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
| South: Access Road       |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| East: School Road_SE     |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: Blakemore Street  |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: School Road_NW     |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |



## LANE SUMMARY

 **Site: R44Sch [R44 X School Rd AM\_IY2025 (Site Folder: Scenario 1a - Implementation Year 2025 - AM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current AM Peak.

Site Category: Base Year

Stop (Two-Way)

| Lane Use and Performance |              |        |               |        |       |           |            |             |                  |                   |          |             |             |                        |     |
|--------------------------|--------------|--------|---------------|--------|-------|-----------|------------|-------------|------------------|-------------------|----------|-------------|-------------|------------------------|-----|
|                          | Demand Flows |        | Arrival Flows |        | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |          | Lane Config | Lane Length | Cap. Prob. Adj. Block. |     |
|                          | [ Total ]    | [ HV ] | [ Total ]     | [ HV ] |       |           |            |             |                  | [ Veh ]           | [ Dist ] |             |             | %                      | %   |
|                          | veh/h        | %      | veh/h         | %      | veh/h | v/c       | %          | sec         |                  |                   | m        |             | m           |                        |     |
| South: R44_SW            |              |        |               |        |       |           |            |             |                  |                   |          |             |             |                        |     |
| Lane 1                   | 2092         | 0.5    | 2092          | 0.5    | 1944  | 1.076     | 100        | 191.2       | LOS F            | 0.0               | 0.0      | Full        | 2600        | 0.0                    | 0.0 |
| Lane 2                   | 473          | 2.4    | 473           | 2.4    | 439   | 1.076     | 100        | 222.8       | LOS F            | 64.9              | 463.2    | Full        | 2600        | 0.0                    | 0.0 |
| Approach                 | 2564         | 0.8    | 2564          | 0.8    |       | 1.076     |            | 197.0       | NA               | 64.9              | 463.2    |             |             |                        |     |
| East: School Road        |              |        |               |        |       |           |            |             |                  |                   |          |             |             |                        |     |
| Lane 1                   | 117          | 5.4    | 117           | 5.4    | 100   | 1.164     | 100        | 173.2       | LOS F            | 13.1              | 95.7     | Full        | 270         | 0.0                    | 0.0 |
| Approach                 | 117          | 5.4    | 117           | 5.4    |       | 1.164     |            | 173.2       | LOS F            | 13.1              | 95.7     |             |             |                        |     |
| North: R44_NE            |              |        |               |        |       |           |            |             |                  |                   |          |             |             |                        |     |
| Lane 1                   | 41           | 2.6    | 41            | 2.6    | 1824  | 0.023     | 100        | 5.6         | LOS A            | 0.0               | 0.0      | Short       | 80          | 0.0                    | NA  |
| Lane 2                   | 558          | 1.7    | 558           | 1.7    | 1929  | 0.289     | 100        | 0.1         | LOS A            | 0.0               | 0.0      | Full        | 580         | 0.0                    | 0.0 |
| Lane 3                   | 558          | 1.7    | 558           | 1.7    | 1929  | 0.289     | 100        | 0.1         | LOS A            | 0.0               | 0.0      | Full        | 580         | 0.0                    | 0.0 |
| Approach                 | 1157         | 1.7    | 1157          | 1.7    |       | 0.289     |            | 0.3         | NA               | 0.0               | 0.0      |             |             |                        |     |
| All Vehicles             | 3838         | 1.2    | 3838          | 1.2    |       | 1.164     |            | 137.0       | NA               | 64.9              | 463.2    |             |             |                        |     |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

South: R44\_SW

| Mov.            | T1   | R2  | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|------|-----|-------|-----|------|-----------|------------|--------------|--------------|
| From S To Exit: | N    | E   |       |     |      |           |            |              |              |
| Lane 1          | 2092 | -   | 2092  | 0.5 | 1944 | 1.076     | 100        | NA           | NA           |
| Lane 2          | 346  | 126 | 473   | 2.4 | 439  | 1.076     | 100        | NA           | NA           |
| Approach        | 2438 | 126 | 2564  | 0.8 |      | 1.076     |            |              |              |

East: School Road

| Mov.            | L2  | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|-----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From E To Exit: | S   | N  |       |     |      |           |            |              |              |
| Lane 1          | 113 | 4  | 117   | 5.4 | 100  | 1.164     | 100        | NA           | NA           |
| Approach        | 113 | 4  | 117   | 5.4 |      | 1.164     |            |              |              |

North: R44\_NE

| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | Total | %HV   | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|-------|-------|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 41      | -       | 41    | 2.6   | 1824          | 0.023               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 558     | 558   | 1.7   | 1929          | 0.289               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 558     | 558   | 1.7   | 1929          | 0.289               | 100                | NA                   | NA                 |
| Approach                   | 41      | 1116    | 1157  | 1.7   |               | 0.289               |                    |                      |                    |
| Total %HV Deg.Satn (v/c)   |         |         |       |       |               |                     |                    |                      |                    |
| All Vehicles               | 3838    | 1.2     |       | 1.164 |               |                     |                    |                      |                    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% | Opposing<br>Flow Rate<br>veh/h | Critical<br>Gap<br>pcu/h | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------|--------------------------------|--------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------|--------------------------------|--------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                   | Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand<br>to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|-------------------|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|
| South: R44_SW     |                                    |                                     |                                                   |                                   |
| Lane 1            | 0.0                                | 73.8                                | 136.6                                             | NA                                |
| Lane 2            | 0.0                                | 16.7                                | 136.6                                             | NA                                |
| East: School Road |                                    |                                     |                                                   |                                   |
| Lane 1            | 0.0                                | 8.2                                 | 295.0                                             | NA                                |
| North: R44_NE     |                                    |                                     |                                                   |                                   |
| Lane 1            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| Lane 2            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| Lane 3            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |



## LANE SUMMARY

**Site: R44Web1 [R44 X Webersvallei Rd PM\_IY2025 - Planned  
(Site Folder: Scenario 1a - Implementation Year 2025 - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 PM Peak.

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|-------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |                   |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |                   |           |            |             |                  | veh/h             | v/c    |             |             |           |              |
| South: R44_S             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 54           | 2.0  | 54            | 2.0  | 982               | 0.055     | 100        | 16.2        | LOS B            | 1.1               | 7.9    | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 394          | 3.1  | 394           | 3.1  | 1030              | 0.382     | 100        | 13.1        | LOS B            | 10.0              | 72.2   | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 394          | 3.1  | 394           | 3.1  | 1030              | 0.382     | 100        | 13.1        | LOS B            | 10.0              | 72.2   | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 394          | 3.1  | 394           | 3.1  | 1030              | 0.382     | 100        | 15.0        | LOS B            | 10.0              | 72.2   | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 164          | 0.0  | 164           | 0.0  | 369               | 0.445     | 100        | 21.0        | LOS C            | 3.4               | 24.1   | Short       | 120         | 0.0       | NA           |
| Approach                 | 1399         | 2.7  | 1399          | 2.7  |                   | 0.445     |            | 14.7        | LOS B            | 10.0              | 72.2   |             |             |           |              |
| East: Webersvallei Road  |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 309          | 1.4  | 309           | 1.4  | 608 <sup>1</sup>  | 0.509     | 100        | 33.8        | LOS C            | 11.0              | 77.9   | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 54           | 0.0  | 54            | 0.0  | 392               | 0.137     | 100        | 34.4        | LOS C            | 2.0               | 13.7   | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 176          | 0.9  | 176           | 0.9  | 273               | 0.643     | 100        | 45.9        | LOS D            | 7.4               | 52.0   | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 177          | 0.9  | 177           | 0.9  | 275               | 0.643     | 100        | 45.7        | LOS D            | 7.4               | 52.3   | Short       | 40          | 0.0       | NA           |
| Approach                 | 716          | 1.0  | 716           | 1.0  |                   | 0.643     |            | 39.8        | LOS D            | 11.0              | 77.9   |             |             |           |              |
| North: R44_N             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 518          | 0.6  | 518           | 0.6  | 1239              | 0.418     | 100        | 15.6        | LOS B            | 10.4              | 73.0   | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 660          | 0.4  | 660           | 0.4  | 855 <sup>1</sup>  | 0.772     | 100        | 22.1        | LOS C            | 24.0              | 168.2  | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 809          | 0.4  | 809           | 0.4  | 1048              | 0.772     | 100        | 18.0        | LOS B            | 28.1              | 197.5  | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 781          | 0.4  | 781           | 0.4  | 1013 <sup>1</sup> | 0.772     | 100        | 34.1        | LOS C            | 27.3              | 191.8  | Short       | 145         | 0.0       | NA           |
| Lane 5                   | 59           | 1.8  | 59            | 1.8  | 749               | 0.079     | 100        | 24.3        | LOS C            | 1.0               | 6.8    | Short       | 70          | 0.0       | NA           |
| Approach                 | 2827         | 0.4  | 2827          | 0.4  |                   | 0.772     |            | 23.1        | LOS C            | 28.1              | 197.5  |             |             |           |              |
| West: Maria Lievens Road |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 107          | 1.0  | 107           | 1.0  | 222               | 0.483     | 100        | 43.7        | LOS D            | 4.6               | 32.5   | Full        | 25          | 0.0       | 29.0         |
| Lane 2                   | 69           | 1.5  | 69            | 1.5  | 269               | 0.258     | 100        | 47.2        | LOS D            | 3.0               | 21.0   | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 177          | 1.2  | 177           | 1.2  |                   | 0.483     |            | 45.1        | LOS D            | 4.6               | 32.5   |             |             |           |              |
| All Vehicles             | 5119         | 1.2  | 5119          | 1.2  |                   | 0.772     |            | 23.9        | LOS C            | 28.1              | 197.5  |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes.  
Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov. | L2 | T1 | R2 | Total | %HV | Deg. | Lane | Prob. | Ov. |
|------|----|----|----|-------|-----|------|------|-------|-----|
|------|----|----|----|-------|-----|------|------|-------|-----|

| From S<br>To Exit: | W  | N    | E   |      |     | Cap.<br>veh/h | Satn<br>v/c | Util.<br>% | SL Ov.<br>% | Lane<br>No. |
|--------------------|----|------|-----|------|-----|---------------|-------------|------------|-------------|-------------|
| Lane 1             | 54 | -    | -   | 54   | 2.0 | 982           | 0.055       | 100        | 0.0         | 2           |
| Lane 2             | -  | 394  | -   | 394  | 3.1 | 1030          | 0.382       | 100        | NA          | NA          |
| Lane 3             | -  | 394  | -   | 394  | 3.1 | 1030          | 0.382       | 100        | NA          | NA          |
| Lane 4             | -  | 394  | -   | 394  | 3.1 | 1030          | 0.382       | 100        | 0.0         | 3           |
| Lane 5             | -  | -    | 164 | 164  | 0.0 | 369           | 0.445       | 100        | 0.0         | 4           |
| Approach           | 54 | 1181 | 164 | 1399 | 2.7 |               | 0.445       |            |             |             |

## East: Webersvallei Road

| Mov.<br>From E<br>To Exit: | L2<br>S | T1<br>W | R2<br>N | Total | %HV | Cap.<br>veh/h    | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 309     | -       | -       | 309   | 1.4 | 608 <sup>1</sup> | 0.509               | 100                | 66.8                 | 2                  |
| Lane 2                     | -       | 54      | -       | 54    | 0.0 | 392              | 0.137               | 100                | NA                   | NA                 |
| Lane 3                     | -       | -       | 176     | 176   | 0.9 | 273              | 0.643               | 100                | 0.0                  | 2                  |
| Lane 4                     | -       | -       | 177     | 177   | 0.9 | 275              | 0.643               | 100                | 29.4                 | 3                  |
| Approach                   | 309     | 54      | 353     | 716   | 1.0 |                  | 0.643               |                    |                      |                    |

## North: R44\_N

| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | R2<br>W | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|-------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 518     | -       | -       | 518   | 0.6 | 1239              | 0.418               | 100                | 8.8                  | 2                  |
| Lane 2                     | -       | 660     | -       | 660   | 0.4 | 855 <sup>1</sup>  | 0.772               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 809     | -       | 809   | 0.4 | 1048              | 0.772               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 781     | -       | 781   | 0.4 | 1013 <sup>1</sup> | 0.772               | 100                | 30.5                 | 3                  |
| Lane 5                     | -       | -       | 59      | 59    | 1.8 | 749               | 0.079               | 100                | 0.0                  | 4                  |
| Approach                   | 518     | 2251    | 59      | 2827  | 0.4 |                   | 0.772               |                    |                      |                    |

## West: Maria Lievens Road

| Mov.<br>From W<br>To Exit: | L2<br>N | T1<br>E | R2<br>S | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 80      | 27      | -       | 107   | 1.0 | 222           | 0.483               | 100                | NA                   | NA                 |
| Lane 2                     | -       | -       | 69      | 69    | 1.5 | 269           | 0.258               | 100                | NA                   | NA                 |
| Approach                   | 80      | 27      | 69      | 177   | 1.2 |               | 0.483               |                    |                      |                    |

| Total        | %HV  | Deg. | Satn (v/c) |
|--------------|------|------|------------|
| All Vehicles | 5119 | 1.2  | 0.772      |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

## Merge Analysis

|                                           | Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% | Opposing<br>Flow Rate<br>veh/h | pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane<br>Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|-------------------------------------------|------------------------|------------------------------|---------------------------------|--------------------------------|-------|------------------------|-----------------------------|----------------------------------------|---------------------|----------------------|-----------------------|
| South Exit: R44_S<br>Merge Type: Priority |                        |                              |                                 |                                |       |                        |                             |                                        |                     |                      |                       |
| Exit Short Lane                           | 3                      | 140                          | 0.0                             | 878                            | 880   | 3.01                   | 2.00                        | 781                                    | 878                 | 0.890                | 10.4                  |
| Merge Lane                                | 2                      | -                            | 100.0                           | Merge Lane is not Opposed      |       |                        |                             | 878                                    | 1800                | 0.488                | 0.0                   |
| North Exit: R44_N<br>Merge Type: Priority |                        |                              |                                 |                                |       |                        |                             |                                        |                     |                      |                       |
| Exit Short Lane                           | 3                      | 145                          | 0.0                             | 571                            | 578   | 3.05                   | 2.03                        | 394                                    | 1172                | 0.336                | 1.9                   |
| Merge Lane                                | 2                      | -                            | 100.0                           | Merge Lane is not Opposed      |       |                        |                             | 571                                    | 1800                | 0.317                | 0.0                   |

| Variable Demand Analysis        |                             |                              |                                            |                            |
|---------------------------------|-----------------------------|------------------------------|--------------------------------------------|----------------------------|
|                                 | Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand<br>to Clear | Duration<br>of<br>Oversatn |
|                                 | veh                         | veh                          | sec                                        | sec                        |
| <b>South: R44_S</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>East: Webersvallei Road</b>  |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>North: R44_N</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>West: Maria Lievens Road</b> |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Thursday, 15 February 2024 12:30:29

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site:** WebFresl [Webersvallei Rd X Fresno St PM\_IY2025 (Site Folder: Scenario 1a - Implementation Year 2025 - PM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 PM Peak.

Site Category: Future Conditions 1

Roundabout

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | Queue             |        |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| South: Fresno Street     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>      | 93           | 0.0  | 93            | 0.0  | 1064 | 0.087     | 100        | 6.1         | LOS A            | 0.4               | 3.1    | Full        | 160         | 0.0       | 0.0          |
| Approach                 | 93           | 0.0  | 93            | 0.0  |      | 0.087     |            | 6.1         | LOS A            | 0.4               | 3.1    |             |             |           |              |
| East: Webersvallei Rd_SE |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>      | 195          | 0.0  | 195           | 0.0  | 1106 | 0.176     | 100        | 5.8         | LOS A            | 0.9               | 6.4    | Full        | 220         | 0.0       | 0.0          |
| Approach                 | 195          | 0.0  | 195           | 0.0  |      | 0.176     |            | 5.8         | LOS A            | 0.9               | 6.4    |             |             |           |              |
| North: RoadName          |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>      | 22           | 0.0  | 22            | 0.0  | 922  | 0.024     | 100        | 9.5         | LOS A            | 0.1               | 0.8    | Full        | 500         | 0.0       | 0.0          |
| Approach                 | 22           | 0.0  | 22            | 0.0  |      | 0.024     |            | 9.5         | LOS A            | 0.1               | 0.8    |             |             |           |              |
| West: Webersvallei Rd_NW |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>      | 436          | 0.7  | 436           | 0.7  | 1599 | 0.273     | 100        | 5.9         | LOS A            | 1.8               | 12.6   | Full        | 130         | 0.0       | 0.0          |
| Approach                 | 436          | 0.7  | 436           | 0.7  |      | 0.273     |            | 5.9         | LOS A            | 1.8               | 12.6   |             |             |           |              |
| All Vehicles             | 745          | 0.4  | 745           | 0.4  |      | 0.273     |            | 6.0         | LOS A            | 1.8               | 12.6   |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay; Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

**South: Fresno Street**

| Mov.            | L2 | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From S To Exit: | W  | N  | E  |       |     |      |           |            |              |              |
| Lane 1          | 84 | 4  | 4  | 93    | 0.0 | 1064 | 0.087     | 100        | NA           | NA           |
| Approach        | 84 | 4  | 4  | 93    | 0.0 |      | 0.087     |            |              |              |

**East: Webersvallei Rd\_SE**

| Mov.            | L2 | T1  | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|-----|-------|-----|------|-----------|------------|--------------|--------------|
| From E To Exit: | S  | W   |       |     |      |           |            |              |              |
| Lane 1          | 8  | 186 | 195   | 0.0 | 1106 | 0.176     | 100        | NA           | NA           |
| Approach        | 8  | 186 | 195   | 0.0 |      | 0.176     |            |              |              |

**North: RoadName**

| Mov.                      | T1  | R2  | Total | %HV   |       | Deg.  | Lane  | Prob.  | Ov.    |
|---------------------------|-----|-----|-------|-------|-------|-------|-------|--------|--------|
| From N                    |     |     |       |       | Cap.  | Satn  | Util. | SL Ov. | Lane   |
| To Exit:                  | S   | W   |       |       | veh/h | v/c   | %     | %      | No.    |
| Lane 1                    | 2   | 20  | 22    | 0.0   | 922   | 0.024 | 100   | NA     | NA     |
| Approach                  | 2   | 20  | 22    | 0.0   |       | 0.024 |       |        |        |
| West: Webersvallei Rd_NW  |     |     |       |       |       |       |       |        |        |
| Mov.                      | L2  | T1  | R2    | Total | %HV   |       | Deg.  | Lane   | Prob.  |
| From W                    |     |     |       |       |       | Cap.  | Satn  | Util.  | SL Ov. |
| To Exit:                  | N   | E   | S     |       |       | veh/h | v/c   | %      | %      |
| Lane 1                    | 42  | 245 | 148   | 436   | 0.7   | 1599  | 0.273 | 100    | NA     |
| Approach                  | 42  | 245 | 148   | 436   | 0.7   |       | 0.273 |        |        |
| Total %HV Deg. Satn (v/c) |     |     |       |       |       |       |       |        |        |
| All Vehicles              | 745 | 0.4 |       | 0.273 |       |       |       |        |        |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis                                                 |                     |                      |                            |                  |                       |                     |               |                |                 |  |  |
|----------------------------------------------------------------|---------------------|----------------------|----------------------------|------------------|-----------------------|---------------------|---------------|----------------|-----------------|--|--|
| Exit Lane Number                                               | Short Lane Length m | Percent Opng in Lane | Opposing Flow Rate % veh/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |  |  |
| There are no Exit Short Lanes for Merge Analysis at this Site. |                     |                      |                            |                  |                       |                     |               |                |                 |  |  |

| Variable Demand Analysis |                           |                            |                                       |                          |
|--------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
|                          | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
| South: Fresno Street     |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| East: Webersvallei Rd_SE |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: RoadName          |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: Webersvallei Rd_NW |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |



## LANE SUMMARY

**Site:** SchFresl [School Rd X Fresno St PM\_IY2025 (Site Folder: Scenario 1a - Implementation Year 2025 - PM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 PM Peak.

Site Category: Future Conditions 1

Stop (Two-Way)

| Lane Use and Performance    |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
|-----------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                             | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                             | [ Total      | HV ] | [ Total       | HV ] |       |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                             | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec         |                  |                   | m      |             | m           | %         | %            |
| <b>East: School Road_SE</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                      | 27           | 7.7  | 27            | 7.7  | 1778  | 0.015     | 100        | 2.2         | LOS A            | 0.1               | 0.4    | Full        | 100         | 0.0       | 0.0          |
| Approach                    | 27           | 7.7  | 27            | 7.7  |       | 0.015     |            | 2.2         | NA               | 0.1               | 0.4    |             |             |           |              |
| <b>North: Fresno Street</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                      | 111          | 0.0  | 111           | 0.0  | 1248  | 0.089     | 100        | 7.9         | LOS A            | 0.3               | 2.3    | Full        | 240         | 0.0       | 0.0          |
| Approach                    | 111          | 0.0  | 111           | 0.0  |       | 0.089     |            | 7.9         | LOS A            | 0.3               | 2.3    |             |             |           |              |
| <b>West: School Road_NW</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                      | 60           | 1.8  | 60            | 1.8  | 1856  | 0.032     | 100        | 4.4         | LOS A            | 0.0               | 0.0    | Full        | 150         | 0.0       | 0.0          |
| Approach                    | 60           | 1.8  | 60            | 1.8  |       | 0.032     |            | 4.4         | NA               | 0.0               | 0.0    |             |             |           |              |
| All Vehicles                | 198          | 1.6  | 198           | 1.6  |       | 0.089     |            | 6.0         | NA               | 0.3               | 2.3    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

#### East: School Road\_SE

| Mov.     | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|-------|------|
| From E   |    |    |       |     | veh/h | Satn  | Util. | SL    | Lane |
| To Exit: | W  | N  |       |     |       | v/c   | %     | %     | No.  |
| Lane 1   | 17 | 11 | 27    | 7.7 | 1778  | 0.015 | 100   | NA    | NA   |
| Approach | 17 | 11 | 27    | 7.7 |       | 0.015 |       |       |      |

#### North: Fresno Street

| Mov.     | L2 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|-------|------|
| From N   |    |    |       |     | veh/h | Satn  | Util. | SL    | Lane |
| To Exit: | E  | W  |       |     |       | v/c   | %     | %     | No.  |
| Lane 1   | 59 | 52 | 111   | 0.0 | 1248  | 0.089 | 100   | NA    | NA   |
| Approach | 59 | 52 | 111   | 0.0 |       | 0.089 |       |       |      |

#### West: School Road\_NW

| Mov.     | L2 | T1 | Total | %HV | Cap.  | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|-------|------|
| From W   |    |    |       |     | veh/h | Satn  | Util. | SL    | Lane |
| To Exit: | N  | E  |       |     |       | v/c   | %     | %     | No.  |
| Lane 1   | 47 | 13 | 60    | 1.8 | 1856  | 0.032 | 100   | NA    | NA   |

|                          |     |     |       |     |       |
|--------------------------|-----|-----|-------|-----|-------|
| Approach                 | 47  | 13  | 60    | 1.8 | 0.032 |
| Total %HV Deg Satn (v/c) |     |     |       |     |       |
| All Vehicles             | 198 | 1.6 | 0.089 |     |       |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Opposing Flow Rate % veh/h pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|----------------------------------|------------------|-----------------------|-------------------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|----------------------------------|------------------|-----------------------|-------------------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                      | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|----------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
| East: School Road_SE |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: Fresno Street |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: School Road_NW |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 17:31:50

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9



## LANE SUMMARY

 **Site: SchAcc [School Rd X Access Road PM - IY2025 (Site Folder: Scenario 1a - Implementation Year 2025 - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 PM Peak.

Site Category: Base Year

Stop (All-Way)

| Lane Use and Performance       |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                                | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                                | [ Total      | HV ] | [ Total       | HV ] |       |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                                | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec         |                  |                   | m      |             | m           | %         | %            |
| <b>South: Access Road</b>      |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                         | 24           | 0.0  | 24            | 0.0  | 306   | 0.079     | 100        | 18.6        | LOS C            | 0.3               | 1.8    | Full        | 100         | 0.0       | 0.0          |
| Approach                       | 24           | 0.0  | 24            | 0.0  |       | 0.079     |            | 18.6        | LOS C            | 0.3               | 1.8    |             |             |           |              |
| <b>North: Blakemore Street</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                         | 24           | 8.7  | 24            | 8.7  | 564   | 0.043     | 100        | 10.6        | LOS B            | 0.1               | 1.0    | Full        | 50          | 0.0       | 0.0          |
| Approach                       | 24           | 8.7  | 24            | 8.7  |       | 0.043     |            | 10.6        | LOS B            | 0.1               | 1.0    |             |             |           |              |
| <b>West: School Road_NW</b>    |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                         | 71           | 3.0  | 71            | 3.0  | 767   | 0.092     | 100        | 11.0        | LOS B            | 0.3               | 1.9    | Full        | 260         | 0.0       | 0.0          |
| Approach                       | 71           | 3.0  | 71            | 3.0  |       | 0.092     |            | 11.0        | LOS B            | 0.3               | 1.9    |             |             |           |              |
| All Vehicles                   | 119          | 3.5  | 119           | 3.5  |       | 0.092     |            | 12.5        | LOS B            | 0.3               | 1.9    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

#### South: Access Road

| Mov.            | L2 | T1 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From S To Exit: | W  | N  |       |     |      |           |            |              |              |
| Lane 1          | 13 | 12 | 24    | 0.0 | 306  | 0.079     | 100        | NA           | NA           |
| Approach        | 13 | 12 | 24    | 0.0 |      | 0.079     |            |              |              |

#### North: Blakemore Street

| Mov.            | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From N To Exit: | S  | W  |       |     |      |           |            |              |              |
| Lane 1          | 11 | 14 | 24    | 8.7 | 564  | 0.043     | 100        | NA           | NA           |
| Approach        | 11 | 14 | 24    | 8.7 |      | 0.043     |            |              |              |

#### West: School Road\_NW

| Mov.            | L2 | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From W To Exit: | N  | E  | S  |       |     |      |           |            |              |              |
| Lane 1          | 35 | 8  | 27 | 71    | 3.0 | 767  | 0.092     | 100        | NA           | NA           |
| Approach        | 35 | 8  | 27 | 71    | 3.0 |      | 0.092     |            |              |              |

Total %HV Deg. Satn (v/c)

All Vehicles 119 3.5 0.092

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis   |                   |                       |           |              |                   |                |               |           |            |             |  |
|------------------|-------------------|-----------------------|-----------|--------------|-------------------|----------------|---------------|-----------|------------|-------------|--|
| Exit Lane Number | Short Lane Length | Percent Oppng in Lane | Flow Rate | Critical Gap | Follow-up Headway | Lane Flow Rate | Lane Capacity | Deq. Satn | Min. Delay | Merge Delay |  |
|                  | m                 | % veh/h               | pcu/h     | sec          | sec               | veh/h          | veh/h         | v/c       | sec        | sec         |  |

There are no Exit Short Lanes for Merge Analysis at this Site.

| Variable Demand Analysis |                       |                        |                                   |                      |
|--------------------------|-----------------------|------------------------|-----------------------------------|----------------------|
|                          | Initial Queued Demand | Residual Queued Demand | Time for Residual Demand to Clear | Duration of Oversatn |
|                          | veh                   | veh                    | sec                               | sec                  |
| South: Access Road       |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| North: Blakemore Street  |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| West: School Road_NW     |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:27

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extension.sip9

## LANE SUMMARY

 **Site: R44Sch [R44 X School Rd PM\_IY2025 (Site Folder: Scenario 1a - Implementation Year 2025 - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current PM Peak.

Site Category: Base Year

Stop (Two-Way)

| Lane Use and Performance |                  |         |                  |         |      |           |                |             |                  |                   |           |             |             |           |              |
|--------------------------|------------------|---------|------------------|---------|------|-----------|----------------|-------------|------------------|-------------------|-----------|-------------|-------------|-----------|--------------|
|                          | Demand Flows     |         | Arrival Flows    |         | Cap. | Deg. Satn | Lane Util.     | Aver. Delay | Level of Service | 95% Back Of Queue |           | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total<br>veh/h | HV<br>% | [ Total<br>veh/h | HV<br>% |      |           |                |             |                  | [ Veh             | Dist<br>m |             |             |           |              |
| South: R44_SW            |                  |         |                  |         |      |           |                |             |                  |                   |           |             |             |           |              |
| Lane 1                   | 1403             | 2.7     | 1403             | 2.7     | 1916 | 0.732     | 7 <sup>5</sup> | 2.9         | LOS A            | 0.0               | 0.0       | Full        | 2600        | 0.0       | 0.0          |
| Lane 2                   | 62               | 0.0     | 62               | 0.0     | 6    | 10.14     | 100            | 8451.5      | LOS F            | 37.0              | 258.8     | Full        | 2600        | 0.0       | 0.0          |
| Approach                 | 1465             | 2.6     | 1465             | 2.6     |      | 10.14     |                | 361.0       | NA               | 37.0              | 258.8     |             |             |           |              |
| East: School Road        |                  |         |                  |         |      |           |                |             |                  |                   |           |             |             |           |              |
| Lane 1                   | 133              | 0.0     | 133              | 0.0     | 61   | 2.188     | 100            | 1125.5      | LOS F            | 47.7              | 333.9     | Full        | 270         | 0.0       | 11.7         |
| Approach                 | 133              | 0.0     | 133              | 0.0     |      | 2.188     |                | 1125.5      | LOS F            | 47.7              | 333.9     |             |             |           |              |
| North: R44_NE            |                  |         |                  |         |      |           |                |             |                  |                   |           |             |             |           |              |
| Lane 1                   | 52               | 0.0     | 52               | 0.0     | 1857 | 0.028     | 100            | 5.5         | LOS A            | 0.0               | 0.0       | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 1289             | 0.6     | 1289             | 0.6     | 1943 | 0.663     | 100            | 0.5         | LOS A            | 0.0               | 0.0       | Full        | 580         | 0.0       | 0.0          |
| Lane 3                   | 1289             | 0.6     | 1289             | 0.6     | 1943 | 0.663     | 100            | 0.5         | LOS A            | 0.0               | 0.0       | Full        | 580         | 0.0       | 0.0          |
| Approach                 | 2629             | 0.6     | 2629             | 0.6     |      | 0.663     |                | 0.6         | NA               | 0.0               | 0.0       |             |             |           |              |
| All Vehicles             | 4227             | 1.2     | 4227             | 1.2     |      | 10.14     |                | 160.8       | NA               | 47.7              | 333.9     |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>5</sup> Lane under-utilisation found by the program

### Approach Lane Flows (veh/h)

South: R44\_SW

| Mov.            | T1   | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util.     | Prob. SL | Ov. Lane |
|-----------------|------|----|-------|-----|------|-----------|----------------|----------|----------|
| From S To Exit: | N    | E  |       |     |      |           |                |          |          |
| Lane 1          | 1403 | -  | 1403  | 2.7 | 1916 | 0.732     | 7 <sup>5</sup> | NA       | NA       |
| Lane 2          | -    | 62 | 62    | 0.0 | 6    | 10.145    | 100            | NA       | NA       |
| Approach        | 1403 | 62 | 1465  | 2.6 |      | 10.145    |                |          |          |

East: School Road

| Mov.            | L2  | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |
|-----------------|-----|----|-------|-----|------|-----------|------------|----------|----------|
| From E To Exit: | S   | N  |       |     |      |           |            |          |          |
| Lane 1          | 127 | 5  | 133   | 0.0 | 61   | 2.188     | 100        | NA       | NA       |

Approach 127 5 133 0.0 2.188

#### North: R44\_NE

| Mov.            | L2 | T1   | Total | %HV | Cap.  | Deg.     | Lane    | Prob.    | Ov.      |
|-----------------|----|------|-------|-----|-------|----------|---------|----------|----------|
| From N To Exit: | E  | S    |       |     | veh/h | Satn v/c | Util. % | SL Ov. % | Lane No. |
| Lane 1          | 52 | -    | 52    | 0.0 | 1857  | 0.028    | 100     | 0.0      | 2        |
| Lane 2          | -  | 1289 | 1289  | 0.6 | 1943  | 0.663    | 100     | NA       | NA       |
| Lane 3          | -  | 1289 | 1289  | 0.6 | 1943  | 0.663    | 100     | NA       | NA       |
| Approach        | 52 | 2578 | 2629  | 0.6 |       | 0.663    |         |          |          |

Total %HV Deg. Satn (v/c)

All Vehicles 4227 1.2 10.145

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

5 Lane under-utilisation found by the program

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane % | Flow Rate veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-------------------------|-----------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-------------------------|-----------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|  | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|

#### South: R44\_SW

|        |     |      |         |     |
|--------|-----|------|---------|-----|
| Lane 1 | 0.0 | 0.0  | 0.0     | 0.0 |
| Lane 2 | 0.0 | 28.0 | 16460.8 | NA  |

#### East: School Road

|        |     |      |        |    |
|--------|-----|------|--------|----|
| Lane 1 | 0.0 | 36.0 | 2139.1 | NA |
|--------|-----|------|--------|----|

#### North: R44\_NE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |

## LANE SUMMARY

**Site: R44WebFPD [R44 X Webersvallei Rd  
AM\_IY2025\_PropDev - Planned (Site Folder: Scenario 1b -  
Implementation Year 2025 Proposed Dev - AM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 AM Peak with Development trips.

