Contract no. 210C/2022/23: Three Anchor Bay Development on Erf 2187 Development on Erf 2187

Transport Impact Assessment

Cape Town

June 2026

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SUMMARY SHEET

Report Type	Transport Impact Assessment
Title	Contract no. 210C/2022/23: Three Anchor Bay Development on Erf 2187
Location	Cape Town
Client	City of Cape Town
Reference Number	ITS 4819
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It is herewith certified that this Transport Impact Assessment has been prepared according to requirements of the South African Traffic Impact and Site Traffic Assessment Manual.

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REPORT - SUMMARY TABLE

This transport impact assessment is reported only in a summary table instead of a lengthy report to assist review and interpretation of the results. This summary table includes all the relevant information that is normally contained in a report. It should be sufficient for review and interpretation of the expected transport impacts as well as the comprehension of the required measures to mitigate the transport impact. If any more detail is required please contact the authors.

ANNEXURES

Annexure A: Figures
Annexure B: Land Use Extents
Annexure C: Trip Generation Calculations
Annexure D: Parking Calculations

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ABBREVIATIONS

COTO	Committee of Transport Officials
Ha	Hectare
HCM	Highway Capacity Manual

LOS	Level of Service
NMT	Non-motorised Transport
SATGR	South African Trip Generation Rates
SQM	Square Meters (m^2)
TIA	Transport Impact Assessment
V/C	Volume to Capacity Ratio
WCG	Western Cape Government

Transport Impact Assessment

Contract no. 210C/2022/23: Three Anchor Bay Development on Erf 2187, Cape Town

1 Project Proposal	The applicant, the City of Cape Town Property Development Department, is proposing a high-intensity mixed-use development on Erf 2187 in Three Anchor Bay. The site is approximately 4.5 hectares in size, municipal-owned, and currently zoned as Public Open Space (OS2). The site is bounded by Sea Point Main Road (M61) to the south, Helen Suzman Boulevard and Beach Road (M6) to the north, and Three Anchor Bay Road to the west. These roads contribute to good connectivity in an east-west directions to and from the site. My-City and Golden Arrow bus services are available within walking distance to the site. Notwithstanding the site's prime location, the site is currently underutilised. The bowling clubs that used to occupy significant land on the site are no longer active and the club houses are now being leased for various other low-intensity community uses or stand vacant. There are various sport and public recreational facilities in the vicinity of the site and the City's Spatial Development Framework earmarks the site for infill development that would ensure better utilisation of this well-located land parcel close the City CBD and regional community and recreational facilities. The intention is for the site to be disposed of via a competitive bidding process after Council's in principle approval to transfer is obtained and statutory processes in terms of NEMA and MPBL are concluded. The development proposal includes residential, retail, commercial, civic and hotel land uses.
2 Existing Land Uses to be Retained	The proposed concept design retains the library, civic centre and hall and provision is also made to extend the library building, reconfigure internal spaces, accommodate other community and civic uses within the new additions and re-purposed spaces. The proposal includes a new building and outdoor space for a creche/ECD and the CPA parking on the site will be incorporated into the design. The electric substation will be moved to a different location to maximise the developability of the site.
3 Purpose of this Report	The purpose of this Transport Impact Assessment (TIA) report (dated March 2026) prepared by Innovative Transport Solutions (ITS) is to assess the transport and traffic implications of the proposed mixed-use development on the surrounding road network. The TIA will support the SDP, inform access and circulation planning, and provide the

<table>
<tr><td></td><td>necessary technical input to the City of Cape Town for development rights approval.

This report is one of a series of technical reports which either gave input to or assess the proposals for the redevelopment of the site. Refer to the section below for a list of specialists involved in the project, and the specialist reports that support this development proposal.</td></tr>
<tr><td>4 Project Team and Specialist Reports</td><td>The following specialist investigations and assessments have been undertaken as part of preparing the project proposals.

<table>
<tr><th>Discipline</th><th>Company name</th><th>Assessment & Reports</th></tr>
<tr><td>Environment</td><td>Infinity</td><td>Basic Environmental Impact Assessment report</td></tr>
<tr><td>Heritage</td><td>Lize Malan & Cindy Postlethwayt</td><td>Heritage Impact Assessment report</td></tr>
<tr><td>Visual</td><td>David Gibbs</td><td>Visual Impact Assessment report</td></tr>
<tr><td>Architects and Urban Designers:</td><td>ACG Architects & Urban Design</td><td>Urban Design Concept, Urban Desing report Urban Desing guidelines</td></tr>
<tr><td>Socio-Economic Specialist:</td><td>Urban Econ</td><td>Socio-Economic Impact Assessment</td></tr>
<tr><td>Property Market</td><td>Urban Econ</td><td>Property Market Assessment report</td></tr>
<tr><td>Transport Engineers:</td><td>ITS</td><td>Transport Impact Assessment report</td></tr>
<tr><td>Civil Engineers:</td><td>EAS</td><td>Bulk Engineering Services Impact Assessment and Stormwater report</td></tr>
<tr><td>Electrical Engineers</td><td>BVI</td><td>Electricity Infrastructure Impact Assessment report</td></tr>
<tr><td>Town Planning</td><td>@Planning Town Planning</td><td>Town planning input & statutory application</td></tr>
</table>
</td></tr>
<tr><td>5 Report Scope</td><td>The scope of work for the TIA includes the following:

1. Project Initiation and Liaison

• Initial discussions and correspondence with the relevant authorities.
• Review of applicable land use frameworks and road network planning documentation.

2. Data Collection and Baseline Assessment

• Traffic counts at key intersections within the study area.
• Site visits and field observations.</td></tr>
</table>

	• Collection and review of:
	  ○ Existing public transport services and facilities.
	  ○ Non-Motorised Transport (NMT) infrastructure.
	  ○ Relevant background traffic data.
	  ○ Assessment of existing traffic operations and intersection capacities.
	
	3. SDP Transport Input
	
	• Review of proposed site access arrangements, including:
	  ○ Access spacing and shoulder sight distances (SSD).
	  ○ Compliance with relevant guidelines.
	  ○ Review of internal circulation and layout.
	  ○ Assessment of parking provision and compliance with municipal requirements.
	  ○ Comments on pedestrian, cyclist, and public transport integration within and adjacent to the site.
	
	4. Transport Impact Assessment and Modelling
	
	• Determination of trip generation of the site.
	• Trip distribution and assignment to the surrounding network.
	• Setup and application of an appropriate transport model where required.
	• Assessment of:
	  ○ Existing year traffic conditions.
	  ○ Background (future without development) traffic conditions.
	  ○ Future year traffic conditions with the proposed development for multiple traffic scenarios.
	• Capacity analyses of affected intersections.
	• Identification of required mitigation measures and external road upgrade recommendations, where applicable.

6 Locality *Reference: Annexure A*	The proposed development will be located on Erf 2187 in Three Anchor Bay. Within the Metropolitan context, the application site is situated to the northwest of Cape Town in Green Point. The subject property is bordered by Helen Suzman Boulevard (Main Road 103 | M6) to the north, Main Road (M61) to the south and Three Anchor Bay Road to the west. The site has an extent of 4.50 ha. Refer to **Figure A1** in **Annexure A** for the locality plan of the site. The site is located in close proximity to numerous established commercial, and mixed-use economic nodes of the City. Employment opportunities and economic growth opportunities are therefore well within convenient travelling distance of the site, while established road

networks connects these nodes, playing an important role in reinforcing transit-oriented corridors.

Erf 2187 is currently zoned as Open Space 2: Public Open Space (OS2). Zoning in the surrounding urban context include Single Residential 1: Conventional Housing (SR1), General Residential 2 (GR2), General Residential 4 (GR4), General Residential 5 (GR5), General Business 1 (GB1), General Business 5 (GB5) and Open Space 2: Public Open Space (OS2).

Refer to **Figure A2** in **Annexure A** for the zoning of the area surrounding the site as per the City of Cape Town Map Viewer (City of Cape Town, 2025).

7 Land Use

Refer to Annexure B

The proposed development includes a mix of land uses including affordable housing units, open-market residential units, retail space, offices, two hotels, and community facilities. Multiple development scenarios, reflecting varying extents of these land uses, were assessed to test their transport implications and to ensure that a range of viable development options can be supported.

A summary of the land use extents for each scenario is shown in **Table 1** and can be found in **Annexure B**.

Table 1: Land Use Components per Scenario

Scenario	Retail	Office	Hotel	Community	Affordable Housing	Open Market
	GLA	GLA	Rooms	GLA	Units	Units
1a	8 379	1 403	325	1 355	261	1 033
1b					242	949
1c					230	915
2a		13 063			214	862
2b					193	801
2c					183	772

8 Existing Roadways

The existing road network is well developed with a full hierarchy of road classes in the site vicinity. The major roads surrounding the subject property include:

Helen Suzman Boulevard: is a Class 2 major arterial and is a proclaimed main road (MR103) for which the WCG is the road authority. This road is a dual carriageway with two lanes per direction and has an approximate width of 30.0 m. Helen Suzman Boulevard has a posted speed limit of 60 km/h. Paved sidewalks are present sporadically in the site vicinity.

Main Road: is a Class 3 minor arterial. This road is a dual carriageway with two lanes per direction and has an approximate width of 20.0 m. There is a posted speed limit of 60 km/h in the site vicinity. On-street

	parking and paved sidewalks are present along both sides of Main Road. Three Anchor Bay Road: is a Class 4 collector road. This road is a dual carriageway with two lanes northbound and three lanes southbound. Three Anchor Bay Road has an approximate width of 23.0 m. On-street parking and paved sidewalks are present along both sides of the road. Beach Road (west of Helen Suzman Boulevard): is a Class 3 minor arterial. This road is a dual carriageway with two lanes per direction and has an approximate width of 20.0 m. On-street parking and paved sidewalks are present along both sides of the road. Beach Road (north of Helen Suzman Boulevard): is a Class 4 collector road. This road is a single carriageway with one lane per direction and has an approximate width of 15.0 m. On-street parking and paved sidewalks are present along both sides of the road. Vlei Road: is a Class 5 access road. This road is a single carriageway with one lane per direction and an approximate width of 9.0 m. There are paved sidewalks along both side of the road. Granger Bay Boulevard: is a Class 4 collector road. This road is a dual carriageway with two lanes per direction and has an approximate width of 23.0 m. A bicycle lane is present along the eastbound lane of Granger Bay Boulevard. There is a posted speed limit of 60 km/h and there are paved sidewalks along both sides of the road. Portswood Road: is a Class 4 collector road. This road is a single carriageway with one lane per direction and has an approximate width of 10.0 m. On-street parking is available sporadically along both sides of the road. Portswood Road has paved sidewalks along both sides. Link Road: is a Class 5 access road. This road is a single carriageway with one lane per direction and an approximate width of 6.5 m. There is a paved sidewalk along the western side of the road. St Bedes Road: is a one-way Class 5 access road. This road has a northbound lane and an approximate width of 5.0 m. There are paved sidewalks along both sides of the road and on-street parking along the western side. Richmond Road: is a Class 5 access road. This road is a single carriageway with one lane per direction and an approximate width of 5.0 m. There are paved sidewalks along both sides of the road and on-street parking along the western side. Hill Road: is a Class 5 access road. This road is a single carriageway with one lane per direction and an approximate width of 5.0 m. There are

	paved sidewalks along both sides of the road. Hill Road is a north-south link between Main Road and High Level Road. St Georges Road: is a Class 5 access road. This road is a single carriageway with one lane per direction and an approximate width of 4.5 m. There are paved sidewalks along both sides of the road. Only permit holders are permitted to park along St Georges Road. Clyde Road: is a Class 5 access road. This road is a single carriageway with one lane per direction and an approximate width of 4.5 m. There are paved sidewalks along both sides of the road. Grove Road: is a cul-de-sac Class 5 access road. This road is a single carriageway with one lane per direction and an approximate width of 4.0 m. There are paved sidewalks along both sides of the road. Pine Road: is a one-way Class 5 access road. This road has a northbound lane and an approximate width of 3.5 m. There is no available space for sidewalks along this road. Wigtown Road: is a Class 5 access road. This road is a single carriageway with one lane per direction and an approximate width of 4.0 m. There are paved sidewalks along both sides of the road. Varneys Road: is a one-way Class 5 access road. This road has a southbound lane and an approximate width of 3.0 m. On-street parking is available along the western side of the road. There are paved sidewalks along both sides of Varneys Road. York Road: is a one-way Class 5 access road. This road has a northbound lane and an approximate width of 15.0 m. On-street parking and paved sidewalks are present along both sides of the road. Refer to **Figure 1** for the City of Cape Town's Public Right of Way – Road Network (City of Cape Town, July 2017).