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
|--------------------------|-----------------|----------|-----------------|----------|-------------------|-----------|------------|-------------|------------------|-------------------|------------|-------------|-------------|-----------|--------------|
|                          | Demand Flows    |          | Arrival Flows   |          | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |            | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total veh/h ] | [ HV % ] | [ Total veh/h ] | [ HV % ] |                   |           |            |             |                  | [ Veh ]           | [ Dist m ] |             |             |           |              |
| South: R44_S             |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                   | 15              | 0.0      | 15              | 0.0      | 975               | 0.015     | 100        | 21.4        | LOS C            | 0.3               | 2.1        | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 795             | 0.5      | 795             | 0.5      | 1020 <sup>1</sup> | 0.779     | 100        | 24.1        | LOS C            | 28.4              | 199.9      | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 799             | 0.5      | 799             | 0.5      | 1026              | 0.779     | 100        | 19.1        | LOS B            | 28.6              | 200.8      | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 799             | 0.5      | 799             | 0.5      | 1026              | 0.779     | 100        | 157.3       | LOS F            | 28.6              | 200.8      | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 49              | 2.1      | 49              | 2.1      | 766               | 0.065     | 100        | 13.4        | LOS B            | 0.8               | 5.9        | Short       | 120         | 0.0       | NA           |
| Approach                 | 2458            | 0.5      | 2458            | 0.5      |                   | 0.779     |            | 65.6        | LOS E            | 28.6              | 200.8      |             |             |           |              |
| East: Webersvallei Road  |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                   | 69              | 1.5      | 69              | 1.5      | 636               | 0.109     | 100        | 27.1        | LOS C            | 2.1               | 14.7       | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 53              | 0.0      | 53              | 0.0      | 414               | 0.127     | 100        | 31.3        | LOS C            | 1.9               | 13.2       | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 243             | 0.2      | 243             | 0.2      | 362               | 0.671     | 100        | 46.3        | LOS D            | 10.1              | 71.1       | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 244             | 0.2      | 244             | 0.2      | 364               | 0.671     | 100        | 46.2        | LOS D            | 10.2              | 71.5       | Short       | 40          | 0.0       | NA           |
| Approach                 | 609             | 0.3      | 609             | 0.3      |                   | 0.671     |            | 42.7        | LOS D            | 10.2              | 71.5       |             |             |           |              |
| North: R44_N             |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                   | 125             | 2.5      | 125             | 2.5      | 1223              | 0.102     | 100        | 11.2        | LOS B            | 1.9               | 13.8       | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 354             | 1.8      | 354             | 1.8      | 1017              | 0.348     | 100        | 13.4        | LOS B            | 9.0               | 64.0       | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 354             | 1.8      | 354             | 1.8      | 1017              | 0.348     | 100        | 13.4        | LOS B            | 9.0               | 64.0       | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 354             | 1.8      | 354             | 1.8      | 1017              | 0.348     | 100        | 14.3        | LOS B            | 9.0               | 64.0       | Short       | 145         | 0.0       | NA           |
| Lane 5                   | 43              | 0.0      | 43              | 0.0      | 391               | 0.110     | 100        | 19.7        | LOS B            | 0.8               | 5.5        | Short       | 70          | 0.0       | NA           |
| Approach                 | 1232            | 1.8      | 1232            | 1.8      |                   | 0.348     |            | 13.7        | LOS B            | 9.0               | 64.0       |             |             |           |              |
| West: Maria Lievens Road |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                   | 54              | 0.0      | 54              | 0.0      | 247               | 0.218     | 100        | 41.1        | LOS D            | 2.2               | 15.2       | Full        | 25          | 0.0       | 0.0          |
| Lane 2                   | 27              | 0.0      | 27              | 0.0      | 278               | 0.098     | 100        | 46.3        | LOS D            | 1.1               | 8.0        | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 81              | 0.0      | 81              | 0.0      |                   | 0.218     |            | 42.8        | LOS D            | 2.2               | 15.2       |             |             |           |              |
| All Vehicles             | 4380            | 0.8      | 4380            | 0.8      |                   | 0.779     |            | 47.4        | LOS D            | 28.6              | 200.8      |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S



| Mov.<br>From S<br>To Exit: | L2<br>W | T1<br>N | R2<br>E | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|-------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 15      | -       | -       | 15    | 0.0 | 975               | 0.015               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 795     | -       | 795   | 0.5 | 1020 <sup>1</sup> | 0.779               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 799     | -       | 799   | 0.5 | 1026              | 0.779               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 799     | -       | 799   | 0.5 | 1026              | 0.779               | 100                | 5.4                  | 3                  |
| Lane 5                     | -       | -       | 49      | 49    | 2.1 | 766               | 0.065               | 100                | 0.0                  | 4                  |
| Approach                   | 15      | 2394    | 49      | 2458  | 0.5 |                   | 0.779               |                    |                      |                    |

## East: Webersvallei Road

| Mov.<br>From E<br>To Exit: | L2<br>S | T1<br>W | R2<br>N | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 69      | -       | -       | 69    | 1.5 | 636           | 0.109               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 53      | -       | 53    | 0.0 | 414           | 0.127               | 100                | NA                   | NA                 |
| Lane 3                     | -       | -       | 243     | 243   | 0.2 | 362           | 0.671               | 100                | 13.6                 | 2                  |
| Lane 4                     | -       | -       | 244     | 244   | 0.2 | 364           | 0.671               | 100                | 58.5                 | 3                  |
| Approach                   | 69      | 53      | 487     | 609   | 0.3 |               | 0.671               |                    |                      |                    |

## North: R44\_N

| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | R2<br>W | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 125     | -       | -       | 125   | 2.5 | 1223          | 0.102               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 354     | -       | 354   | 1.8 | 1017          | 0.348               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 354     | -       | 354   | 1.8 | 1017          | 0.348               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 354     | -       | 354   | 1.8 | 1017          | 0.348               | 100                | 0.0                  | 3                  |
| Lane 5                     | -       | -       | 43      | 43    | 0.0 | 391           | 0.110               | 100                | 0.0                  | 4                  |
| Approach                   | 125     | 1063    | 43      | 1232  | 1.8 |               | 0.348               |                    |                      |                    |

## West: Maria Lievens Road

| Mov.<br>From W<br>To Exit: | L2<br>N | T1<br>E | R2<br>S | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 43      | 11      | -       | 54    | 0.0 | 247           | 0.218               | 100                | NA                   | NA                 |
| Lane 2                     | -       | -       | 27      | 27    | 0.0 | 278           | 0.098               | 100                | NA                   | NA                 |
| Approach                   | 43      | 11      | 27      | 81    | 0.0 |               | 0.218               |                    |                      |                    |

Total %HV Deg. Satn (v/c)

All Vehicles 4380 0.8 0.779

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

## Merge Analysis

| Exit<br>Lane<br>Number                    | Short<br>Lane<br>Length<br>m | Percent<br>Oppng<br>Lane | Percent<br>Opposing<br>Flow Rate<br>% veh/h pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane<br>Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|-------------------------------------------|------------------------------|--------------------------|---------------------------------------------------|------------------------|-----------------------------|----------------------------------------|---------------------|----------------------|-----------------------|
| South Exit: R44_S<br>Merge Type: Priority |                              |                          |                                                   |                        |                             |                                        |                     |                      |                       |
| Exit Short Lane                           | 3                            | 140                      | 0.0 382 385                                       | 3.03                   | 2.02                        | 354                                    | 1389 0.255          | 0.6                  | 0.9                   |
| Merge Lane                                | 2                            | -                        | 100.0 Merge Lane is not Opposed                   |                        |                             | 382                                    | 1800 0.212          | 0.0                  | 0.0                   |
| North Exit: R44_N<br>Merge Type: Priority |                              |                          |                                                   |                        |                             |                                        |                     |                      |                       |
| Exit Short Lane                           | 3                            | 145                      | 0.0 1044 1046                                     | 3.01                   | 2.00                        | 799                                    | 701 1.140           | 3.0                  | 138.2                 |
| Merge Lane                                | 2                            | -                        | 100.0 Merge Lane is not Opposed                   |                        |                             | 1044                                   | 1800 0.580          | 0.0                  | 0.0                   |

| Variable Demand Analysis        |                             |                              |                                            |                            |
|---------------------------------|-----------------------------|------------------------------|--------------------------------------------|----------------------------|
|                                 | Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand<br>to Clear | Duration<br>of<br>Oversatn |
|                                 | veh                         | veh                          | sec                                        | sec                        |
| <b>South: R44_S</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>East: Webersvallei Road</b>  |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>North: R44_N</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>West: Maria Lievens Road</b> |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Thursday, 15 February 2024 12:30:29

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9



## LANE SUMMARY

**Site:** WebFresIPD [Webersvallei Rd X Fresno St  
**AM\_IY2025\_PropDev** (Site Folder: Scenario 1b - Implementation  
**Year 2025 Proposed Dev - AM Peak)**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 AM Peak with Development trips.  
 Site Category: Proposed Design 1  
 Roundabout

| Lane Use and Performance |               |      |               |      |       |           |            |             |                  |           |               |             |             |           |              |
|--------------------------|---------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-----------|---------------|-------------|-------------|-----------|--------------|
|                          | Demand Flows  |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Queue | Back Of Queue | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total veh/h | HV % | [ Total veh/h | HV % | veh/h | v/c       | %          | sec         |                  | [ Veh     | Dist ] m      |             | m           | %         | %            |
| South: Fresno Street     |               |      |               |      |       |           |            |             |                  |           |               |             |             |           |              |
| Lane 1 <sup>d</sup>      | 188           | 3.4  | 188           | 3.4  | 902   | 0.209     | 100        | 7.3         | LOS A            | 1.2       | 8.6           | Full        | 160         | 0.0       | 0.0          |
| Approach                 | 188           | 3.4  | 188           | 3.4  |       | 0.209     |            | 7.3         | LOS A            | 1.2       | 8.6           |             |             |           |              |
| East: Webersvallei Rd_SE |               |      |               |      |       |           |            |             |                  |           |               |             |             |           |              |
| Lane 1 <sup>d</sup>      | 328           | 0.3  | 328           | 0.3  | 1058  | 0.310     | 100        | 6.4         | LOS A            | 1.8       | 12.8          | Full        | 220         | 0.0       | 0.0          |
| Approach                 | 328           | 0.3  | 328           | 0.3  |       | 0.310     |            | 6.4         | LOS A            | 1.8       | 12.8          |             |             |           |              |
| North: RoadName          |               |      |               |      |       |           |            |             |                  |           |               |             |             |           |              |
| Lane 1 <sup>d</sup>      | 48            | 0.0  | 48            | 0.0  | 987   | 0.049     | 100        | 9.0         | LOS A            | 0.2       | 1.6           | Full        | 500         | 0.0       | 0.0          |
| Approach                 | 48            | 0.0  | 48            | 0.0  |       | 0.049     |            | 9.0         | LOS A            | 0.2       | 1.6           |             |             |           |              |
| West: Webersvallei Rd_NW |               |      |               |      |       |           |            |             |                  |           |               |             |             |           |              |
| Lane 1 <sup>d</sup>      | 316           | 3.3  | 316           | 3.3  | 1567  | 0.202     | 100        | 6.5         | LOS A            | 1.3       | 9.4           | Full        | 130         | 0.0       | 0.0          |
| Approach                 | 316           | 3.3  | 316           | 3.3  |       | 0.202     |            | 6.5         | LOS A            | 1.3       | 9.4           |             |             |           |              |
| All Vehicles             | 881           | 2.0  | 881           | 2.0  |       | 0.310     |            | 6.8         | LOS A            | 1.8       | 12.8          |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

South: Fresno Street

| Mov.            | L2  | T1 | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|-----|----|----|-------|-----|-------|-----------|------------|--------------|--------------|
| From S To Exit: | W   | N  | E  |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 181 | 2  | 5  | 188   | 3.4 | 902   | 0.209     | 100        | NA           | NA           |
| Approach        | 181 | 2  | 5  | 188   | 3.4 |       | 0.209     |            |              |              |

East: Webersvallei Rd\_SE

| Mov.            | L2 | T1  | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|-----|-------|-----|-------|-----------|------------|--------------|--------------|
| From E To Exit: | S  | W   |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 9  | 319 | 328   | 0.3 | 1058  | 0.310     | 100        | NA           | NA           |
| Approach        | 9  | 319 | 328   | 0.3 |       | 0.310     |            |              |              |

## North: RoadName

| Mov.     | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|--------|------|
| From N   |    |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | S  | W  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 5  | 43 | 48    | 0.0 | 987   | 0.049 | 100   | NA     | NA   |
| Approach | 5  | 43 | 48    | 0.0 |       | 0.049 |       |        |      |

## West: Webersvallei Rd\_NW

| Mov.     | L2 | T1  | R2  | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|-----|-----|-------|-----|-------|-------|-------|--------|------|
| From W   |    |     |     |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | N  | E   | S   |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 18 | 119 | 179 | 316   | 3.3 | 1567  | 0.202 | 100   | NA     | NA   |
| Approach | 18 | 119 | 179 | 316   | 3.3 |       | 0.202 |       |        |      |

| Total        | %HV | Deg. | Satn (v/c) |
|--------------|-----|------|------------|
| All Vehicles | 881 | 2.0  | 0.310      |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

## Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Opposing Flow Rate % veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|----------------------------|--------------------------|------------------|-----------------------|-------------------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|----------------------------|--------------------------|------------------|-----------------------|-------------------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial Queued Demand | Residual Queued Demand | Time for Residual Demand to Clear | Duration of Oversatn |
|-----------------------|------------------------|-----------------------------------|----------------------|
| veh                   | veh                    | sec                               | sec                  |

## South: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## East: Webersvallei Rd\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## North: RoadName

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## West: Webersvallei Rd\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## LANE SUMMARY

**Site:** SchFresIPD [School Rd X Fresno St  
**AM\_IY2025\_PropDev** (Site Folder: Scenario 1b - Implementation  
 Year 2025 Proposed Dev - AM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Implementation Year 2025 AM Peak with Development trips.

Site Category: Proposed Design 1

Stop (Two-Way)

| Lane Use and Performance    |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |           |              |
|-----------------------------|-----------------|----------|-----------------|----------|-------|-----------|------------|-------------|------------------|-------------------|------------|-------------|-------------|-----------|--------------|
|                             | Demand Flows    |          | Arrival Flows   |          | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |            | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                             | [ Total veh/h ] | [ HV % ] | [ Total veh/h ] | [ HV % ] | veh/h | v/c       | %          | sec         |                  | [ Veh ]           | [ Dist m ] |             | m           | %         | %            |
| <b>East: School Road_SE</b> |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                      | 109             | 3.8      | 109             | 3.8      | 1810  | 0.060     | 100        | 2.1         | LOS A            | 0.2               | 1.5        | Full        | 100         | 0.0       | 0.0          |
| Approach                    | 109             | 3.8      | 109             | 3.8      |       | 0.060     |            | 2.1         | NA               | 0.2               | 1.5        |             |             |           |              |
| <b>North: Fresno Street</b> |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                      | 175             | 8.4      | 175             | 8.4      | 1090  | 0.160     | 100        | 8.5         | LOS A            | 0.6               | 4.7        | Full        | 240         | 0.0       | 0.0          |
| Approach                    | 175             | 8.4      | 175             | 8.4      |       | 0.160     |            | 8.5         | LOS A            | 0.6               | 4.7        |             |             |           |              |
| <b>West: School Road_NW</b> |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                      | 36              | 0.0      | 36              | 0.0      | 1886  | 0.019     | 100        | 3.8         | LOS A            | 0.0               | 0.0        | Full        | 150         | 0.0       | 0.0          |
| Approach                    | 36              | 0.0      | 36              | 0.0      |       | 0.019     |            | 3.8         | NA               | 0.0               | 0.0        |             |             |           |              |
| All Vehicles                | 320             | 5.9      | 320             | 5.9      |       | 0.160     |            | 5.8         | NA               | 0.6               | 4.7        |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA:(TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Approach Lane Flows (veh/h) |    |     |       |     |            |           |            |              |          |  |
|-----------------------------|----|-----|-------|-----|------------|-----------|------------|--------------|----------|--|
| <b>East: School Road_SE</b> |    |     |       |     |            |           |            |              |          |  |
| Mov.                        | T1 | R2  | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane |  |
| From E                      |    |     |       |     | Cap. veh/h | v/c       | %          | %            | No.      |  |
| To Exit:                    | W  | N   |       |     |            |           |            |              |          |  |
| Lane 1                      | 68 | 41  | 109   | 3.8 | 1810       | 0.060     | 100        | NA           | NA       |  |
| Approach                    | 68 | 41  | 109   | 3.8 |            | 0.060     |            |              |          |  |
| <b>North: Fresno Street</b> |    |     |       |     |            |           |            |              |          |  |
| Mov.                        | L2 | R2  | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane |  |
| From N                      |    |     |       |     | Cap. veh/h | v/c       | %          | %            | No.      |  |
| To Exit:                    | E  | W   |       |     |            |           |            |              |          |  |
| Lane 1                      | 62 | 113 | 175   | 8.4 | 1090       | 0.160     | 100        | NA           | NA       |  |
| Approach                    | 62 | 113 | 175   | 8.4 |            | 0.160     |            |              |          |  |
| <b>West: School Road_NW</b> |    |     |       |     |            |           |            |              |          |  |
| Mov.                        | L2 | T1  | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane |  |
| From W                      |    |     |       |     | Cap. veh/h | v/c       | %          | %            | No.      |  |
| To Exit:                    | N  | E   |       |     |            |           |            |              |          |  |

|          |    |    |    |     |       |       |     |    |    |
|----------|----|----|----|-----|-------|-------|-----|----|----|
| Lane 1   | 24 | 12 | 36 | 0.0 | 1886  | 0.019 | 100 | NA | NA |
| Approach | 24 | 12 | 36 | 0.0 | 0.019 |       |     |    |    |

|       |     |                |
|-------|-----|----------------|
| Total | %HV | Deg.Satn (v/c) |
|-------|-----|----------------|

|              |     |     |       |
|--------------|-----|-----|-------|
| All Vehicles | 320 | 5.9 | 0.160 |
|--------------|-----|-----|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Flow Rate % veh/h pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|-------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|-------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                      | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|----------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
| East: School Road_SE |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: Fresno Street |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: School Road_NW |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 17:48:05

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliverables\0510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extension.sip9

## LANE SUMMARY

**Site: SchAccIPD [School Rd X Access Road]**  
**AM\_IY2025\_PropDev (Site Folder: Scenario 1b - Implementation**  
**Year 2025 Proposed Dev - AM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Implementation Year 2025 AM Peak with Development trips.

Site Category: Proposed Design 1

Stop (All-Way)

| Lane Use and Performance |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
|--------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|------------|--------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. |        |
|                          | [ Total      | HV ] | [ Total       | HV ] |       |           |            |             |                  | [ Veh             | Dist ] |             |             | Adj.       | Block. |
|                          | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec.        |                  |                   | m      |             | m           | %          | %      |
| South: Access Road       |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                   | 84           | 0.0  | 84            | 0.0  | 424   | 0.199     | 100        | 16.5        | LOS C            | 0.7               | 4.9    | Full        | 100         | 0.0        | 0.0    |
| Approach                 | 84           | 0.0  | 84            | 0.0  |       | 0.199     |            | 16.5        | LOS C            | 0.7               | 4.9    |             |             |            |        |
| East: School Road_SE     |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                   | 7            | 42.9 | 7             | 42.9 | 407   | 0.018     | 100        | 16.8        | LOS C            | 0.1               | 0.5    | Full        | 400         | 0.0        | 0.0    |
| Approach                 | 7            | 42.9 | 7             | 42.9 |       | 0.018     |            | 16.8        | LOS C            | 0.1               | 0.5    |             |             |            |        |
| North: Blakemore Street  |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                   | 40           | 2.6  | 40            | 2.6  | 745   | 0.054     | 100        | 8.9         | LOS A            | 0.2               | 1.1    | Full        | 50          | 0.0        | 0.0    |
| Approach                 | 40           | 2.6  | 40            | 2.6  |       | 0.054     |            | 8.9         | LOS A            | 0.2               | 1.1    |             |             |            |        |
| West: School Road_NW     |              |      |               |      |       |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                   | 80           | 10.5 | 80            | 10.5 | 576   | 0.139     | 100        | 13.5        | LOS B            | 0.4               | 3.4    | Full        | 260         | 0.0        | 0.0    |
| Approach                 | 80           | 10.5 | 80            | 10.5 |       | 0.139     |            | 13.5        | LOS B            | 0.4               | 3.4    |             |             |            |        |
| All Vehicles             | 212          | 6.0  | 212           | 6.0  |       | 0.199     |            | 13.9        | LOS B            | 0.7               | 4.9    |             |             |            |        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Approach Lane Flows (veh/h) |    |       |       |       |       |       |       |        |        |      |  |
|-----------------------------|----|-------|-------|-------|-------|-------|-------|--------|--------|------|--|
| South: Access Road          |    |       |       |       |       |       |       |        |        |      |  |
| Mov.                        | L2 | T1    | Total | %HV   |       |       |       |        |        |      |  |
| From S                      |    |       |       |       | Cap.  | Deg.  | Lane  | Prob.  | Ov.    |      |  |
| To Exit:                    | W  | N     |       |       | veh/h | Satn  | Util. | SL Ov. | Lane   |      |  |
|                             |    |       |       |       |       | v/c   | %     | %      | No.    |      |  |
| Lane 1                      | 68 | 16    | 84    | 0.0   | 424   | 0.199 | 100   | NA     | NA     |      |  |
| Approach                    | 68 | 16    | 84    | 0.0   |       | 0.199 |       |        |        |      |  |
| East: School Road_SE        |    |       |       |       |       |       |       |        |        |      |  |
| Mov.                        | T1 | Total | %HV   |       |       |       |       |        |        |      |  |
| From E                      |    |       |       |       | Cap.  | Deg.  | Lane  | Prob.  | Ov.    |      |  |
| To Exit:                    | W  |       |       |       | veh/h | Satn  | Util. | SL Ov. | Lane   |      |  |
|                             |    |       |       |       |       | v/c   | %     | %      | No.    |      |  |
| Lane 1                      | 7  | 7     | 42.9  |       | 407   | 0.018 | 100   | NA     | NA     |      |  |
| Approach                    | 7  | 7     | 42.9  |       |       | 0.018 |       |        |        |      |  |
| North: Blakemore Street     |    |       |       |       |       |       |       |        |        |      |  |
| Mov.                        | L2 | T1    | R2    | Total | %HV   |       |       |        |        |      |  |
| From N                      |    |       |       |       |       | Cap.  | Deg.  | Lane   | Prob.  | Ov.  |  |
| To Exit:                    | E  | S     | W     |       |       | veh/h | Satn  | Util.  | SL Ov. | Lane |  |
|                             |    |       |       |       |       |       | v/c   | %      | %      | No.  |  |



|                           |     |     |    |       |       |       |       |       |        |      |
|---------------------------|-----|-----|----|-------|-------|-------|-------|-------|--------|------|
| Lane 1                    | 1   | 7   | 32 | 40    | 2.6   | 745   | 0.054 | 100   | NA     | NA   |
| Approach                  | 1   | 7   | 32 | 40    | 2.6   |       | 0.054 |       |        |      |
| West: School Road_NW      |     |     |    |       |       |       |       |       |        |      |
| Mov.                      | L2  | T1  | R2 | Total | %HV   |       |       |       |        |      |
| From W                    |     |     |    |       |       |       |       |       |        |      |
| To Exit:                  | N   | E   | S  |       |       | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|                           |     |     |    |       |       | veh/h | Satn  | Util. | SL Ov. | Lane |
|                           |     |     |    |       |       |       | v/c   | %     | %      | No:  |
| Lane 1                    | 39  | 12  | 29 | 80    | 10.5  | 576   | 0.139 | 100   | NA     | NA   |
| Approach                  | 39  | 12  | 29 | 80    | 10.5  |       | 0.139 |       |        |      |
| Total %HV Deg. Satn (v/c) |     |     |    |       |       |       |       |       |        |      |
| All Vehicles              | 212 | 6.0 |    |       | 0.199 |       |       |       |        |      |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis   |                     |                      |                           |                 |                  |                       |                      |                     |               |                |                 |  |
|------------------|---------------------|----------------------|---------------------------|-----------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|--|
| Exit Lane Number | Short Lane Length m | Percent Opng In Lane | Opposing Flow Rate %veh/h | Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |  |

There are no Exit Short Lanes for Merge Analysis at this Site.

| Variable Demand Analysis |                           |                            |                                       |                          |
|--------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
|                          | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
| South: Access Road       |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| East: School Road_SE     |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: Blakemore Street  |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: School Road_NW     |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:29

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site: R44Sch [R44 X School Rd AM\_IY2025\_PropDev (Site Folder: Scenario 1b - Implementation Year 2025 Proposed Dev - AM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current AM Peak.

Site Category: Base Year

Stop (Two-Way)

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |        |             |             |                        |     |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|------------------------|-----|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. Adj. Block. |     |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | [ Veh             | Dist ] |             |             |                        |     |
|                          | veh/h        | %    | veh/h         | %    |      | veh/h     | v/c        | %           | sec              |                   | m      |             |             | m                      | %   |
| South: R44_SW            |              |      |               |      |      |           |            |             |                  |                   |        |             |             |                        |     |
| Lane 1                   | 2103         | 0.5  | 2103          | 0.5  | 1944 | 1.082     | 100        | 204.1       | LOS F            | 0.0               | 0.0    | Full        | 2600        | 0.0                    | 0.0 |
| Lane 2                   | 472          | 2.4  | 472           | 2.4  | 436  | 1.082     | 100        | 227.0       | LOS F            | 65.6              | 468.6  | Full        | 2600        | 0.0                    | 0.0 |
| Approach                 | 2575         | 0.8  | 2575          | 0.8  |      | 1.082     |            | 208.3       | NA               | 65.6              | 468.6  |             |             |                        |     |
| East: School Road        |              |      |               |      |      |           |            |             |                  |                   |        |             |             |                        |     |
| Lane 1                   | 137          | 4.6  | 137           | 4.6  | 115  | 1.191     | 100        | 195.7       | LOS F            | 16.6              | 121.0  | Full        | 270         | 0.0                    | 0.0 |
| Approach                 | 137          | 4.6  | 137           | 4.6  |      | 1.191     |            | 195.7       | LOS F            | 16.6              | 121.0  |             |             |                        |     |
| North: R44_NE            |              |      |               |      |      |           |            |             |                  |                   |        |             |             |                        |     |
| Lane 1                   | 45           | 2.3  | 45            | 2.3  | 1827 | 0.025     | 100        | 5.6         | LOS A            | 0.0               | 0.0    | Short       | 80          | 0.0                    | NA  |
| Lane 2                   | 558          | 1.7  | 558           | 1.7  | 1929 | 0.289     | 100        | 0.1         | LOS A            | 0.0               | 0.0    | Full        | 580         | 0.0                    | 0.0 |
| Lane 3                   | 558          | 1.7  | 558           | 1.7  | 1929 | 0.289     | 100        | 0.1         | LOS A            | 0.0               | 0.0    | Full        | 580         | 0.0                    | 0.0 |
| Approach                 | 1161         | 1.7  | 1161          | 1.7  |      | 0.289     |            | 0.3         | NA               | 0.0               | 0.0    |             |             |                        |     |
| All Vehicles             | 3873         | 1.2  | 3873          | 1.2  |      | 1.191     |            | 145.5       | NA               | 65.6              | 468.6  |             |             |                        |     |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

South: R44\_SW

| Mov.            | T1   | R2  | Total | %HV | Cap. veh/h | Deg. Satn v/c | Lane Util. % | Prob. SL Ov. % | Ov. Lane No. |
|-----------------|------|-----|-------|-----|------------|---------------|--------------|----------------|--------------|
| From S To Exit: | N    | E   |       |     |            |               |              |                |              |
| Lane 1          | 2103 | -   | 2103  | 0.5 | 1944       | 1.082         | 100          | NA             | NA           |
| Lane 2          | 346  | 126 | 472   | 2.4 | 436        | 1.082         | 100          | NA             | NA           |
| Approach        | 2448 | 126 | 2575  | 0.8 |            | 1.082         |              |                |              |

East: School Road

| Mov.            | L2  | R2 | Total | %HV | Cap. veh/h | Deg. Satn v/c | Lane Util. % | Prob. SL Ov. % | Ov. Lane No. |
|-----------------|-----|----|-------|-----|------------|---------------|--------------|----------------|--------------|
| From E To Exit: | S   | N  |       |     |            |               |              |                |              |
| Lane 1          | 133 | 4  | 137   | 4.6 | 115        | 1.191         | 100          | NA             | NA           |
| Approach        | 133 | 4  | 137   | 4.6 |            | 1.191         |              |                |              |



## North: R44\_NE

| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | Total | %HV   | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|-------|-------|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 45      | -       | 45    | 2.3   | 1827          | 0.025               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 558     | 558   | 1.7   | 1929          | 0.289               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 558     | 558   | 1.7   | 1929          | 0.289               | 100                | NA                   | NA                 |
| Approach                   | 45      | 1116    | 1161  | 1.7   |               | 0.289               |                    |                      |                    |
| Total %HV Deg. Satn (v/c)  |         |         |       |       |               |                     |                    |                      |                    |
| All Vehicles               | 3873    | 1.2     |       | 1.191 |               |                     |                    |                      |                    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

## Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Oppng in<br>Lane<br>% | Flow Rate<br>veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|----------------------------------|--------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|----------------------------------|--------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

|                   | Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand<br>to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|-------------------|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|
| South: R44_SW     |                                    |                                     |                                                   |                                   |
| Lane 1            | 0.0                                | 79.4                                | 147.1                                             | NA                                |
| Lane 2            | 0.0                                | 17.8                                | 147.1                                             | NA                                |
| East: School Road |                                    |                                     |                                                   |                                   |
| Lane 1            | 0.0                                | 11.0                                | 343.9                                             | NA                                |
| North: R44_NE     |                                    |                                     |                                                   |                                   |
| Lane 1            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| Lane 2            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| Lane 3            | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |

## LANE SUMMARY

**Site: R44WebFPD [R44 X Webersvallei Rd  
PM\_IY2025\_PropDev - Planned (Site Folder: Scenario 1b -  
Implementation Year 2025 Proposed Dev - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 PM Peak with Development trips.