Figure 1: Public Right of Way- Road Network (City of Cape Town, July 2017)

9 Existing Access	The subject property has existing accesses off Helen Suzman Boulevard, Three Anchor Bay Road and Main Road. The location of all existing accesses is shown in **Figure 2** below. The future access arrangements for the site are discussed in detail in **Section 18**.  *Figure 2: Existing Site Accesses*
10 Future Roadways	Future planning in the broader site context includes the completion of the Foreshore Freeway. The future road network planning, as reflected in the City of Cape Town Public Right of Way Plan (2023), is illustrated in **Figure 3**.

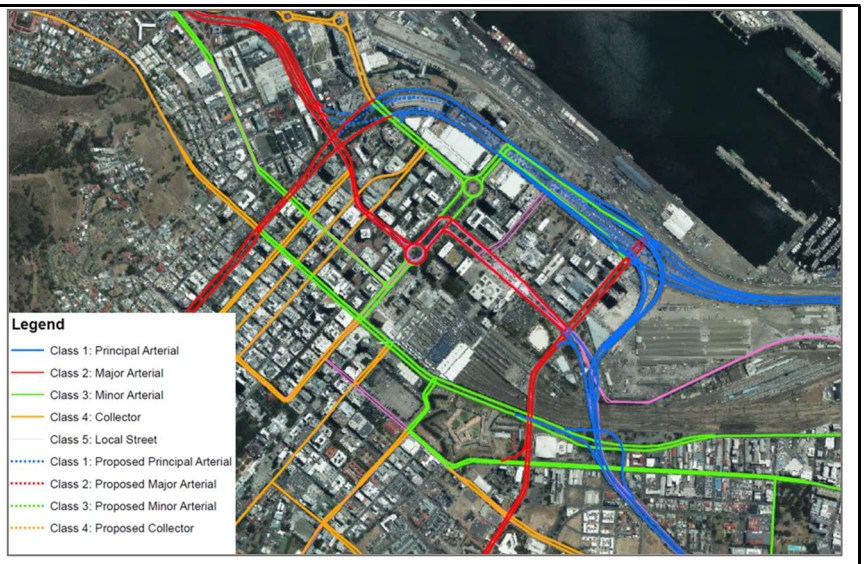

Figure 3: Future Road Network (PRoW, 2023)

Currently, there is no confirmed timeline for the completion of the Foreshore Freeway.

There are no other known major road network upgrades planned in the vicinity of the site that will have a significant influence on traffic operations.

11 Study Intersections (existing controls)

Reference: Annexure A

The following key intersections are included in the scope of the report:

Int. 1: Three Anchor Bay Road/Main Road ..... Signalised

Int. 2: Three Anchor Bay Road/Beach Road..... Signalised

Int. 3: Helen Suzman Boulevard/Beach Road ..... Signalised

Int. 4: Helen Suzman Boulevard/Link Road ..... Priority Stop-controlled

Int. 5: Helen Suzman Boulevard/Vlei Road ..... Priority Stop-controlled

Int. 6: Helen Suzman Boulevard/Granger Bay Road ..... Roundabout

Int. 7: Helen Suzman Boulevard/Portswood Road..... Signalised

Int. 8: Main Road/York Road/Granger Bay Road ..... Signalised

Int. 9: Main Road/Varneys Road ..... Priority Stop-controlled

Int. 10: Main Road/Wigtown Road ..... Priority Stop-controlled

Int. 11: Main Road/Pine Road ..... Priority Stop-controlled

Int. 12: Main Road/Grove Road ..... Priority Stop-controlled

Int. 13: Main Road/Clyde Road ..... Priority Stop-controlled

Int. 14: Main Road/St Georges Road..... Priority Stop-controlled

	Int. 15: Main Road/Hill Road ..... Priority Stop-controlled Int. 16: Main Road/Richmond Road ..... Priority Stop-Controlled Int. 17: Main Road/St Bedes Road ..... Priority Stop-controlled  *Figure 4: Key Intersections in the Study Area* Refer to **Figure A3** in **Annexure A** for the location of the above-mentioned key intersections in the study area where traffic surveys were conducted. **Figure A4** in **Annexure A** schematically illustrates the geometry of the study intersections.
12 Analyses Hours *Reference: Annexure A*	The traffic analyses are based on the weekday a.m. and p.m. peak hours. The following peak hours were investigated: • a.m. peak hour 07:45 – 08:45 • p.m. peak hour 17:00 – 18:00 The analysis periods were selected in accordance with standard guidelines, which require that assessments be undertaken during the hours when the combined effect of background and development traffic results in the highest overall demand on the road network. Given that the proposed development comprises predominantly residential and office land uses, traffic generation is expected to follow typical commuter patterns. The assessment therefore focuses on the weekday AM and PM peak hours, which represent the most critical periods of interaction between development traffic and existing traffic. Although the Three Anchor Bay area experiences increased traffic during weekends and special events (e.g. stadium events and recreational activity), these conditions are classified as abnormal days and are not representative of typical network operations. The proposed development is not expected to generate or attract such event-related traffic.

	Accordingly, the use of normal weekday peak periods is considered appropriate and consistent with accepted practice for urban traffic impact assessments.
13 Scenarios Analysed	The following scenarios were analysed: 1. 2026 Existing Traffic Conditions (based on the existing recorded traffic volumes) 2. 2031 Total Traffic Conditions (2031 traffic volumes plus the development trips for all traffic scenarios) 3. 2031 Sensitivity Analyses (2026 existing traffic volumes adjusted with a 1% growth rate per annum over a 5-year horizon period plus the development trips for the wors-case traffic scenario)
14 Traffic Volumes *Reference: Annexure A*	Traffic surveys were conducted to determine the existing peak hour traffic volumes at the study intersections. The surveys were conducted on Tuesday, 18 March 2025 between 06:30 and 09:00 in the morning and between 15:30 and 18:00 in the afternoon. The existing traffic volumes during the a.m. and p.m. peak hours are illustrated in **Figure A5** and **Figure A6** in **Annexure A**.
15 Existing Intersection Operations *Reference: Annexure A*	The study intersections were analysed based on the methods described in the Highway Capacity Manual (HCM) to determine the level of service (LOS), delay per vehicle (in seconds) and volume per capacity (v/c) for each intersection in the peak hours. The results indicated that during the p.m. peak hour or during both peak hours the following intersections are overall operating at unacceptable levels of service (LOS E/F) or have approaches operating at unacceptable LOS: • Three Anchor Bay Road/Main Road • Three Anchor Bay Road/Beach Road • Helen Suzman Boulevard/Beach Road • Main Road/York Road However, by optimising the signal phasing and timings it was possible to improve the traffic operations at the above-mentioned four intersection to be able to achieve acceptable LOS with minimal average delays during both peak hours. No geometric changes were included. All other study intersections are operating at acceptable LOS during the a.m. and p.m. peak hours. The results of the capacity analyses of the a.m. and p.m. peak hours are shown in **Figure A5** to **Figure A8** in **Annexure A**.

16 Traffic Growth Rate	Traffic growth rates were determined by comparing 2012 and 2025 peak hour counts at the Helen Suzman Boulevard/Granger Bay Boulevard intersection. Based on these growth rate calculations, it is evident that the traffic growth in this area is low. The a.m. peak hour traffic volumes remained the same (i.e. 0% growth) while the overall traffic volumes increased with a relatively low rate of 1.4% per annum. Due to these low historic growth rates, it was decided that no background traffic growth rates would be applied. A sensitivity analyses was however undertaken to test the reliability of the above-mentioned assumption. The purpose of the sensitivity analyses was to confirm that the operational assessment results remain valid under a conservative growth rate assumption. Refer to **Section 24** for the results of the sensitivity analyses.
17 Approved Developments/Latent Rights	There are several known major developments proposed in the vicinity of the site, including the developments indicated on **Figure 5**. However, these developments are not expected to have a significant traffic impact in the site vicinity during the weekday peak hours. Therefore, these trips were not included in the analyses.  *Figure 5: Future Developments*
18 Site Access	The site is accessible and well-located within the metropolitan area with the study area serviced by two higher order roads (Helen Suzman Boulevard and Main Road). These contribute to good connectivity in an east-west directions to and from the site. Parcel 1 of the site, accommodating the existing civic centre, public library and creche, will retain its two current Left-in/Left-out (LILO) accesses. The first is located on Three Anchor Bay Road, approximately 90 m north of the Three Anchor Bay Road/Main Road intersection, and the second on Main Road, approximately 90 m east of the same intersection. No changes are proposed to these accesses. Both have a two-lane cross-section, with one inbound and one outbound lane, and are stop-controlled on the development side.

Along Main Road, three new accesses are proposed. The primary site access will be positioned opposite Richmond Road and is proposed to be signalised. This access will have one lane per direction. In addition, two priority stop-controlled accesses are proposed along Main Road, one opposite St Bedes Road and one opposite Hill Road. Each access will have a two-lane cross-section with one lane in each direction and be stop-controlled on the development side. The access opposite Hill Road will serve the hotel exclusively.

The latest Concept Design retains the two existing accesses along Helen Suzman Boulevard. It is proposed that these accesses be upgraded to one left-in-only access and one left-out-only egress to improve operational efficiency and safety.

The focus was on optimising the available spacing for these accesses. Therefore, it is proposed that the site have one left-in access approximately 320 m east of the Helen Suzman Boulevard/Beach Road intersection and one left-out egress approximately 140 m east of the intersection. In addition, the existing median break will be closed to support the revised access configuration.

Figure 6 reflects the locations of the proposed future site accesses.

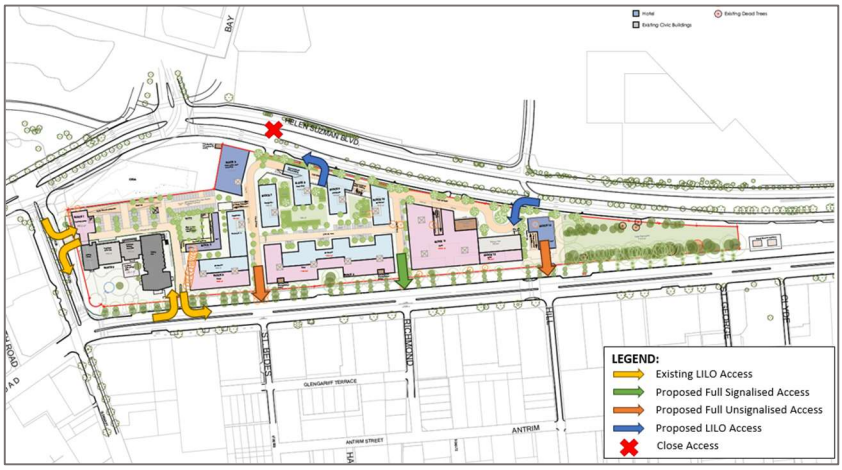

Figure 6: Proposed Future Site Accesses

Access Spacing:

The spacing requirements for the proposed accesses were investigated based on the Road Access Guidelines (WCG, 2002).

Richmond Road Access: Sufficient spacing is available between the proposed signalised Main Road/Richmond Road intersection and the Three Anchor Bay Road/Main Road intersection (275 m required & 295 m available). But the spacing between the proposed full signalised intersection at Richmond Road and the full unsignalised intersections on either side of it are less than the recommended (275 m required vs

130 m available to St Bedes Road & to Hill Road). The location of the proposed signalised access was deemed the most optimal location.

St Bedes Road Access: The spacing between the proposed full unsignalised access across from St Bedes Road and the full signalised Three Anchor Bay/Main Road intersection is sufficient (90 m required & 165 m available). Sufficient spacing is also available between the proposed access and the signalised Main Road/Richmond Road intersection (90 m required & 130 m available).

Hill Road Access: The spacing between the proposed full unsignalised intersection at Hill Road and the full unsignalised intersections on either side of it are more than the recommended (90 m required vs 130 m available to Richmond Road & 160 m available to St Georges Road).

Helen Suzman LI Accesses: Sufficient spacing is available in both directions at the proposed left-in-only access along Helen Suzman Boulevard (90 m required and 180 m to the left-out-only access and 420 m to Vlei Road).

Helen Suzman LO Egress: Sufficient spacing is available in both directions at the proposed left-out-only access along Helen Suzman Boulevard (90 m required and 140 m to Beach Road and 180 m to the left-out-only access).

Table 2 contains a summary of the required and available spacing for each of the proposed accesses.