Site Category: Future Conditions 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |                  |         |                  |         |                   |           |            |             |                  |                   |           |             |             |           |              |
|--------------------------|------------------|---------|------------------|---------|-------------------|-----------|------------|-------------|------------------|-------------------|-----------|-------------|-------------|-----------|--------------|
|                          | Demand Flows     |         | Arrival Flows    |         | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |           | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total<br>veh/h | HV<br>% | [ Total<br>veh/h | HV<br>% |                   |           |            |             |                  | [ Veh             | Dist<br>m |             |             |           |              |
| South: R44_S             |                  |         |                  |         |                   |           |            |             |                  |                   |           |             |             |           |              |
| Lane 1                   | 54               | 2.0     | 54               | 2.0     | 982               | 0.055     | 100        | 16.2        | LOS B            | 1.1               | 7.9       | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 394              | 3.1     | 394              | 3.1     | 1030              | 0.382     | 100        | 13.1        | LOS B            | 10.0              | 72.2      | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 394              | 3.1     | 394              | 3.1     | 1030              | 0.382     | 100        | 13.1        | LOS B            | 10.0              | 72.2      | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 394              | 3.1     | 394              | 3.1     | 1030              | 0.382     | 100        | 15.0        | LOS B            | 10.0              | 72.2      | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 188              | 0.0     | 188              | 0.0     | 367               | 0.514     | 100        | 21.4        | LOS C            | 4.1               | 28.4      | Short       | 120         | 0.0       | NA           |
| Approach                 | 1423             | 2.7     | 1423             | 2.7     |                   | 0.514     |            | 14.9        | LOS B            | 10.0              | 72.2      |             |             |           |              |
| East: Webersvallei Road  |                  |         |                  |         |                   |           |            |             |                  |                   |           |             |             |           |              |
| Lane 1                   | 309              | 1.4     | 309              | 1.4     | 608 <sup>1</sup>  | 0.509     | 100        | 33.8        | LOS C            | 11.0              | 77.9      | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 54               | 0.0     | 54               | 0.0     | 392               | 0.137     | 100        | 34.4        | LOS C            | 2.0               | 13.7      | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 181              | 0.9     | 181              | 0.9     | 274               | 0.663     | 100        | 46.4        | LOS D            | 7.6               | 53.9      | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 183              | 0.9     | 183              | 0.9     | 275               | 0.663     | 100        | 46.2        | LOS D            | 7.7               | 54.2      | Short       | 40          | 0.0       | NA           |
| Approach                 | 727              | 1.0     | 727              | 1.0     |                   | 0.663     |            | 40.1        | LOS D            | 11.0              | 77.9      |             |             |           |              |
| North: R44_N             |                  |         |                  |         |                   |           |            |             |                  |                   |           |             |             |           |              |
| Lane 1                   | 527              | 0.6     | 527              | 0.6     | 1239              | 0.426     | 100        | 15.7        | LOS B            | 10.6              | 74.9      | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 660              | 0.4     | 660              | 0.4     | 850 <sup>1</sup>  | 0.776     | 100        | 22.5        | LOS C            | 24.2              | 170.3     | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 814              | 0.4     | 814              | 0.4     | 1048              | 0.776     | 100        | 18.2        | LOS B            | 28.6              | 200.6     | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 786              | 0.4     | 786              | 0.4     | 1012 <sup>1</sup> | 0.776     | 100        | 35.2        | LOS D            | 27.7              | 194.7     | Short       | 145         | 0.0       | NA           |
| Lane 5                   | 59               | 1.8     | 59               | 1.8     | 749               | 0.079     | 100        | 24.5        | LOS C            | 1.0               | 6.8       | Short       | 70          | 0.0       | NA           |
| Approach                 | 2846             | 0.4     | 2846             | 0.4     |                   | 0.776     |            | 23.6        | LOS C            | 28.6              | 200.6     |             |             |           |              |
| West: Maria Lievens Road |                  |         |                  |         |                   |           |            |             |                  |                   |           |             |             |           |              |
| Lane 1                   | 107              | 1.0     | 107              | 1.0     | 222               | 0.483     | 100        | 43.7        | LOS D            | 4.6               | 32.5      | Full        | 25          | 0.0       | 29.0         |
| Lane 2                   | 69               | 1.5     | 69               | 1.5     | 269               | 0.258     | 100        | 47.2        | LOS D            | 3.0               | 21.0      | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 177              | 1.2     | 177              | 1.2     |                   | 0.483     |            | 45.1        | LOS D            | 4.6               | 32.5      |             |             |           |              |
| All Vehicles             | 5174             | 1.2     | 5174             | 1.2     |                   | 0.776     |            | 24.2        | LOS C            | 28.6              | 200.6     |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov.<br>From S<br>To Exit: | L2<br>W | T1<br>N | R2<br>E | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|-------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 54      | -       | -       | 54    | 2.0 | 982               | 0.055               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 394     | -       | 394   | 3.1 | 1030              | 0.382               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 394     | -       | 394   | 3.1 | 1030              | 0.382               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 394     | -       | 394   | 3.1 | 1030              | 0.382               | 100                | 0.0                  | 3                  |
| Lane 5                     | -       | -       | 188     | 188   | 0.0 | 367               | 0.514               | 100                | 0.0                  | 4                  |
| Approach                   | 54      | 1181    | 188     | 1423  | 2.7 |                   | 0.514               |                    |                      |                    |
| East: Webersvallei Road    |         |         |         |       |     |                   |                     |                    |                      |                    |
| Mov.<br>From E<br>To Exit: | L2<br>S | T1<br>W | R2<br>N | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                     | 309     | -       | -       | 309   | 1.4 | 608 <sup>1</sup>  | 0.509               | 100                | 66.8                 | 2                  |
| Lane 2                     | -       | 54      | -       | 54    | 0.0 | 392               | 0.137               | 100                | NA                   | NA                 |
| Lane 3                     | -       | -       | 181     | 181   | 0.9 | 274               | 0.663               | 100                | 0.0                  | 2                  |
| Lane 4                     | -       | -       | 183     | 183   | 0.9 | 275               | 0.663               | 100                | 32.7                 | 3                  |
| Approach                   | 309     | 54      | 364     | 727   | 1.0 |                   | 0.663               |                    |                      |                    |
| North: R44_N               |         |         |         |       |     |                   |                     |                    |                      |                    |
| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | R2<br>W | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                     | 527     | -       | -       | 527   | 0.6 | 1239              | 0.426               | 100                | 11.1                 | 2                  |
| Lane 2                     | -       | 660     | -       | 660   | 0.4 | 850 <sup>1</sup>  | 0.776               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 814     | -       | 814   | 0.4 | 1048              | 0.776               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 786     | -       | 786   | 0.4 | 1012 <sup>1</sup> | 0.776               | 100                | 31.8                 | 3                  |
| Lane 5                     | -       | -       | 59      | 59    | 1.8 | 749               | 0.079               | 100                | 0.0                  | 4                  |
| Approach                   | 527     | 2260    | 59      | 2846  | 0.4 |                   | 0.776               |                    |                      |                    |
| West: Maria Lievens Road   |         |         |         |       |     |                   |                     |                    |                      |                    |
| Mov.<br>From W<br>To Exit: | L2<br>N | T1<br>E | R2<br>S | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                     | 80      | 27      | -       | 107   | 1.0 | 222               | 0.483               | 100                | NA                   | NA                 |
| Lane 2                     | -       | -       | 69      | 69    | 1.5 | 269               | 0.258               | 100                | NA                   | NA                 |
| Approach                   | 80      | 27      | 69      | 177   | 1.2 |                   | 0.483               |                    |                      |                    |
| Total %HV Deg. Satn (v/c)  |         |         |         |       |     |                   |                     |                    |                      |                    |
| All Vehicles               | 5174    | 1.2     |         |       |     |                   | 0.776               |                    |                      |                    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Merge Analysis

|                                                  | Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Oppng in<br>Lane<br>% veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane<br>Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |     |      |
|--------------------------------------------------|------------------------|------------------------------|----------------------------------------|--------------------------------|------------------------|-----------------------------|----------------------------------------|---------------------|----------------------|-----------------------|-----|------|
| South Exit: R44_S<br>Merge Type: <b>Priority</b> |                        |                              |                                        |                                |                        |                             |                                        |                     |                      |                       |     |      |
| Exit Short Lane                                  | 3                      | 140                          | 0.0                                    | 883                            | 885                    | 3.01                        | 2.00                                   | 786                 | 873                  | 0.901                 | 2.1 | 11.1 |
| Merge Lane                                       | 2                      | -                            | 100.0                                  | Merge Lane is not Opposed      |                        |                             | 883                                    | 1800                | 0.491                | 0.0                   | 0.0 |      |
| North Exit: R44_N<br>Merge Type: <b>Priority</b> |                        |                              |                                        |                                |                        |                             |                                        |                     |                      |                       |     |      |
| Exit Short Lane                                  | 3                      | 145                          | 0.0                                    | 576                            | 583                    | 3.05                        | 2.03                                   | 394                 | 1166                 | 0.338                 | 1.1 | 1.9  |
| Merge Lane                                       | 2                      | -                            | 100.0                                  | Merge Lane is not Opposed      |                        |                             | 576                                    | 1800                | 0.320                | 0.0                   | 0.0 |      |

| Variable Demand Analysis |                             |                              |                                            |                            |
|--------------------------|-----------------------------|------------------------------|--------------------------------------------|----------------------------|
|                          | Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand<br>to Clear | Duration<br>of<br>Oversatn |
|                          | veh                         | veh                          | sec                                        | sec                        |
| South: R44_S             |                             |                              |                                            |                            |
| Lane 1                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| East: Webersvallei Road  |                             |                              |                                            |                            |
| Lane 1                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| North: R44_N             |                             |                              |                                            |                            |
| Lane 1                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| West: Maria Lievens Road |                             |                              |                                            |                            |
| Lane 1                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                   | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Thursday, 15 February 2024 12:30:30

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extension.sip9

## LANE SUMMARY

**Site:** WebFresIPD [Webersvallei Rd X Fresno St  
PM\_IY2025\_PropDev (Site Folder: Scenario 1b - Implementation  
Year 2025 Proposed Dev - PM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 PM Peak with Development trips.

Site Category: Proposed Design 1  
Roundabout

| Lane Use and Performance |               |      |               |      |       |           |            |             |                  |                   |                    |             |             |                 |              |
|--------------------------|---------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------------------|-------------|-------------|-----------------|--------------|
|                          | Demand Flows  |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue | Back Of Queue Dist | Lane Config | Lane Length | Cap. Prob. Adj. | Prob. Block. |
|                          | [ Total veh/h | HV % | [ Total veh/h | HV % | veh/h | v/c       | %          | sec         |                  | [ Veh             | m                  |             | m           | %               | %            |
| South: Fresno Street     |               |      |               |      |       |           |            |             |                  |                   |                    |             |             |                 |              |
| Lane 1 <sup>d</sup>      | 105           | 0.0  | 105           | 0.0  | 1063  | 0.099     | 100        | 6.1         | LOS A            | 0.5               | 3.6                | Full        | 160         | 0.0             | 0.0          |
| Approach                 | 105           | 0.0  | 105           | 0.0  |       | 0.099     |            | 6.1         | LOS A            | 0.5               | 3.6                |             |             |                 |              |
| East: Webersvallei Rd_SE |               |      |               |      |       |           |            |             |                  |                   |                    |             |             |                 |              |
| Lane 1 <sup>d</sup>      | 198           | 0.0  | 198           | 0.0  | 1073  | 0.184     | 100        | 6.0         | LOS A            | 1.0               | 6.8                | Full        | 220         | 0.0             | 0.0          |
| Approach                 | 198           | 0.0  | 198           | 0.0  |       | 0.184     |            | 6.0         | LOS A            | 1.0               | 6.8                |             |             |                 |              |
| North: RoadName          |               |      |               |      |       |           |            |             |                  |                   |                    |             |             |                 |              |
| Lane 1 <sup>d</sup>      | 22            | 0.0  | 22            | 0.0  | 898   | 0.025     | 100        | 9.7         | LOS A            | 0.1               | 0.8                | Full        | 500         | 0.0             | 0.0          |
| Approach                 | 22            | 0.0  | 22            | 0.0  |       | 0.025     |            | 9.7         | LOS A            | 0.1               | 0.8                |             |             |                 |              |
| West: Webersvallei Rd_NW |               |      |               |      |       |           |            |             |                  |                   |                    |             |             |                 |              |
| Lane 1 <sup>d</sup>      | 469           | 0.7  | 469           | 0.7  | 1595  | 0.294     | 100        | 6.0         | LOS A            | 2.0               | 14.0               | Full        | 130         | 0.0             | 0.0          |
| Approach                 | 469           | 0.7  | 469           | 0.7  |       | 0.294     |            | 6.0         | LOS A            | 2.0               | 14.0               |             |             |                 |              |
| All Vehicles             | 795           | 0.4  | 795           | 0.4  |       | 0.294     |            | 6.1         | LOS A            | 2.0               | 14.0               |             |             |                 |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

South: Fresno Street

| Mov.            | L2 | T1 | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|----|-------|-----|-------|-----------|------------|--------------|--------------|
| From S To Exit: | W  | N  | E  |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 96 | 4  | 5  | 105   | 0.0 | 1063  | 0.099     | 100        | NA           | NA           |
| Approach        | 96 | 4  | 5  | 105   | 0.0 |       | 0.099     |            |              |              |

East: Webersvallei Rd\_SE

| Mov.            | L2 | T1  | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|-----|-------|-----|-------|-----------|------------|--------------|--------------|
| From E To Exit: | S  | W   |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 12 | 186 | 198   | 0.0 | 1073  | 0.184     | 100        | NA           | NA           |
| Approach        | 12 | 186 | 198   | 0.0 |       | 0.184     |            |              |              |

**North: RoadName**

| Mov.     | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|--------|------|
| From N   |    |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | S  | W  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 2  | 20 | 22    | 0.0 | 898   | 0.025 | 100   | NA     | NA   |
| Approach | 2  | 20 | 22    | 0.0 |       | 0.025 |       |        |      |

**West: Webersvallei Rd\_NW**

| Mov.     | L2 | T1  | R2  | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|-----|-----|-------|-----|-------|-------|-------|--------|------|
| From W   |    |     |     |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | N  | E   | S   |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 42 | 245 | 182 | 469   | 0.7 | 1595  | 0.294 | 100   | NA     | NA   |
| Approach | 42 | 245 | 182 | 469   | 0.7 |       | 0.294 |       |        |      |

Total %HV Deg.Satn (v/c)

All Vehicles 795 0.4 0.294

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

**Merge Analysis**

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane % | Flow Rate veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-------------------------|-----------------|--------------------------|------------------|-----------------------|-------------------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-------------------------|-----------------|--------------------------|------------------|-----------------------|-------------------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

**Variable Demand Analysis**

| Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|---------------------------|----------------------------|---------------------------------------|--------------------------|
|---------------------------|----------------------------|---------------------------------------|--------------------------|

**South: Fresno Street**

Lane 1 0.0 0.0 0.0 0.0

**East: Webersvallei Rd\_SE**

Lane 1 0.0 0.0 0.0 0.0

**North: RoadName**

Lane 1 0.0 0.0 0.0 0.0

**West: Webersvallei Rd\_NW**

Lane 1 0.0 0.0 0.0 0.0



| Approach Lane Flows (veh/h) |    |    |       |     |       |             |            |             |             |  |
|-----------------------------|----|----|-------|-----|-------|-------------|------------|-------------|-------------|--|
| East: School Road_SE        |    |    |       |     |       |             |            |             |             |  |
| Mov.                        | T1 | R2 | Total | %HV | Cap.  | Deg.        | Lane       | Prob.       | Ov.         |  |
| From E<br>To Exit:          | W  | N  |       |     | veh/h | Satn<br>v/c | Util.<br>% | SL Ov.<br>% | Lane<br>No. |  |
| Lane 1                      | 26 | 24 | 51    | 4.2 | 1774  | 0.028       | 100        | NA          | NA          |  |
| Approach                    | 26 | 24 | 51    | 4.2 |       | 0.028       |            |             |             |  |
| North: Fresno Street        |    |    |       |     |       |             |            |             |             |  |
| Mov.                        | L2 | R2 | Total | %HV | Cap.  | Deg.        | Lane       | Prob.       | Ov.         |  |
| From N<br>To Exit:          | E  | W  |       |     | veh/h | Satn<br>v/c | Util.<br>% | SL Ov.<br>% | Lane<br>No. |  |
| Lane 1                      | 96 | 52 | 147   | 0.0 | 1263  | 0.117       | 100        | NA          | NA          |  |
| Approach                    | 96 | 52 | 147   | 0.0 |       | 0.117       |            |             |             |  |
| West: School Road_NW        |    |    |       |     |       |             |            |             |             |  |
| Mov.                        | L2 | T1 | Total | %HV | Cap.  | Deg.        | Lane       | Prob.       | Ov.         |  |
| From W<br>To Exit:          | N  | E  |       |     | veh/h | Satn<br>v/c | Util.<br>% | SL Ov.<br>% | Lane<br>No. |  |



|                          |     |     |       |     |       |       |     |    |    |
|--------------------------|-----|-----|-------|-----|-------|-------|-----|----|----|
| Lane 1                   | 47  | 23  | 71    | 1.5 | 1869  | 0.038 | 100 | NA | NA |
| Approach                 | 47  | 23  | 71    | 1.5 | 0.038 |       |     |    |    |
| Total %HV Deg.Satn (v/c) |     |     |       |     |       |       |     |    |    |
| All Vehicles             | 268 | 1.2 | 0.117 |     |       |       |     |    |    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length<br>m | Percent Oppng in Lane<br>% | Flow Rate<br>veh/h | Opposing Flow Rate<br>pcu/h | Critical Gap<br>sec | Follow-up Headway<br>sec | Lane Capacity Flow Rate<br>veh/h | Lane Capacity<br>veh/h | Deg. Satn<br>v/c | Min. Delay<br>sec | Merge Delay<br>sec |
|------------------|------------------------|----------------------------|--------------------|-----------------------------|---------------------|--------------------------|----------------------------------|------------------------|------------------|-------------------|--------------------|
|------------------|------------------------|----------------------------|--------------------|-----------------------------|---------------------|--------------------------|----------------------------------|------------------------|------------------|-------------------|--------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                      | Initial Queued Demand<br>veh | Residual Queued Demand<br>veh | Time for Residual Demand to Clear<br>sec | Duration of Oversatn<br>sec |
|----------------------|------------------------------|-------------------------------|------------------------------------------|-----------------------------|
| East: School Road_SE |                              |                               |                                          |                             |
| Lane 1               | 0.0                          | 0.0                           | 0.0                                      | 0.0                         |
| North: Fresno Street |                              |                               |                                          |                             |
| Lane 1               | 0.0                          | 0.0                           | 0.0                                      | 0.0                         |
| West: School Road_NW |                              |                               |                                          |                             |
| Lane 1               | 0.0                          | 0.0                           | 0.0                                      | 0.0                         |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 17:51:08

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site:** SchAcc [School Rd X Access Road]  
**PM\_IY2025\_PropDev** (Site Folder: Scenario 1b - Implementation  
 Year 2025 Proposed Dev - PM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Implementation Year 2025 PM Peak with Development trips.

Site Category: Base Year

Stop (All-Way)

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |           |            |             |                  | veh/h             | v/c    |             |             |           |              |
| South: Access Road       |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 49           | 0.0  | 49            | 0.0  | 202  | 0.245     | 100        | 29.3        | LOS D            | 0.9               | 6.5    | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 49           | 0.0  | 49            | 0.0  |      | 0.245     |            | 29.3        | LOS D            | 0.9               | 6.5    |             |             |           |              |
| North: Blakemore Street  |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 27           | 7.7  | 27            | 7.7  | 453  | 0.060     | 100        | 12.4        | LOS B            | 0.2               | 1.4    | Full        | 50          | 0.0       | 0.0          |
| Approach                 | 27           | 7.7  | 27            | 7.7  |      | 0.060     |            | 12.4        | LOS B            | 0.2               | 1.4    |             |             |           |              |
| West: School Road_NW     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 117          | 1.8  | 117           | 1.8  | 875  | 0.133     | 100        | 10.4        | LOS B            | 0.4               | 2.8    | Full        | 260         | 0.0       | 0.0          |
| Approach                 | 117          | 1.8  | 117           | 1.8  |      | 0.133     |            | 10.4        | LOS B            | 0.4               | 2.8    |             |             |           |              |
| All Vehicles             | 194          | 2.2  | 194           | 2.2  |      | 0.245     |            | 15.5        | LOS C            | 0.9               | 6.5    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

#### South: Access Road

| Mov.               | L2 | T1 | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|--------------------|----|----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| From S<br>To Exit: | W  | N  |       |     |               |                     |                    |                      |                    |
| Lane 1             | 36 | 14 | 49    | 0.0 | 202           | 0.245               | 100                | NA                   | NA                 |
| Approach           | 36 | 14 | 49    | 0.0 |               | 0.245               |                    |                      |                    |

#### North: Blakemore Street

| Mov.               | T1 | R2 | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|--------------------|----|----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| From N<br>To Exit: | S  | W  |       |     |               |                     |                    |                      |                    |
| Lane 1             | 14 | 14 | 27    | 7.7 | 453           | 0.060               | 100                | NA                   | NA                 |
| Approach           | 14 | 14 | 27    | 7.7 |               | 0.060               |                    |                      |                    |

#### West: School Road\_NW

| Mov.               | L2 | T1 | R2 | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|--------------------|----|----|----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| From W<br>To Exit: | N  | E  | S  |       |     |               |                     |                    |                      |                    |
| Lane 1             | 35 | 8  | 74 | 117   | 1.8 | 875           | 0.133               | 100                | NA                   | NA                 |
| Approach           | 35 | 8  | 74 | 117   | 1.8 |               | 0.133               |                    |                      |                    |

|              | Total | %HV | Deg.Satn (v/c) |
|--------------|-------|-----|----------------|
| All Vehicles | 194   | 2.2 | 0.245          |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis   |                        |                                  |                             |                     |                          |                         |                        |                  |                   |                    |
|------------------|------------------------|----------------------------------|-----------------------------|---------------------|--------------------------|-------------------------|------------------------|------------------|-------------------|--------------------|
| Exit Lane Number | Short Lane Length<br>m | Percent Oppng in Lane<br>% veh/h | Opposing Flow Rate<br>pcu/h | Critical Gap<br>sec | Follow-up Headway<br>sec | Lane Flow Rate<br>veh/h | Lane Capacity<br>veh/h | Deg. Satn<br>v/c | Min. Delay<br>sec | Merge Delay<br>sec |

There are no Exit Short Lanes for Merge Analysis at this Site.

| Variable Demand Analysis |                           |                            |                                       |                          |
|--------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
|                          | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
| South: Access Road       |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: Blakemore Street  |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: School Road_NW     |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:31

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliverables\10 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site: R44Sch [R44 X School Rd PM\_IY2025\_PropDev (Site Folder: Scenario 1b - Implementation Year 2025 Proposed Dev - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Current PM Peak.

Site Category: Base Year

Stop (Two-Way)

| Lane Use and Performance |                  |      |                  |      |       |           |                |             |                  |                   |             |             |             |           |              |
|--------------------------|------------------|------|------------------|------|-------|-----------|----------------|-------------|------------------|-------------------|-------------|-------------|-------------|-----------|--------------|
|                          | Demand Flows     |      | Arrival Flows    |      | Cap.  | Deg. Satn | Lane Util.     | Aver. Delay | Level of Service | 95% Back Of Queue |             | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total<br>veh/h | HV % | [ Total<br>veh/h | HV % | veh/h | v/c       | %              | sec         |                  | [ Veh             | Dist ]<br>m |             | m           | %         | %            |
| South: R44_SW            |                  |      |                  |      |       |           |                |             |                  |                   |             |             |             |           |              |
| Lane 1                   | 1427             | 2.7  | 1427             | 2.7  | 1917  | 0.745     | 7 <sup>5</sup> | 3.1         | LOS A            | 0.0               | 0.0         | Full        | 2600        | 0.0       | 0.0          |
| Lane 2                   | 62               | 0.0  | 62               | 0.0  | 6     | 10.14     | 100            | 8448.1      | LOS F            | 37.0              | 258.7       | Full        | 2600        | 0.0       | 0.0          |
| Approach                 | 1489             | 2.5  | 1489             | 2.5  |       | 10.14     |                | 355.2       | NA               | 37.0              | 258.7       |             |             |           |              |
| East: School Road        |                  |      |                  |      |       |           |                |             |                  |                   |             |             |             |           |              |
| Lane 1                   | 143              | 0.0  | 143              | 0.0  | 63    | 2.287     | 100            | 1213.4      | LOS F            | 53.0              | 371.2       | Full        | 270         | 0.0       | 15.3         |
| Approach                 | 143              | 0.0  | 143              | 0.0  |       | 2.287     |                | 1213.4      | LOS F            | 53.0              | 371.2       |             |             |           |              |
| North: R44_NE            |                  |      |                  |      |       |           |                |             |                  |                   |             |             |             |           |              |
| Lane 1                   | 61               | 0.0  | 61               | 0.0  | 1857  | 0.033     | 100            | 5.5         | LOS A            | 0.0               | 0.0         | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 1289             | 0.6  | 1289             | 0.6  | 1943  | 0.663     | 100            | 0.5         | LOS A            | 0.0               | 0.0         | Full        | 580         | 0.0       | 0.0          |
| Lane 3                   | 1289             | 0.6  | 1289             | 0.6  | 1943  | 0.663     | 100            | 0.5         | LOS A            | 0.0               | 0.0         | Full        | 580         | 0.0       | 0.0          |
| Approach                 | 2639             | 0.6  | 2639             | 0.6  |       | 0.663     |                | 0.6         | NA               | 0.0               | 0.0         |             |             |           |              |
| All Vehicles             | 4272             | 1.2  | 4272             | 1.2  |       | 10.14     |                | 164.9       | NA               | 53.0              | 371.2       |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>5</sup> Lane under-utilisation found by the program

### Approach Lane Flows (veh/h)

South: R44\_SW

| Mov.            | T1   | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util.     | Prob. SL Ov. | Ov. Lane No. |
|-----------------|------|----|-------|-----|-------|-----------|----------------|--------------|--------------|
| From S To Exit: | N    | E  |       |     | veh/h | v/c       | %              | %            |              |
| Lane 1          | 1427 | -  | 1427  | 2.7 | 1917  | 0.745     | 7 <sup>5</sup> | NA           | NA           |
| Lane 2          | -    | 62 | 62    | 0.0 | 6     | 10.14     | 100            | NA           | NA           |
| Approach        | 1427 | 62 | 1489  | 2.5 |       | 10.14     |                |              |              |

East: School Road

| Mov.            | L2 | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|-------|-----|-------|-----------|------------|--------------|--------------|
| From E To Exit: | S  | N  |       |     | veh/h | v/c       | %          | %            |              |

|          |     |   |     |     |       |       |     |    |    |
|----------|-----|---|-----|-----|-------|-------|-----|----|----|
| Lane 1   | 138 | 5 | 143 | 0.0 | 63    | 2.287 | 100 | NA | NA |
| Approach | 138 | 5 | 143 | 0.0 | 2.287 |       |     |    |    |

## North: R44\_NE

| Mov.     | L2 | T1   | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|------|-------|-----|-------|-------|-------|--------|------|
| From N   | E  | S    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: |    |      |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 61 | -    | 61    | 0.0 | 1857  | 0.033 | 100   | 0.0    | 2    |
| Lane 2   | -  | 1289 | 1289  | 0.6 | 1943  | 0.663 | 100   | NA     | NA   |
| Lane 3   | -  | 1289 | 1289  | 0.6 | 1943  | 0.663 | 100   | NA     | NA   |
| Approach | 61 | 2578 | 2639  | 0.6 | 0.663 |       |       |        |      |

| Total        | %HV  | Deg. | Satn (v/c) |
|--------------|------|------|------------|
| All Vehicles | 4272 | 1.2  | 10.141     |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

5 Lane under-utilisation-found by the program

## Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Opng in Lane | Opposing Flow Rate %veh/h | Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|----------------------|---------------------------|-----------------|------------------|-----------------------|----------------------|----------------|---------------|----------------|-----------------|
|------------------|---------------------|----------------------|---------------------------|-----------------|------------------|-----------------------|----------------------|----------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial Queued Demand | Residual Queued Demand | Time for Residual Demand to Clear | Duration of Oversatn |
|-----------------------|------------------------|-----------------------------------|----------------------|
| veh                   | veh                    | sec                               | sec                  |

## South: R44\_SW

|        |     |      |         |     |
|--------|-----|------|---------|-----|
| Lane 1 | 0.0 | 0.0  | 0.0     | 0.0 |
| Lane 2 | 0.0 | 28.0 | 16454.5 | NA  |

## East: School Road

|        |     |      |        |    |
|--------|-----|------|--------|----|
| Lane 1 | 0.0 | 40.3 | 2315.9 | NA |
|--------|-----|------|--------|----|

## North: R44\_NE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |

## LANE SUMMARY

**Site: R44WebF [R44 X Webersvallei Rd AM\_FY2030 - Planned  
(Site Folder: Scenario 2a - Future Year 2030 - AM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 AM Peak.

Site Category: Proposed Design 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated · Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
|--------------------------|-----------------|----------|-----------------|----------|-------------------|-----------|------------|-------------|------------------|-------------------|------------|-------------|-------------|-----------|--------------|
|                          | Demand Flows    |          | Arrival Flows   |          | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |            | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total veh/h ] | [ HV % ] | [ Total veh/h ] | [ HV % ] | veh/h             | v/c       | %          | sec         |                  | [ Veh ]           | [ Dist ] m |             | m           | %         | %            |
| South: R44_S             |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                   | 16              | 0.0      | 16              | 0.0      | 1086              | 0.015     | 100        | 23.7        | LOS C            | 0.3               | 2.4        | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 889             | 0.5      | 889             | 0.5      | 1133 <sup>1</sup> | 0.785     | 100        | 26.8        | LOS C            | 36.3              | 255.1      | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 897             | 0.5      | 897             | 0.5      | 1143              | 0.785     | 100        | 18.8        | LOS B            | 36.6              | 257.3      | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 857             | 0.5      | 857             | 0.5      | 1091 <sup>1</sup> | 0.785     | 100        | 439.1       | LOS F            | 35.0              | 245.8      | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 181             | 6.4      | 181             | 6.4      | 708               | 0.256     | 100        | 18.5        | LOS B            | 3.7               | 27.2       | Short       | 120         | 0.0       | NA           |
| Approach                 | 2840            | 0.9      | 2840            | 0.9      |                   | 0.785     |            | 148.1       | LOS F            | 36.6              | 257.3      |             |             |           |              |
| East: Webersvallei Road  |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                   | 198             | 4.3      | 198             | 4.3      | 560               | 0.353     | 100        | 37.3        | LOS D            | 8.2               | 59.8       | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 58              | 0.0      | 58              | 0.0      | 392               | 0.148     | 100        | 39.2        | LOS D            | 2.6               | 18.0       | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 252             | 0.2      | 252             | 0.2      | 328               | 0.767     | 100        | 65.2        | LOS E            | 13.1              | 92.2       | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 254             | 0.2      | 254             | 0.2      | 331               | 0.767     | 100        | 65.1        | LOS E            | 13.2              | 92.8       | Short       | 40          | 0.0       | NA           |
| Approach                 | 761             | 1.2      | 761             | 1.2      |                   | 0.767     |            | 56.0        | LOS E            | 13.2              | 92.8       |             |             |           |              |
| North: R44_N             |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                   | 177             | 3.0      | 177             | 3.0      | 1329              | 0.133     | 100        | 10.3        | LOS B            | 2.8               | 20.1       | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 387             | 1.8      | 387             | 1.8      | 1133              | 0.341     | 100        | 12.7        | LOS B            | 10.6              | 75.7       | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 387             | 1.8      | 387             | 1.8      | 1133              | 0.341     | 100        | 12.7        | LOS B            | 10.6              | 75.7       | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 387             | 1.8      | 387             | 1.8      | 1133              | 0.341     | 100        | 13.8        | LOS B            | 10.6              | 75.7       | Short       | 145         | 0.0       | NA           |
| Lane 5                   | 47              | 0.0      | 47              | 0.0      | 328               | 0.144     | 100        | 22.1        | LOS C            | 1.1               | 7.7        | Short       | 70          | 0.0       | NA           |
| Approach                 | 1384            | 1.9      | 1384            | 1.9      |                   | 0.341     |            | 13.0        | LOS B            | 10.6              | 75.7       |             |             |           |              |
| West: Maria Lievens Road |                 |          |                 |          |                   |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                   | 59              | 0.0      | 59              | 0.0      | 202               | 0.292     | 100        | 52.6        | LOS D            | 3.0               | 21.1       | Full        | 25          | 0.0       | 0.0          |
| Lane 2                   | 31              | 0.0      | 31              | 0.0      | 227               | 0.134     | 100        | 57.4        | LOS E            | 1.6               | 11.1       | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 89              | 0.0      | 89              | 0.0      |                   | 0.292     |            | 54.2        | LOS D            | 3.0               | 21.1       |             |             |           |              |
| All Vehicles             | 5075            | 1.2      | 5075            | 1.2      |                   | 0.785     |            | 95.8        | LOS F            | 36.6              | 257.3      |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov. | L2 | T1 | R2 | Total | %HV | Deg. | Lane | Prob. | Qv. |
|------|----|----|----|-------|-----|------|------|-------|-----|
|------|----|----|----|-------|-----|------|------|-------|-----|



| From S<br>To Exit:        | W    | N    | E   |       |     | Cap.<br>veh/h     | Satn<br>v/c         | Util.<br>%         | SL Ov.<br>%          | Lane<br>No.        |
|---------------------------|------|------|-----|-------|-----|-------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                    | 16   | -    | -   | 16    | 0.0 | 1086              | 0.015               | 100                | 0.0                  | 2                  |
| Lane 2                    | -    | 889  | -   | 889   | 0.5 | 1133 <sup>1</sup> | 0.785               | 100                | NA                   | NA                 |
| Lane 3                    | -    | 897  | -   | 897   | 0.5 | 1143              | 0.785               | 100                | NA                   | NA                 |
| Lane 4                    | -    | 857  | -   | 857   | 0.5 | 1091 <sup>1</sup> | 0.785               | 100                | 23.7                 | 3                  |
| Lane 5                    | -    | -    | 181 | 181   | 6.4 | 708               | 0.256               | 100                | 0.0                  | 4                  |
| Approach                  | 16   | 2643 | 181 | 2840  | 0.9 |                   | 0.785               |                    |                      |                    |
| East: Webersvallei Road   |      |      |     |       |     |                   |                     |                    |                      |                    |
| Mov.                      | L2   | T1   | R2  | Total | %HV |                   |                     |                    |                      |                    |
| From E<br>To Exit:        | S    | W    | N   |       |     | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                    | 198  | -    | -   | 198   | 4.3 | 560               | 0.353               | 100                | 41.9                 | 2                  |
| Lane 2                    | -    | 58   | -   | 58    | 0.0 | 392               | 0.148               | 100                | NA                   | NA                 |
| Lane 3                    | -    | -    | 252 | 252   | 0.2 | 328               | 0.767               | 100                | 37.5                 | 2                  |
| Lane 4                    | -    | -    | 254 | 254   | 0.2 | 331               | 0.767               | 100                | 83.8                 | 3                  |
| Approach                  | 198  | 58   | 505 | 761   | 1.2 |                   | 0.767               |                    |                      |                    |
| North: R44_N              |      |      |     |       |     |                   |                     |                    |                      |                    |
| Mov.                      | L2   | T1   | R2  | Total | %HV |                   |                     |                    |                      |                    |
| From N<br>To Exit:        | E    | S    | W   |       |     | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                    | 177  | -    | -   | 177   | 3.0 | 1329              | 0.133               | 100                | 0.0                  | 2                  |
| Lane 2                    | -    | 387  | -   | 387   | 1.8 | 1133              | 0.341               | 100                | NA                   | NA                 |
| Lane 3                    | -    | 387  | -   | 387   | 1.8 | 1133              | 0.341               | 100                | NA                   | NA                 |
| Lane 4                    | -    | 387  | -   | 387   | 1.8 | 1133              | 0.341               | 100                | 0.0                  | 3                  |
| Lane 5                    | -    | -    | 47  | 47    | 0.0 | 328               | 0.144               | 100                | 0.0                  | 4                  |
| Approach                  | 177  | 1160 | 47  | 1384  | 1.9 |                   | 0.341               |                    |                      |                    |
| West: Maria Lievens Road  |      |      |     |       |     |                   |                     |                    |                      |                    |
| Mov.                      | L2   | T1   | R2  | Total | %HV |                   |                     |                    |                      |                    |
| From W<br>To Exit:        | N    | E    | S   |       |     | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                    | 47   | 12   | -   | 59    | 0.0 | 202               | 0.292               | 100                | NA                   | NA                 |
| Lane 2                    | -    | -    | 31  | 31    | 0.0 | 227               | 0.134               | 100                | NA                   | NA                 |
| Approach                  | 47   | 12   | 31  | 89    | 0.0 |                   | 0.292               |                    |                      |                    |
| Total %HV Deg. Satn (v/c) |      |      |     |       |     |                   |                     |                    |                      |                    |
| All Vehicles              | 5075 | 1.2  |     |       |     |                   | 0.785               |                    |                      |                    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Merge Analysis

|                                           | Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% | Opposing<br>Flow Rate<br>veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane<br>Flow<br>Rate<br>veh/h | Lane Capacity<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|-------------------------------------------|------------------------|------------------------------|---------------------------------|--------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------|------------------------|---------------------|----------------------|-----------------------|
| South Exit: R44_S<br>Merge Type: Priority |                        |                              |                                 |                                |                                |                        |                             |                               |                        |                     |                      |                       |
| Exit Short Lane                           | 3                      | 140                          | 0.0                             | 417                            | 421                            | 3.03                   | 2.02                        | 387                           | 1351                   | 0.286               | 0.7                  | 1.1                   |
| Merge Lane                                | 2                      | -                            | 100.0                           | Merge Lane is not Opposed      |                                |                        |                             | 417                           | 1800                   | 0.232               | 0.0                  | 0.0                   |
| North Exit: R44_N<br>Merge Type: Priority |                        |                              |                                 |                                |                                |                        |                             |                               |                        |                     |                      |                       |
| Exit Short Lane                           | 3                      | 145                          | 0.0                             | 1151                           | 1153                           | 3.01                   | 2.01                        | 857                           | 589                    | 1.455               | 3.8                  | 418.1                 |
| Merge Lane                                | 2                      | -                            | 100.0                           | Merge Lane is not Opposed      |                                |                        |                             | 1151                          | 1800                   | 0.639               | 0.0                  | 0.0                   |



| Variable Demand Analysis        |                             |                              |                                            |                            |
|---------------------------------|-----------------------------|------------------------------|--------------------------------------------|----------------------------|
|                                 | Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand<br>to Clear | Duration<br>of<br>Oversatn |
|                                 | veh                         | veh                          | sec                                        | sec                        |
| <b>South: R44_S</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>East: Webersvallei Road</b>  |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>North: R44_N</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>West: Maria Lievens Road</b> |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |

**SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)**

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 18:35:40

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site: WebFresF [Webersvallei Rd X Fresno St AM\_FY2030  
(Site Folder: Scenario 2a - Future Year 2030 - AM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 AM Peak.  
Site Category: Future Conditions 2  
Roundabout

| Lane Use and Performance   |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
|----------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                            | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                            | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                            | veh/h        | %    | veh/h         | %    |      |           |            |             |                  |                   |        |             |             |           |              |
| South: Fresno Street       |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>        | 288          | 2.6  | 288           | 2.6  | 873  | 0.330     | 100        | 7.8         | LOS A            | 2.1               | 14.9   | Full        | 160         | 0.0       | 0.0          |
| Approach                   | 288          | 2.6  | 288           | 2.6  |      | 0.330     |            | 7.8         | LOS A            | 2.1               | 14.9   |             |             |           |              |
| East: Webersvallei Rd_SE - |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>        | 361          | 0.3  | 361           | 0.3  | 1013 | 0.357     | 100        | 6.8         | LOS A            | 2.2               | 15.2   | Full        | 220         | 0.0       | 0.0          |
| Approach                   | 361          | 0.3  | 361           | 0.3  |      | 0.357     |            | 6.8         | LOS A            | 2.2               | 15.2   |             |             |           |              |
| North: RoadName            |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>        | 48           | 0.0  | 48            | 0.0  | 945  | 0.051     | 100        | 9.4         | LOS A            | 0.2               | 1.7    | Full        | 500         | 0.0       | 0.0          |
| Approach                   | 48           | 0.0  | 48            | 0.0  |      | 0.051     |            | 9.4         | LOS A            | 0.2               | 1.7    |             |             |           |              |
| West: Webersvallei Rd_NW   |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>        | 375          | 3.4  | 375           | 3.4  | 1615 | 0.232     | 100        | 6.6         | LOS A            | 1.6               | 11.6   | Full        | 130         | 0.0       | 0.0          |
| Approach                   | 375          | 3.4  | 375           | 3.4  |      | 0.232     |            | 6.6         | LOS A            | 1.6               | 11.6   |             |             |           |              |
| All Vehicles               | 1073         | 2.0  | 1073          | 2.0  |      | 0.357     |            | 7.1         | LOS A            | 2.2               | 15.2   |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).  
Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

**South: Fresno Street**

| Mov.            | L2  | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|-----|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From S To Exit: | W   | N  | E  |       |     |      |           |            |              |              |
| Lane 1          | 284 | 2  | 2  | 288   | 2.6 | 873  | 0.330     | 100        | NA           | NA           |
| Approach        | 284 | 2  | 2  | 288   | 2.6 |      | 0.330     |            |              |              |

**East: Webersvallei Rd\_SE**

| Mov.            | L2 | T1  | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|-----|-------|-----|------|-----------|------------|--------------|--------------|
| From E To Exit: | S  | W   |       |     |      |           |            |              |              |
| Lane 1          | 9  | 352 | 361   | 0.3 | 1013 | 0.357     | 100        | NA           | NA           |
| Approach        | 9  | 352 | 361   | 0.3 |      | 0.357     |            |              |              |

**North: RoadName**

| Mov.                      | T1   | R2  | Total | %HV   |       | Deg.  | Lane  | Prob.  | Ov.    |
|---------------------------|------|-----|-------|-------|-------|-------|-------|--------|--------|
| From N                    |      |     |       |       | Cap.  | Satn  | Util. | SL Ov. | Lane   |
| To Exit:                  | S    | W   |       |       | veh/h | v/c   | %     | %      | No.    |
| Lane 1                    | 5    | 43  | 48    | 0.0   | 945   | 0.051 | 100   | NA     | NA     |
| Approach                  | 5    | 43  | 48    | 0.0   |       | 0.051 |       |        |        |
| West: Webersvallei Rd_NW  |      |     |       |       |       |       |       |        |        |
| Mov.                      | L2   | T1  | R2    | Total | %HV   |       | Deg.  | Lane   | Prob.  |
| From W                    |      |     |       |       |       | Cap.  | Satn  | Util.  | SL Ov. |
| To Exit:                  | N    | E   | S     |       |       | veh/h | v/c   | %      | %      |
| Lane 1                    | 18   | 132 | 225   | 375   | 3.4   | 1615  | 0.232 | 100    | NA     |
| Approach                  | 18   | 132 | 225   | 375   | 3.4   |       | 0.232 |        |        |
| Total %HV Deg. Satn (v/c) |      |     |       |       |       |       |       |        |        |
| All Vehicles              | 1073 | 2.0 |       | 0.357 |       |       |       |        |        |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis   |                     |                       |           |                    |              |                   |               |           |            |             |  |
|------------------|---------------------|-----------------------|-----------|--------------------|--------------|-------------------|---------------|-----------|------------|-------------|--|
| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Flow Rate | Opposing Flow Rate | Critical Gap | Follow-up Headway | Lane Capacity | Deg. Satn | Min. Delay | Merge Delay |  |
|                  |                     |                       | % veh/h   | pcu/h              | sec          | sec               | veh/h         | v/c       | sec        | sec         |  |

There are no Exit Short Lanes for Merge Analysis at this Site.

| Variable Demand Analysis |                       |                        |                                   |                      |
|--------------------------|-----------------------|------------------------|-----------------------------------|----------------------|
|                          | Initial Queued Demand | Residual Queued Demand | Time for Residual Demand to Clear | Duration of Oversatn |
|                          | veh                   | veh                    | sec                               | sec                  |
| South: Fresno Street     |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| East: Webersvallei Rd_SE |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| North: RoadName          |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| West: Webersvallei Rd_NW |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |

## LANE SUMMARY

**Site:** SchFresF [School Rd X Fresno St AM\_FY2030 (Site Folder: Scenario 2a - Future Year 2030 - AM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 AM Peak.

Site Category: Future Conditions 2

Stop (Two-Way)

| Lane Use and Performance    |               |        |               |        |       |           |            |             |                  |           |               |             |             |                        |
|-----------------------------|---------------|--------|---------------|--------|-------|-----------|------------|-------------|------------------|-----------|---------------|-------------|-------------|------------------------|
|                             | Demand Flows  |        | Arrival Flows |        | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Queue | Back Of Queue | Lane Config | Lane Length | Cap. Prob. Adj. Block. |
|                             | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | veh/h | v/c       | %          | sec         |                  | [Veh]     | [Dist m]      |             | m           | % %                    |
| <b>East: School Road_SE</b> |               |        |               |        |       |           |            |             |                  |           |               |             |             |                        |
| Lane 1                      | 67            | 7.8    | 67            | 7.8    | 1684  | 0.040     | 100        | 5.6         | LOS A            | 0.2       | 1.4           | Full        | 100         | 0.0 0.0                |
| Approach                    | 67            | 7.8    | 67            | 7.8    |       | 0.040     |            | 5.6         | NA               | 0.2       | 1.4           |             |             |                        |
| <b>North: Fresno Street</b> |               |        |               |        |       |           |            |             |                  |           |               |             |             |                        |
| Lane 1                      | 163           | 6.5    | 163           | 6.5    | 1290  | 0.127     | 100        | 8.4         | LOS A            | 0.5       | 3.9           | Full        | 240         | 0.0 0.0                |
| Approach                    | 163           | 6.5    | 163           | 6.5    |       | 0.127     |            | 8.4         | LOS A            | 0.5       | 3.9           |             |             |                        |
| <b>West: School Road_NW</b> |               |        |               |        |       |           |            |             |                  |           |               |             |             |                        |
| Lane 1                      | 32            | 0.0    | 32            | 0.0    | 1857  | 0.017     | 100        | 5.5         | LOS A            | 0.0       | 0.0           | Full        | 150         | 0.0 0.0                |
| Approach                    | 32            | 0.0    | 32            | 0.0    |       | 0.017     |            | 5.5         | NA               | 0.0       | 0.0           |             |             |                        |
| All Vehicles                | 262           | 6.0    | 262           | 6.0    |       | 0.127     |            | 7.3         | NA               | 0.5       | 3.9           |             |             |                        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay; Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

**East: School Road\_SE**

| Mov.            | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |
|-----------------|----|-------|-----|-------|-----------|------------|----------|----------|
| From E To Exit: | N  |       |     | veh/h | v/c       | %          | %        | No.      |
| Lane 1          | 67 | 67    | 7.8 | 1684  | 0.040     | 100        | NA       | NA       |
| Approach        | 67 | 67    | 7.8 |       | 0.040     |            |          |          |

**North: Fresno Street**

| Mov.            | L2 | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |
|-----------------|----|----|-------|-----|-------|-----------|------------|----------|----------|
| From N To Exit: | E  | W  |       |     | veh/h | v/c       | %          | %        | No.      |
| Lane 1          | 69 | 94 | 163   | 6.5 | 1290  | 0.127     | 100        | NA       | NA       |
| Approach        | 69 | 94 | 163   | 6.5 |       | 0.127     |            |          |          |

**West: School Road\_NW**

| Mov.            | L2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |
|-----------------|----|-------|-----|-------|-----------|------------|----------|----------|
| From W To Exit: | N  |       |     | veh/h | v/c       | %          | %        | No.      |
| Lane 1          | 32 | 32    | 0.0 | 1857  | 0.017     | 100        | NA       | NA       |

|                          |     |     |       |       |
|--------------------------|-----|-----|-------|-------|
| Approach                 | 32  | 32  | 0.0   | 0.017 |
| Total %HV Deg.Satn (v/c) |     |     |       |       |
| All Vehicles             | 262 | 6.0 | 0.127 |       |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis                                                 |                     |                               |                          |                  |                       |                      |                     |               |                |                 |  |
|----------------------------------------------------------------|---------------------|-------------------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|--|
| Exit Lane Number                                               | Short Lane Length m | Percent Oppng in Lane % veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |  |
| There are no Exit Short Lanes for Merge Analysis at this Site. |                     |                               |                          |                  |                       |                      |                     |               |                |                 |  |

| Variable Demand Analysis  |                            |                                       |                          |     |
|---------------------------|----------------------------|---------------------------------------|--------------------------|-----|
| Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |     |
| East: School Road_SE      |                            |                                       |                          |     |
| Lane 1                    | 0.0                        | 0.0                                   | 0.0                      | 0.0 |
| North: Fresno Street      |                            |                                       |                          |     |
| Lane 1                    | 0.0                        | 0.0                                   | 0.0                      | 0.0 |
| West: School Road_NW      |                            |                                       |                          |     |
| Lane 1                    | 0.0                        | 0.0                                   | 0.0                      | 0.0 |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:33

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliverables\Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site: SchAccF [School Rd X Access Road AM\_FY2030 (Site Folder: Scenario 2a - Future Year 2030 - AM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Future year 2030 AM Peak.

Site Category: Future Conditions 2

Stop (All-Way)

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |        |             |             |            |        |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|------------|--------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. | Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | [ Veh             | Dist ] |             |             | %          | %      |
|                          | veh/h        | %    | veh/h         | %    |      | veh/h     | v/c        |             |                  | %                 | sec    |             |             | m          | m      |
| South: Access Road       |              |      |               |      |      |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                   | 37           | 0.0  | 37            | 0.0  | 406  | 0.091     | 100        | 15.6        | LOS C            | 0.3               | 2.1    | Full        | 100         | 0.0        | 0.0    |
| Approach                 | 37           | 0.0  | 37            | 0.0  |      | 0.091     |            | 15.6        | LOS C            | 0.3               | 2.1    |             |             |            |        |
| East: School Road_SE     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                   | 8            | 37.5 | 8             | 37.5 | 429  | 0.020     | 100        | 16.1        | LOS C            | 0.1               | 0.6    | Full        | 400         | 0.0        | 0.0    |
| Approach                 | 8            | 37.5 | 8             | 37.5 |      | 0.020     |            | 16.1        | LOS C            | 0.1               | 0.6    |             |             |            |        |
| North: Blakemore Street  |              |      |               |      |      |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                   | 43           | 2.4  | 43            | 2.4  | 763  | 0.057     | 100        | 8.8         | LOS A            | 0.2               | 1.2    | Full        | 50          | 0.0        | 0.0    |
| Approach                 | 43           | 2.4  | 43            | 2.4  |      | 0.057     |            | 8.8         | LOS A            | 0.2               | 1.2    |             |             |            |        |
| West: School Road_NW     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |            |        |
| Lane 1                   | 67           | 14.1 | 67            | 14.1 | 508  | 0.133     | 100        | 14.7        | LOS B            | 0.4               | 3.4    | Full        | 260         | 0.0        | 0.0    |
| Approach                 | 67           | 14.1 | 67            | 14.1 |      | 0.133     |            | 14.7        | LOS B            | 0.4               | 3.4    |             |             |            |        |
| All Vehicles             | 156          | 8.8  | 156           | 8.8  |      | 0.133     |            | 13.3        | LOS B            | 0.4               | 3.4    |             |             |            |        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

#### South: Access Road

| Mov.     | L2 | T1 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|--------|------|
| From S   |    |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | W  | N  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 22 | 15 | 37    | 0.0 | 406   | 0.091 | 100   | NA     | NA   |
| Approach | 22 | 15 | 37    | 0.0 |       | 0.091 |       |        |      |

#### East: School Road\_SE

| Mov.     | T1 | Total | %HV  | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|-------|------|-------|-------|-------|--------|------|
| From E   |    |       |      | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | W  |       |      |       | v/c   | %     | %      | No.  |
| Lane 1   | 8  | 8     | 37.5 | 429   | 0.020 | 100   | NA     | NA   |
| Approach | 8  | 8     | 37.5 |       | 0.020 |       |        |      |

#### North: Blakemore Street

| Mov.     | L2 | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|----|-------|-----|-------|-------|-------|--------|------|
| From N   |    |    |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | E  | S  | W  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 1  | 7  | 35 | 43    | 2.4 | 763   | 0.057 | 100   | NA     | NA   |



Approach 1 7 35 43 2.4 0.057

#### West: School Road\_NW

| Mov.                      | L2  | T1  | R2 | Total | %HV  |            |               |              |                |              |  |
|---------------------------|-----|-----|----|-------|------|------------|---------------|--------------|----------------|--------------|--|
| From W To Exit:           | N   | E   | S  |       |      | Cap. veh/h | Deg. Satn v/c | Lane Util. % | Prob. SL Ov. % | Ov. Lane No. |  |
| Lane 1                    | 43  | 14  | 11 | 67    | 14.1 | 508        | 0.133         | 100          | NA             | NA           |  |
| Approach                  | 43  | 14  | 11 | 67    | 14.1 |            | 0.133         |              |                |              |  |
| Total %HV Deg. Satn (v/c) |     |     |    |       |      |            |               |              |                |              |  |
| All Vehicles              | 156 | 8.8 |    |       |      |            | 0.133         |              |                |              |  |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane % | Opposing Flow Rate veh/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-------------------------|--------------------------|------------------|-----------------------|----------------------|----------------|---------------|----------------|-----------------|
|------------------|---------------------|-------------------------|--------------------------|------------------|-----------------------|----------------------|----------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                         | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|-------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
| South: Access Road      |                           |                            |                                       |                          |
| Lane 1                  | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| East: School Road_SE    |                           |                            |                                       |                          |
| Lane 1                  | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: Blakemore Street |                           |                            |                                       |                          |
| Lane 1                  | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: School Road_NW    |                           |                            |                                       |                          |
| Lane 1                  | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |



## LANE SUMMARY

**Site: R44WebF [R44 X Webersvallei Rd AM\_FY2030 - Ultimate Plan (Site Folder: Scenario 2a - Future Year 2030 - AM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 AM Peak.

Site Category: Proposed Design 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|-------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |                   |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    | veh/h             | v/c       | %          | sec         |                  |                   | m      |             | m           | %         | %            |
| South: R44_S             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 16           | 0.0  | 16            | 0.0  | 1086              | 0.015     | 100        | 23.7        | LOS C            | 0.3               | 2.4    | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 889          | 0.5  | 889           | 0.5  | 1133 <sup>1</sup> | 0.785     | 100        | 26.8        | LOS C            | 36.3              | 255.1  | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 897          | 0.5  | 897           | 0.5  | 1143              | 0.785     | 100        | 18.8        | LOS B            | 36.6              | 257.3  | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 857          | 0.5  | 857           | 0.5  | 1091 <sup>1</sup> | 0.785     | 100        | 21.0        | LOS C            | 35.0              | 245.8  | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 181          | 6.4  | 181           | 6.4  | 708               | 0.256     | 100        | 18.5        | LOS B            | 3.7               | 27.2   | Short       | 120         | 0.0       | NA           |
| Approach                 | 2840         | 0.9  | 2840          | 0.9  |                   | 0.785     |            | 22.0        | LOS C            | 36.6              | 257.3  |             |             |           |              |
| East: Webersvallei Road  |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 148          | 4.3  | 148           | 4.3  | 560               | 0.265     | 100        | 36.3        | LOS D            | 6.0               | 43.4   | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 107          | 2.0  | 107           | 2.0  | 406               | 0.265     | 100        | 41.3        | LOS D            | 4.8               | 34.3   | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 252          | 0.2  | 252           | 0.2  | 328               | 0.767     | 100        | 65.2        | LOS E            | 13.1              | 92.2   | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 254          | 0.2  | 254           | 0.2  | 331               | 0.767     | 100        | 65.1        | LOS E            | 13.2              | 92.8   | Short       | 40          | 0.0       | NA           |
| Approach                 | 761          | 1.2  | 761           | 1.2  |                   | 0.767     |            | 56.2        | LOS E            | 13.2              | 92.8   |             |             |           |              |
| North: R44_N             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 177          | 3.0  | 177           | 3.0  | 1329              | 0.133     | 100        | 10.3        | LOS B            | 2.8               | 20.1   | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 387          | 1.8  | 387           | 1.8  | 1133              | 0.341     | 100        | 12.7        | LOS B            | 10.6              | 75.7   | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 387          | 1.8  | 387           | 1.8  | 1133              | 0.341     | 100        | 12.7        | LOS B            | 10.6              | 75.7   | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 387          | 1.8  | 387           | 1.8  | 1133              | 0.341     | 100        | 12.7        | LOS B            | 10.6              | 75.7   | Full        | 650         | 0.0       | 0.0          |
| Lane 5                   | 47           | 0.0  | 47            | 0.0  | 328               | 0.144     | 100        | 22.1        | LOS C            | 1.1               | 7.7    | Short       | 70          | 0.0       | NA           |
| Approach                 | 1384         | 1.9  | 1384          | 1.9  |                   | 0.341     |            | 12.7        | LOS B            | 10.6              | 75.7   |             |             |           |              |
| West: Maria Lievens Road |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 59           | 0.0  | 59            | 0.0  | 202               | 0.292     | 100        | 52.6        | LOS D            | 3.0               | 21.1   | Full        | 25          | 0.0       | 0.0          |
| Lane 2                   | 31           | 0.0  | 31            | 0.0  | 229               | 0.133     | 100        | 57.3        | LOS E            | 1.6               | 11.1   | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 89           | 0.0  | 89            | 0.0  |                   | 0.292     |            | 54.2        | LOS D            | 3.0               | 21.1   |             |             |           |              |
| All Vehicles             | 5075         | 1.2  | 5075          | 1.2  |                   | 0.785     |            | 25.2        | LOS C            | 36.6              | 257.3  |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov. | L2 | T1 | R2 | Total | %HV | Deg. | Lane | Prob. | Ov. |
|------|----|----|----|-------|-----|------|------|-------|-----|
|------|----|----|----|-------|-----|------|------|-------|-----|

| From S<br>To Exit:         | W       | N       | E       |       |     | Cap.<br>veh/h     | Satn<br>v/c         | Util.<br>%         | SL Ov.<br>%          | Lane<br>No.        |
|----------------------------|---------|---------|---------|-------|-----|-------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 16      | -       | -       | 16    | 0.0 | 1086              | 0.015               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 889     | -       | 889   | 0.5 | 1133 <sup>1</sup> | 0.785               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 897     | -       | 897   | 0.5 | 1143              | 0.785               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 857     | -       | 857   | 0.5 | 1091 <sup>1</sup> | 0.785               | 100                | 23.7                 | 3                  |
| Lane 5                     | -       | -       | 181     | 181   | 6.4 | 708               | 0.256               | 100                | 0.0                  | 4                  |
| Approach                   | 16      | 2643    | 181     | 2840  | 0.9 |                   | 0.785               |                    |                      |                    |
| East: Webersvallei Road    |         |         |         |       |     |                   |                     |                    |                      |                    |
| Mov.<br>From E<br>To Exit: | L2<br>S | T1<br>W | R2<br>N | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                     | 148     | -       | -       | 148   | 4.3 | 560               | 0.265               | 100                | 12.4                 | 2                  |
| Lane 2                     | 50      | 58      | -       | 107   | 2.0 | 406               | 0.265               | 100                | NA                   | NA                 |
| Lane 3                     | -       | -       | 252     | 252   | 0.2 | 328               | 0.767               | 100                | 37.5                 | 2                  |
| Lane 4                     | -       | -       | 254     | 254   | 0.2 | 331               | 0.767               | 100                | 83.8                 | 3                  |
| Approach                   | 198     | 58      | 505     | 761   | 1.2 |                   | 0.767               |                    |                      |                    |
| North: R44_N               |         |         |         |       |     |                   |                     |                    |                      |                    |
| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | R2<br>W | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                     | 177     | -       | -       | 177   | 3.0 | 1329              | 0.133               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 387     | -       | 387   | 1.8 | 1133              | 0.341               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 387     | -       | 387   | 1.8 | 1133              | 0.341               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 387     | -       | 387   | 1.8 | 1133              | 0.341               | 100                | NA                   | NA                 |
| Lane 5                     | -       | -       | 47      | 47    | 0.0 | 328               | 0.144               | 100                | 0.0                  | 4                  |
| Approach                   | 177     | 1160    | 47      | 1384  | 1.9 |                   | 0.341               |                    |                      |                    |
| West: Maria Lievens Road   |         |         |         |       |     |                   |                     |                    |                      |                    |
| Mov.<br>From W<br>To Exit: | L2<br>N | T1<br>E | R2<br>S | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                     | 47      | 12      | -       | 59    | 0.0 | 202               | 0.292               | 100                | NA                   | NA                 |
| Lane 2                     | -       | -       | 31      | 31    | 0.0 | 229               | 0.133               | 100                | NA                   | NA                 |
| Approach                   | 47      | 12      | 31      | 89    | 0.0 |                   | 0.292               |                    |                      |                    |
| Total %HV Deg. Satn (v/c)  |         |         |         |       |     |                   |                     |                    |                      |                    |
| All Vehicles               | 5075    | 1.2     |         |       |     |                   | 0.785               |                    |                      |                    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

#### Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Oppng in<br>Lane<br>% veh/h | Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|----------------------------------------|--------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|----------------------------------------|--------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

| Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand<br>to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|

South: R44\_S

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 5 | 0.0 | 0.0 | 0.0 | 0.0 |

**East: Webersvallei Road**

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |

**North: R44\_N**

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 5 | 0.0 | 0.0 | 0.0 | 0.0 |

**West: Maria Lievens Road**

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |

**SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)**

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Monday, 12 February 2024 13:05:44

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site: R44WebF [R44 X Webersvallei Rd PM\_FY2030 - Planned  
(Site Folder: Scenario 2a - Future Year 2030 - PM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Future year 2030 PM Peak.