Table 2: Required and Available Access Spacing

Access	Access Type*	Spacing Required	Spacing Available	
Richmond St Access	Signalised	275m	To Three Anchor Bay Rd	295m
			To St Bedes St	130m
			To Hill St	130m
St Bedes St Access	Unsignalised	90m	To Three Anchor Bay Rd	165m
			To Richmond St	130m
Hill St Access	Unsignalised	90m	To Richmond St	130m
			To St George St	160m
Helen Suzman LO Access	LILO	90m	To Beach Rd	140m
			To LI Access	180m
Helen Suzman LI Access	LILO	90m	LO Access	180m
			Vlei St	420m

*All unsignalised intersections were assumed to be equivalent side roads

Queue Analysis:

	To ensure that no queues form during the peak hours, it is proposed that all access gates be left open during the operating hours of the retail space, offices, hotel and community facilities. Carriageway Crossings: All proposed accesses must have a carriageway crossing width of between 2.4 m and 8.0 m (CoCT, 2025).
19 Trip Generation and Development Trips *Reference: Annexure C*	The additional vehicle trips that will be generated by the proposed development was calculated using the trip rates as provided in the TMH17 South African Trip Data Manual (COTO, September 2013). The trip generation rates for the possible mix of activities for the development areas are shown in **Table 3**. *Table 3: Trip Generation Rates* **Land Use** / **Source** / **Weekday a.m. Peak Hour** (Rate, In, Out) / **Weekday p.m. Peak Hour** (Rate, In, Out) Apartments & Flats — COTO220 — 0.65 — 25% — 75% — 0.65 — 70% — 30% Offices — COTO710 — 2.10 — 85% — 15% — 2.10 — 20% — 80% Shopping Centre — COTO820 — 0.60 — 65% — 35% — 3.40 — 50% — 50% Hotel, Residential — COTO310 — 0.50 — 60% — 40% — 0.50 — 55% — 45% It is expected that a percentage of the development trips will be internal. These are vehicle trips between the different land uses on the site. Hence, not all vehicle trips generated by this development will be distributed to the external road network. The proposed development is located in an area well served by public transport (minibus taxis, MyCiti buses and GABS buses) that has been identified as a PT2 zone. PT2 zones are areas where the use of public transport is promoted, and the City considers the provision of public transport as good, or the use of private vehicles is very limited. The TMH17 (COTO, September 2013) recommends trip reduction factors for the following areas: Mixed-Use Development: mixed-use developments are defined as developments in an area that consists of two or more single-use developments between which trips can be made by means of non-motorised modes of transport (such as walking). This has the net effect of reducing the vehicle trip generation in the area. Transit Nodes or Corridors: The transit reduction factors are applicable to developments that are located within a reasonable walking distance from a major transit node or stops on a major transit corridor. Therefore, it is anticipated that reduction factors will be applied to the trip generation rates to account for the mixed-use nature of the development and the proximity to public transport nodes. The trip

reduction percentages for each of the proposed land uses are shown in **Table 4**.

Table 4: Trip Reduction Percentages

Land Use	Trip Reduction Percentages	
	Mixed-use Development	Transit Nodes or Corridors
Apartments & Flats	15%	15%
Offices	-	15%
Shopping Centre	10%	15%
Hotel, Residential	20%	15%

Based on the above, the proposed development is expected to generate the following number of peak hour trips, as shown in **Table 5**, for each of the scenarios. Refer to **Annexure C** for detailed trip generation calculations.

Table 5: Expected Peak Hour Trips for Each of the Scenarios

Scenario	Weekday a.m. Peak Hour			Weekday p.m. Peak Hour		
	Total	In	Out	Total	In	Out
1A	776	261	515	952	595	357
1B	728	249	479	904	561	342
1C	706	244	462	882	546	336
2A	882	412	469	1 058	565	492
2B	843	403	441	1 019	538	481
2C	825	398	427	1 001	526	475

20 Trip Distribution

Probe data was analysed to determine the existing weekday a.m. and p.m. peak hour trip distribution patterns to and from Green Point, Sea Point and Three Anchor Bay. It was assumed that the proposed development will exhibit a similar directional distribution of trips during the peak periods, given the comparable land use context and location within the broader area.

The following distribution was used and is illustrated in **Figure 7**:

- 5% to/from the west along Beach Road
- 15% to/from the west along Main Road
- 15% to/from the north along Beach Road
- 15% to/from the north along Granger Bay Road
- 15% to/from the east along Helen Suzman Boulevard
- 35% to/from the east along Main Road

Figure 7: Existing Site Accesses

21 Public Transport Assessment

Reference: Annexure C

The main road-based public transport routes currently run along Helen Suzman Boulevard and Main Road with minibus taxis, GABS buses and MyCiti buses.

Refer to **Figure 8** and **Figure 9** for the existing minibus taxi routes and bus coverage respectively in the site vicinity according to the ITPN 2032 (CoCT, 2014). It should be noted that the ITPN is currently under review and updated details regarding public transport will only be available at a later stage.

The closest minibus taxi rank is located at Somerset Hospital, approximately 1.9 km northeast of the site.

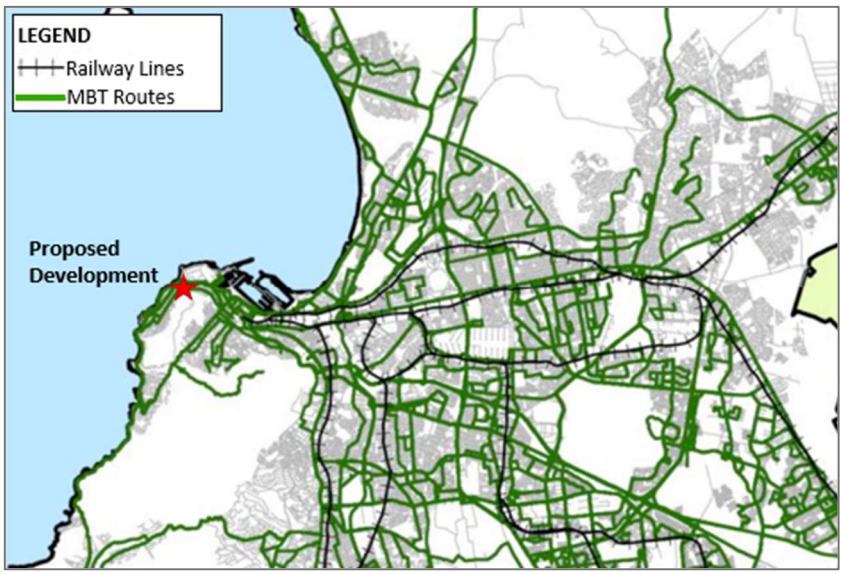

Figure 8: Minibus Taxi Routes (CoCT, 2014)

Figure 9: Bus Coverage (CoCT, 2014)

Figure 10 indicates the existing MyCiti routes according to the MyCiti website (Transport for Cape Town, 2026) in the site vicinity.

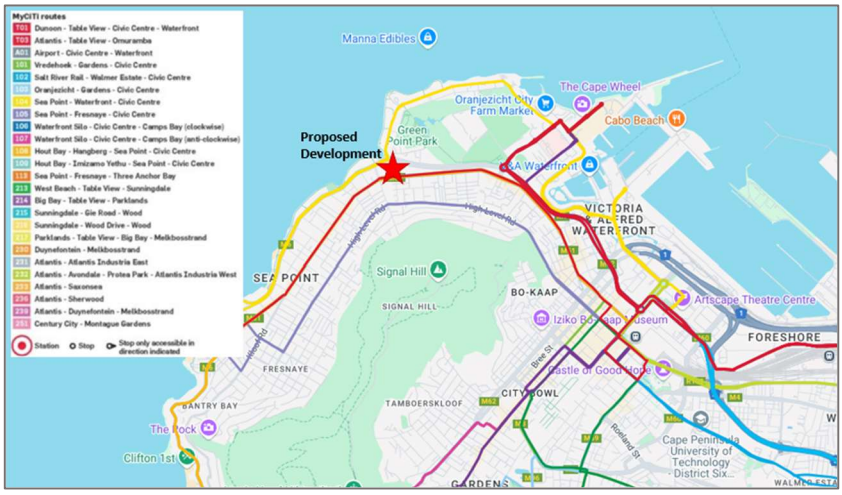

Figure 10: MyCiti Routes (Transport for Cape Town, April 2025)

The proposed development is therefore well located to access various forms of road-based public transport.

Public Transport Trips:

There will be employment opportunities within the development land uses that will generate public transport, pedestrian and cycling trips in addition to vehicular trips.

The methodology provided in the City's Guidelines for the Public Transport Components of Transport Impact Assessments was used to determine the number of pedestrian and public transport trips that will be generated by the proposed development.

Land use classification & sizes: As mentioned previously, the proposed development will include retail, offices, apartments and a hotel. The hotel was excluded from the public transport and pedestrian trip generation calculations, since hotel guest trips are generally not expected to generate significant peak hour demand. To account for the worst-case scenario, the extent of the land uses included in Scenario 2A was assessed.

Person trip generation rates: The trip generation rates provided by the City gives a higher and lower limit for person trip generation rates for each land use. Refer to **Table 6**. Both of these scenarios were assessed.

Table 6: Person Trip Generation Rates (CoCT, 2001)

Land Use	Person Trip Generation Rates	
	Higher	Lower
Retail	25 m²/employee	35 m²/employee
Office	15 m²/employee	30 m²/employee
Industrial	1.6 workers/unit	1.2 workers/unit

Demand during peak: It was assumed that 60% of the person trips for all land uses will occur during the peak hour (CoCT, 2001).

Estimate primary modal split: A number of factors, such as the current patters, existing and future public transport facilities, private transport infrastructure and the proposed land uses and densities, influence the likely modal split between private and public transport modes (including walking). Taking these factors into account, it was assumed that all land uses will have a 60% modal split in favour of public transport (CoCT, 2001).

Estimate secondary modal split: It was assumed that 80% of all public transport users will make use of MyCity. The remaining 20% will walk. The same secondary modal split was applied to all land uses.

Number of public transport trips generated: Each 18 m MyCiTi bus can accommodate approximately 65 passengers. Assuming a 50% inbound and 50% outbound directional split, the proposed development is expected to generate the following public transport trips during the peak hours:

- Lower person trip generation rates: 10 bus trips (5 in, 5 out)
- Higher person trip generation rates: 14 bus trips (7 in, 7 out)

Provision should be made to accommodate the additional public transport demand that will be generated by the site. Therefore, the demand determined should be used by the City to inform future public transport planning, including the assessment of MyCiTi service capacity and potential service adjustments within the site vicinity.

Full details of the public transport and pedestrian trip generation calculations are included in **Annexure C**.

22 Non-motorised Transport Assessment

Reference: Annexure C

The location of the site lends itself to creating a landscaped NMT friendly space that link the development to the existing NMT network in the site vicinity.

Sidewalks are present along Helen Suzman Boulevard, Main Road, Three Anchor Bay Road, Beach Road, Vlei Road, Granger Bay Boulevard, Portswood Road, Link Road, St Bedes Road, Richmond Road, Hill Road, St Georges Road, Clyde Road, Grove Road, Wigtown Road, Varneys Road and York Road. The proposed development must provide sidewalks along the frontages of the site that tie in with the existing network of sidewalks.

Helen Suzman Boulevard and Main Road are classified as Class 2 cycle routes near the subject property. Refer to **Figure 11** for the NMT cycle network in the vicinity of the proposed development.

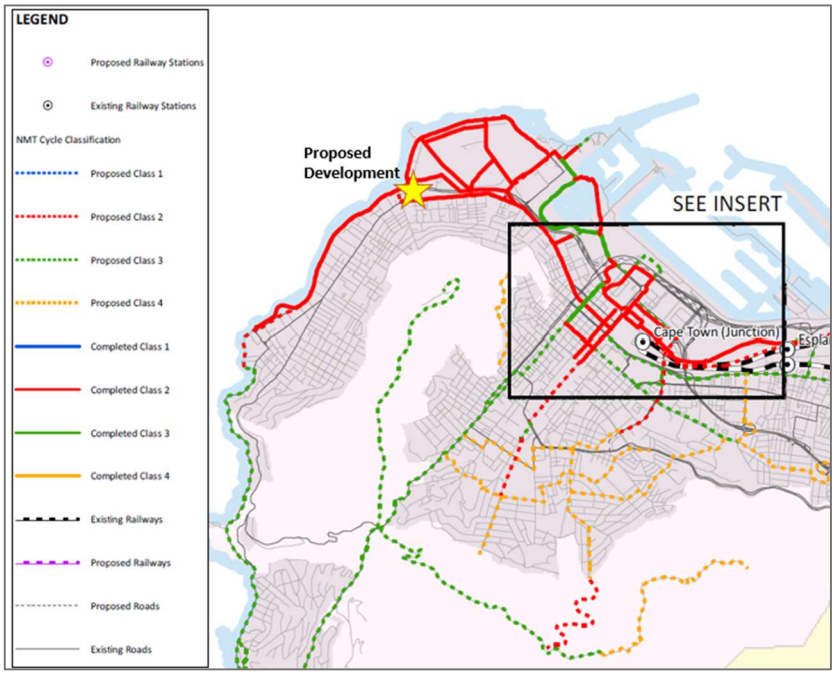

Figure 11: NMT Cycle Network (Transport for Cape Town, August 2013)

The design of the proposed development layout must support NMT inclusion since a significant number of pedestrian and bicycle trips are likely to be generated by the future development, for which adequate infrastructure should be provided where necessary. The internal road network must also include pedestrian and bicycle facilities.