Site Category: Proposed Design 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                 |                   |
|--------------------------|--------------|------|---------------|------|-------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------------|-------------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. Adj. | Prob. Block.      |
|                          | [ Total      | HV ] | [ Total       | HV ] |                   |           |            |             |                  | [ Veh             | Dist ] |             |             |                 |                   |
|                          | veh/h        | %    | veh/h         | %    | veh/h             | v/c       | %          | sec         |                  |                   | m      |             | m           | %               | %                 |
| South: R44_S             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                 |                   |
| Lane 1                   | 59           | 1.8  | 59            | 1.8  | 983               | 0.060     | 100        | 16.3        | LOS B            | 1.2               | 8.7    | Short       | 80          | 0.0             | NA                |
| Lane 2                   | 435          | 3.1  | 435           | 3.1  | 1030              | 0.422     | 100        | 13.5        | LOS B            | 11.4              | 82.0   | Full        | 2500        | 0.0             | 0.0               |
| Lane 3                   | 435          | 3.1  | 435           | 3.1  | 1030              | 0.422     | 100        | 13.5        | LOS B            | 11.4              | 82.0   | Full        | 2500        | 0.0             | 0.0               |
| Lane 4                   | 435          | 3.1  | 435           | 3.1  | 1030              | 0.422     | 100        | 15.9        | LOS B            | 11.4              | 82.0   | Short       | 200         | 0.0             | NA                |
| Lane 5                   | 247          | 0.0  | 247           | 0.0  | 340               | 0.728     | 100        | 27.4        | LOS C            | 6.7               | 47.0   | Short       | 120         | 0.0             | NA                |
| Approach                 | 1611         | 2.6  | 1611          | 2.6  |                   | 0.728     |            | 16.4        | LOS B            | 11.4              | 82.0   |             |             |                 |                   |
| East: Webersvallei Road  |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                 |                   |
| Lane 1                   | 481          | 1.1  | 481           | 1.1  | 585 <sup>1</sup>  | 0.823     | 100        | 53.8        | LOS D            | 21.6              | 152.4  | Short       | 40          | 0.0             | NA                |
| Lane 2                   | 59           | 0.0  | 59            | 0.0  | 392               | 0.150     | 100        | 45.5        | LOS D            | 2.2               | 15.1   | Full        | 110         | 0.0             | 34.7 <sup>8</sup> |
| Lane 3                   | 196          | 0.8  | 196           | 0.8  | 323               | 0.606     | 100        | 46.4        | LOS D            | 8.2               | 57.6   | Short       | 65          | 0.0             | NA                |
| Lane 4                   | 197          | 0.8  | 197           | 0.8  | 325               | 0.606     | 100        | 46.3        | LOS D            | 8.2               | 57.9   | Short       | 40          | 0.0             | NA                |
| Approach                 | 933          | 0.9  | 933           | 0.9  |                   | 0.823     |            | 50.1        | LOS D            | 21.6              | 152.4  |             |             |                 |                   |
| North: R44_N             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                 |                   |
| Lane 1                   | 620          | 0.5  | 620           | 0.5  | 1240              | 0.500     | 100        | 16.8        | LOS B            | 13.5              | 94.6   | Short       | 70          | 0.0             | NA                |
| Lane 2                   | 671          | 0.4  | 671           | 0.4  | 771 <sup>1</sup>  | 0.871     | 100        | 33.9        | LOS C            | 31.3              | 219.7  | Full        | 650         | 0.0             | 0.0               |
| Lane 3                   | 913          | 0.4  | 913           | 0.4  | 1048              | 0.871     | 100        | 26.6        | LOS C            | 39.8              | 279.8  | Full        | 650         | 0.0             | 0.0               |
| Lane 4                   | 871          | 0.4  | 871           | 0.4  | 1000 <sup>1</sup> | 0.871     | 100        | 176.7       | LOS F            | 38.3              | 269.1  | Short       | 145         | 0.0             | NA                |
| Lane 5                   | 65           | 1.6  | 65            | 1.6  | 694               | 0.094     | 100        | 30.0        | LOS C            | 1.1               | 7.6    | Short       | 70          | 0.0             | NA                |
| Approach                 | 3140         | 0.4  | 3140          | 0.4  |                   | 0.871     |            | 67.9        | LOS E            | 39.8              | 279.8  |             |             |                 |                   |
| West: Maria Lievens Road |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |                 |                   |
| Lane 1                   | 119          | 0.9  | 119           | 0.9  | 222               | 0.537     | 100        | 44.1        | LOS D            | 5.1               | 36.3   | Full        | 25          | 0.0             | 39.1              |
| Lane 2                   | 76           | 1.4  | 76            | 1.4  | 199               | 0.382     | 100        | 50.8        | LOS D            | 3.4               | 23.9   | Full        | 25          | 0.0             | 1.1               |
| Approach                 | 195          | 1.1  | 195           | 1.1  |                   | 0.537     |            | 46.7        | LOS D            | 5.1               | 36.3   |             |             |                 |                   |
| All Vehicles             | 5878         | 1.1  | 5878          | 1.1  |                   | 0.871     |            | 50.3        | LOS D            | 39.8              | 279.8  |             |             |                 |                   |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

<sup>8</sup> Probability of Blockage has been set on the basis of a queue that overflows from a short lane.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov.     | L2 | T1   | R2  | Total | %HV |       | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|------|-----|-------|-----|-------|-------|-------|--------|------|
| From S   |    |      |     |       |     | Cap.  | Satn  | Util. | SL Ov. | Lane |
| To Exit: | W  | N    | E   |       |     | veh/h | v/c   | %     | %      | No.  |
| Lane 1   | 59 | -    | -   | 59    | 1.8 | 983   | 0.060 | 100   | 0.0    | 2    |
| Lane 2   | -  | 435  | -   | 435   | 3.1 | 1030  | 0.422 | 100   | NA     | NA   |
| Lane 3   | -  | 435  | -   | 435   | 3.1 | 1030  | 0.422 | 100   | NA     | NA   |
| Lane 4   | -  | 435  | -   | 435   | 3.1 | 1030  | 0.422 | 100   | 0.0    | 3    |
| Lane 5   | -  | -    | 247 | 247   | 0.0 | 340   | 0.728 | 100   | 0.0    | 4    |
| Approach | 59 | 1304 | 247 | 1611  | 2.6 |       | 0.728 |       |        |      |

## East: Webersvallei Road

| Mov.     | L2  | T1 | R2  | Total | %HV |                  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|-----|----|-----|-------|-----|------------------|-------|-------|--------|------|
| From E   |     |    |     |       |     | Cap.             | Satn  | Util. | SL Ov. | Lane |
| To Exit: | S   | W  | N   |       |     | veh/h            | v/c   | %     | %      | No.  |
| Lane 1   | 481 | -  | -   | 481   | 1.1 | 585 <sup>1</sup> | 0.823 | 100   | 100.0  | 2    |
| Lane 2   | -   | 59 | -   | 59    | 0.0 | 392              | 0.150 | 100   | NA     | NA   |
| Lane 3   | -   | -  | 196 | 196   | 0.8 | 323              | 0.606 | 100   | 0.0    | 2    |
| Lane 4   | -   | -  | 197 | 197   | 0.8 | 325              | 0.606 | 100   | 38.8   | 3    |
| Approach | 481 | 59 | 393 | 933   | 0.9 |                  | 0.823 |       |        |      |

## North: R44\_N

| Mov.     | L2  | T1   | R2 | Total | %HV |                   | Deg.  | Lane  | Prob.  | Ov.  |
|----------|-----|------|----|-------|-----|-------------------|-------|-------|--------|------|
| From N   |     |      |    |       |     | Cap.              | Satn  | Util. | SL Ov. | Lane |
| To Exit: | E   | S    | W  |       |     | veh/h             | v/c   | %     | %      | No.  |
| Lane 1   | 620 | -    | -  | 620   | 0.5 | 1240              | 0.500 | 100   | 32.5   | 2    |
| Lane 2   | -   | 671  | -  | 671   | 0.4 | 771 <sup>1</sup>  | 0.871 | 100   | NA     | NA   |
| Lane 3   | -   | 913  | -  | 913   | 0.4 | 1048              | 0.871 | 100   | NA     | NA   |
| Lane 4   | -   | 871  | -  | 871   | 0.4 | 1000 <sup>1</sup> | 0.871 | 100   | 62.2   | 3    |
| Lane 5   | -   | -    | 65 | 65    | 1.6 | 694               | 0.094 | 100   | 0.0    | 4    |
| Approach | 620 | 2455 | 65 | 3140  | 0.4 |                   | 0.871 |       |        |      |

## West: Maria Lievens Road

| Mov.     | L2 | T1 | R2 | Total | %HV |       | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|----|-------|-----|-------|-------|-------|--------|------|
| From W   |    |    |    |       |     | Cap.  | Satn  | Util. | SL Ov. | Lane |
| To Exit: | N  | E  | S  |       |     | veh/h | v/c   | %     | %      | No.  |
| Lane 1   | 88 | 31 | -  | 119   | 0.9 | 222   | 0.537 | 100   | NA     | NA   |
| Lane 2   | -  | -  | 76 | 76    | 1.4 | 199   | 0.382 | 100   | NA     | NA   |
| Approach | 88 | 31 | 76 | 195   | 1.1 |       | 0.537 |       |        |      |

Total %HV Deg. Satn (v/c)

All Vehicles 5878 1.1 0.871

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

## Merge Analysis

|                             | Exit Lane Number | Short Lane Length m | Percent Opng in Lane % veh/h | Opposing Flow Rate pcu/h  | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |     |       |
|-----------------------------|------------------|---------------------|------------------------------|---------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|-----|-------|
| South Exit: R44_S           |                  |                     |                              |                           |                  |                       |                               |               |                |                 |     |       |
| Merge Type: <b>Priority</b> |                  |                     |                              |                           |                  |                       |                               |               |                |                 |     |       |
| Exit Short Lane             | 3                | 140                 | 0.0                          | 988                       | 991              | 3.01                  | 2.00                          | 871           | 761            | 1.145           | 2.6 | 141.4 |
| Merge Lane                  | 2                | -                   | 100.0                        | Merge Lane is not Opposed |                  |                       | 988                           | 1800          | 0.549          | 0.0             | 0.0 |       |
| North Exit: R44_N           |                  |                     |                              |                           |                  |                       |                               |               |                |                 |     |       |
| Merge Type: <b>Priority</b> |                  |                     |                              |                           |                  |                       |                               |               |                |                 |     |       |
| Exit Short Lane             | 3                | 145                 | 0.0                          | 632                       | 639              | 3.05                  | 2.03                          | 435           | 1106           | 0.393           | 1.2 | 2.4   |
| Merge Lane                  | 2                | -                   | 100.0                        | Merge Lane is not Opposed |                  |                       | 632                           | 1800          | 0.351          | 0.0             | 0.0 |       |

| Variable Demand Analysis        |                             |                              |                                            |                            |
|---------------------------------|-----------------------------|------------------------------|--------------------------------------------|----------------------------|
|                                 | Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand<br>to Clear | Duration<br>of<br>Oversatn |
|                                 | veh                         | veh                          | sec                                        | sec                        |
| <b>South: R44_S</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>East: Webersvallei Road</b>  |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>North: R44_N</b>             |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 3                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 4                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 5                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| <b>West: Maria Lievens Road</b> |                             |                              |                                            |                            |
| Lane 1                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |
| Lane 2                          | 0.0                         | 0.0                          | 0.0                                        | 0.0                        |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 18:35:41

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9



## LANE SUMMARY

**Site:** WebFresF [Webersvallei Rd X Fresno St PM\_FY2030  
(Site Folder: Scenario 2a - Future Year 2030 - PM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 PM Peak.

Site Category: Future Conditions 2

Roundabout

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | Queue             |        |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| South: Fresno Street     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>      | 241          | 0.0  | 241           | 0.0  | 1039 | 0.232     | 100        | 6.4         | LOS A            | 1.4               | 9.5    | Full        | 160         | 0.0       | 0.0          |
| Approach                 | 241          | 0.0  | 241           | 0.0  |      | 0.232     |            | 6.4         | LOS A            | 1.4               | 9.5    |             |             |           |              |
| East: Webersvallei Rd_SE |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>      | 215          | 0.0  | 215           | 0.0  | 1042 | 0.206     | 100        | 6.3         | LOS A            | 1.1               | 7.7    | Full        | 220         | 0.0       | 0.0          |
| Approach                 | 215          | 0.0  | 215           | 0.0  |      | 0.206     |            | 6.3         | LOS A            | 1.1               | 7.7    |             |             |           |              |
| North: RoadName          |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>      | 22           | 0.0  | 22            | 0.0  | 856  | 0.026     | 100        | 10.1        | LOS B            | 0.1               | 0.9    | Full        | 500         | 0.0       | 0.0          |
| Approach                 | 22           | 0.0  | 22            | 0.0  |      | 0.026     |            | 10.1        | LOS B            | 0.1               | 0.9    |             |             |           |              |
| West: Webersvallei Rd_NW |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1 <sup>d</sup>      | 529          | 0.6  | 529           | 0.6  | 1603 | 0.330     | 100        | 6.1         | LOS A            | 2.4               | 16.9   | Full        | 130         | 0.0       | 0.0          |
| Approach                 | 529          | 0.6  | 529           | 0.6  |      | 0.330     |            | 6.1         | LOS A            | 2.4               | 16.9   |             |             |           |              |
| All Vehicles             | 1007         | 0.3  | 1007          | 0.3  |      | 0.330     |            | 6.3         | LOS A            | 2.4               | 16.9   |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

South: Fresno Street

| Mov.            | L2  | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|-----|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From S To Exit: | W   | N  | E  |       |     |      |           |            |              |              |
| Lane 1          | 232 | 4  | 5  | 241   | 0.0 | 1039 | 0.232     | 100        | NA           | NA           |
| Approach        | 232 | 4  | 5  | 241   | 0.0 |      | 0.232     |            |              |              |

East: Webersvallei Rd\_SE

| Mov.            | L2 | T1  | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|-----|-------|-----|------|-----------|------------|--------------|--------------|
| From E To Exit: | S  | W   |       |     |      |           |            |              |              |
| Lane 1          | 9  | 205 | 215   | 0.0 | 1042 | 0.206     | 100        | NA           | NA           |
| Approach        | 9  | 205 | 215   | 0.0 |      | 0.206     |            |              |              |

North: RoadName



| Mov.               | T1 | R2 | Total | %HV |               | Deg.        | Lane    | Prob.    | Ov.         |
|--------------------|----|----|-------|-----|---------------|-------------|---------|----------|-------------|
| From N<br>To Exit: | S  | W  |       |     | Cap.<br>veh/h | Satn<br>v/c | Util. % | SL Ov. % | Lane<br>No. |
| Lane 1             | 2  | 20 | 22    | 0.0 | 856           | 0.026       | 100     | NA       | NA          |
| Approach           | 2  | 20 | 22    | 0.0 |               | 0.026       |         |          |             |

#### West: Webersvallei Rd\_NW

| Mov.               | L2 | T1  | R2  | Total | %HV |               | Deg.        | Lane    | Prob.    | Ov.         |
|--------------------|----|-----|-----|-------|-----|---------------|-------------|---------|----------|-------------|
| From W<br>To Exit: | N  | E   | S   |       |     | Cap.<br>veh/h | Satn<br>v/c | Util. % | SL Ov. % | Lane<br>No. |
| Lane 1             | 42 | 271 | 217 | 529   | 0.6 | 1603          | 0.330       | 100     | NA       | NA          |
| Approach           | 42 | 271 | 217 | 529   | 0.6 |               | 0.330       |         |          |             |

| Total        | %HV  | Deg. | Satn (v/c) |
|--------------|------|------|------------|
| All Vehicles | 1007 | 0.3  | 0.330      |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng In<br>Lane<br>% veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                          | Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand<br>to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|--------------------------|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|
| South: Fresno Street     |                                    |                                     |                                                   |                                   |
| Lane 1                   | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| East: Webersvallei Rd_SE |                                    |                                     |                                                   |                                   |
| Lane 1                   | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| North: RoadName          |                                    |                                     |                                                   |                                   |
| Lane 1                   | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |
| West: Webersvallei Rd_NW |                                    |                                     |                                                   |                                   |
| Lane 1                   | 0.0                                | 0.0                                 | 0.0                                               | 0.0                               |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:36

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

 **Site: SchFresF [School Rd X Fresno St PM\_FY2030 (Site Folder: Scenario 2a - Future Year 2030 - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 PM Peak.

Site Category: Future Conditions 2

Stop (Two-Way)

| Lane Use and Performance    |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |           |              |
|-----------------------------|-----------------|----------|-----------------|----------|-------|-----------|------------|-------------|------------------|-------------------|------------|-------------|-------------|-----------|--------------|
|                             | Demand Flows    |          | Arrival Flows   |          | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |            | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                             | [ Total veh/h ] | [ HV % ] | [ Total veh/h ] | [ HV % ] | veh/h | v/c       | %          | sec         |                  | [ Veh ]           | [ Dist m ] |             | m           | %         | %            |
| <b>East: School Road_SE</b> |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                      | 29              | 7.1      | 29              | 7.1      | 1680  | 0.018     | 100        | 5.3         | LOS A            | 0.1               | 0.6        | Full        | 100         | 0.0       | 0.0          |
| Approach                    | 29              | 7.1      | 29              | 7.1      |       | 0.018     |            | 5.3         | NA               | 0.1               | 0.6        |             |             |           |              |
| <b>North: Fresno Street</b> |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                      | 85              | 0.0      | 85              | 0.0      | 1404  | 0.061     | 100        | 8.0         | LOS A            | 0.2               | 1.7        | Full        | 240         | 0.0       | 0.0          |
| Approach                    | 85              | 0.0      | 85              | 0.0      |       | 0.061     |            | 8.0         | LOS A            | 0.2               | 1.7        |             |             |           |              |
| <b>West: School Road_NW</b> |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |           |              |
| Lane 1                      | 85              | 1.2      | 85              | 1.2      | 1844  | 0.046     | 100        | 5.5         | LOS A            | 0.0               | 0.0        | Full        | 150         | 0.0       | 0.0          |
| Approach                    | 85              | 1.2      | 85              | 1.2      |       | 0.046     |            | 5.5         | NA               | 0.0               | 0.0        |             |             |           |              |
| All Vehicles                | 200             | 1.6      | 200             | 1.6      |       | 0.061     |            | 6.5         | NA               | 0.2               | 1.7        |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Approach Lane Flows (veh/h) |    |    |       |     |            |           |            |              |              |  |
|-----------------------------|----|----|-------|-----|------------|-----------|------------|--------------|--------------|--|
| <b>East: School Road_SE</b> |    |    |       |     |            |           |            |              |              |  |
| Mov.                        | T1 | R2 | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From E To Exit:             | W  | N  |       |     | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                      | 2  | 27 | 29    | 7.1 | 1680       | 0.018     | 100        | NA           | NA           |  |
| Approach                    | 2  | 27 | 29    | 7.1 |            | 0.018     |            |              |              |  |
| <b>North: Fresno Street</b> |    |    |       |     |            |           |            |              |              |  |
| Mov.                        | L2 | R2 | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From N To Exit:             | E  | W  |       |     | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                      | 79 | 6  | 85    | 0.0 | 1404       | 0.061     | 100        | NA           | NA           |  |
| Approach                    | 79 | 6  | 85    | 0.0 |            | 0.061     |            |              |              |  |
| <b>West: School Road_NW</b> |    |    |       |     |            |           |            |              |              |  |
| Mov.                        | L2 | T1 | Total | %HV |            | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |  |
| From W To Exit:             | N  | E  |       |     | Cap. veh/h | v/c       | %          | %            |              |  |
| Lane 1                      | 84 | 1  | 85    | 1.2 | 1844       | 0.046     | 100        | NA           | NA           |  |

|                           |     |     |    |       |       |
|---------------------------|-----|-----|----|-------|-------|
| Approach                  | 84  | 1   | 85 | 1.2   | 0.046 |
| Total %HV Deg. Satn (v/c) |     |     |    |       |       |
| All Vehicles              | 200 | 1.6 |    | 0.061 |       |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Opposing Flow Rate % veh/h pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|----------------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|----------------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|  | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|

East: School Road\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

North: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

West: School Road\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:36

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

 **Site:** SchAcc [School Rd X Access Road PM\_FY2030 (Site Folder: Scenario 2a - Future Year 2030 - PM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 PM Peak.

Site Category: Base Year

Stop (All-Way)

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |           |            |             |                  |                   |        |             |             |           |              |
| South: Access Road       |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 28           | 0.0  | 28            | 0.0  | 310  | 0.092     | 100        | 18.6        | LOS C            | 0.3               | 2.2    | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 28           | 0.0  | 28            | 0.0  |      | 0.092     |            | 18.6        | LOS C            | 0.3               | 2.2    |             |             |           |              |
| North: Blakemore Street  |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 27           | 7.7  | 27            | 7.7  | 570  | 0.048     | 100        | 10.6        | LOS B            | 0.1               | 1.1    | Full        | 50          | 0.0       | 0.0          |
| Approach                 | 27           | 7.7  | 27            | 7.7  |      | 0.048     |            | 10.6        | LOS B            | 0.1               | 1.1    |             |             |           |              |
| West: School Road_NW     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 78           | 2.7  | 78            | 2.7  | 760  | 0.102     | 100        | 11.1        | LOS B            | 0.3               | 2.2    | Full        | 260         | 0.0       | 0.0          |
| Approach                 | 78           | 2.7  | 78            | 2.7  |      | 0.102     |            | 11.1        | LOS B            | 0.3               | 2.2    |             |             |           |              |
| All Vehicles             | 134          | 3.1  | 134           | 3.1  |      | 0.102     |            | 12.6        | LOS B            | 0.3               | 2.2    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

#### South: Access Road

| Mov.           | L2 | T1 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|----------------|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From S To Exit | W  | N  |       |     |      |           |            |              |              |
| Lane 1         | 15 | 14 | 28    | 0.0 | 310  | 0.092     | 100        | NA           | NA           |
| Approach       | 15 | 14 | 28    | 0.0 |      | 0.092     |            |              |              |

#### North: Blakemore Street

| Mov.           | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|----------------|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From N To Exit | S  | W  |       |     |      |           |            |              |              |
| Lane 1         | 12 | 16 | 27    | 7.7 | 570  | 0.048     | 100        | NA           | NA           |
| Approach       | 12 | 16 | 27    | 7.7 |      | 0.048     |            |              |              |

#### West: School Road\_NW

| Mov.           | L2 | T1 | R2 | Total | %HV | Cap. | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|----------------|----|----|----|-------|-----|------|-----------|------------|--------------|--------------|
| From W To Exit | N  | E  | S  |       |     |      |           |            |              |              |
| Lane 1         | 38 | 9  | 31 | 78    | 2.7 | 760  | 0.102     | 100        | NA           | NA           |
| Approach       | 38 | 9  | 31 | 78    | 2.7 |      | 0.102     |            |              |              |

Total %HV Deg.Satn (v/c)

All Vehicles    134    3.1    0.102

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis   |                   |                      |                    |              |                   |                |               |           |            |             |  |
|------------------|-------------------|----------------------|--------------------|--------------|-------------------|----------------|---------------|-----------|------------|-------------|--|
| Exit Lane Number | Short Lane Length | Percent Opng in Lane | Opposing Flow Rate | Critical Gap | Follow-up Headway | Lane Flow Rate | Lane Capacity | Deg. Satn | Min. Delay | Merge Delay |  |
|                  | m                 | %                    | veh/h pcu/h        | sec          | sec               | veh/h          | veh/h         | v/c       | sec        | sec         |  |

There are no Exit Short Lanes for Merge Analysis at this Site.

| Variable Demand Analysis |                       |                        |                                   |                      |
|--------------------------|-----------------------|------------------------|-----------------------------------|----------------------|
|                          | Initial Queued Demand | Residual Queued Demand | Time for Residual Demand to Clear | Duration of Oversatn |
|                          | veh                   | veh                    | sec                               | sec                  |
| South: Access Road       |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| North: Blakemore Street  |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |
| West: School Road_NW     |                       |                        |                                   |                      |
| Lane 1                   | 0.0                   | 0.0                    | 0.0                               | 0.0                  |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:37

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extension.sip9



## LANE SUMMARY

**Site: R44WebF [R44 X Webersvallei Rd PM\_FY2030 - Ultimate Plan - Copy (Site Folder: Scenario 2a - Future Year 2030 - PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 PM Peak.

Site Category: Proposed Design 1

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |               |        |               |        |                   |           |            |             |                  |                   |          |             |             |           |              |
|--------------------------|---------------|--------|---------------|--------|-------------------|-----------|------------|-------------|------------------|-------------------|----------|-------------|-------------|-----------|--------------|
|                          | Demand Flows  |        | Arrival Flows |        | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |          | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [Total veh/h] | [HV %] | [Total veh/h] | [HV %] | veh/h             | v/c       | %          | sec         |                  | [Veh]             | [Dist] m |             | m           | %         | %            |
| South: R44_S             |               |        |               |        |                   |           |            |             |                  |                   |          |             |             |           |              |
| Lane 1                   | 59            | 1.8    | 59            | 1.8    | 1069              | 0.055     | 100        | 15.1        | LOS B            | 1.2               | 8.7      | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 435           | 3.1    | 435           | 3.1    | 1120              | 0.388     | 100        | 12.1        | LOS B            | 11.3              | 81.5     | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 435           | 3.1    | 435           | 3.1    | 1120              | 0.388     | 100        | 12.1        | LOS B            | 11.3              | 81.5     | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 435           | 3.1    | 435           | 3.1    | 1120              | 0.388     | 100        | 12.1        | LOS B            | 11.3              | 81.5     | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 247           | 0.0    | 247           | 0.0    | 322               | 0.769     | 100        | 29.6        | LOS C            | 8.1               | 56.8     | Short       | 120         | 0.0       | NA           |
| Approach                 | 1611          | 2.6    | 1611          | 2.6    |                   | 0.769     |            | 14.9        | LOS B            | 11.3              | 81.5     |             |             |           |              |
| East: Webersvallei Road  |               |        |               |        |                   |           |            |             |                  |                   |          |             |             |           |              |
| Lane 1                   | 294           | 1.1    | 294           | 1.1    | 483 <sup>1</sup>  | 0.610     | 100        | 43.1        | LOS D            | 12.4              | 87.6     | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 246           | 0.8    | 246           | 0.8    | 403 <sup>1</sup>  | 0.610     | 100        | 46.3        | LOS D            | 10.9              | 76.5     | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 196           | 0.8    | 196           | 0.8    | 291               | 0.674     | 100        | 53.7        | LOS D            | 9.3               | 65.5     | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 197           | 0.8    | 197           | 0.8    | 292               | 0.674     | 100        | 53.5        | LOS D            | 9.3               | 65.8     | Short       | 40          | 0.0       | NA           |
| Approach                 | 933           | 0.9    | 933           | 0.9    |                   | 0.674     |            | 48.4        | LOS D            | 12.4              | 87.6     |             |             |           |              |
| North: R44_N             |               |        |               |        |                   |           |            |             |                  |                   |          |             |             |           |              |
| Lane 1                   | 620           | 0.5    | 620           | 0.5    | 1302              | 0.476     | 100        | 15.5        | LOS B            | 13.4              | 94.2     | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 675           | 0.4    | 675           | 0.4    | 843 <sup>1</sup>  | 0.800     | 100        | 22.9        | LOS C            | 27.1              | 190.0    | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 912           | 0.4    | 912           | 0.4    | 1140              | 0.800     | 100        | 17.7        | LOS B            | 34.6              | 243.3    | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 868           | 0.4    | 868           | 0.4    | 1084 <sup>1</sup> | 0.800     | 100        | 25.5        | LOS C            | 33.3              | 233.6    | Full        | 650         | 0.0       | 0.0          |
| Lane 5                   | 65            | 1.6    | 65            | 1.6    | 727               | 0.090     | 100        | 27.6        | LOS C            | 1.1               | 7.6      | Short       | 70          | 0.0       | NA           |
| Approach                 | 3140          | 0.4    | 3140          | 0.4    |                   | 0.800     |            | 20.7        | LOS C            | 34.6              | 243.3    |             |             |           |              |
| West: Maria Lievens Road |               |        |               |        |                   |           |            |             |                  |                   |          |             |             |           |              |
| Lane 1                   | 119           | 0.9    | 119           | 0.9    | 199               | 0.596     | 100        | 50.2        | LOS D            | 5.8               | 41.1     | Full        | 25          | 0.0       | 50.6         |
| Lane 2                   | 76            | 1.4    | 76            | 1.4    | 163               | 0.466     | 100        | 56.8        | LOS E            | 3.8               | 26.9     | Full        | 25          | 0.0       | 11.5         |
| Approach                 | 195           | 1.1    | 195           | 1.1    |                   | 0.596     |            | 52.8        | LOS D            | 5.8               | 41.1     |             |             |           |              |
| All Vehicles             | 5878          | 1.1    | 5878          | 1.1    |                   | 0.800     |            | 24.6        | LOS C            | 34.6              | 243.3    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov.<br>From S<br>To Exit: | L2<br>W | T1<br>N | R2<br>E | Total | %HV   | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-------|-------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 59      | -       | -       | 59    | 1.8   | 1069              | 0.055               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 435     | -       | 435   | 3.1   | 1120              | 0.388               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 435     | -       | 435   | 3.1   | 1120              | 0.388               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 435     | -       | 435   | 3.1   | 1120              | 0.388               | 100                | 0.0                  | 3                  |
| Lane 5                     | -       | -       | 247     | 247   | 0.0   | 322               | 0.769               | 100                | 0.0                  | 4                  |
| Approach                   | 59      | 1304    | 247     | 1611  | 2.6   |                   | 0.769               |                    |                      |                    |
| East: Webersvallei Road    |         |         |         |       |       |                   |                     |                    |                      |                    |
| Mov.<br>From E<br>To Exit: | L2<br>S | T1<br>W | R2<br>N | Total | %HV   | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                     | 294     | -       | -       | 294   | 1.1   | 483 <sup>1</sup>  | 0.610               | 100                | 78.1                 | 2                  |
| Lane 2                     | 187     | 59      | -       | 246   | 0.8   | 403 <sup>1</sup>  | 0.610               | 100                | NA                   | NA                 |
| Lane 3                     | -       | -       | 196     | 196   | 0.8   | 291               | 0.674               | 100                | 6.1                  | 2                  |
| Lane 4                     | -       | -       | 197     | 197   | 0.8   | 292               | 0.674               | 100                | 50.8                 | 3                  |
| Approach                   | 481     | 59      | 393     | 933   | 0.9   |                   | 0.674               |                    |                      |                    |
| North: R44_N               |         |         |         |       |       |                   |                     |                    |                      |                    |
| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | R2<br>W | Total | %HV   | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                     | 620     | -       | -       | 620   | 0.5   | 1302              | 0.476               | 100                | 32.1                 | 2                  |
| Lane 2                     | -       | 675     | -       | 675   | 0.4   | 843 <sup>1</sup>  | 0.800               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 912     | -       | 912   | 0.4   | 1140              | 0.800               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 868     | -       | 868   | 0.4   | 1084 <sup>1</sup> | 0.800               | 100                | NA                   | NA                 |
| Lane 5                     | -       | -       | 65      | 65    | 1.6   | 727               | 0.090               | 100                | 0.0                  | 4                  |
| Approach                   | 620     | 2455    | 65      | 3140  | 0.4   |                   | 0.800               |                    |                      |                    |
| West: Maria Lievens Road   |         |         |         |       |       |                   |                     |                    |                      |                    |
| Mov.<br>From W<br>To Exit: | L2<br>N | T1<br>E | R2<br>S | Total | %HV   | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| Lane 1                     | 88      | 31      | -       | 119   | 0.9   | 199               | 0.596               | 100                | NA                   | NA                 |
| Lane 2                     | -       | -       | 76      | 76    | 1.4   | 163               | 0.466               | 100                | NA                   | NA                 |
| Approach                   | 88      | 31      | 76      | 195   | 1.1   |                   | 0.596               |                    |                      |                    |
| Total %HV Deg. Satn (v/c)  |         |         |         |       |       |                   |                     |                    |                      |                    |
| All Vehicles               | 5878    | 1.1     |         |       | 0.800 |                   |                     |                    |                      |                    |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

#### Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

| Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand<br>to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|

South: R44\_S



|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 5 | 0.0 | 0.0 | 0.0 | 0.0 |

East: Webersvallei Road

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |

North: R44\_N

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 5 | 0.0 | 0.0 | 0.0 | 0.0 |

West: Maria Lievens Road

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Monday, 12 February 2024 13:09:57

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site: R44WebFPD [R44 X Webersvallei Rd  
AM\_FY2030\_PropDev - Ultimate Plan (Site Folder: Scenario 2b -  
Future Year 2030 Proposed Dev - AM Peak )]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 AM Peak with Development trips.

Site Category: Proposed Design 2

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 110 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|-------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |                   |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |                   |           |            |             |                  |                   |        |             |             |           |              |
| South: R44_S             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 16           | 0.0  | 16            | 0.0  | 1052              | 0.015     | 100        | 25.9        | LOS C            | 0.4               | 2.5    | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 893          | 0.5  | 893           | 0.5  | 1097 <sup>1</sup> | 0.814     | 100        | 30.3        | LOS C            | 38.5              | 270.9  | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 901          | 0.5  | 901           | 0.5  | 1107              | 0.814     | 100        | 20.9        | LOS C            | 38.8              | 272.8  | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 849          | 0.5  | 849           | 0.5  | 1042 <sup>1</sup> | 0.814     | 100        | 24.2        | LOS C            | 36.9              | 259.6  | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 192          | 6.0  | 192           | 6.0  | 717               | 0.267     | 100        | 19.6        | LOS B            | 3.8               | 28.3   | Short       | 120         | 0.0       | NA           |
| Approach                 | 2851         | 0.9  | 2851          | 0.9  |                   | 0.814     |            | 24.8        | LOS C            | 38.8              | 272.8  |             |             |           |              |
| East: Webersvallei Road  |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 164          | 3.9  | 164           | 3.9  | 595               | 0.275     | 100        | 34.9        | LOS C            | 6.5               | 46.8   | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 112          | 1.9  | 112           | 1.9  | 408               | 0.275     | 100        | 41.5        | LOS D            | 5.1               | 35.9   | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 265          | 0.2  | 265           | 0.2  | 325               | 0.813     | 100        | 69.2        | LOS E            | 14.1              | 98.8   | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 267          | 0.2  | 267           | 0.2  | 328               | 0.813     | 100        | 69.1        | LOS E            | 14.2              | 99.4   | Short       | 40          | 0.0       | NA           |
| Approach                 | 807          | 1.2  | 807           | 1.2  |                   | 0.813     |            | 58.4        | LOS E            | 14.2              | 99.4   |             |             |           |              |
| North: R44_N             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 185          | 2.8  | 185           | 2.8  | 1297              | 0.143     | 100        | 11.0        | LOS B            | 3.1               | 22.5   | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 387          | 1.8  | 387           | 1.8  | 1098              | 0.352     | 100        | 13.8        | LOS B            | 11.1              | 79.0   | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 387          | 1.8  | 387           | 1.8  | 1098              | 0.352     | 100        | 13.8        | LOS B            | 11.1              | 79.0   | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 387          | 1.8  | 387           | 1.8  | 1098              | 0.352     | 100        | 13.8        | LOS B            | 11.1              | 79.0   | Full        | 650         | 0.0       | 0.0          |
| Lane 5                   | 47           | 0.0  | 47            | 0.0  | 351               | 0.135     | 100        | 22.9        | LOS C            | 1.2               | 8.1    | Short       | 70          | 0.0       | NA           |
| Approach                 | 1393         | 1.9  | 1393          | 1.9  |                   | 0.352     |            | 13.8        | LOS B            | 11.1              | 79.0   |             |             |           |              |
| West: Maria Lievens Road |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 59           | 0.0  | 59            | 0.0  | 209               | 0.283     | 100        | 51.6        | LOS D            | 3.0               | 20.9   | Full        | 25          | 0.0       | 0.0          |
| Lane 2                   | 31           | 0.0  | 31            | 0.0  | 229               | 0.133     | 100        | 57.3        | LOS E            | 1.6               | 11.1   | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 89           | 0.0  | 89            | 0.0  |                   | 0.283     |            | 53.5        | LOS D            | 3.0               | 20.9   |             |             |           |              |
| All Vehicles             | 5140         | 1.2  | 5140          | 1.2  |                   | 0.814     |            | 27.6        | LOS C            | 38.8              | 272.8  |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov.     | L2 | T1   | R2  | Total | %HV |                   | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|------|-----|-------|-----|-------------------|-------|-------|--------|------|
| From S   |    |      |     |       |     | Cap.              | Satn  | Util. | SL Ov. | Lane |
| To Exit: | W  | N    | E   |       |     | veh/h             | v/c   | %     | %      | No.  |
| Lane 1   | 16 | -    | -   | 16    | 0.0 | 1052              | 0.015 | 100   | 0.0    | 2    |
| Lane 2   | -  | 893  | -   | 893   | 0.5 | 1097 <sup>1</sup> | 0.814 | 100   | NA     | NA   |
| Lane 3   | -  | 901  | -   | 901   | 0.5 | 1107              | 0.814 | 100   | NA     | NA   |
| Lane 4   | -  | 849  | -   | 849   | 0.5 | 1042 <sup>1</sup> | 0.814 | 100   | 28.7   | 3    |
| Lane 5   | -  | -    | 192 | 192   | 6.0 | 717               | 0.267 | 100   | 0.0    | 4    |
| Approach | 16 | 2643 | 192 | 2851  | 0.9 |                   | 0.814 |       |        |      |

## East: Webersvallei Road

| Mov.     | L2  | T1 | R2  | Total | %HV |       | Deg.  | Lane  | Prob.  | Ov.  |
|----------|-----|----|-----|-------|-----|-------|-------|-------|--------|------|
| From E   |     |    |     |       |     | Cap.  | Satn  | Util. | SL Ov. | Lane |
| To Exit: | S   | W  | N   |       |     | veh/h | v/c   | %     | %      | No.  |
| Lane 1   | 164 | -  | -   | 164   | 3.9 | 595   | 0.275 | 100   | 19.3   | 2    |
| Lane 2   | 54  | 58 | -   | 112   | 1.9 | 408   | 0.275 | 100   | NA     | NA   |
| Lane 3   | -   | -  | 265 | 265   | 0.2 | 325   | 0.813 | 100   | 43.9   | 2    |
| Lane 4   | -   | -  | 267 | 267   | 0.2 | 328   | 0.813 | 100   | 90.6   | 3    |
| Approach | 218 | 58 | 532 | 807   | 1.2 |       | 0.813 |       |        |      |

## North: R44\_N

| Mov.     | L2  | T1   | R2 | Total | %HV |       | Deg.  | Lane  | Prob.  | Ov.  |
|----------|-----|------|----|-------|-----|-------|-------|-------|--------|------|
| From N   |     |      |    |       |     | Cap.  | Satn  | Util. | SL Ov. | Lane |
| To Exit: | E   | S    | W  |       |     | veh/h | v/c   | %     | %      | No.  |
| Lane 1   | 185 | -    | -  | 185   | 2.8 | 1297  | 0.143 | 100   | 0.0    | 2    |
| Lane 2   | -   | 387  | -  | 387   | 1.8 | 1098  | 0.352 | 100   | NA     | NA   |
| Lane 3   | -   | 387  | -  | 387   | 1.8 | 1098  | 0.352 | 100   | NA     | NA   |
| Lane 4   | -   | 387  | -  | 387   | 1.8 | 1098  | 0.352 | 100   | NA     | NA   |
| Lane 5   | -   | -    | 47 | 47    | 0.0 | 351   | 0.135 | 100   | 0.0    | 4    |
| Approach | 185 | 1160 | 47 | 1393  | 1.9 |       | 0.352 |       |        |      |

## West: Maria Lievens Road

| Mov.     | L2 | T1 | R2 | Total | %HV |       | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|----|-------|-----|-------|-------|-------|--------|------|
| From W   |    |    |    |       |     | Cap.  | Satn  | Util. | SL Ov. | Lane |
| To Exit: | N  | E  | S  |       |     | veh/h | v/c   | %     | %      | No.  |
| Lane 1   | 47 | 12 | -  | 59    | 0.0 | 209   | 0.283 | 100   | NA     | NA   |
| Lane 2   | -  | -  | 31 | 31    | 0.0 | 229   | 0.133 | 100   | NA     | NA   |
| Approach | 47 | 12 | 31 | 89    | 0.0 |       | 0.283 |       |        |      |

Total %HV Deg. Satn (v/c)

All Vehicles 5140 1.2 0.814

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

## Merge Analysis

| Exit   | Short  | Percent | Opposing  | Critical | Follow-up | Lane Capacity | Deg. | Min.  | Merge |
|--------|--------|---------|-----------|----------|-----------|---------------|------|-------|-------|
| Lane   | Lane   | Opng in | Flow Rate | Gap      | Headway   | Flow          | Satn | Delay | Delay |
| Number | Length | Lane    | % veh/h   | sec      | sec       | veh/h         | v/c  | sec   | sec   |
|        | m      |         | pcu/h     |          |           |               |      |       |       |

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial | Residual | Time for | Duration |
|---------|----------|----------|----------|
| Queued  | Queued   | Residual | of       |
| Demand  | Demand   | Demand   | Oversatn |
| veh     | veh      | to Clear | sec      |
|         |          | sec      |          |

South: R44\_S

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 5 | 0.0 | 0.0 | 0.0 | 0.0 |

East: Webersvallei Road

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |

North: R44\_N

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 5 | 0.0 | 0.0 | 0.0 | 0.0 |

West: Maria Lievens Road

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2 | 0.0 | 0.0 | 0.0 | 0.0 |

## LANE SUMMARY

Site: WebFresFPD [Webersvallei Rd X Fresno St  
AM\_FY2030\_PropDev (Site Folder: Scenario 2b - Future Year  
2030 Proposed Dev - AM Peak )]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Future year 2030 AM Peak with Development trips.

Site Category: Proposed Design 2

Roundabout

| Lane Use and Performance |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                 |        |
|--------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------------|--------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. Adj. | Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] | veh/h | v/c       | %          | sec         |                  | [ Veh             | Dist ] |             | m           | %               | %      |
| South: Fresno Street     |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                 |        |
| Lane 1 <sup>d</sup>      | 338          | 2.2  | 338           | 2.2  | 874   | 0.387     | 100        | 7.9         | LOS A            | 2.6               | 18.2   | Full        | 160         | 0.0             | 0.0    |
| Approach                 | 338          | 2.2  | 338           | 2.2  |       | 0.387     |            | 7.9         | LOS A            | 2.6               | 18.2   |             |             |                 |        |
| East: Webersvallei Rd_SE |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                 |        |
| Lane 1 <sup>d</sup>      | 362          | 0.3  | 362           | 0.3  | 995   | 0.364     | 100        | 7.0         | LOS A            | 2.2               | 15.6   | Full        | 220         | 0.0             | 0.0    |
| Approach                 | 362          | 0.3  | 362           | 0.3  |       | 0.364     |            | 7.0         | LOS A            | 2.2               | 15.6   |             |             |                 |        |
| North: RoadName          |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                 |        |
| Lane 1 <sup>d</sup>      | 48           | 0.0  | 48            | 0.0  | 928   | 0.052     | 100        | 9.5         | LOS A            | 0.3               | 1.8    | Full        | 500         | 0.0             | 0.0    |
| Approach                 | 48           | 0.0  | 48            | 0.0  |       | 0.052     |            | 9.5         | LOS A            | 0.3               | 1.8    |             |             |                 |        |
| West: Webersvallei Rd_NW |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                 |        |
| Lane 1 <sup>d</sup>      | 394          | 3.2  | 394           | 3.2  | 1582  | 0.249     | 100        | 6.7         | LOS A            | 1.8               | 12.7   | Full        | 130         | 0.0             | 0.0    |
| Approach                 | 394          | 3.2  | 394           | 3.2  |       | 0.249     |            | 6.7         | LOS A            | 1.8               | 12.7   |             |             |                 |        |
| All Vehicles             | 1142         | 1.8  | 1142          | 1.8  |       | 0.387     |            | 7.3         | LOS A            | 2.6               | 18.2   |             |             |                 |        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

South: Fresno Street

| Mov.     | L2  | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|-----|----|----|-------|-----|-------|-------|-------|--------|------|
| From S   |     |    |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | W   | N  | E  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 331 | 2  | 5  | 338   | 2.2 | 874   | 0.387 | 100   | NA     | NA   |
| Approach | 331 | 2  | 5  | 338   | 2.2 |       | 0.387 |       |        |      |

East: Webersvallei Rd\_SE

| Mov.     | L2 | T1  | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|-----|-------|-----|-------|-------|-------|--------|------|
| From E   |    |     |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | S  | W   |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 11 | 352 | 362   | 0.3 | 995   | 0.364 | 100   | NA     | NA   |
| Approach | 11 | 352 | 362   | 0.3 |       | 0.364 |       |        |      |

## North: RoadName

| Mov.     | T1 | R2 | Total | %HV |       | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|-------|------|
| From N   |    |    |       |     | Cap.  | Satn  | Util. | SL    | Lane |
| To Exit: | S  | W  |       |     | veh/h | v/c   | %     | %     | No.  |
| Lane 1   | 5  | 43 | 48    | 0.0 | 928   | 0.052 | 100   | NA    | NA   |
| Approach | 5  | 43 | 48    | 0.0 |       | 0.052 |       |       |      |

## West: Webersvallei Rd\_NW

| Mov.     | L2 | T1  | R2  | Total | %HV |       | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|-----|-----|-------|-----|-------|-------|-------|-------|------|
| From W   |    |     |     |       |     | Cap.  | Satn  | Util. | SL    | Lane |
| To Exit: | N  | E   | S   |       |     | veh/h | v/c   | %     | %     | No.  |
| Lane 1   | 18 | 132 | 244 | 394   | 3.2 | 1582  | 0.249 | 100   | NA    | NA   |
| Approach | 18 | 132 | 244 | 394   | 3.2 |       | 0.249 |       |       |      |

| Total        | %HV  | Deg. | Satn (v/c) |
|--------------|------|------|------------|
| All Vehicles | 1142 | 1.8  | 0.387      |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

## Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Flow Rate % veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|-------------------|--------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|-------------------|--------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

|                          | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|--------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
| South: Fresno Street     |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| East: Webersvallei Rd_SE |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: RoadName          |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: Webersvallei Rd_NW |                           |                            |                                       |                          |
| Lane 1                   | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |



## LANE SUMMARY

**Site: SchFresFPD [School Rd X Fresno St  
AM\_FY2030\_PropDev (Site Folder: Scenario 2b - Future Year  
2030 Proposed Dev - AM Peak )]**

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

**Future year 2030 AM Peak with Development trips.**

Site Category: Proposed Design 2

### Stop (Two-Way)

| Lane Use and Performance |               |      |               |      |      |           |            |             |                  |                   |         |             |             |           |              |
|--------------------------|---------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|---------|-------------|-------------|-----------|--------------|
|                          | Demand Flows  |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |         | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total veh/h | HV % | [ Total veh/h | HV % |      |           |            |             |                  | [ Veh             | Dist] m |             |             |           |              |
| East: School Road_SE     |               |      |               |      |      |           |            |             |                  |                   |         |             |             |           |              |
| Lane 1                   | 116           | 4.5  | 116           | 4.5  | 1712 | 0.068     | 100        | 5.6         | LOS A            | 0.3               | 2.3     | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 116           | 4.5  | 116           | 4.5  |      | 0.068     |            | 5.6         | NA               | 0.3               | 2.3     |             |             |           |              |
| North: Fresno Street     |               |      |               |      |      |           |            |             |                  |                   |         |             |             |           |              |
| Lane 1                   | 183           | 5.7  | 183           | 5.7  | 1292 | 0.142     | 100        | 8.6         | LOS A            | 0.6               | 4.6     | Full        | 240         | 0.0       | 0.0          |
| Approach                 | 183           | 5.7  | 183           | 5.7  |      | 0.142     |            | 8.6         | LOS A            | 0.6               | 4.6     |             |             |           |              |
| West: School Road_NW     |               |      |               |      |      |           |            |             |                  |                   |         |             |             |           |              |
| Lane 1                   | 32            | 0.0  | 32            | 0.0  | 1857 | 0.017     | 100        | 5.5         | LOS A            | 0.0               | 0.0     | Full        | 150         | 0.0       | 0.0          |
| Approach                 | 32            | 0.0  | 32            | 0.0  |      | 0.017     |            | 5.5         | NA               | 0.0               | 0.0     |             |             |           |              |
| All Vehicles             | 331           | 4.8  | 331           | 4.8  |      | 0.142     |            | 7.2         | NA               | 0.6               | 4.6     |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

**Two-Way Sign Control Capacity Model: SIDRA Standard.**

**Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).**

**Queue Model:** SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

**Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).**

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Approach Lane Flows (veh/h) |     |       |       |     |       |       |       |        |      |  |
|-----------------------------|-----|-------|-------|-----|-------|-------|-------|--------|------|--|
| East: School Road_SE        |     |       |       |     |       |       |       |        |      |  |
| Mov.                        | R2  | Total | %HV   |     | Deg.  | Lane  | Prob. | Ov.    |      |  |
| From E                      |     |       |       |     | Cap.  | Satn  | Util. | SL Ov. | Lane |  |
| To Exit:                    | N   |       |       |     | veh/h | v/c   | %     | %      | No.  |  |
| Lane 1                      | 116 | 116   | 4.5   |     | 1712  | 0.068 | 100   | NA     | NA   |  |
| Approach                    | 116 | 116   | 4.5   |     | 0.068 |       |       |        |      |  |
| North: Fresno Street        |     |       |       |     |       |       |       |        |      |  |
| Mov.                        | L2  | R2    | Total | %HV |       | Deg.  | Lane  | Prob.  | Ov.  |  |
| From N                      |     |       |       |     | Cap.  | Satn  | Util. | SL Ov. | Lane |  |
| To Exit:                    | E   | W     |       |     | veh/h | v/c   | %     | %      | No.  |  |
| Lane 1                      | 89  | 94    | 183   | 5.7 | 1292  | 0.142 | 100   | NA     | NA   |  |
| Approach                    | 89  | 94    | 183   | 5.7 | 0.142 |       |       |        |      |  |
| West: School Road_NW        |     |       |       |     |       |       |       |        |      |  |
| Mov.                        | L2  | Total | %HV   |     | Deg.  | Lane  | Prob. | Ov.    |      |  |
| From W                      |     |       |       |     | Cap.  | Satn  | Util. | SL Ov. | Lane |  |
| To Exit:                    | N   |       |       |     | veh/h | v/c   | %     | %      | No.  |  |



|          |    |    |     |       |       |     |    |    |
|----------|----|----|-----|-------|-------|-----|----|----|
| Lane 1   | 32 | 32 | 0.0 | 1857  | 0.017 | 100 | NA | NA |
| Approach | 32 | 32 | 0.0 | 0.017 |       |     |    |    |

|              | Total | %HV | Deg.Satn (v/c) |
|--------------|-------|-----|----------------|
| All Vehicles | 331   | 4.8 | 0.142          |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane % veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-------------------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-------------------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                      | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|----------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
| East: School Road_SE |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: Fresno Street |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: School Road_NW |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:40

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site:** SchAccFPD [School Rd X Access Road]  
**AM\_FY2030\_PropDev** (Site Folder: Scenario 2b - Future Year  
 2030 Proposed Dev - AM Peak )]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 AM Peak with Development trips.

Site Category: Proposed Design 2

Stop (All-Way)

| Lane Use and Performance |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap. | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |      |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |      |           |            |             |                  | veh/h             | v/c    |             |             |           |              |
| South: Access Road       |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 87           | 0.0  | 87            | 0.0  | 420  | 0.208     | 100        | 16.7        | LOS C            | 0.7               | 5.2    | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 87           | 0.0  | 87            | 0.0  |      | 0.208     |            | 16.7        | LOS C            | 0.7               | 5.2    |             |             |           |              |
| East: School Road_SE     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 8            | 37.5 | 8             | 37.5 | 421  | 0.020     | 100        | 16.2        | LOS C            | 0.1               | 0.6    | Full        | 400         | 0.0       | 0.0          |
| Approach                 | 8            | 37.5 | 8             | 37.5 |      | 0.020     |            | 16.2        | LOS C            | 0.1               | 0.6    |             |             |           |              |
| North: Blakemore Street  |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 44           | 2.4  | 44            | 2.4  | 746  | 0.059     | 100        | 8.9         | LOS A            | 0.2               | 1.2    | Full        | 50          | 0.0       | 0.0          |
| Approach                 | 44           | 2.4  | 44            | 2.4  |      | 0.059     |            | 8.9         | LOS A            | 0.2               | 1.2    |             |             |           |              |
| West: School Road_NW     |              |      |               |      |      |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 87           | 10.8 | 87            | 10.8 | 576  | 0.152     | 100        | 13.6        | LOS B            | 0.5               | 3.8    | Full        | 260         | 0.0       | 0.0          |
| Approach                 | 87           | 10.8 | 87            | 10.8 |      | 0.152     |            | 13.6        | LOS B            | 0.5               | 3.8    |             |             |           |              |
| All Vehicles             | 227          | 6.0  | 227           | 6.0  |      | 0.208     |            | 14.0        | LOS B            | 0.7               | 5.2    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Approach Lane Flows (veh/h)    |    |       |       |       |       |       |       |        |      |     |
|--------------------------------|----|-------|-------|-------|-------|-------|-------|--------|------|-----|
| <b>South: Access Road</b>      |    |       |       |       |       |       |       |        |      |     |
| Mov.                           | L2 | T1    | Total | %HV   |       |       |       |        |      |     |
| From S                         |    |       |       |       | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |     |
| To Exit:                       | W  | N     |       |       | veh/h | Satn  | Util. | SL Ov. | Lane | No. |
|                                |    |       |       |       | v/c   | %     | %     |        |      |     |
| Lane 1                         | 71 | 17    | 87    | 0.0   | 420   | 0.208 | 100   | NA     | NA   |     |
| Approach                       | 71 | 17    | 87    | 0.0   |       | 0.208 |       |        |      |     |
| <b>East: School Road_SE</b>    |    |       |       |       |       |       |       |        |      |     |
| Mov.                           | T1 | Total | %HV   |       |       |       |       |        |      |     |
| From E                         |    |       |       |       | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |     |
| To Exit:                       | W  |       |       |       | veh/h | Satn  | Util. | SL Ov. | Lane | No. |
|                                |    |       |       |       | v/c   | %     | %     |        |      |     |
| Lane 1                         | 8  | 8     | 37.5  |       | 421   | 0.020 | 100   | NA     | NA   |     |
| Approach                       | 8  | 8     | 37.5  |       |       | 0.020 |       |        |      |     |
| <b>North: Blakemore Street</b> |    |       |       |       |       |       |       |        |      |     |
| Mov.                           | L2 | T1    | R2    | Total | %HV   |       |       |        |      |     |
| From N                         |    |       |       |       | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |     |
| To Exit:                       | E  | S     | W     |       | veh/h | Satn  | Util. | SL Ov. | Lane | No. |
|                                |    |       |       |       | v/c   | %     | %     |        |      |     |

|                           |     |     |    |       |      |       |       |       |        |      |
|---------------------------|-----|-----|----|-------|------|-------|-------|-------|--------|------|
| Lane 1                    | 1   | 8   | 35 | 44    | 2.4  | 746   | 0.059 | 100   | NA     | NA   |
| Approach                  | 1   | 8   | 35 | 44    | 2.4  |       | 0.059 |       |        |      |
| West: School Road_NW      |     |     |    |       |      |       |       |       |        |      |
| Mov.                      | L2  | T1  | R2 | Total | %HV  |       |       |       |        |      |
| From W                    |     |     |    |       |      | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
| To Exit                   | N   | E   | S  |       |      | veh/h | Satn  | Util. | SL Ov. | Lane |
|                           |     |     |    |       |      |       | v/c   | %     | %      | No.  |
| Lane 1                    | 43  | 14  | 31 | 87    | 10.8 | 576   | 0.152 | 100   | NA     | NA   |
| Approach                  | 43  | 14  | 31 | 87    | 10.8 |       | 0.152 |       |        |      |
| Total %HV Deg. Satn (v/c) |     |     |    |       |      |       |       |       |        |      |
| All Vehicles              | 227 | 6.0 |    |       |      |       | 0.208 |       |        |      |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Opng in Lane | Opposing Flow Rate % veh/h pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|----------------------|----------------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|
|------------------|---------------------|----------------------|----------------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                         | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|-------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
| South: Access Road      |                           |                            |                                       |                          |
| Lane 1                  | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| East: School Road_SE    |                           |                            |                                       |                          |
| Lane 1                  | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: Blakemore Street |                           |                            |                                       |                          |
| Lane 1                  | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: School Road_NW    |                           |                            |                                       |                          |
| Lane 1                  | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |

## LANE SUMMARY

**Site: R44WebFPD [R44 X Webersvallei Rd  
PM\_FY2030\_PropDev - Ultimate Plan (Site Folder: Scenario 2b -  
Future Year 2030 Proposed Dev - PM Peak )]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 PM Peak with Development trips.

Site Category: Proposed Design 2

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 90 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|-------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.              | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |                   |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    |                   |           |            |             |                  |                   |        |             |             |           |              |
| South: R44_S             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 59           | 1.8  | 59            | 1.8  | 983               | 0.060     | 100        | 16.3        | LOS B            | 1.2               | 8.7    | Short       | 80          | 0.0       | NA           |
| Lane 2                   | 435          | 3.1  | 435           | 3.1  | 1030              | 0.422     | 100        | 13.5        | LOS B            | 11.4              | 82.0   | Full        | 2500        | 0.0       | 0.0          |
| Lane 3                   | 435          | 3.1  | 435           | 3.1  | 1030              | 0.422     | 100        | 13.5        | LOS B            | 11.4              | 82.0   | Full        | 2500        | 0.0       | 0.0          |
| Lane 4                   | 435          | 3.1  | 435           | 3.1  | 1030              | 0.422     | 100        | 13.5        | LOS B            | 11.4              | 82.0   | Short       | 200         | 0.0       | NA           |
| Lane 5                   | 272          | 0.0  | 272           | 0.0  | 339               | 0.801     | 100        | 30.2        | LOS C            | 8.0               | 55.9   | Short       | 120         | 0.0       | NA           |
| Approach                 | 1635         | 2.6  | 1635          | 2.6  |                   | 0.801     |            | 16.4        | LOS B            | 11.4              | 82.0   |             |             |           |              |
| East: Webersvallei Road  |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 302          | 1.1  | 302           | 1.1  | 587 <sup>1</sup>  | 0.515     | 100        | 33.2        | LOS C            | 10.8              | 76.1   | Short       | 40          | 0.0       | NA           |
| Lane 2                   | 247          | 0.8  | 247           | 0.8  | 479               | 0.515     | 100        | 36.4        | LOS D            | 9.4               | 66.1   | Full        | 110         | 0.0       | 0.0          |
| Lane 3                   | 202          | 0.8  | 202           | 0.8  | 323               | 0.624     | 100        | 46.8        | LOS D            | 8.4               | 59.5   | Short       | 65          | 0.0       | NA           |
| Lane 4                   | 203          | 0.8  | 203           | 0.8  | 325               | 0.624     | 100        | 46.6        | LOS D            | 8.5               | 59.7   | Short       | 40          | 0.0       | NA           |
| Approach                 | 954          | 0.9  | 954           | 0.9  |                   | 0.624     |            | 39.7        | LOS D            | 10.8              | 76.1   |             |             |           |              |
| North: R44_N             |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 639          | 0.5  | 639           | 0.5  | 1240              | 0.515     | 100        | 16.9        | LOS B            | 14.1              | 99.0   | Short       | 70          | 0.0       | NA           |
| Lane 2                   | 667          | 0.4  | 667           | 0.4  | 764 <sup>1</sup>  | 0.873     | 100        | 34.5        | LOS C            | 31.5              | 221.1  | Full        | 650         | 0.0       | 0.0          |
| Lane 3                   | 915          | 0.4  | 915           | 0.4  | 1048              | 0.873     | 100        | 26.9        | LOS C            | 40.2              | 282.1  | Full        | 650         | 0.0       | 0.0          |
| Lane 4                   | 873          | 0.4  | 873           | 0.4  | 1000 <sup>1</sup> | 0.873     | 100        | 35.7        | LOS D            | 38.6              | 271.4  | Full        | 650         | 0.0       | 0.0          |
| Lane 5                   | 65           | 1.6  | 65            | 1.6  | 694               | 0.094     | 100        | 30.0        | LOS C            | 1.1               | 7.6    | Short       | 70          | 0.0       | NA           |
| Approach                 | 3159         | 0.4  | 3159          | 0.4  |                   | 0.873     |            | 29.0        | LOS C            | 40.2              | 282.1  |             |             |           |              |
| West: Maria Lievens Road |              |      |               |      |                   |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 119          | 0.9  | 119           | 0.9  | 222               | 0.537     | 100        | 44.1        | LOS D            | 5.1               | 36.3   | Full        | 25          | 0.0       | 39.1         |
| Lane 2                   | 76           | 1.4  | 76            | 1.4  | 266               | 0.285     | 100        | 47.4        | LOS D            | 3.2               | 23.0   | Full        | 25          | 0.0       | 0.0          |
| Approach                 | 195          | 1.1  | 195           | 1.1  |                   | 0.537     |            | 45.3        | LOS D            | 5.1               | 36.3   |             |             |           |              |
| All Vehicles             | 5942         | 1.1  | 5942          | 1.1  |                   | 0.873     |            | 27.8        | LOS C            | 40.2              | 282.1  |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes.  
Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

### Approach Lane Flows (veh/h)

South: R44\_S

| Mov.<br>From S<br>To Exit: | L2 | T1   | R2  | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|----|------|-----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 59 | -    | -   | 59    | 1.8 | 983           | 0.060               | 100                | 0.0                  | 2                  |
| Lane 2                     | -  | 435  | -   | 435   | 3.1 | 1030          | 0.422               | 100                | NA                   | NA                 |
| Lane 3                     | -  | 435  | -   | 435   | 3.1 | 1030          | 0.422               | 100                | NA                   | NA                 |
| Lane 4                     | -  | 435  | -   | 435   | 3.1 | 1030          | 0.422               | 100                | 0.0                  | 3                  |
| Lane 5                     | -  | -    | 272 | 272   | 0.0 | 339           | 0.801               | 100                | 0.0                  | 4                  |
| Approach                   | 59 | 1304 | 272 | 1635  | 2.6 |               | 0.801               |                    |                      |                    |

## East: Webersvallei Road

| Mov.<br>From E<br>To Exit: | L2  | T1 | R2  | Total | %HV | Cap.<br>veh/h    | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|-----|----|-----|-------|-----|------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 302 | -  | -   | 302   | 1.1 | 587 <sup>1</sup> | 0.515               | 100                | 64.6                 | 2                  |
| Lane 2                     | 188 | 59 | -   | 247   | 0.8 | 479              | 0.515               | 100                | NA                   | NA                 |
| Lane 3                     | -   | -  | 202 | 202   | 0.8 | 323              | 0.624               | 100                | 0.0                  | 2                  |
| Lane 4                     | -   | -  | 203 | 203   | 0.8 | 325              | 0.624               | 100                | 41.7                 | 3                  |
| Approach                   | 491 | 59 | 404 | 954   | 0.9 |                  | 0.624               |                    |                      |                    |

## North: R44\_N

| Mov.<br>From N<br>To Exit: | L2  | T1   | R2 | Total | %HV | Cap.<br>veh/h     | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|-----|------|----|-------|-----|-------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 639 | -    | -  | 639   | 0.5 | 1240              | 0.515               | 100                | 36.7                 | 2                  |
| Lane 2                     | -   | 667  | -  | 667   | 0.4 | 764 <sup>1</sup>  | 0.873               | 100                | NA                   | NA                 |
| Lane 3                     | -   | 915  | -  | 915   | 0.4 | 1048              | 0.873               | 100                | NA                   | NA                 |
| Lane 4                     | -   | 873  | -  | 873   | 0.4 | 1000 <sup>1</sup> | 0.873               | 100                | NA                   | NA                 |
| Lane 5                     | -   | -    | 65 | 65    | 1.6 | 694               | 0.094               | 100                | 0.0                  | 4                  |
| Approach                   | 639 | 2455 | 65 | 3159  | 0.4 |                   | 0.873               |                    |                      |                    |

## West: Maria Lievens Road

| Mov.<br>From W<br>To Exit: | L2 | T1 | R2 | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|----|----|----|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 88 | 31 | -  | 119   | 0.9 | 222           | 0.537               | 100                | NA                   | NA                 |
| Lane 2                     | -  | -  | 76 | 76    | 1.4 | 266           | 0.285               | 100                | NA                   | NA                 |
| Approach                   | 88 | 31 | 76 | 195   | 1.1 |               | 0.537               |                    |                      |                    |

Total %HV Deg. Satn (v/c)

All Vehicles 5942 1.1 0.873

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

## Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Oppng in<br>Flow Rate<br>% veh/h pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|------------------------------------|-------------------------------------|------------------------------------------------|-----------------------------------|
|------------------------------------|-------------------------------------|------------------------------------------------|-----------------------------------|

South: R44\_S

|                          |     |     |     |     |
|--------------------------|-----|-----|-----|-----|
| Lane 1                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 5                   | 0.0 | 0.0 | 0.0 | 0.0 |
| East: Webersvallei Road  |     |     |     |     |
| Lane 1                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4                   | 0.0 | 0.0 | 0.0 | 0.0 |
| North: R44_N             |     |     |     |     |
| Lane 1                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 3                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 4                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 5                   | 0.0 | 0.0 | 0.0 | 0.0 |
| West: Maria Lievens Road |     |     |     |     |
| Lane 1                   | 0.0 | 0.0 | 0.0 | 0.0 |
| Lane 2                   | 0.0 | 0.0 | 0.0 | 0.0 |

**SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)**

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Monday, 12 February 2024 13:18:57

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9



## LANE SUMMARY

Site: WebFresFPD [Webersvallei Rd X Fresno St  
PM\_FY2030\_PropDev (Site Folder: Scenario 2b - Future Year  
2030 Proposed Dev - PM Peak )]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Future year 2030 PM Peak with Development trips.

Site Category: Proposed Design 2

Roundabout

| Lane Use and Performance |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |     |
|--------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|------------------------|-----|
|                          | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. Adj. Block. |     |
|                          | [ Total      | HV ] | [ Total       | HV ] |       |           |            |             |                  | [ Veh             | Dist ] |             |             | %                      | %   |
|                          | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec         |                  |                   | m      |             | m           |                        |     |
| South: Fresno Street     |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |     |
| Lane 1 <sup>d</sup>      | 263          | 0.0  | 263           | 0.0  | 1040  | 0.253     | 100        | 6.4         | LOS A            | 1.5               | 10.6   | Full        | 160         | 0.0                    | 0.0 |
| Approach                 | 263          | 0.0  | 263           | 0.0  |       | 0.253     |            | 6.4         | LOS A            | 1.5               | 10.6   |             |             |                        |     |
| East: Webersvallei Rd_SE |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |     |
| Lane 1 <sup>d</sup>      | 217          | 0.0  | 217           | 0.0  | 1006  | 0.215     | 100        | 6.6         | LOS A            | 1.2               | 8.1    | Full        | 220         | 0.0                    | 0.0 |
| Approach                 | 217          | 0.0  | 217           | 0.0  |       | 0.215     |            | 6.6         | LOS A            | 1.2               | 8.1    |             |             |                        |     |
| North: RoadName          |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |     |
| Lane 1 <sup>d</sup>      | 22           | 0.0  | 22            | 0.0  | 827   | 0.027     | 100        | 10.4        | LOS B            | 0.1               | 0.9    | Full        | 500         | 0.0                    | 0.0 |
| Approach                 | 22           | 0.0  | 22            | 0.0  |       | 0.027     |            | 10.4        | LOS B            | 0.1               | 0.9    |             |             |                        |     |
| West: Webersvallei Rd_NW |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |     |
| Lane 1 <sup>d</sup>      | 573          | 0.6  | 573           | 0.6  | 1599  | 0.358     | 100        | 6.2         | LOS A            | 2.7               | 19.1   | Full        | 130         | 0.0                    | 0.0 |
| Approach                 | 573          | 0.6  | 573           | 0.6  |       | 0.358     |            | 6.2         | LOS A            | 2.7               | 19.1   |             |             |                        |     |
| All Vehicles             | 1075         | 0.3  | 1075          | 0.3  |       | 0.358     |            | 6.4         | LOS A            | 2.7               | 19.1   |             |             |                        |     |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

South: Fresno Street

| Mov.            | L2  | T1 | R2 | Total | %HV | Cap. veh/h | Deg. Satn v/c | Lane Util. % | Prob. SL Ov. % | Ov. Lane No. |
|-----------------|-----|----|----|-------|-----|------------|---------------|--------------|----------------|--------------|
| From S To Exit: | W   | N  | E  |       |     |            |               |              |                |              |
| Lane 1          | 253 | 4  | 6  | 263   | 0.0 | 1040       | 0.253         | 100          | NA             | NA           |
| Approach        | 253 | 4  | 6  | 263   | 0.0 |            | 0.253         |              |                |              |

East: Webersvallei Rd\_SE

| Mov.            | L2 | T1  | Total | %HV | Cap. veh/h | Deg. Satn v/c | Lane Util. % | Prob. SL Ov. % | Ov. Lane No. |
|-----------------|----|-----|-------|-----|------------|---------------|--------------|----------------|--------------|
| From E To Exit: | S  | W   |       |     |            |               |              |                |              |
| Lane 1          | 12 | 205 | 217   | 0.0 | 1006       | 0.215         | 100          | NA             | NA           |
| Approach        | 12 | 205 | 217   | 0.0 |            | 0.215         |              |                |              |



## North: RoadName

| Mov.               | T1 | R2 | Total | %HV | Cap.  | Deg.        | Lane       | Prob.       | Ov.         |
|--------------------|----|----|-------|-----|-------|-------------|------------|-------------|-------------|
| From N<br>To Exit: | S  | W  |       |     | veh/h | Satn<br>v/c | Util.<br>% | SL Ov.<br>% | Lane<br>No. |
| Lane 1             | 2  | 20 | 22    | 0.0 | 827   | 0.027       | 100        | NA          | NA          |
| Approach           | 2  | 20 | 22    | 0.0 |       | 0.027       |            |             |             |

## West: Webersvallei Rd\_NW

| Mov.               | L2 | T1  | R2  | Total | %HV | Cap.  | Deg.        | Lane       | Prob.       | Ov.         |
|--------------------|----|-----|-----|-------|-----|-------|-------------|------------|-------------|-------------|
| From W<br>To Exit: | N  | E   | S   |       |     | veh/h | Satn<br>v/c | Util.<br>% | SL Ov.<br>% | Lane<br>No. |
| Lane 1             | 42 | 271 | 260 | 573   | 0.6 | 1599  | 0.358       | 100        | NA          | NA          |
| Approach           | 42 | 271 | 260 | 573   | 0.6 |       | 0.358       |            |             |             |

| Total        | %HV  | Deg. | Satn (v/c) |
|--------------|------|------|------------|
| All Vehicles | 1075 | 0.3  | 0.358      |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

## Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% | Opposing<br>Flow Rate<br>veh/h | Critical<br>Gap<br>pcu/h | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------|--------------------------------|--------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------|--------------------------------|--------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial<br>Queued<br>Demand<br>veh | Residual<br>Queued<br>Demand<br>veh | Time for<br>Residual<br>Demand<br>to Clear<br>sec | Duration<br>of<br>Oversatn<br>sec |
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|
|------------------------------------|-------------------------------------|---------------------------------------------------|-----------------------------------|

## South: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## East: Webersvallei Rd\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## North: RoadName

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## West: Webersvallei Rd\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## LANE SUMMARY

**Site: SchFresFPD [School Rd X Fresno St  
PM\_FY2030\_PropDev (Site Folder: Scenario 2b - Future Year  
2030 Proposed Dev - PM Peak )]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 PM Peak with Development trips.