Pedestrian Trips:

The methodology and assumptions described in **Section 21** was used to determine the number of expected pedestrians during the peak hours. The following number of pedestrians are likely to be generated by the proposed development:

- Lower person trip generation rates: 142 pedestrians

<table>
<tr><td></td><td>

- Higher person trip generation rates: 211 pedestrians

Full details of the public transport and pedestrian trip generation calculations are included in **Annexure C**.
</td></tr>
<tr><td>23 Total Traffic Conditions</td><td>To assess the impact of the proposed development on the surrounding road network, the development traffic for each of the scenarios was added to the 2031 traffic volumes.

The capacity analyses indicated that all study intersections will continue to operate at acceptable LOS during both peak hours for each of the trip generation scenarios.

Refer to Figures A10 to Figure A21 in Annexure A for a summary of the 2031 total traffic conditions of the study intersections.</td></tr>
<tr><td>24 2031 Sensitivity Analyses</td><td>A sensitivity analysis was undertaken to test the reliability of the growth rate assumption. For the analyses, a 1% per annum growth rate was applied to the existing traffic volumes to represent a conservative increase in base traffic conditions. In addition, the worst-case development trips, Scenario 2A in Section 19, were included.

The capacity analyses indicated that all study intersections will continue to operate at acceptable LOS during both peak hours.

Refer to Figures A22 and Figure A23 in Annexure A for a summary of the 2031 total traffic conditions of the study intersections.</td></tr>
<tr><td>25 Parking

Reference: Annexure D</td><td>Parking provision for the proposed development should satisfy the requirements as suggested in the Municipal Planning Amendment By-Law (CoCT, 2025). The existing parking at the civic centre and the public library will remain as is, and these land uses were therefore not included in the parking calculations for the site.

The site is located within a PT2 zone where the use of public transport is promoted, and the City considers the provision of public transport good or where the use of motor vehicles is limited. The prescribed parking requirements for the mixed-use land uses assumed for this development is as shown in Table 7.

Table 7: Parking Requirements
<table>
<tr><th rowspan="2">Land Use</th><th colspan="3">PT Zone</th></tr>
<tr><th>Standard Areas</th><th>PT1</th><th>PT2</th></tr>
<tr><td>Flats</td><td>1.25 bays per dwelling unit plus 0.25 bays per dwelling units for visitors</td><td>1 bay per dwelling unit plus 0.25 bays per dwelling unit for visitors</td><td>Nil</td></tr>
<tr><td>Affordable Housing</td><td>0.8 bays per dwelling unit plus 0.2 bays per dwelling units for visitors</td><td>0.5 bays per dwelling unit plus 0.15 bays per dwelling unit for visitors</td><td>Nil</td></tr>
<tr><td>Office</td><td>4 bays per 100 m² GLA</td><td>2,5 bays per 100 m² GLA</td><td>Nil</td></tr>
<tr><td>Shops (excluding supermarket)</td><td>3 bays per 100 m² GLA</td><td>2 bays per 100 m² GLA</td><td>Nil</td></tr>
</table>
</td></tr>
</table>

Supermarket	4 bays per 100 m² GLA	2,5 bays per 100 m² GLA	Nil
Hotel	0,5 bays per bedroom, plus associated reduced (based on parking sharing) requirement for any ancillary land uses open to public	0,5 bays per bedroom, plus associated reduced (based on parking sharing) requirement for any ancillary land uses open to public	Nil
Library	2 bays per 100 m² floor space	1,5 bays per 100 m² floor space	Nil
Place of assembly	1 bay per 6 seats or persons, calculated at 1,4 m² floor space = 1 person	1 bay per 8 seats or persons, calculated at 1,4 m² floor space = 1 person	Nil
Creche	Nil. Facilities with more than 34 learners must be able to accommodate an informal stop and drop facility on-street.		

While the development aims to align with Transit Orientated Development (TOD) principles and reduce reliance on private vehicles, some level of on-site parking remains necessary to accommodate demand. A complete absence of parking could lead to spillover effects on the surrounding road network, which may negatively impact traffic flow and local accessibility. However, to support efficient land use and TOD goals, parking provision should be market-related and complemented by shared parking strategies between complementary land uses (e.g. daytime retail and nighttime residential uses), ensuring flexibility and efficiency within the broader development framework. Therefore, it is proposed that the parking requirements for PT1 zones be applied.

A summary of the number of parking bays recommended for each of the land use scenarios is shown in **Table 8**.

Table 8: Parking Bays Recommended for Each Scenario

Scenario	Total Parking Bays Recommended	Disabled Bays Required	Loading Bays Required
1A	1 964	22	3
1B	1 847	21	3
1C	1 796	20	3
2A	2 011	23	4
2B	1 921	22	4
2C	1 879	21	4

Based on the above, 2 011 parking bays is the maximum number of on-site bays recommended for the proposed development. Parking will be accommodated within a three-level super basement structure. Preliminary investigations indicate that the super basement can accommodate up to approximately 1 895 bays and 80 additional bays will be provided on the ground level. Therefore, a total of 1 975 bays will be provided.

This parking supply is sufficient to accommodate all assessed scenarios, with the exception of Scenario 2A. While Scenario 2A exceeds the PT1 parking requirement, the site is located within a PT2 zone, where no minimum parking requirements apply. Furthermore, the mixed-use

	nature of the development will facilitate shared parking opportunities, reducing overall parking demand. Accordingly, the proposed parking provision is considered adequate to support the development. Locating parking within a basement structure, rather than at ground level, optimises land use efficiency, and supports a more NMT-friendly urban environment. Standard 90° parking bays must have a minimum width of 2.5m and length of 5 m. However, all end bays must have a width of 2.9 m. Depending on the scenario being assessed, between 22 and 24 of the required parking bays must be allocated for the physically disabled. These bays must be marked and located as close as possible to accessible accesses to the buildings. The disabled parking bays must have a minimum width of 3.7 m and length of 5 m. The number or loading bays required for each of the scenarios were determined based on the extent of the offices and retail space. For Scenario 1A, 1B and 1C, 3 loading bays must be provided on-site. For Scenario 2A, 2B and 2C, 4 loading bays must be provided. Perpendicular loading bays must have a minimum width of 4.5 m and length of 10 m, while a minimum width of 2.5 m and length of 12 m is required for parallel loading bays. Details of the parking calculations are included in **Annexure D**.
26 Conclusions and Recommendations	This report summarises the assessment of the transport related impacts of the proposed development on Erf 2187 in Cape Town. The assessment resulted in the following conclusions and recommendations: **Land Use** The proposed development will include a mix of land uses such as affordable housing units, open-market residential units, retail space, offices, a hotel and community facilities. A range of land use scenarios were assessed in this report. **Road Network** <u>2026 Existing Traffic Conditions</u> Capacity constraints are expected at the following intersections during the p.m. peak hour or during both peak hours: • Three Anchor Bay Road/Main Road • Three Anchor Bay Road/Beach Road • Helen Suzman Boulevard/Beach Road • Main Road/York Road

By optimising the signal phasing and timings it was possible to improve the operations at the above intersections. No capacity constraints are expected once the traffic signals have been optimised and spare capacity will be available. No geometric changes are required.

The remaining study intersections are currently operating at acceptable LOS with spare capacity during both peak hours. No upgrades are proposed.

Development Trips

It is expected that the proposed development will generate the following trips during the peak hours depending on the scenario constructed:

Scenario	Weekday a.m. Peak Hour			Weekday p.m. Peak Hour		
	Total	In	Out	Total	In	Out
1A	776	261	515	952	595	357
1B	728	249	479	904	561	342
1C	706	244	462	882	546	336
2A	882	412	469	1 058	565	492
2B	843	403	441	1 019	538	481
2C	825	398	427	1 001	526	475

2031 Total Traffic Conditions

No capacity constraints are expected in any of the scenarios assessed, and all study intersections will continue to operate at acceptable LOS with the additional site generated traffic added to the network. No upgrades are proposed.

2031 Sensitivity Analyses

No capacity constraints are expected, and all study intersections will continue to operate at acceptable LOS. No upgrades are proposed.

Access

The existing two LILO accesses along Three Anchor Bay Road and Main Road will remain unchanged and continue to provide access to the public library, the civic centre and the creche (Parcel 1).

Three accesses are proposed along Main Road, located opposite Richmond Road, St Bedes Road and Hill Road. The Richmond Road access will be signalised and have one lane per direction. The remaining two accesses will be stop-controlled on the development side and have one lane per direction. The Hill Road access will only provide access to the hotel component of the development.

The latest Concept Design retains the two existing accesses along Helen Suzman Boulevard. However, it is proposed that these accesses be reconfigured into a left-in-only access and a left-out-only egress, with improved spacing. The left-in access is located approximately 320 m

east of Beach Road, while the left-out egress is located approximately 140 m east of the intersection.

Available spacing for the proposed site accesses were deemed sufficient.

To prevent queues from forming at the accesses, it is proposed that all access gates be left open during the operating hours of the facilities.

All accesses must have a carriageway crossing width of between 2.4 m and 8.0 m.

Public Transport

The site is located within a PT2 zone where the use of public transport is promoted, and the City considers the provision of public transport to be good or where the use of motor vehicles is limited. Minibus taxis, GABS buses and MyCiti routes operate along Helen Suzman Boulevard and Main Road.

It was determined that the proposed development can be expected to generate between 10 bus trips (5 in, 5 out) and 14 bus trips (7 in, 7 out) during the peak hours. The demand determined should therefore be used as input into future public transport planning by the City, including the assessment of MyCiTi service capacity and potential service adjustments.

Non-Motorised Transport

The surrounding area is well serviced by NMT infrastructure. Sidewalks must be provided along the frontage of the site and tie into the existing sidewalks. Pedestrian and cycle facilities to be provided along the internal road network.

It was determined that the proposed development can be expected to generate between 142 and 211 pedestrian trips during the peak hours.

Parking

It is proposed that the parking rates provided for PT1 zones are applied. The following standard parking bays, disabled parking bays and loading bays are recommended for the proposed development:

Scenario	Total Parking Bays Recommended	Disabled Bays Required	Loading Bays Required
1A	1 964	22	3
1B	1 847	21	3
1C	1 796	20	3
2A	2 011	23	4
2B	1 921	22	4
2C	1 879	21	4

	Conclusion It is concluded that the expected transport related impacts of the proposed development can be sufficiently mitigated, provided that the above proposals are in place. It is recommended that the proposed development can be approved from a transport impact perspective.

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1. Highway Capacity Manual (HCM), Quality and Level-of-Service Concepts, Transportation Research Board, 9 March 2015
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8. City of Cape Town, Integrated Public Transport Network Plan 2032, May 2014
9. City of Cape Town, Transit Oriented Development Strategic Framework, March 2016
10. City of Cape Town, Parking Policy for the City of Cape Town (Policy Number 17913), December 2020
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13. Province of the Western Cape, Provincial Gazette Extraordinary 8185, City of Cape Town Municipal Planning Amendment By-law, 6 December 2019
14. Transport for Cape Town, Public Right of Way, Non-Motorised Transport Network (Cycle Routes) Map, August 2013
15. Transport for Cape Town, MyCiti website, accessed February 2026
16. City of Cape Town Municipal Planning Amendment By-law, Provincial Gazette Extraordinary, 9117, 8 August 2025
17. Guidelines for the Public Transport Component of Transport Impact Assessments, City of Cape Town, December 2001

Annexure A

Figures

its	PROJECT: Three Anchor Bay Development, Erf 2187	FIGURE: LOCALITY PLAN WIDER AREA	NUMBER: A1.1

its	PROJECT: Three Anchor Bay Development, Erf 2187	FIGURE: LOCALITY PLAN ZOOMED-VIEW	NUMBER: A1.2

PROJECT:	FIGURE:	NUMBER:
Three Anchor Bay Development, Erf 2187	ZONING OF THE AREA SURROUNDING ERF 2187	A2