Site Category: Proposed Design 2

Stop (Two-Way)

| Lane Use and Performance    |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
|-----------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                             | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                             | [ Total      | HV ] | [ Total       | HV ] |       |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                             | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec         |                  |                   | m      |             | m           | %         | %            |
| <b>East: School Road_SE</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                      | 53           | 4.0  | 53            | 4.0  | 1677  | 0.031     | 100        | 5.5         | LOS A            | 0.1               | 1.0    | Full        | 100         | 0.0       | 0.0          |
| Approach                    | 53           | 4.0  | 53            | 4.0  |       | 0.031     |            | 5.5         | NA               | 0.1               | 1.0    |             |             |           |              |
| <b>North: Fresno Street</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                      | 131          | 0.0  | 131           | 0.0  | 1414  | 0.092     | 100        | 8.0         | LOS A            | 0.4               | 2.7    | Full        | 240         | 0.0       | 0.0          |
| Approach                    | 131          | 0.0  | 131           | 0.0  |       | 0.092     |            | 8.0         | LOS A            | 0.4               | 2.7    |             |             |           |              |
| <b>West: School Road_NW</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                      | 85           | 1.2  | 85            | 1.2  | 1844  | 0.046     | 100        | 5.5         | LOS A            | 0.0               | 0.0    | Full        | 150         | 0.0       | 0.0          |
| Approach                    | 85           | 1.2  | 85            | 1.2  |       | 0.046     |            | 5.5         | NA               | 0.0               | 0.0    |             |             |           |              |
| All Vehicles                | 268          | 1.2  | 268           | 1.2  |       | 0.092     |            | 6.7         | NA               | 0.4               | 2.7    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

#### East: School Road\_SE

| Mov.     | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|--------|------|
| From E   |    |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | W  | N  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 2  | 51 | 53    | 4.0 | 1677  | 0.031 | 100   | NA     | NA   |
| Approach | 2  | 51 | 53    | 4.0 |       | 0.031 |       |        |      |

#### North: Fresno Street

| Mov.     | L2  | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|-----|----|-------|-----|-------|-------|-------|--------|------|
| From N   |     |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | E   | W  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 124 | 6  | 131   | 0.0 | 1414  | 0.092 | 100   | NA     | NA   |
| Approach | 124 | 6  | 131   | 0.0 |       | 0.092 |       |        |      |

#### West: School Road\_NW

| Mov.     | L2 | T1 | Total | %HV | Cap.  | Deg. | Lane  | Prob.  | Ov.  |
|----------|----|----|-------|-----|-------|------|-------|--------|------|
| From W   |    |    |       |     | veh/h | Satn | Util. | SL Ov. | Lane |
| To Exit: | N  | E  |       |     |       | v/c  | %     | %      | No.  |

|          |    |   |    |     |       |       |     |    |    |
|----------|----|---|----|-----|-------|-------|-----|----|----|
| Lane 1   | 84 | 1 | 85 | 1.2 | 1844  | 0.046 | 100 | NA | NA |
| Approach | 84 | 1 | 85 | 1.2 | 0.046 |       |     |    |    |

|       |     |     |            |
|-------|-----|-----|------------|
| Total | %HV | Deg | Satn (v/c) |
|-------|-----|-----|------------|

|              |     |     |       |
|--------------|-----|-----|-------|
| All Vehicles | 268 | 1.2 | 0.092 |
|--------------|-----|-----|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Opng in Lane % | Opposing Flow Rate % veh/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|------------------------|----------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|
|------------------|---------------------|------------------------|----------------------------|------------------|-----------------------|-------------------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|                      | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|----------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
| East: School Road_SE |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| North: Fresno Street |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| West: School Road_NW |                           |                            |                                       |                          |
| Lane 1               | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:43

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

**Site:** SchAcc [School Rd X Access Road  
PM\_FY2030\_PropDev (Site Folder: Scenario 2b - Future Year  
2030 Proposed Dev - PM Peak )]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Future year 2030 PM Peak with Development trips.

Site Category: Base Year

Stop (All-Way)

| Lane Use and Performance |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
|--------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                          | [ Total      | HV ] | [ Total       | HV ] |       |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                          | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec         |                  |                   | m      |             | m           | %         | %            |
| South: Access Road       |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 53           | 0.0  | 53            | 0.0  | 210   | 0.251     | 100        | 28.7        | LOS D            | 1.0               | 6.7    | Full        | 100         | 0.0       | 0.0          |
| Approach                 | 53           | 0.0  | 53            | 0.0  |       | 0.251     |            | 28.7        | LOS D            | 1.0               | 6.7    |             |             |           |              |
| North: Blakemore Street  |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 31           | 6.9  | 31            | 6.9  | 467   | 0.065     | 100        | 12.2        | LOS B            | 0.2               | 1.5    | Full        | 50          | 0.0       | 0.0          |
| Approach                 | 31           | 6.9  | 31            | 6.9  |       | 0.065     |            | 12.2        | LOS B            | 0.2               | 1.5    |             |             |           |              |
| West: School Road_NW     |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                   | 123          | 1.7  | 123           | 1.7  | 864   | 0.143     | 100        | 10.6        | LOS B            | 0.4               | 3.0    | Full        | 260         | 0.0       | 0.0          |
| Approach                 | 123          | 1.7  | 123           | 1.7  |       | 0.143     |            | 10.6        | LOS B            | 0.4               | 3.0    |             |             |           |              |
| All Vehicles             | 206          | 2.0  | 206           | 2.0  |       | 0.251     |            | 15.4        | LOS C            | 1.0               | 6.7    |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

| South: Access Road      |    |    |       |       |               |                     |                     |                      |                      |                    |
|-------------------------|----|----|-------|-------|---------------|---------------------|---------------------|----------------------|----------------------|--------------------|
| Mov.                    | L2 | T1 | Total | %HV   | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>%  | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No.   |                    |
| From S<br>To Exit:      | W  | N  |       |       |               |                     |                     |                      |                      |                    |
| Lane 1                  | 38 | 15 | 53    | 0.0   | 210           | 0.251               | 100                 | NA                   | NA                   |                    |
| Approach                | 38 | 15 | 53    | 0.0   |               | 0.251               |                     |                      |                      |                    |
| North: Blakemore Street |    |    |       |       |               |                     |                     |                      |                      |                    |
| Mov.                    | T1 | R2 | Total | %HV   | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>%  | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No.   |                    |
| From N<br>To Exit:      | S  | W  |       |       |               |                     |                     |                      |                      |                    |
| Lane 1                  | 15 | 16 | 31    | 6.9   | 467           | 0.065               | 100                 | NA                   | NA                   |                    |
| Approach                | 15 | 16 | 31    | 6.9   |               | 0.065               |                     |                      |                      |                    |
| West: School Road_NW    |    |    |       |       |               |                     |                     |                      |                      |                    |
| Mov.                    | L2 | T1 | R2    | Total | %HV           | Cap.<br>veh/h       | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>%   | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
| From W<br>To Exit:      | N  | E  | S     |       |               |                     |                     |                      |                      |                    |
| Lane 1                  | 38 | 9  | 76    | 123   | 1.7           | 864                 | 0.143               | 100                  | NA                   | NA                 |
| Approach                | 38 | 9  | 76    | 123   | 1.7           |                     | 0.143               |                      |                      |                    |

|              | Total | %HV | Deg.Satn (v/c) |
|--------------|-------|-----|----------------|
| All Vehicles | 206   | 2.0 | 0.251          |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Opposing Flow Rate % veh/h pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Capacity Flow Rate veh/h | Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|----------------------------------|------------------|-----------------------|-------------------------------|----------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|----------------------------------|------------------|-----------------------|-------------------------------|----------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|  | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|
|--|---------------------------|----------------------------|---------------------------------------|--------------------------|

##### South: Access Road

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

##### North: Blakemore Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

##### West: School Road\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:43

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9



## LANE SUMMARY

**Site: R44WebFPD [R44 X Webersvallei Rd  
AM\_FY2030\_PropDev\_FutDev - Ultimate Plan (Site Folder:  
Scenario 3 - Future Year 2030 Proposed Dev Future Road  
Network - AM Peak )]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 AM Peak with Development trips and future Development trips.

Site Category: Proposed Design 2

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 100 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance        |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
|---------------------------------|--------------|------|---------------|------|------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|-------------------|
|                                 | Demand Flows |      | Arrival Flows |      | Cap.             | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block.      |
|                                 | [ Total      | HV ] | [ Total       | HV ] |                  |           |            |             |                  | [ Veh             | Dist ] |             |             |           |                   |
|                                 | veh/h        | %    | veh/h         | %    | veh/h            | v/c       | %          | sec         |                  |                   | m      |             | m           | %         | %                 |
| <b>South: R44_S</b>             |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
| Lane 1                          | 16           | 0.0  | 16            | 0.0  | 803              | 0.020     | 100        | 38.9        | LOS D            | 0.4               | 3.0    | Short       | 80          | 0.0       | NA                |
| Lane 2                          | 900          | 0.5  | 900           | 0.5  | 836 <sup>1</sup> | 1.075     | 100        | 139.6       | LOS F            | 79.6              | 559.7  | Full        | 2500        | 0.0       | 0.0               |
| Lane 3                          | 908          | 0.5  | 908           | 0.5  | 844              | 1.075     | 100        | 123.3       | LOS F            | 80.3              | 564.5  | Full        | 2500        | 0.0       | 0.0               |
| Lane 4                          | 836          | 0.5  | 836           | 0.5  | 777 <sup>1</sup> | 1.075     | 100        | 132.0       | LOS F            | 74.4              | 523.1  | Short       | 200         | 0.0       | NA                |
| Lane 5                          | 260          | 4.5  | 260           | 4.5  | 663              | 0.392     | 100        | 32.6        | LOS C            | 5.9               | 42.9   | Short       | 120         | 0.0       | NA                |
| Approach                        | 2919         | 0.9  | 2919          | 0.9  |                  | 1.075     |            | 122.3       | LOS F            | 80.3              | 564.5  |             |             |           |                   |
| <b>East: Webersvallei Road</b>  |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
| Lane 1                          | 262          | 2.2  | 262           | 2.2  | 827              | 0.317     | 100        | 24.4        | LOS C            | 8.2               | 58.1   | Short       | 40          | 0.0       | NA                |
| Lane 2                          | 178          | 1.5  | 178           | 1.5  | 561              | 0.317     | 100        | 41.8        | LOS D            | 6.7               | 47.7   | Full        | 110         | 0.0       | 21.3 <sup>8</sup> |
| Lane 3                          | 367          | 0.1  | 367           | 0.1  | 413 <sup>1</sup> | 0.890     | 100        | 70.8        | LOS E            | 18.7              | 131.2  | Short       | 65          | 0.0       | NA                |
| Lane 4                          | 369          | 0.1  | 369           | 0.1  | 414 <sup>1</sup> | 0.890     | 100        | 70.7        | LOS E            | 18.8              | 131.6  | Short       | 40          | 0.0       | NA                |
| Approach                        | 1176         | 0.8  | 1176          | 0.8  |                  | 0.890     |            | 56.0        | LOS E            | 18.8              | 131.6  |             |             |           |                   |
| <b>North: R44_N</b>             |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
| Lane 1                          | 240          | 2.2  | 240           | 2.2  | 1158             | 0.207     | 100        | 13.9        | LOS B            | 4.9               | 34.9   | Short       | 70          | 0.0       | NA                |
| Lane 2                          | 387          | 1.8  | 387           | 1.8  | 837              | 0.462     | 100        | 21.7        | LOS C            | 13.3              | 94.9   | Full        | 650         | 0.0       | 0.0               |
| Lane 3                          | 387          | 1.8  | 387           | 1.8  | 837              | 0.462     | 100        | 21.7        | LOS C            | 13.3              | 94.9   | Full        | 650         | 0.0       | 0.0               |
| Lane 4                          | 387          | 1.8  | 387           | 1.8  | 837              | 0.462     | 100        | 21.7        | LOS C            | 13.3              | 94.9   | Full        | 650         | 0.0       | 0.0               |
| Lane 5                          | 47           | 0.0  | 47            | 0.0  | 423              | 0.112     | 100        | 25.6        | LOS C            | 1.1               | 7.7    | Short       | 70          | 0.0       | NA                |
| Approach                        | 1447         | 1.8  | 1447          | 1.8  |                  | 0.462     |            | 20.5        | LOS C            | 13.3              | 94.9   |             |             |           |                   |
| <b>West: Maria Lievens Road</b> |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
| Lane 1                          | 59           | 0.0  | 59            | 0.0  | 242              | 0.243     | 100        | 44.8        | LOS D            | 2.6               | 18.5   | Full        | 25          | 0.0       | 0.0               |
| Lane 2                          | 31           | 0.0  | 31            | 0.0  | 252              | 0.121     | 100        | 51.9        | LOS D            | 1.4               | 10.0   | Full        | 25          | 0.0       | 0.0               |
| Approach                        | 89           | 0.0  | 89            | 0.0  |                  | 0.243     |            | 47.2        | LOS D            | 2.6               | 18.5   |             |             |           |                   |
| All Vehicles                    | 5632         | 1.1  | 5632          | 1.1  |                  | 1.075     |            | 81.1        | LOS F            | 80.3              | 564.5  |             |             |           |                   |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

<sup>8</sup> Probability of Blockage has been set on the basis of a queue that overflows from a short lane.

**Approach Lane Flows (veh/h)****South: R44\_S**

| Mov.<br>From S<br>To Exit: | L2<br>W | T1<br>N | R2<br>E | Total | %HV | Cap.<br>veh/h    | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 16      | -       | -       | 16    | 0.0 | 803              | 0.020               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 900     | -       | 900   | 0.5 | 836 <sup>1</sup> | 1.075               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 908     | -       | 908   | 0.5 | 844              | 1.075               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 836     | -       | 836   | 0.5 | 777 <sup>1</sup> | 1.075               | 100                | 95.7                 | 3                  |
| Lane 5                     | -       | -       | 260     | 260   | 4.5 | 663              | 0.392               | 100                | 0.0                  | 4                  |
| Approach                   | 16      | 2643    | 260     | 2919  | 0.9 |                  | 1.075               |                    |                      |                    |

**East: Webersvallei Road**

| Mov.<br>From E<br>To Exit: | L2<br>S | T1<br>W | R2<br>N | Total | %HV | Cap.<br>veh/h    | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 262     | -       | -       | 262   | 2.2 | 827              | 0.317               | 100                | 39.2                 | 2                  |
| Lane 2                     | 120     | 58      | -       | 178   | 1.5 | 561              | 0.317               | 100                | NA                   | NA                 |
| Lane 3                     | -       | -       | 367     | 367   | 0.1 | 413 <sup>1</sup> | 0.890               | 100                | 70.5                 | 2                  |
| Lane 4                     | -       | -       | 369     | 369   | 0.1 | 414 <sup>1</sup> | 0.890               | 100                | 100.0                | 3                  |
| Approach                   | 382     | 58      | 736     | 1176  | 0.8 |                  | 0.890               |                    |                      |                    |

**North: R44\_N**

| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | R2<br>W | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 240     | -       | -       | 240   | 2.2 | 1158          | 0.207               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 387     | -       | 387   | 1.8 | 837           | 0.462               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 387     | -       | 387   | 1.8 | 837           | 0.462               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 387     | -       | 387   | 1.8 | 837           | 0.462               | 100                | NA                   | NA                 |
| Lane 5                     | -       | -       | 47      | 47    | 0.0 | 423           | 0.112               | 100                | 0.0                  | 4                  |
| Approach                   | 240     | 1160    | 47      | 1447  | 1.8 |               | 0.462               |                    |                      |                    |

**West: Maria Lievens Road**

| Mov.<br>From W<br>To Exit: | L2<br>N | T1<br>E | R2<br>S | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 47      | 12      | -       | 59    | 0.0 | 242           | 0.243               | 100                | NA                   | NA                 |
| Lane 2                     | -       | -       | 31      | 31    | 0.0 | 252           | 0.121               | 100                | NA                   | NA                 |
| Approach                   | 47      | 12      | 31      | 89    | 0.0 |               | 0.243               |                    |                      |                    |

|       |     |                 |
|-------|-----|-----------------|
| Total | %HV | Deg. Satn (v/c) |
|-------|-----|-----------------|

|              |      |     |       |
|--------------|------|-----|-------|
| All Vehicles | 5632 | 1.1 | 1.075 |
|--------------|------|-----|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

**Merge Analysis**

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

**Variable Demand Analysis**

| Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand | Duration<br>of<br>Oversatn |
|-----------------------------|------------------------------|--------------------------------|----------------------------|
|-----------------------------|------------------------------|--------------------------------|----------------------------|



|                          | veh | veh  | to Clear<br>sec | sec |
|--------------------------|-----|------|-----------------|-----|
| South: R44_S             |     |      |                 |     |
| Lane 1                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 2                   | 0.0 | 31.5 | 135.7           | NA  |
| Lane 3                   | 0.0 | 31.8 | 135.7           | NA  |
| Lane 4                   | 0.0 | 29.3 | 135.7           | NA  |
| Lane 5                   | 0.0 | 0.0  | 0.0             | 0.0 |
| East: Webersvallei Road  |     |      |                 |     |
| Lane 1                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 2                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 3                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 4                   | 0.0 | 0.0  | 0.0             | 0.0 |
| North: R44_N             |     |      |                 |     |
| Lane 1                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 2                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 3                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 4                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 5                   | 0.0 | 0.0  | 0.0             | 0.0 |
| West: Maria Lievens Road |     |      |                 |     |
| Lane 1                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 2                   | 0.0 | 0.0  | 0.0             | 0.0 |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Monday, 12 February 2024 14:31:29

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

Site: WebFresFPD [Webersvallei Rd X Fresno St  
AM\_FY2030\_PropDev\_FutDev (Site Folder: Scenario 3 - Future  
Year 2030 Proposed Dev Future Road Network - AM Peak )]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Future year 2030 AM Peak with Development trips and future Development trips.

Site Category: Proposed Design 2

Roundabout

| Lane Use and Performance |               |      |               |      |       |           |            |             |                  |                   |          |             |             |                        |     |
|--------------------------|---------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|----------|-------------|-------------|------------------------|-----|
|                          | Demand Flows  |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |          | Lane Config | Lane Length | Cap. Prob. Adj. Block. |     |
|                          | [ Total veh/h | HV % | [ Total veh/h | HV % | veh/h | v/c       | %          | sec         |                  | [ Veh             | Dist ] m |             | m           | %                      | %   |
| South: Fresno Street     |               |      |               |      |       |           |            |             |                  |                   |          |             |             |                        |     |
| Lane 1 <sup>d</sup>      | 725           | 1.0  | 725           | 1.0  | 900   | 0.806     | 100        | 14.8        | LOS B            | 12.6              | 88.9     | Full        | 160         | 0.0                    | 0.0 |
| Approach                 | 725           | 1.0  | 725           | 1.0  |       | 0.806     |            | 14.8        | LOS B            | 12.6              | 88.9     |             |             |                        |     |
| East: Webersvallei Rd_SE |               |      |               |      |       |           |            |             |                  |                   |          |             |             |                        |     |
| Lane 1 <sup>d</sup>      | 369           | 0.3  | 369           | 0.3  | 894   | 0.413     | 100        | 8.0         | LOS A            | 2.6               | 18.5     | Full        | 220         | 0.0                    | 0.0 |
| Approach                 | 369           | 0.3  | 369           | 0.3  |       | 0.413     |            | 8.0         | LOS A            | 2.6               | 18.5     |             |             |                        |     |
| North: RoadName          |               |      |               |      |       |           |            |             |                  |                   |          |             |             |                        |     |
| Lane 1 <sup>d</sup>      | 48            | 0.0  | 48            | 0.0  | 821   | 0.059     | 100        | 10.4        | LOS B            | 0.3               | 2.1      | Full        | 500         | 0.0                    | 0.0 |
| Approach                 | 48            | 0.0  | 48            | 0.0  |       | 0.059     |            | 10.4        | LOS B            | 0.3               | 2.1      |             |             |                        |     |
| West: Webersvallei Rd_NW |               |      |               |      |       |           |            |             |                  |                   |          |             |             |                        |     |
| Lane 1 <sup>d</sup>      | 517           | 2.4  | 517           | 2.4  | 1469  | 0.352     | 100        | 7.1         | LOS A            | 3.0               | 21.4     | Full        | 130         | 0.0                    | 0.0 |
| Approach                 | 517           | 2.4  | 517           | 2.4  |       | 0.352     |            | 7.1         | LOS A            | 3.0               | 21.4     |             |             |                        |     |
| All Vehicles             | 1660          | 1.3  | 1660          | 1.3  |       | 0.806     |            | 10.8        | LOS B            | 12.6              | 88.9     |             |             |                        |     |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

South: Fresno Street

| Mov.            | L2  | T1 | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|-----|----|----|-------|-----|-------|-----------|------------|--------------|--------------|
| From S To Exit: | W   | N  | E  |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 698 | 2  | 25 | 725   | 1.0 | 900   | 0.806     | 100        | NA           | NA           |
| Approach        | 698 | 2  | 25 | 725   | 1.0 |       | 0.806     |            |              |              |

East: Webersvallei Rd\_SE

| Mov.            | L2 | T1  | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|-----|-------|-----|-------|-----------|------------|--------------|--------------|
| From E To Exit: | S  | W   |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 18 | 352 | 369   | 0.3 | 894   | 0.413     | 100        | NA           | NA           |
| Approach        | 18 | 352 | 369   | 0.3 |       | 0.413     |            |              |              |

## North: RoadName

| Mov.     | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|--------|------|
| From N   |    |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | S  | W  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 5  | 43 | 48    | 0.0 | 821   | 0.059 | 100   | NA     | NA   |
| Approach | 5  | 43 | 48    | 0.0 |       | 0.059 |       |        |      |

## West: Webersvallei Rd\_NW

| Mov.     | L2 | T1  | R2  | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|-----|-----|-------|-----|-------|-------|-------|--------|------|
| From W   |    |     |     |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | N  | E   | S   |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 18 | 132 | 367 | 517   | 2.4 | 1469  | 0.352 | 100   | NA     | NA   |
| Approach | 18 | 132 | 367 | 517   | 2.4 |       | 0.352 |       |        |      |

Total %HV Deg.Satn (v/c)

All Vehicles 1660 1.3 0.806

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

## Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Opng in Lane % veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|------------------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|------------------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|---------------------------|----------------------------|---------------------------------------|--------------------------|
|---------------------------|----------------------------|---------------------------------------|--------------------------|

## South: Fresno Street

Lane 1 0.0 0.0 0.0 0.0

## East: Webersvallei Rd\_SE

Lane 1 0.0 0.0 0.0 0.0

## North: RoadName

Lane 1 0.0 0.0 0.0 0.0

## West: Webersvallei Rd\_NW

Lane 1 0.0 0.0 0.0 0.0

## LANE SUMMARY

**Site: SchFresFPD [School Rd X Fresno St  
AM\_FY2030\_PropDev\_FutDev (Site Folder: Scenario 3 - Future  
Year 2030 Proposed Dev Future Road Network - AM Peak )]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 AM Peak with Development trips and future Development trips.

Site Category: Proposed Design 2

Stop (Two-Way)

| Lane Use and Performance    |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
|-----------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|--------------|
|                             | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block. |
|                             | [ Total      | HV ] | [ Total       | HV ] |       |           |            |             |                  | [ Veh             | Dist ] |             |             |           |              |
|                             | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec         |                  |                   | m      |             | m           | %         | %            |
| <b>East: School Road_SE</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                      | 504          | 1.0  | 504           | 1.0  | 1743  | 0.289     | 100        | 5.6         | LOS A            | 1.7               | 12.0   | Full        | 100         | 0.0       | 0.0          |
| Approach                    | 504          | 1.0  | 504           | 1.0  |       | 0.289     |            | 5.6         | NA               | 1.7               | 12.0   |             |             |           |              |
| <b>North: Fresno Street</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                      | 314          | 3.4  | 314           | 3.4  | 1176  | 0.267     | 100        | 11.7        | LOS B            | 1.7               | 12.3   | Full        | 240         | 0.0       | 0.0          |
| Approach                    | 314          | 3.4  | 314           | 3.4  |       | 0.267     |            | 11.7        | LOS B            | 1.7               | 12.3   |             |             |           |              |
| <b>West: School Road_NW</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |           |              |
| Lane 1                      | 32           | 0.0  | 32            | 0.0  | 1857  | 0.017     | 100        | 5.5         | LOS A            | 0.0               | 0.0    | Full        | 150         | 0.0       | 0.0          |
| Approach                    | 32           | 0.0  | 32            | 0.0  |       | 0.017     |            | 5.5         | NA               | 0.0               | 0.0    |             |             |           |              |
| All Vehicles                | 849          | 1.9  | 849           | 1.9  |       | 0.289     |            | 7.8         | NA               | 1.7               | 12.3   |             |             |           |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Approach Lane Flows (veh/h) |     |       |       |     |       |           |            |            |          |          |
|-----------------------------|-----|-------|-------|-----|-------|-----------|------------|------------|----------|----------|
| <b>East: School Road_SE</b> |     |       |       |     |       |           |            |            |          |          |
| Mov.                        | R2  | Total | %HV   |     | Cap.  | Deg. Satn | Lane Util. | Prob. SL   | Ov. Lane |          |
| From E To Exit:             | N   |       |       |     | veh/h | v/c       | %          | %          | No.      |          |
| Lane 1                      | 504 | 504   | 1.0   |     | 1743  | 0.289     | 100        | NA         | NA       |          |
| Approach                    | 504 | 504   | 1.0   |     |       | 0.289     |            |            |          |          |
| <b>North: Fresno Street</b> |     |       |       |     |       |           |            |            |          |          |
| Mov.                        | L2  | R2    | Total | %HV |       | Cap.      | Deg. Satn  | Lane Util. | Prob. SL | Ov. Lane |
| From N To Exit:             | E   | W     |       |     | veh/h | v/c       | %          | %          | %        | No.      |
| Lane 1                      | 220 | 94    | 314   | 3.4 | 1176  | 0.267     | 100        | NA         | NA       |          |
| Approach                    | 220 | 94    | 314   | 3.4 |       | 0.267     |            |            |          |          |
| <b>West: School Road_NW</b> |     |       |       |     |       |           |            |            |          |          |
| Mov.                        | L2  | Total | %HV   |     | Cap.  | Deg. Satn | Lane Util. | Prob. SL   | Ov. Lane |          |
| From W To Exit:             | N   |       |       |     | veh/h | v/c       | %          | %          | %        | No.      |
| Lane 1                      | 32  | 32    | 0.0   |     | 1857  | 0.017     | 100        | NA         | NA       |          |
| Approach                    | 32  | 32    | 0.0   |     |       | 0.017     |            |            |          |          |

|          |    |    |     |       |       |     |    |    |
|----------|----|----|-----|-------|-------|-----|----|----|
| Lane 1   | 32 | 32 | 0.0 | 1857  | 0.017 | 100 | NA | NA |
| Approach | 32 | 32 | 0.0 | 0.017 |       |     |    |    |

| Total | %HV | Deg.Satn (v/c) |
|-------|-----|----------------|
|-------|-----|----------------|

|              |     |     |       |
|--------------|-----|-----|-------|
| All Vehicles | 849 | 1.9 | 0.289 |
|--------------|-----|-----|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane % veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-------------------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-------------------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

| Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|---------------------------|----------------------------|---------------------------------------|--------------------------|
|---------------------------|----------------------------|---------------------------------------|--------------------------|

East: School Road\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

North: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

West: School Road\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## LANE SUMMARY

**Site:** SchAcc [School Rd X Access Road  
AM\_FY2030\_PropDev\_FutDev (Site Folder: Scenario 3 - Future  
Year 2030 Proposed Dev Future Road Network - AM Peak )]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Future year 2030 AM Peak with Development trips and future Development trips.

Site Category: Base Year

Stop (All-Way)

| Lane Use and Performance       |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |      |
|--------------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|------------------------|------|
|                                | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. Adj. Block. |      |
|                                | [ Total      | HV.] | [ Total       | HV.] |       |           |            |             |                  | [ Veh             | Dist ] |             |             |                        |      |
|                                | veh/h        | %    | veh/h         | %    | veh/h | v/c       | %          | sec         |                  |                   | m      |             | m           | %                      | %    |
| <b>South: Access Road</b>      |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |      |
| Lane 1                         | 497          | 0.0  | 497           | 0.0  | 432   | 1.149     | 100        | 189.5       | LOS F            | 37.0              | 259.0  | Full        | 100         | 0.0                    | 89.0 |
| Approach                       | 497          | 0.0  | 497           | 0.0  |       | 1.149     |            | 189.5       | LOS F            | 37.0              | 259.0  |             |             |                        |      |
| <b>East: School Road_SE</b>    |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |      |
| Lane 1                         | 8            | 37.5 | 8             | 37.5 | 310   | 0.027     | 100        | 19.4        | LOS C            | 0.1               | 0.8    | Full        | 500         | 0.0                    | 0.0  |
| Approach                       | 8            | 37.5 | 8             | 37.5 |       | 0.027     |            | 19.4        | LOS C            | 0.1               | 0.8    |             |             |                        |      |
| <b>North: Blakemore Street</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |      |
| Lane 1                         | 51           | 2.1  | 51            | 2.1  | 639   | 0.079     | 100        | 9.9         | LOS A            | 0.2               | 1.7    | Full        | 50          | 0.0                    | 0.0  |
| Approach                       | 51           | 2.1  | 51            | 2.1  |       | 0.079     |            | 9.9         | LOS A            | 0.2               | 1.7    |             |             |                        |      |
| <b>West: School Road_NW</b>    |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |      |
| Lane 1                         | 218          | 4.3  | 218           | 4.3  | 614   | 0.355     | 100        | 14.8        | LOS B            | 1.4               | 10.1   | Full        | 260         | 0.0                    | 0.0  |
| Approach                       | 218          | 4.3  | 218           | 4.3  |       | 0.355     |            | 14.8        | LOS B            | 1.4               | 10.1   |             |             |                        |      |
| All Vehicles                   | 774          | 1.8  | 774           | 1.8  |       | 1.149     |            | 126.7       | LOS F            | 37.0              | 259.0  |             |             |                        |      |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

#### South: Access Road

| Mov.     | L2  | T1 | Total | %HV | Cap.  | Deg.  | Lane  | Prob. | Ov.  |
|----------|-----|----|-------|-----|-------|-------|-------|-------|------|
| From S   |     |    |       |     | veh/h | Satn  | Util. | SL    | Lane |
| To Exit: | W   | N  |       |     |       | v/c   | %     | %     | No.  |
| Lane 1   | 459 | 38 | 497   | 0.0 | 432   | 1.149 | 100   | NA    | NA   |
| Approach | 459 | 38 | 497   | 0.0 |       | 1.149 |       |       |      |

#### East: School Road\_SE

| Mov.     | T1 | Total | %HV  | Cap.  | Deg.  | Lane  | Prob. | Ov.  |
|----------|----|-------|------|-------|-------|-------|-------|------|
| From E   |    |       |      | veh/h | Satn  | Util. | SL    | Lane |
| To Exit: | W  |       |      |       | v/c   | %     | %     | No.  |
| Lane 1   | 8  | 8     | 37.5 | 310   | 0.027 | 100   | NA    | NA   |
| Approach | 8  | 8     | 37.5 |       | 0.027 |       |       |      |

#### North: Blakemore Street

| Mov.     | L2 | T1 | R2 | Total | %HV | Cap.  | Deg. | Lane  | Prob. | Ov.  |
|----------|----|----|----|-------|-----|-------|------|-------|-------|------|
| From N   |    |    |    |       |     | veh/h | Satn | Util. | SL    | Lane |
| To Exit: | E  | S  | W  |       |     |       | v/c  | %     | %     | No.  |



|          |   |    |    |    |     |     |       |     |    |    |
|----------|---|----|----|----|-----|-----|-------|-----|----|----|
| Lane 1   | 1 | 15 | 35 | 51 | 2.1 | 639 | 0.079 | 100 | NA | NA |
| Approach | 1 | 15 | 35 | 51 | 2.1 |     | 0.079 |     |    |    |

**West: School Road\_NW**

| Mov.     | L2 | T1 | R2  | Total | %HV |       | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|-----|-------|-----|-------|-------|-------|--------|------|
| From W   |    |    |     |       |     | Cap.  | Satn  | Util. | SL Ov. | Lane |
| To Exit: | N  | E  | S   |       |     | veh/h | v/c   | %     | %      | No.  |
| Lane 1   | 43 | 14 | 161 | 218   | 4.3 | 614   | 0.355 | 100   | NA     | NA   |
| Approach | 43 | 14 | 161 | 218   | 4.3 |       | 0.355 |       |        |      |

| Total        | %HV | Deg. | Satn (v/c) |
|--------------|-----|------|------------|
| All Vehicles | 774 | 1.8  | 1.149      |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

**Merge Analysis**

| Exit Lane Number | Short Lane Length m | Percent Oppng in Lane | Flow Rate %veh/h | Opposing Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Lane Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |
|------------------|---------------------|-----------------------|------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|
|------------------|---------------------|-----------------------|------------------|--------------------------|------------------|-----------------------|----------------------|---------------------|---------------|----------------|-----------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

**Variable Demand Analysis**

|                                | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
|--------------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
| <b>South: Access Road</b>      |                           |                            |                                       |                          |
| Lane 1                         | 0.0                       | 32.3                       | 268.6                                 | NA                       |
| <b>East: School Road_SE</b>    |                           |                            |                                       |                          |
| Lane 1                         | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| <b>North: Blakemore Street</b> |                           |                            |                                       |                          |
| Lane 1                         | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| <b>West: School Road_NW</b>    |                           |                            |                                       |                          |
| Lane 1                         | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |



## LANE SUMMARY

**Site: R44WebFPD [R44 X Webersvallei Rd  
PM\_FY2030\_PropDev\_FutDev - Ultimate Plan - Copy (Site  
Folder: Scenario 3 - Future Year 2030 Proposed Dev Future  
Road Network- PM Peak)]**

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Future year 2030 PM Peak with Development trips and future Development trips.

Site Category: Proposed Design 2

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Optimum Cycle Time - Minimum Delay)

| Lane Use and Performance |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
|--------------------------|--------------|------|---------------|------|------------------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|-----------|-------------------|
|                          | Demand Flows |      | Arrival Flows |      | Cap.             | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Adj. | Prob. Block.      |
|                          | [ Total      | HV ] | [ Total       | HV ] |                  |           |            |             |                  | [ Veh             | Dist ] |             |             |           |                   |
|                          | veh/h        | %    | veh/h         | %    |                  |           |            |             |                  |                   |        |             |             |           |                   |
| South: R44_S             |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
| Lane 1                   | 59           | 1.8  | 59            | 1.8  | 952              | 0.062     | 100        | 20.8        | LOS C            | 1.7               | 12.0   | Short       | 80          | 0.0       | NA                |
| Lane 2                   | 435          | 3.1  | 435           | 3.1  | 998              | 0.436     | 100        | 19.2        | LOS B            | 15.6              | 112.4  | Full        | 2500        | 0.0       | 0.0               |
| Lane 3                   | 435          | 3.1  | 435           | 3.1  | 998              | 0.436     | 100        | 19.2        | LOS B            | 15.6              | 112.4  | Full        | 2500        | 0.0       | 0.0               |
| Lane 4                   | 435          | 3.1  | 435           | 3.1  | 998              | 0.436     | 100        | 19.2        | LOS B            | 15.6              | 112.4  | Short       | 200         | 0.0       | NA                |
| Lane 5                   | 462          | 0.0  | 462           | 0.0  | 387              | 1.193     | 100        | 217.0       | LOS F            | 47.5              | 332.8  | Short       | 120         | 0.0       | NA                |
| Approach                 | 1825         | 2.3  | 1825          | 2.3  |                  | 1.193     |            | 69.3        | LOS E            | 47.5              | 332.8  |             |             |           |                   |
| East: Webersvallei Road  |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
| Lane 1                   | 370          | 0.9  | 370           | 0.9  | 553 <sup>1</sup> | 0.669     | 100        | 50.7        | LOS D            | 17.8              | 126.0  | Short       | 40          | 0.0       | NA                |
| Lane 2                   | 245          | 0.7  | 245           | 0.7  | 366 <sup>1</sup> | 0.669     | 100        | 59.9        | LOS E            | 13.0              | 91.2   | Full        | 110         | 0.0       | 17.3 <sup>8</sup> |
| Lane 3                   | 243          | 0.6  | 243           | 0.6  | 320              | 0.759     | 100        | 70.0        | LOS E            | 13.6              | 95.5   | Short       | 65          | 0.0       | NA                |
| Lane 4                   | 244          | 0.6  | 244           | 0.6  | 321 <sup>1</sup> | 0.759     | 100        | 69.9        | LOS E            | 13.6              | 95.8   | Short       | 40          | 0.0       | NA                |
| Approach                 | 1101         | 0.8  | 1101          | 0.8  |                  | 0.759     |            | 61.2        | LOS E            | 17.8              | 126.0  |             |             |           |                   |
| North: R44_N             |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
| Lane 1                   | 792          | 0.4  | 792           | 0.4  | 916 <sup>1</sup> | 0.865     | 100        | 37.6        | LOS D            | 40.6              | 285.1  | Short       | 70          | 0.0       | NA                |
| Lane 2                   | 601          | 0.4  | 601           | 0.4  | 637 <sup>1</sup> | 0.944     | 100        | 66.0        | LOS E            | 43.9              | 308.1  | Full        | 650         | 0.0       | 0.0               |
| Lane 3                   | 958          | 0.4  | 958           | 0.4  | 1015             | 0.944     | 100        | 48.4        | LOS D            | 64.8              | 455.2  | Full        | 650         | 0.0       | 0.0               |
| Lane 4                   | 896          | 0.4  | 896           | 0.4  | 950 <sup>1</sup> | 0.944     | 100        | 67.0        | LOS E            | 61.4              | 431.0  | Full        | 650         | 0.0       | 0.0               |
| Lane 5                   | 65           | 1.6  | 65            | 1.6  | 739              | 0.088     | 100        | 48.3        | LOS D            | 1.3               | 8.9    | Short       | 70          | 0.0       | NA                |
| Approach                 | 3312         | 0.4  | 3312          | 0.4  |                  | 0.944     |            | 54.1        | LOS D            | 64.8              | 455.2  |             |             |           |                   |
| West: Maria Lievens Road |              |      |               |      |                  |           |            |             |                  |                   |        |             |             |           |                   |
| Lane 1                   | 119          | 0.9  | 119           | 0.9  | 208              | 0.572     | 100        | 58.1        | LOS E            | 6.8               | 48.2   | Full        | 25          | 0.0       | 65.8              |
| Lane 2                   | 76           | 1.4  | 76            | 1.4  | 149              | 0.509     | 100        | 67.7        | LOS E            | 4.5               | 32.2   | Full        | 25          | 0.0       | 28.0              |
| Approach                 | 195          | 1.1  | 195           | 1.1  |                  | 0.572     |            | 61.9        | LOS E            | 6.8               | 48.2   |             |             |           |                   |
| All Vehicles             | 6433         | 1.0  | 6433          | 1.0  |                  | 1.193     |            | 59.8        | LOS E            | 64.8              | 455.2  |             |             |           |                   |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

<sup>8</sup> Probability of Blockage has been set on the basis of a queue that overflows from a short lane.

## Approach Lane Flows (veh/h)

## South: R44\_S

| Mov.<br>From S<br>To Exit: | L2<br>W | T1<br>N | R2<br>E | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 59      | -       | -       | 59    | 1.8 | 952           | 0.062               | 100                | 0.0                  | 2                  |
| Lane 2                     | -       | 435     | -       | 435   | 3.1 | 998           | 0.436               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 435     | -       | 435   | 3.1 | 998           | 0.436               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 435     | -       | 435   | 3.1 | 998           | 0.436               | 100                | 51.8                 | 3                  |
| Lane 5                     | -       | -       | 462     | 462   | 0.0 | 387           | 1.193               | 100                | 100.0                | 4                  |
| Approach                   | 59      | 1304    | 462     | 1825  | 2.3 |               | 1.193               |                    |                      |                    |

## East: Webersvallei Road

| Mov.<br>From E<br>To Exit: | L2<br>S | T1<br>W | R2<br>N | Total | %HV | Cap.<br>veh/h    | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 370     | -       | -       | 370   | 0.9 | 553 <sup>1</sup> | 0.669               | 100                | 100.0                | 2                  |
| Lane 2                     | 186     | 59      | -       | 245   | 0.7 | 366 <sup>1</sup> | 0.669               | 100                | NA                   | NA                 |
| Lane 3                     | -       | -       | 243     | 243   | 0.6 | 320              | 0.759               | 100                | 40.5                 | 2                  |
| Lane 4                     | -       | -       | 244     | 244   | 0.6 | 321 <sup>1</sup> | 0.759               | 100                | 86.9                 | 3                  |
| Approach                   | 556     | 59      | 486     | 1101  | 0.8 |                  | 0.759               |                    |                      |                    |

## North: R44\_N

| Mov.<br>From N<br>To Exit: | L2<br>E | T1<br>S | R2<br>W | Total | %HV | Cap.<br>veh/h    | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|------------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 792     | -       | -       | 792   | 0.4 | 916 <sup>1</sup> | 0.865               | 100                | 100.0                | 2                  |
| Lane 2                     | -       | 601     | -       | 601   | 0.4 | 637 <sup>1</sup> | 0.944               | 100                | NA                   | NA                 |
| Lane 3                     | -       | 958     | -       | 958   | 0.4 | 1015             | 0.944               | 100                | NA                   | NA                 |
| Lane 4                     | -       | 896     | -       | 896   | 0.4 | 950 <sup>1</sup> | 0.944               | 100                | NA                   | NA                 |
| Lane 5                     | -       | -       | 65      | 65    | 1.6 | 739              | 0.088               | 100                | 0.0                  | 4                  |
| Approach                   | 792     | 2455    | 65      | 3312  | 0.4 |                  | 0.944               |                    |                      |                    |

## West: Maria Lievens Road

| Mov.<br>From W<br>To Exit: | L2<br>N | T1<br>E | R2<br>S | Total | %HV | Cap.<br>veh/h | Deg.<br>Satn<br>v/c | Lane<br>Util.<br>% | Prob.<br>SL Ov.<br>% | Ov.<br>Lane<br>No. |
|----------------------------|---------|---------|---------|-------|-----|---------------|---------------------|--------------------|----------------------|--------------------|
| Lane 1                     | 88      | 31      | -       | 119   | 0.9 | 208           | 0.572               | 100                | NA                   | NA                 |
| Lane 2                     | -       | -       | 76      | 76    | 1.4 | 149           | 0.509               | 100                | NA                   | NA                 |
| Approach                   | 88      | 31      | 76      | 195   | 1.1 |               | 0.572               |                    |                      |                    |

Total %HV Deg. Satn (v/c)

All Vehicles 6433 1.0 1.193

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- <sup>1</sup> Reduced capacity due to a short lane effect. Short lane queues may extend into the full-length lanes. Delay and stops experienced by drivers upstream of short lane entry have been accounted for.

## Merge Analysis

| Exit<br>Lane<br>Number | Short<br>Lane<br>Length<br>m | Percent<br>Opng in<br>Lane<br>% veh/h | Opposing<br>Flow Rate<br>pcu/h | Critical<br>Gap<br>sec | Follow-up<br>Headway<br>sec | Lane Capacity<br>Flow Rate<br>veh/h | Deg.<br>Satn<br>v/c | Min.<br>Delay<br>sec | Merge<br>Delay<br>sec |
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|
|------------------------|------------------------------|---------------------------------------|--------------------------------|------------------------|-----------------------------|-------------------------------------|---------------------|----------------------|-----------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial<br>Queued<br>Demand | Residual<br>Queued<br>Demand | Time for<br>Residual<br>Demand | Duration<br>of<br>Oversatn |
|-----------------------------|------------------------------|--------------------------------|----------------------------|
|-----------------------------|------------------------------|--------------------------------|----------------------------|

|                          | veh | veh  | to Clear<br>sec | sec |
|--------------------------|-----|------|-----------------|-----|
| South: R44_S             |     |      |                 |     |
| Lane 1                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 2                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 3                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 4                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 5                   | 0.0 | 37.3 | 346.7           | NA  |
| East: Webersvallei Road  |     |      |                 |     |
| Lane 1                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 2                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 3                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 4                   | 0.0 | 0.0  | 0.0             | 0.0 |
| North: R44_N             |     |      |                 |     |
| Lane 1                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 2                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 3                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 4                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 5                   | 0.0 | 0.0  | 0.0             | 0.0 |
| West: Maria Lievens Road |     |      |                 |     |
| Lane 1                   | 0.0 | 0.0  | 0.0             | 0.0 |
| Lane 2                   | 0.0 | 0.0  | 0.0             | 0.0 |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | [sidrasolutions.com](http://sidrasolutions.com)

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Monday, 12 February 2024 14:31:38

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9

## LANE SUMMARY

Site: WebFresFPD [Webersvallei Rd X Fresno St  
PM\_FY2030\_PropDev\_FutDev (Site Folder: Scenario 3 - Future  
Year 2030 Proposed Dev Future Road Network- PM Peak)]

Output produced by SIDRA INTERSECTION Version: 9.1.2.202

Future year 2030 PM Peak with Development trips and future Development trips.  
Site Category: Proposed Design 2  
Roundabout

| Lane Use and Performance |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                        |
|--------------------------|-----------------|----------|-----------------|----------|-------|-----------|------------|-------------|------------------|-------------------|------------|-------------|-------------|------------------------|
|                          | Demand Flows    |          | Arrival Flows   |          | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |            | Lane Config | Lane Length | Cap. Prob. Adj. Block. |
|                          | [ Total veh/h ] | [ HV % ] | [ Total veh/h ] | [ HV % ] | veh/h | v/c       | %          | sec         |                  | [ Veh ]           | [ Dist ] m |             | m           | % %                    |
| South: Fresno Street     |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                        |
| Lane 1 <sup>d</sup>      | 418             | 0.0      | 418             | 0.0      | 1055  | 0.396     | 100        | 6.6         | LOS A            | 2.8               | 19.9       | Full        | 160         | 0.0 0.0                |
| Approach                 | 418             | 0.0      | 418             | 0.0      |       | 0.396     |            | 6.6         | LOS A            | 2.8               | 19.9       |             |             |                        |
| East: Webersvallei Rd_SE |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                        |
| Lane 1 <sup>d</sup>      | 237             | 0.0      | 237             | 0.0      | 760   | 0.312     | 100        | 9.4         | LOS A            | 1.9               | 13.2       | Full        | 220         | 0.0 0.0                |
| Approach                 | 237             | 0.0      | 237             | 0.0      |       | 0.312     |            | 9.4         | LOS A            | 1.9               | 13.2       |             |             |                        |
| North: RoadName          |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                        |
| Lane 1 <sup>d</sup>      | 22              | 0.0      | 22              | 0.0      | 598   | 0.037     | 100        | 13.9        | LOS B            | 0.2               | 1.5        | Full        | 500         | 0.0 0.0                |
| Approach                 | 22              | 0.0      | 22              | 0.0      |       | 0.037     |            | 13.9        | LOS B            | 0.2               | 1.5        |             |             |                        |
| West: Webersvallei Rd_NW |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                        |
| Lane 1 <sup>d</sup>      | 917             | 0.3      | 917             | 0.3      | 1584  | 0.579     | 100        | 6.9         | LOS A            | 6.3               | 44.2       | Full        | 130         | 0.0 0.0                |
| Approach                 | 917             | 0.3      | 917             | 0.3      |       | 0.579     |            | 6.9         | LOS A            | 6.3               | 44.2       |             |             |                        |
| All Vehicles             | 1594            | 0.2      | 1594            | 0.2      |       | 0.579     |            | 7.3         | LOS A            | 6.3               | 44.2       |             |             |                        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

<sup>d</sup> Dominant lane on roundabout approach

### Approach Lane Flows (veh/h)

South: Fresno Street

| Mov.            | L2  | T1 | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SLOv. | Ov. Lane No. |
|-----------------|-----|----|----|-------|-----|-------|-----------|------------|-------------|--------------|
| From S To Exit: | W   | N  | E  |       |     | veh/h | v/c       | %          | %           |              |
| Lane 1          | 400 | 4  | 14 | 418   | 0.0 | 1055  | 0.396     | 100        | NA          | NA           |
| Approach        | 400 | 4  | 14 | 418   | 0.0 |       | 0.396     |            |             |              |

East: Webersvallei Rd\_SE

| Mov.            | L2 | T1  | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SLOv. | Ov. Lane No. |
|-----------------|----|-----|-------|-----|-------|-----------|------------|-------------|--------------|
| From E To Exit: | S  | W   |       |     | veh/h | v/c       | %          | %           |              |
| Lane 1          | 32 | 205 | 237   | 0.0 | 760   | 0.312     | 100        | NA          | NA           |
| Approach        | 32 | 205 | 237   | 0.0 |       | 0.312     |            |             |              |

## North: RoadName

| Mov.     | T1 | R2 | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|----|-------|-----|-------|-------|-------|--------|------|
| From N   |    |    |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | S  | W  |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 2  | 20 | 22    | 0.0 | 598   | 0.037 | 100   | NA     | NA   |
| Approach | 2  | 20 | 22    | 0.0 |       | 0.037 |       |        |      |

## West: Webersvallei Rd\_NW

| Mov.     | L2 | T1  | R2  | Total | %HV | Cap.  | Deg.  | Lane  | Prob.  | Ov.  |
|----------|----|-----|-----|-------|-----|-------|-------|-------|--------|------|
| From W   |    |     |     |       |     | veh/h | Satn  | Util. | SL Ov. | Lane |
| To Exit: | N  | E   | S   |       |     |       | v/c   | %     | %      | No.  |
| Lane 1   | 42 | 271 | 604 | 917   | 0.3 | 1584  | 0.579 | 100   | NA     | NA   |
| Approach | 42 | 271 | 604 | 917   | 0.3 |       | 0.579 |       |        |      |

| Total        | %HV  | Deg. | Satn | (v/c) |
|--------------|------|------|------|-------|
| All Vehicles | 1594 | 0.2  |      | 0.579 |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

## Merge Analysis

| Exit   | Short  | Percent | Opposing  | Critical | Follow-up | Lane | Capacity | Deg.  | Min.  | Merge |
|--------|--------|---------|-----------|----------|-----------|------|----------|-------|-------|-------|
| Lane   | Lane   | Opng in | Flow Rate | Gap      | Headway   | Flow |          | Satn  | Delay | Delay |
| Number | Length | Lane    | % veh/h   | pcu/h    | sec       | sec  | veh/h    | veh/h | v/c   | sec   |
|        | m      |         |           |          |           |      |          |       |       |       |

There are no Exit Short Lanes for Merge Analysis at this Site.

## Variable Demand Analysis

| Initial | Residual | Time for | Duration |
|---------|----------|----------|----------|
| Queued  | Queued   | Residual | of       |
| Demand  | Demand   | Demand   | Oversatn |
| veh     | veh      | to Clear | sec      |
|         |          | sec      |          |

## South: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## East: Webersvallei Rd\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## North: RoadName

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

## West: Webersvallei Rd\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|



## LANE SUMMARY

**Site:** SchFresFPD [School Rd X Fresno St  
**PM\_FY2030\_PropDev\_FutDev (Site Folder: Scenario 3 - Future  
 Year 2030 Proposed Dev Future Road Network- PM Peak)]**

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 PM Peak with Development trips and future Development trips.

Site Category: Proposed Design 2

Stop (Two-Way)

| Lane Use and Performance    |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |
|-----------------------------|--------------|------|---------------|------|-------|-----------|------------|-------------|------------------|-------------------|--------|-------------|-------------|------------------------|
|                             | Demand Flows |      | Arrival Flows |      | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |        | Lane Config | Lane Length | Cap. Prob. Adj. Block. |
|                             | [ Total      | HV ] | [ Total       | HV ] | veh/h | v/c       | %          | sec         |                  | [ Veh             | Dist ] |             | m           | % %                    |
|                             | veh/h        | %    | veh/h         | %    |       |           |            |             |                  |                   |        |             |             |                        |
| <b>East: School Road_SE</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |
| Lane 1                      | 208          | 1.0  | 208           | 1.0  | 1674  | 0.125     | 100        | 5.7         | LOS A            | 0.6               | 4.3    | Full        | 100         | 0.0 0.0                |
| Approach                    | 208          | 1.0  | 208           | 1.0  |       | 0.125     |            | 5.7         | NA               | 0.6               | 4.3    |             |             |                        |
| <b>North: Fresno Street</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |
| Lane 1                      | 494          | 0.0  | 494           | 0.0  | 1427  | 0.346     | 100        | 8.0         | LOS A            | 1.9               | 13.6   | Full        | 240         | 0.0 0.0                |
| Approach                    | 494          | 0.0  | 494           | 0.0  |       | 0.346     |            | 8.0         | LOS A            | 1.9               | 13.6   |             |             |                        |
| <b>West: School Road_NW</b> |              |      |               |      |       |           |            |             |                  |                   |        |             |             |                        |
| Lane 1                      | 85           | 1.2  | 85            | 1.2  | 1844  | 0.046     | 100        | 5.5         | LOS A            | 0.0               | 0.0    | Full        | 150         | 0.0 0.0                |
| Approach                    | 85           | 1.2  | 85            | 1.2  |       | 0.046     |            | 5.5         | NA               | 0.0               | 0.0    |             |             |                        |
| All Vehicles                | 787          | 0.4  | 787           | 0.4  |       | 0.346     |            | 7.1         | NA               | 1.9               | 13.6   |             |             |                        |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Minor Road Approach LOS values are based on average delay for all lanes.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

#### East: School Road\_SE

| Mov             | T1 | R2  | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|-----|-------|-----|-------|-----------|------------|--------------|--------------|
| From E To Exit: | W  | N   |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 2  | 206 | 208   | 1.0 | 1674  | 0.125     | 100        | NA           | NA           |
| Approach        | 2  | 206 | 208   | 1.0 |       | 0.125     |            |              |              |

#### North: Fresno Street

| Mov             | L2  | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|-----|----|-------|-----|-------|-----------|------------|--------------|--------------|
| From N To Exit: | E   | W  |       |     | veh/h | v/c       | %          | %            |              |
| Lane 1          | 487 | 6  | 494   | 0.0 | 1427  | 0.346     | 100        | NA           | NA           |
| Approach        | 487 | 6  | 494   | 0.0 |       | 0.346     |            |              |              |

#### West: School Road\_NW

| Mov             | L2 | T1 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL Ov. | Ov. Lane No. |
|-----------------|----|----|-------|-----|-------|-----------|------------|--------------|--------------|
| From W To Exit: | N  | E  |       |     | veh/h | v/c       | %          | %            |              |

|          |    |   |    |     |       |       |     |    |    |
|----------|----|---|----|-----|-------|-------|-----|----|----|
| Lane 1   | 84 | 1 | 85 | 1.2 | 1844  | 0.046 | 100 | NA | NA |
| Approach | 84 | 1 | 85 | 1.2 | 0.046 |       |     |    |    |

|       |     |           |       |
|-------|-----|-----------|-------|
| Total | %HV | Deg. Satn | (v/c) |
|-------|-----|-----------|-------|

|              |     |     |       |
|--------------|-----|-----|-------|
| All Vehicles | 787 | 0.4 | 0.346 |
|--------------|-----|-----|-------|

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

#### Merge Analysis

| Exit Lane Number | Short Lane Length<br>m | Percent Oppng in Lane | Opposing Flow Rate<br>%veh/h pcu/h | Critical Gap<br>sec | Follow-up Headway<br>sec | Lane Capacity Flow Rate<br>veh/h | Deg. Satn | Min. Delay<br>v/c | Merge Delay<br>sec |
|------------------|------------------------|-----------------------|------------------------------------|---------------------|--------------------------|----------------------------------|-----------|-------------------|--------------------|
|------------------|------------------------|-----------------------|------------------------------------|---------------------|--------------------------|----------------------------------|-----------|-------------------|--------------------|

There are no Exit Short Lanes for Merge Analysis at this Site.

#### Variable Demand Analysis

|  | Initial Queued Demand<br>veh | Residual Queued Demand<br>veh | Time for Residual Demand to Clear<br>sec | Duration of Oversatn<br>sec |
|--|------------------------------|-------------------------------|------------------------------------------|-----------------------------|
|--|------------------------------|-------------------------------|------------------------------------------|-----------------------------|

##### East: School Road\_SE

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

##### North: Fresno Street

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

##### West: School Road\_NW

|        |     |     |     |     |
|--------|-----|-----|-----|-----|
| Lane 1 | 0.0 | 0.0 | 0.0 | 0.0 |
|--------|-----|-----|-----|-----|

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:49

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9



## LANE SUMMARY

**Site:** SchAccFPD [School Rd X Access Road  
PM\_FY2030\_PropDev\_FutDev (Site Folder: Scenario 3 - Future  
Year 2030 Proposed Dev Future Road Network- PM Peak)]

**Output produced by SIDRA INTERSECTION Version: 9.1.2.202**

Future year 2030 PM Peak with Development trips and future Development trips.

Site Category: Proposed Design 2

Stop (All-Way)

| Lane Use and Performance       |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                 |              |
|--------------------------------|-----------------|----------|-----------------|----------|-------|-----------|------------|-------------|------------------|-------------------|------------|-------------|-------------|-----------------|--------------|
|                                | Demand Flows    |          | Arrival Flows   |          | Cap.  | Deg. Satn | Lane Util. | Aver. Delay | Level of Service | 95% Back Of Queue |            | Lane Config | Lane Length | Cap. Prob. Adj. | Prob. Block. |
|                                | [ Total veh/h ] | [ HV % ] | [ Total veh/h ] | [ HV % ] | veh/h | v/c       | %          | sec         |                  | [ Veh ]           | [ Dist m ] |             | m           | %               | %            |
| <b>South: Access Road</b>      |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                 |              |
| Lane 1                         | 216             | 0.0      | 216             | 0.0      | 87    | 2.480     | 100        | 1405.7      | LOS F            | 56.7              | 397.2      | Full        | 100         | 0.0             | 100.0        |
| Approach                       | 216             | 0.0      | 216             | 0.0      |       | 2.480     |            | 1405.7      | LOS F            | 56.7              | 397.2      |             |             |                 |              |
| <b>North: Blakemore Street</b> |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                 |              |
| Lane 1                         | 49              | 4.3      | 49              | 4.3      | 294   | 0.169     | 100        | 18.6        | LOS C            | 0.6               | 4.3        | Full        | 50          | 0.0             | 0.0          |
| Approach                       | 49              | 4.3      | 49              | 4.3      |       | 0.169     |            | 18.6        | LOS C            | 0.6               | 4.3        |             |             |                 |              |
| <b>West: School Road_NW</b>    |                 |          |                 |          |       |           |            |             |                  |                   |            |             |             |                 |              |
| Lane 1                         | 486             | 0.4      | 486             | 0.4      | 1042  | 0.467     | 100        | 11.9        | LOS B            | 1.9               | 13.6       | Full        | 260         | 0.0             | 0.0          |
| Approach                       | 486             | 0.4      | 486             | 0.4      |       | 0.467     |            | 11.9        | LOS B            | 1.9               | 13.6       |             |             |                 |              |
| All Vehicles                   | 752             | 0.6      | 752             | 0.6      |       | 2.480     |            | 412.6       | LOS F            | 56.7              | 397.2      |             |             |                 |              |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab). Lane LOS values are based on average delay per lane.

Intersection and Approach LOS values are based on average delay for all lanes.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

### Approach Lane Flows (veh/h)

#### South: Access Road

| Mov.            | L2  | T1 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |
|-----------------|-----|----|-------|-----|-------|-----------|------------|----------|----------|
| From S To Exit: | W   | N  |       |     | veh/h | v/c       | %          | %        | No.      |
| Lane 1          | 193 | 23 | 216   | 0.0 | 87    | 2.480     | 100        | NA       | NA       |
| Approach        | 193 | 23 | 216   | 0.0 |       | 2.480     |            |          |          |

#### North: Blakemore Street

| Mov.            | T1 | R2 | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |
|-----------------|----|----|-------|-----|-------|-----------|------------|----------|----------|
| From N To Exit: | S  | W  |       |     | veh/h | v/c       | %          | %        | No.      |
| Lane 1          | 34 | 16 | 49    | 4.3 | 294   | 0.169     | 100        | NA       | NA       |
| Approach        | 34 | 16 | 49    | 4.3 |       | 0.169     |            |          |          |

#### West: School Road\_NW

| Mov.            | L2 | T1 | R2  | Total | %HV | Cap.  | Deg. Satn | Lane Util. | Prob. SL | Ov. Lane |
|-----------------|----|----|-----|-------|-----|-------|-----------|------------|----------|----------|
| From W To Exit: | N  | E  | S   |       |     | veh/h | v/c       | %          | %        | No.      |
| Lane 1          | 38 | 9  | 439 | 486   | 0.4 | 1042  | 0.467     | 100        | NA       | NA       |
| Approach        | 38 | 9  | 439 | 486   | 0.4 |       | 0.467     |            |          |          |

|              | Total | %HV | Deg.Satn (v/c) |
|--------------|-------|-----|----------------|
| All Vehicles | 752   | 0.6 | 2.480          |

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

| Merge Analysis   |                     |                      |                            |                 |                  |                       |                      |                |               |                |                 |
|------------------|---------------------|----------------------|----------------------------|-----------------|------------------|-----------------------|----------------------|----------------|---------------|----------------|-----------------|
| Exit Lane Number | Short Lane Length m | Percent Opng in Lane | Opposing Flow Rate % veh/h | Flow Rate pcu/h | Critical Gap sec | Follow-up Headway sec | Lane Flow Rate veh/h | Capacity veh/h | Deg. Satn v/c | Min. Delay sec | Merge Delay sec |

There are no Exit Short Lanes for Merge Analysis at this Site.

| Variable Demand Analysis       |                           |                            |                                       |                          |
|--------------------------------|---------------------------|----------------------------|---------------------------------------|--------------------------|
|                                | Initial Queued Demand veh | Residual Queued Demand veh | Time for Residual Demand to Clear sec | Duration of Oversatn sec |
| <b>South: Access Road</b>      |                           |                            |                                       |                          |
| Lane 1                         | 0.0                       | 64.4                       | 2663.6                                | NA                       |
| <b>North: Blakemore Street</b> |                           |                            |                                       |                          |
| Lane 1                         | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |
| <b>West: School Road_NW</b>    |                           |                            |                                       |                          |
| Lane 1                         | 0.0                       | 0.0                        | 0.0                                   | 0.0                      |

SIDRA INTERSECTION 9.1 | Copyright © 2000-2022 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: ZUTARI (PTY) LTD | Licence: PLUS / 1PC | Processed: Friday, 09 February 2024 08:23:50

Project: C:\Users\Armandt.VanStraten\Zutari\1002169 - Jamestown HD - Documents\05 Deliver\510 Reports\Traffic Impact Assessment\Update Johan Comments\Sidra Analysis\_Updated\_06022024\Jamestown\_Extention.sip9