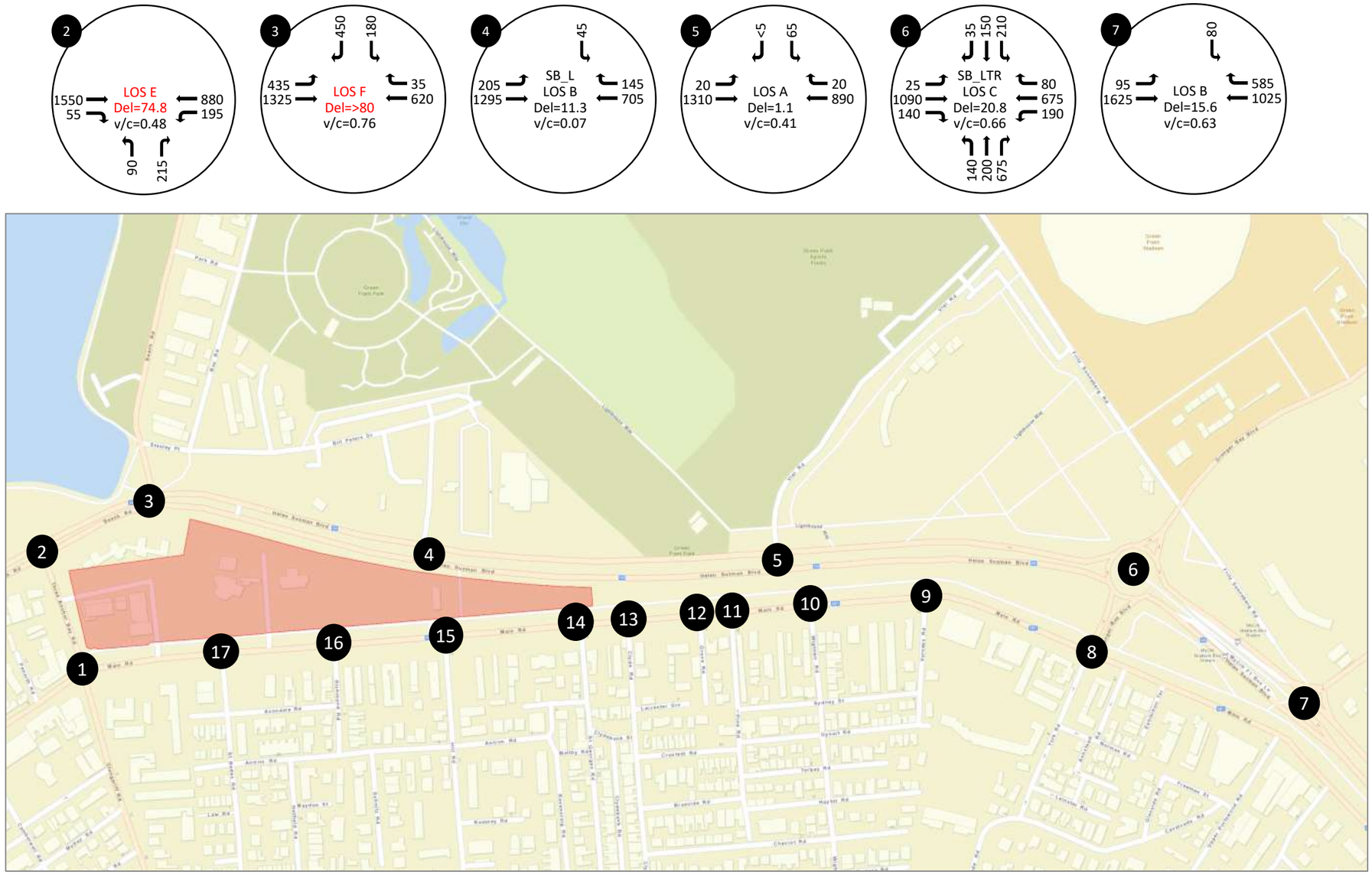
PROJECT:	FIGURE:	NUMBER:
Three Anchor Bay Development, Erf 2187	LOCATION OF KEY INTERSECTIONS FOR TRAFFIC SURVEYS	A3

Diagramtic / Not to Scale

Legend:
- Turning lanes and turning movements
- Stop Control
- Traffic Signal Control
- Roundabout (Yield Control)

its INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**EXISTING 2026 INTERSECTION GEOMETRY**

Figure: **A4**

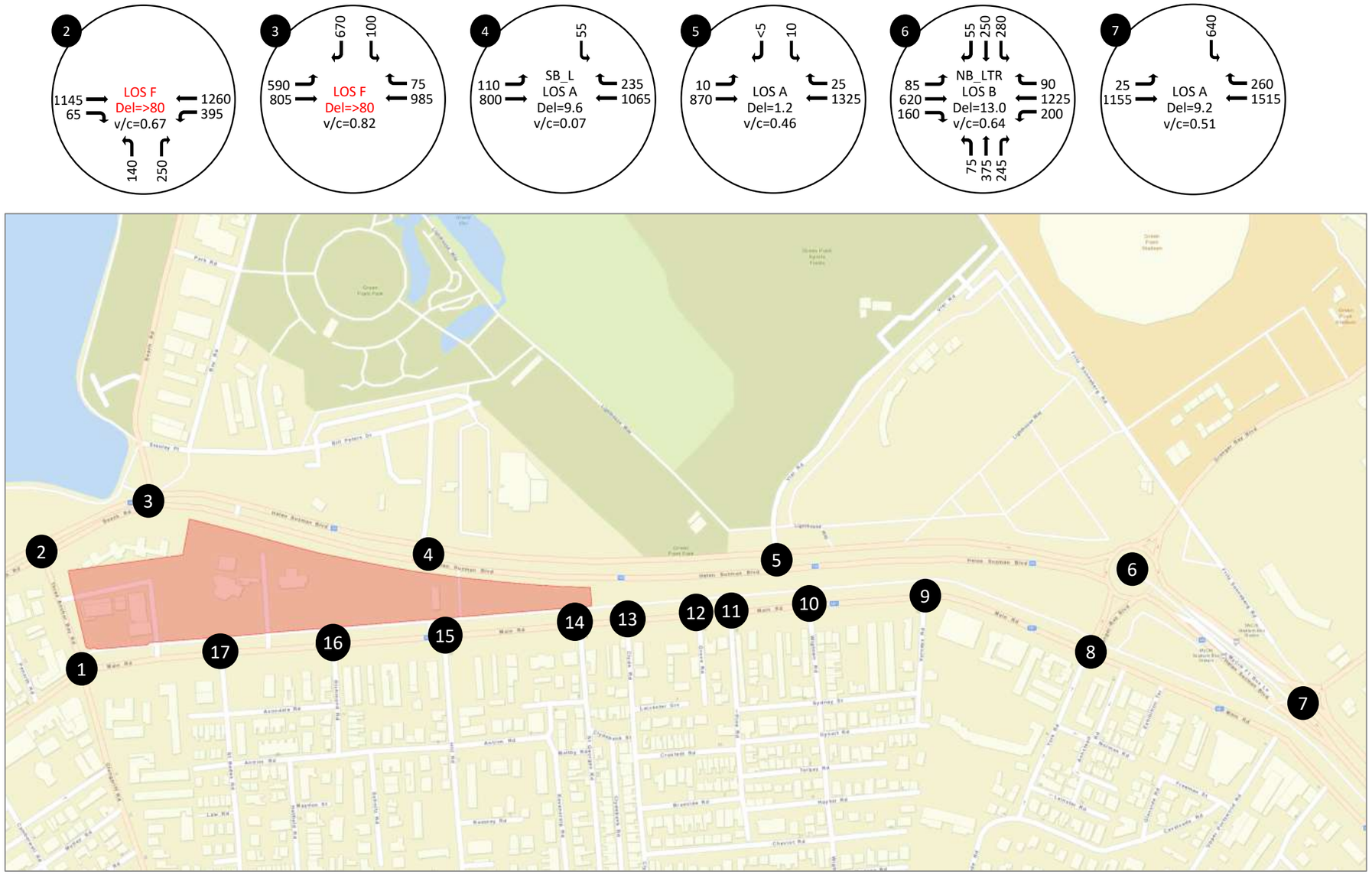


CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**EXISTING 2026 TRAFFIC OPERATIONS - AM PEAK HOUR**

Figure:
A5



CM : Critical Movement
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V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**EXISTING 2026 TRAFFIC OPERATIONS - PM PEAK HOUR**

Figure:

A6

CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**EXISTING 2026 TRAFFIC OPERATIONS (UPGRADED) - AM PEAK HOUR**

Figure:
A7

CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

its INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**EXISTING 2026 TRAFFIC OPERATIONS (UPGRADED) - PM PEAK HOUR**

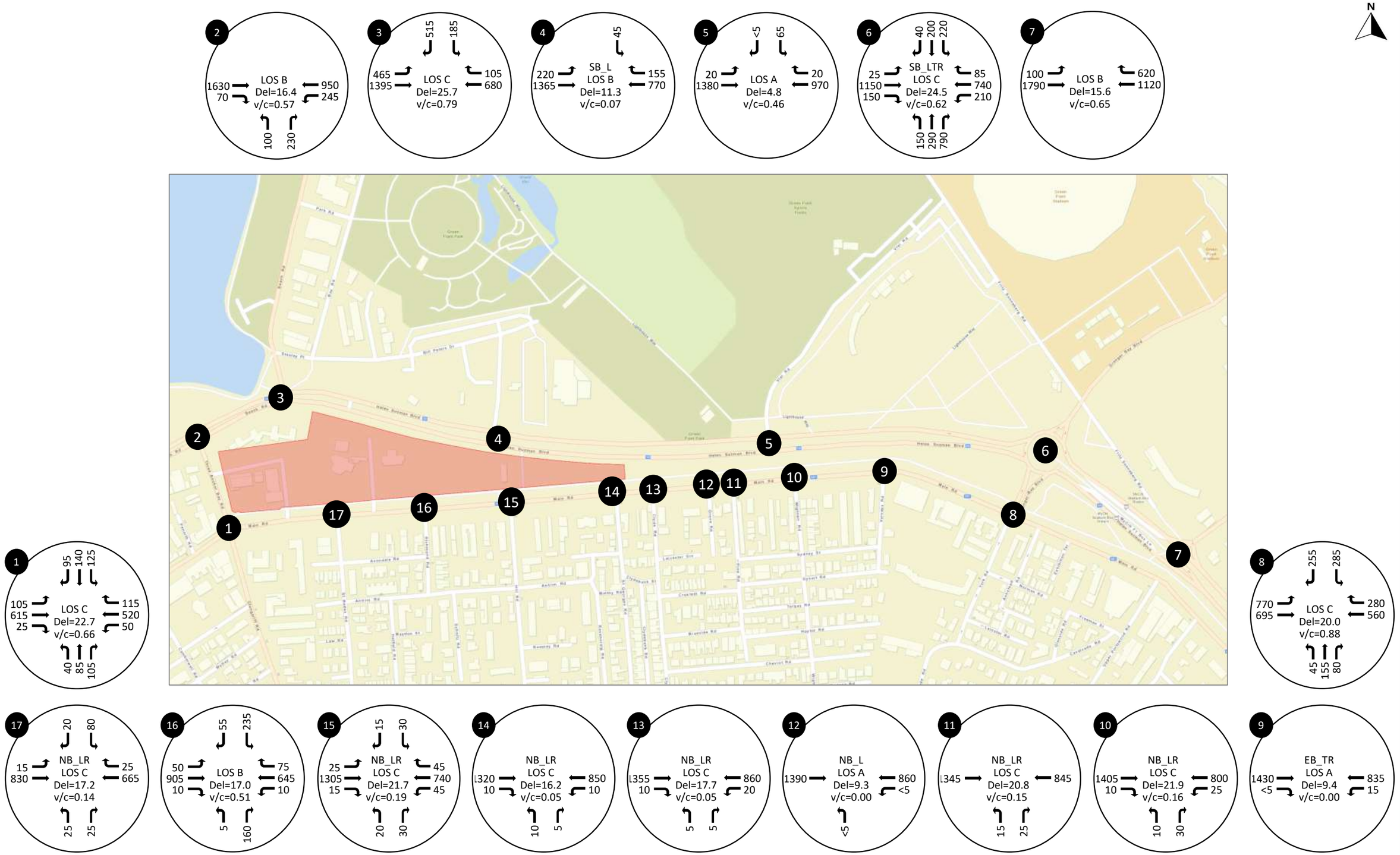
Figure:
A8

Diagramtic / Not to Scale

Legend:
- Turning lanes and turning movements
- Stop Control
- Traffic Signal Control
- Roundabout (Yield Control)

its INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**PROPOSED 2031 INTERSECTION GEOMETRY**

Figure: A9



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DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

its INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 1A - AM PEAK HOUR**	**Figure: A10**

CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

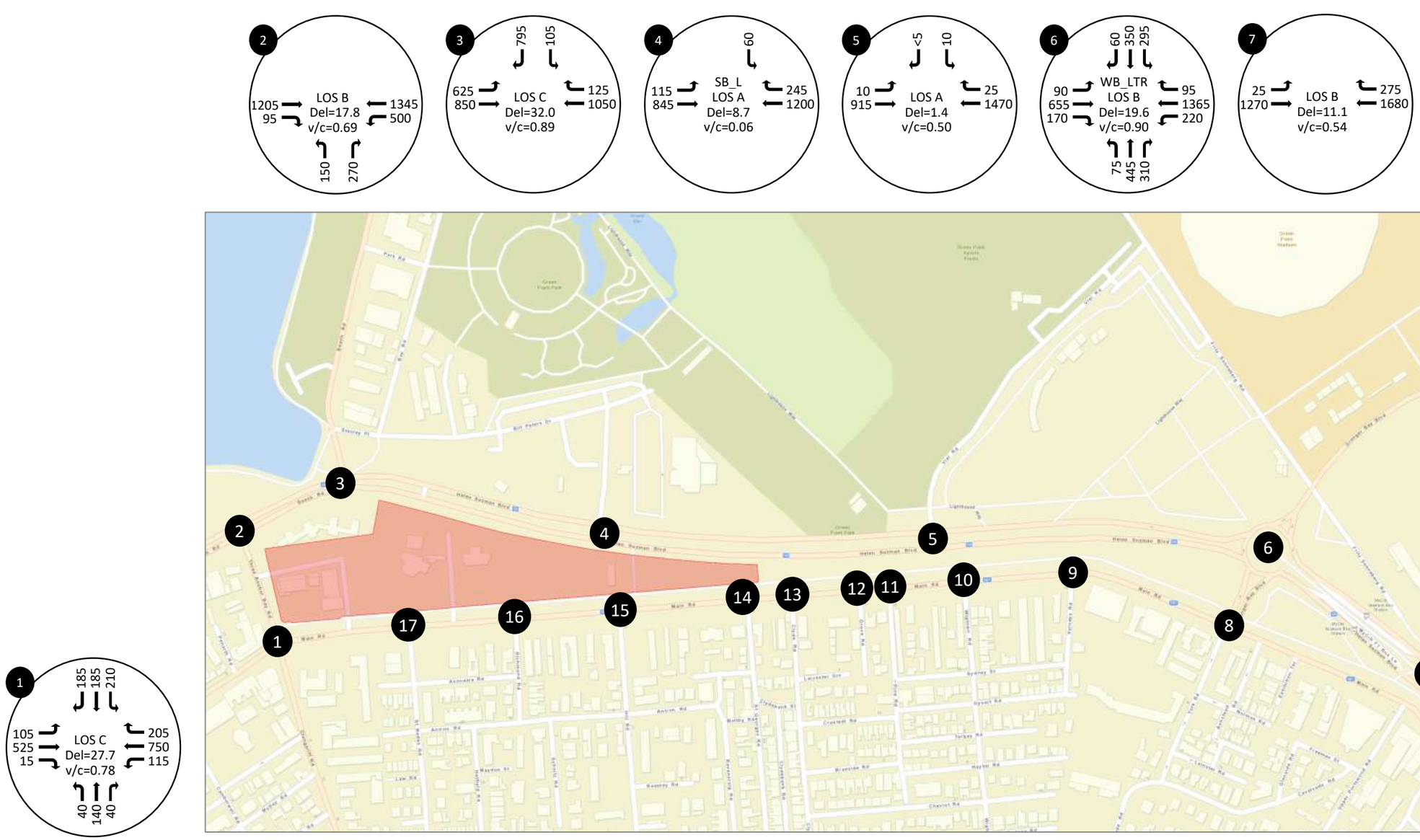
its INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 1A - PM PEAK HOUR**	**Figure: A11**

CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

its INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 1B - AM PEAK HOUR**

Figure:
A12



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DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS

Three Anchor Bay Development, Erf 2187

TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 1B - PM PEAK HOUR

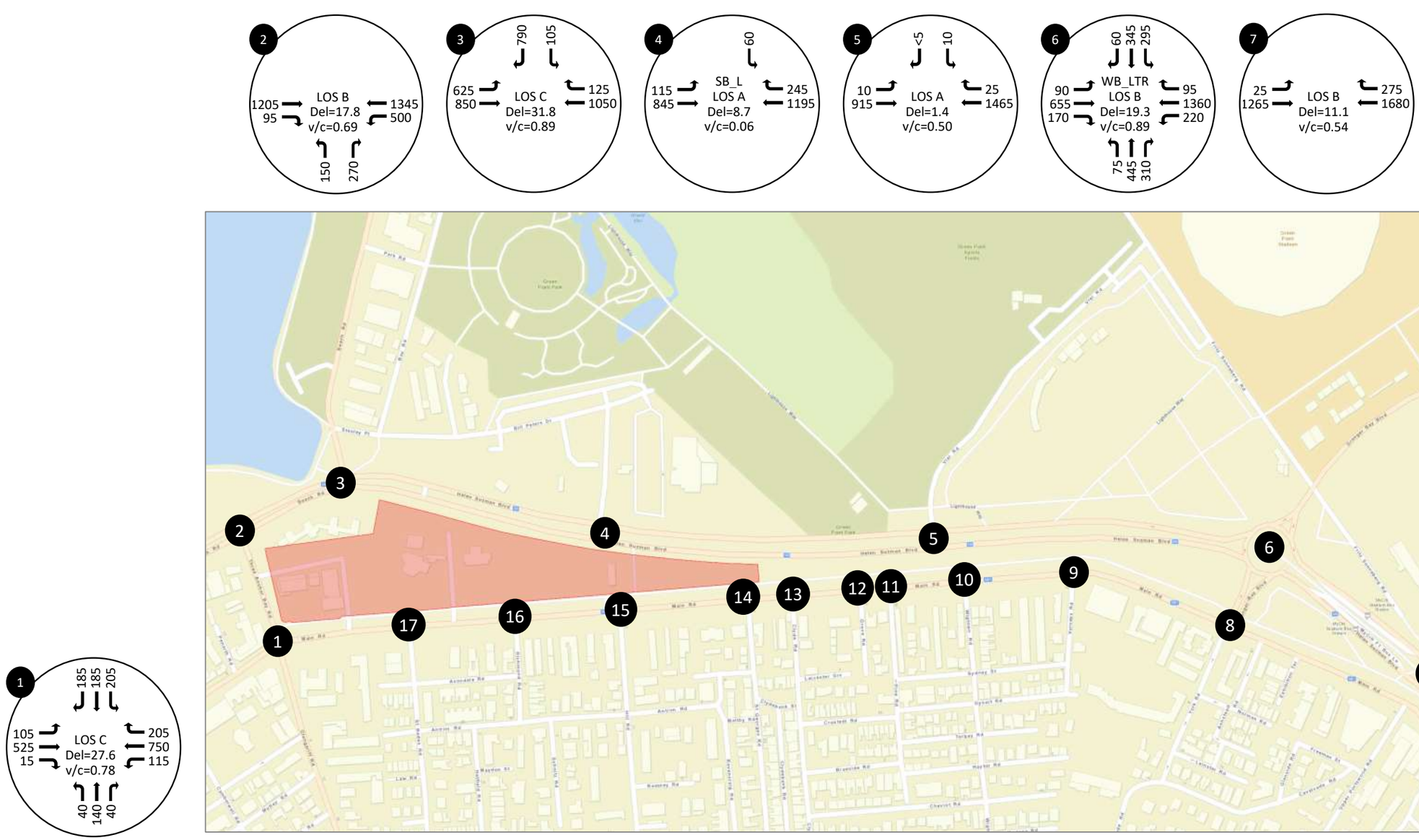
Figure:
A13

CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

its INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 1C - AM PEAK HOUR**

Figure:
A14



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V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 1C - PM PEAK HOUR**

Figure:
A15

CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

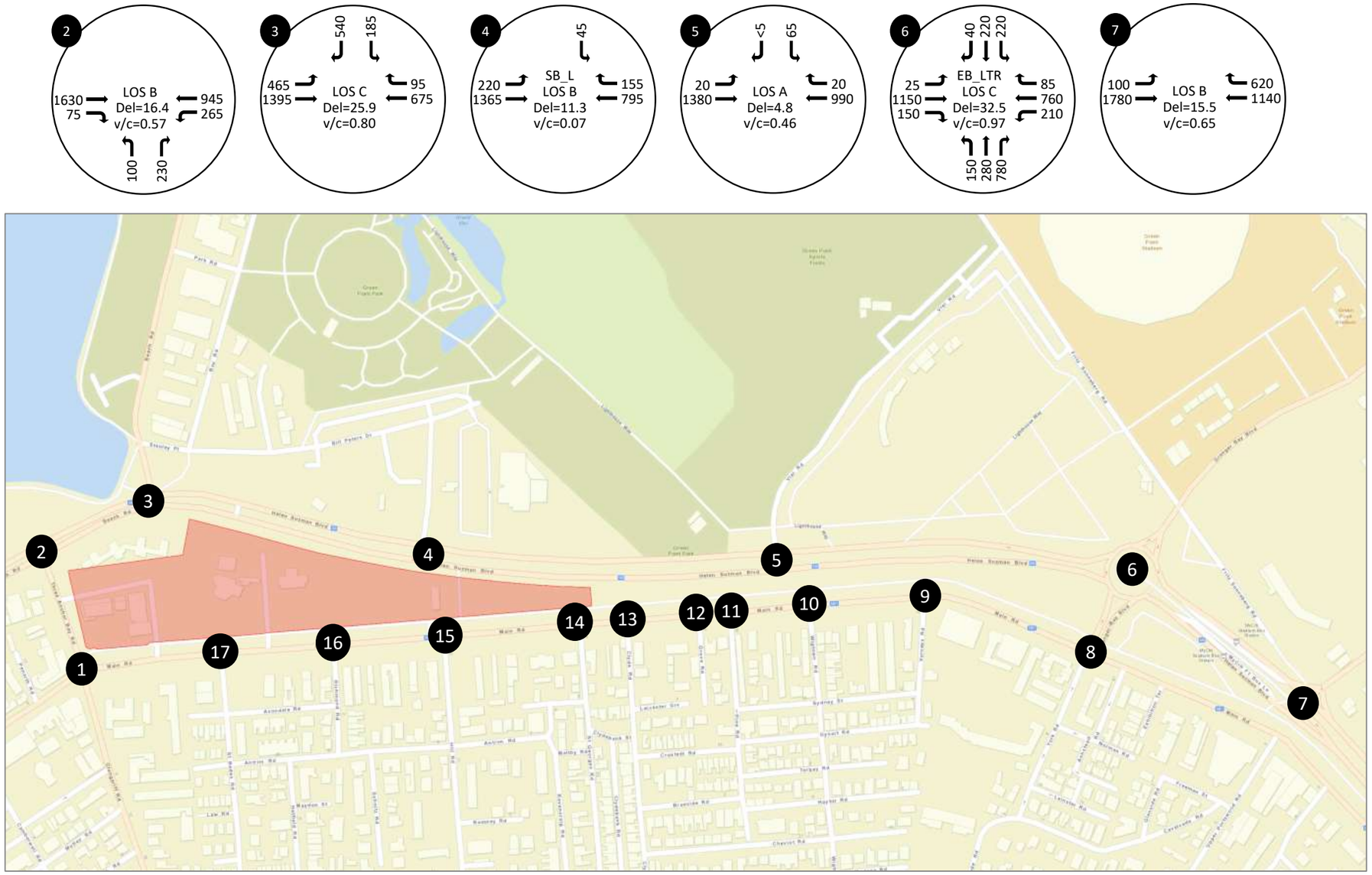
INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 2A - AM PEAK HOUR**
		Figure: A16

CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 2A - PM PEAK HOUR**

Figure:
A17



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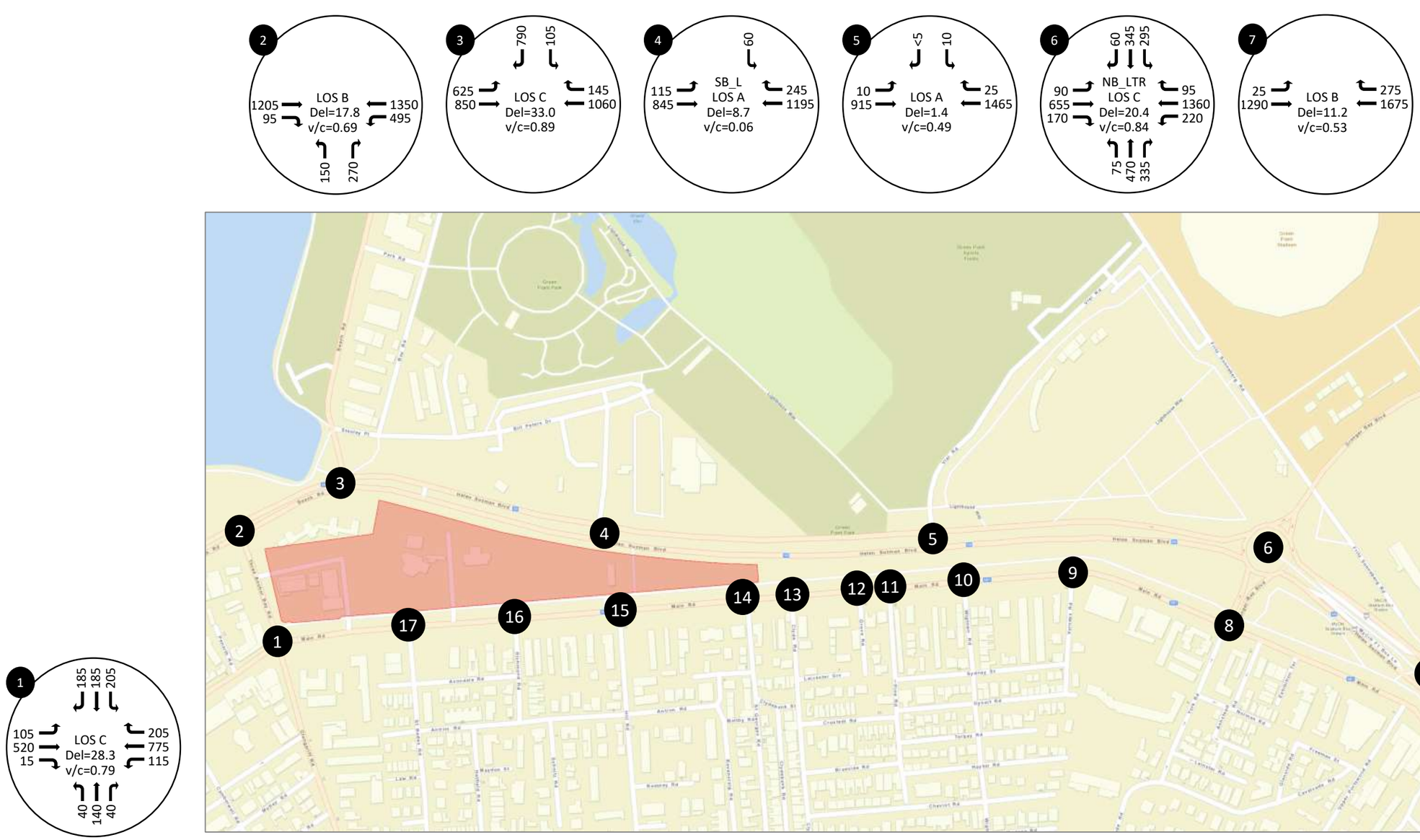
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 2B - AM PEAK HOUR**

Figure:
A18



CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS

Three Anchor Bay Development, Erf 2187

TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 2B - PM PEAK HOUR

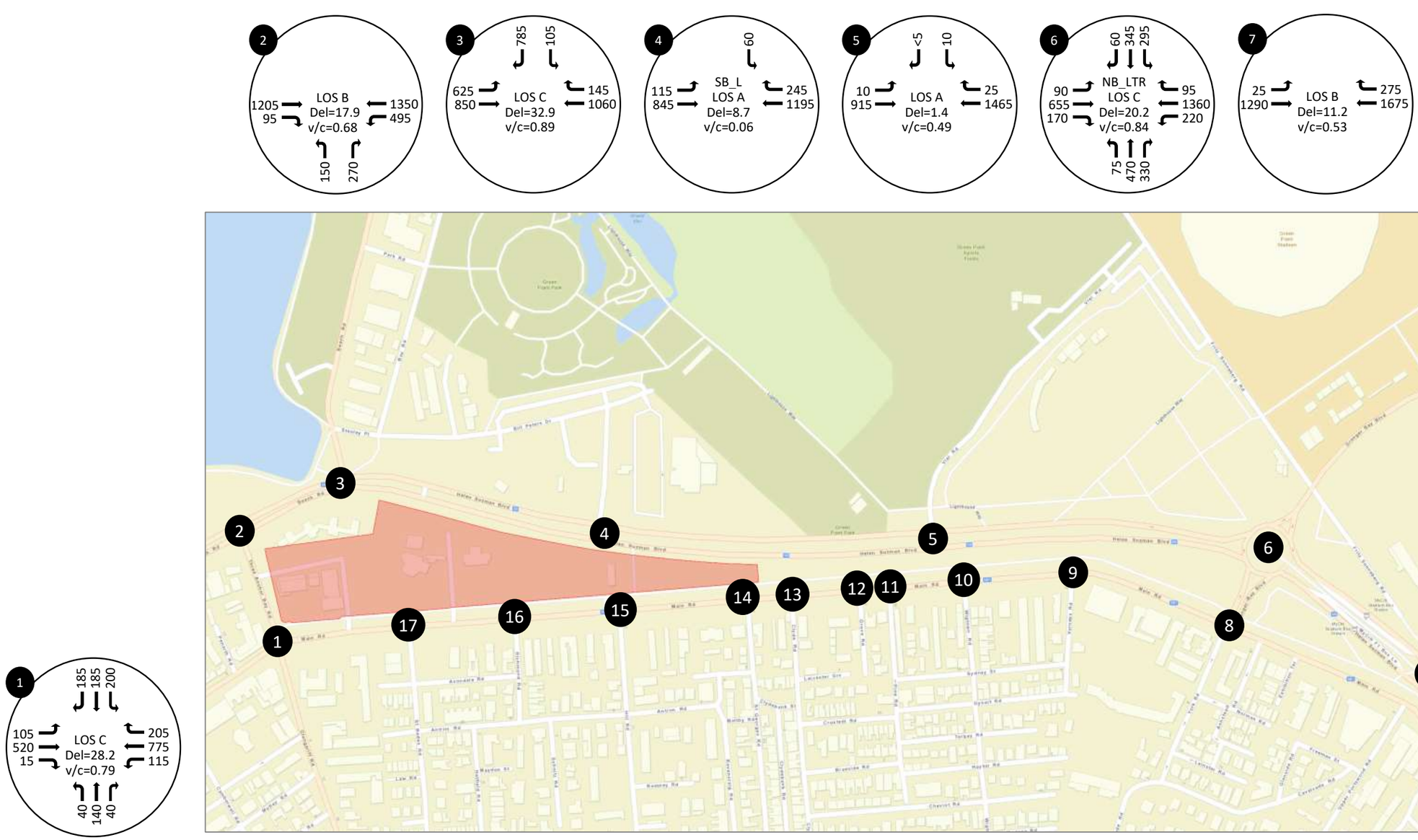
Figure: A19

CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 2C - AM PEAK HOUR**

Figure:
A20



CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

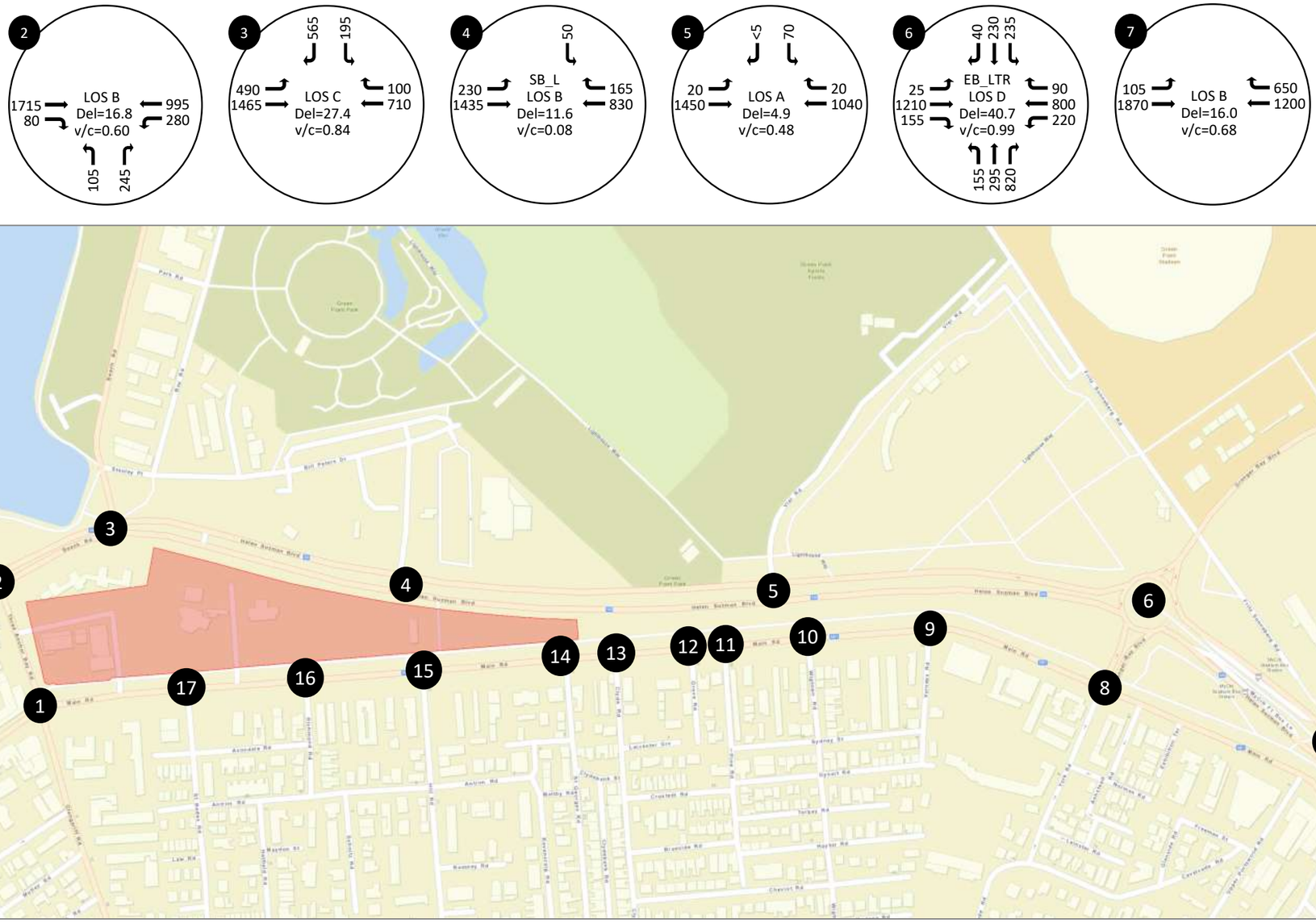
Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS

Three Anchor Bay Development, Erf 2187

TOTAL 2031 TRAFFIC OPERATIONS SCENARIO 2C - PM PEAK HOUR

Figure: A21

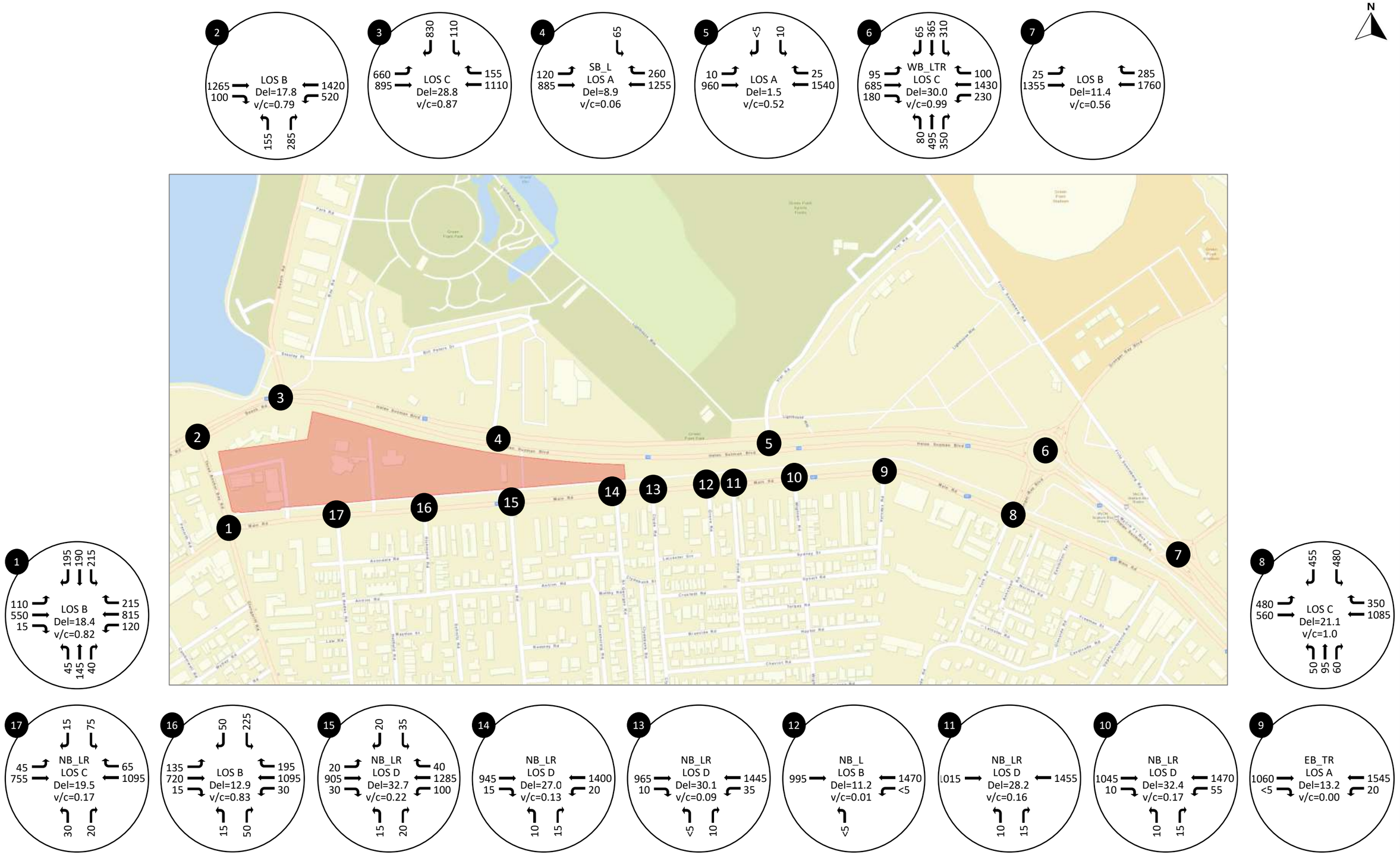


CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

its INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 SENSITIVITY TRAFFIC OPERATIONS - AM PEAK HOUR**

Figure:
A22



CM : Critical Movement
LOS: Level of Service of intersection if Signal or 4-way Stop or of Critical movement if unsignalised
DEL: Avg Delay per vehicle if signalised or for critical movement if unsignalised
V/C: Critical V/C Ratio
Turning movements
Free Flow Left Turn
Critical Movement
Overlap Left Turn

Diagramtic / Not to Scale

INNOVATIVE TRANSPORT SOLUTIONS	**Three Anchor Bay Development, Erf 2187**	**TOTAL 2031 SENSITIVITY TRAFFIC OPERATIONS - AM PEAK HOUR**

Figure:
A23

Annexure B

Land Use Extents

Table B1: Land Use Extents for Scenario 1A, 1B, 1C, 2A, 2B and 2C

OPTION 1:

						Scenario 1A summary			Scenario 1B summary			Scenario 1C summary		
	RETAIL GLA m^2	OFFICE GLA m^2	HOTEL GLA m^2	HOTEL ROOMS	COMMUNITY GLA m^2	Affordable units	Open Market units	TOTAL UNITS	Affordable units	Open Market units	TOTAL UNITS	Affordable units	Open Market units	TOTAL UNITS
Portion 1	425	1 403	-		500		50	50		47	47		43	43
Portion 2a	1 188	-	2 038	213	855	46	171	217	42	158	200	39	154	193
Portion 2b	1 844	-	-	-	-	165	622	787	152	572	724	147	550	697
Portion 2c	4 922	-	3 056	112	-	50	190	240	48	172	220	44	168	212
	8 379	**1 403**	**5 094**	**325**	**1 355**	**261**	**1 033**	**1 294**	**242**	**949**	**1 191**	**230**	**915**	**1 145**

OPTION 2:

						Scenario 2A summary			Scenario 2B summary			Scenario 2C summary		
	RETAIL GLA m^2	OFFICE GLA m^2	HOTEL GLA m^2	HOTEL ROOMS	COMMUNITY GLA m^2	Affordable units	Open Market units	TOTAL UNITS	Affordable units	Open Market units	TOTAL UNITS	Affordable units	Open Market units	TOTAL UNITS
Portion 1	425	926	-	-	500		50	50		47	47		43	43
Portion 2a	1 188	2 349	2 038	213	855	38	145	183	37	135	172	33	131	164
Portion 2b	1 844	4 658	-	-	-	147	556	703	129	518	647	125	499	624
Portion 2c	4 922	5 129	3 056	112	-	29	111	140	27	101	128	25	99	124
	8 379	**13 062**	**5 094**	**325**	**1 355**	**214**	**862**	**1 076**	**193**	**801**	**994**	**183**	**772**	**955**

Annexure C

Trip Generation Calculations

Table C1: Trip Generation of the Proposed Development for Scenario 1A, 1B, 1C, 2A, 2B and 2C.

Description	Land Use	Units	Source	Mixed-use Reduction	Transit Node Reduction	Weekday AM Peak Hour				Weekday PM Peak Hour			
						Rate	In	Out	Adjusted Rate	Rate	In	Out	Adjusted Rate
Residential units	Apartment and Flats	unit	COTO220	15%	15%	0.65	25%	75%	0.47	0.65	70%	30%	0.47
Offices	Offices	100 m^2	COTO710		15%	2.10	85%	15%		2.10	20%	80%	
Retail	Shopping Centre	100 m^2	COTO820	10%	15%	0.60	65%	35%		3.40	50%	50%	
Hotel	Hotel, Residential	100 m^2	COTO310	20%	15%	0.50	60%	40%		0.50	55%	45%	

	Description	Extent		Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Scenario 1A	Residential units	1 294	units	608	152	456	608	425	182
	Offices	1 403	m^2	25	21	4	25	5	20
	Retail	8 379	m^2	38	25	13	214	107	107
	Hotel	325	rooms	106	63	42	106	58	48
	Total Trips			**776**	**261**	**515**	**952**	**595**	**357**

	Description	Extent		Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Scenario 1B	Residential units	1 191	units	559	140	419	559	392	168
	Offices	1 403	m^2	25	21	4	25	5	20
	Retail	8 379	m^2	38	25	13	214	107	107
	Hotel	325	rooms	106	63	42	106	58	48
	Total Trips			**728**	**249**	**479**	**904**	**561**	**342**

	Description	Extent		Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Scenario 1C	Residential units	1 145	units	538	134	403	538	376	161
	Offices	1 403	m^2	25	21	4	25	5	20
	Retail	8 379	m^2	38	25	13	214	107	107
	Hotel	325	rooms	106	63	42	106	58	48
	Total Trips			**706**	**244**	**462**	**882**	**546**	**336**

	Description	Extent		Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Scenario 2A	Residential units	1 076	units	505	126	379	505	354	152
	Offices	13 063	m^2	233	198	35	233	47	187
	Retail	8 379	m^2	38	25	13	214	107	107
	Hotel	325	rooms	106	63	42	106	58	48
	Total Trips			**882**	**412**	**469**	**1058**	**565**	**492**

	Description	Extent		Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Scenario 2B	Residential units	994	units	467	117	350	467	327	140
	Offices	13 063	m^2	233	198	35	233	47	187
	Retail	8 379	m^2	38	25	13	214	107	107
	Hotel	325	rooms	106	63	42	106	58	48
	Total Trips			**843**	**403**	**441**	**1019**	**538**	**481**

	Description	Extent		Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Scenario 2C	Residential units	955	units	448	112	336	448	314	135
	Offices	13 063	m^2	233	198	35	233	47	187
	Retail	8 379	m^2	38	25	13	214	107	107
	Hotel	325	rooms	106	63	42	106	58	48
	Total Trips			**825**	**398**	**427**	**1001**	**526**	**475**

Table C2: Public Transport and Pedestrian Trip Generation

PROPOSED DEVELOPMENTS	SCENARIO 2A							
	HIGHER TRIP GENERATION ASSUMPTIONS				LOWER TRIP GENERATION ASSUMPTIONS			
SIZE OF DEVELOPMENTS								
Landuse	**Retail**	**Office**	**Residential**	**Total**	**Retail**	**Office**	**Residential**	**Total**
Gross Leasable Area (m2)	8379	13062	1076		8379	13062	1076	
PERSON TRIP GENERATION RATES								
Employees per m^2	25	15	1.6		35	30	1.2	
DEMAND DURING PEAK HOUR								
Proportion of peron trips during the peak period	60%	60%	60%		60%	60%	60%	
Person trips during peak hour	201	522	1033	**1757**	144	261	775	**1180**
PRIMARY MODAL SPLIT (PUBLIC TRANSPORT, INCLUDING WALKING, VS PRIVATE TRANSPORT)								
Modal split (public transport share, including walking)	60%	60%	60%		60%	60%	60%	
Number of public transport passengers and pedestrians	121	313	620	**1054**	86	157	465	**708**
SECONDARY MODAL SPLIT								
Public transport modal split (assumed)								
Rail	0%	0%	0%		0%	0%	0%	
Bus	80%	80%	80%		80%	80%	80%	
Taxi	0%	0%	0%		0%	0%	0%	
Walking (only mode)	20%	20%	20%		20%	20%	20%	
No of people using public transport								
Rail	0	0	0		0	0	0	
Bus	97	251	496		69	125	372	
Taxi	0	0	0		0	0	0	
Walking	24	63	124		17	31	93	
NUMBER OF PEDESTRIANS								
No of pedestrians	24	63	124	**211**	17	31	93	**142**
NUMBER OF PUBLIC TRANSPORT VEHICLES								
Bus trips during the AM peak hour								
Bus capacity (pax)	65	65	65		65	65	65	
% of bus trips In	50%	50%	50%		50%	50%	50%	
% of bus trips Out	50%	50%	50%		50%	50%	50%	
No of bus pax In	48	125	248		34	63	186	
No of bus pax Out	48	125	248		34	63	186	
Total no of bus trips In	1	2	4	**7**	1	1	3	**5**
Total no of bus trips Out	1	2	4	**7**	1	1	3	**5**
* *Recommended in the Public Transport TIA Component Guidelines*								

Annexure D

Parking Calculations

Table D1: Required Standard Parking Bays for Scenario 1A, 1B, 1C, 2A, 2B and 2C

Land Use	PT1 Parking Rate	PT1 Visitors Parking Rate	Scenario 1A		Scenario 1B		Scenario 1C		Scenario 2A		Scenario 2B		Scenario 2C	
			Extent	Parking Bays Required	Extent	Parking Bays Required	Extent	Parking Bays Required	Extent	Parking Bays Required	Extent	Parking Bays Required	Extent	Parking Bays Required
Flats	1 bay/unit	0.25 bays/unit	1 033 units	1 291	949 units	1 186	915 units	1 144	862 units	1 078	801 units	1 001	772 units	965
Affordable Housing	0.5 bay/unit	0.15 bays/unit	261 units	170	242 units	157	230 units	150	214 units	139	193 units	125	183 units	119
Office	2.5 bays/100m^2	0 bays/100m^2	1 403 m^2	35	1 403 m^2	35	1 403 m^2	35	13 062 m^2	327	13 062 m^2	327	13 062 m^2	327
Shops	2 bays/100m^2	0 bays/100m^2	3 500 m^2	70	3 500 m^2	70	3 500 m^2	70	3 500 m^2	70	3 500 m^2	70	3 500 m^2	70
Supermarket	2.5 bays/100m^2	0 bays/100m^2	4 879 m^2	122	4 879 m^2	122	4 879 m^2	122	4 879 m^2	122	4 879 m^2	122	4 879 m^2	122
Hotel	0.5 bays/room	0 bays/room	325 rooms	163	325 rooms	163	325 rooms	163	325 rooms	163	325 rooms	163	325 rooms	163
Library	1.5 bays/100m^2	0 bays/room	1 203 m^2	18	1 203 m^2	18	1 203 m^2	18	1 203 m^2	18	1 203 m^2	18	1 203 m^2	18
Place of Assembly	1 bay/8seats	0 bays/room	764 seats	96	764 seats	96	764 seats	96	764 seats	96	764 seats	96	764 seats	96
Creche*	0 bays/student	0 bays/room	200 students	0	200 students	0	200 students	0	200 students	0	200 students	0	200 students	0
Total				**1 964**		**1 847**		**1 796**		**2 011**		**1 921**		**1 879**

*An informal stop & drop facility must be provided

Table D2: Required Disabled Parking Bays for Scenario 1A, 1B, 1C, 2A, 2B and 2C

Scenario	Standard Bays Recommended	Disabled Bay Required	Shortfall
1A	1 964	22	11
1B	1 847	21	128
1C	1 796	20	179
2A	2 011	23	-36
2B	1 921	22	54
2C	1 879	21	96

Table D3: Required Loading Bays for Scenario 1A, 1B, 1C, 2A, 2B and 2C

Land Use	Extent	Number of Loading Bays	Scenario 1A		Scenario 1B		Scenario 1C		Scenario 2A		Scenario 2B		Scenario 2C	
			Extent	Loading Bays Required	Extent	Loading Bays Required	Extent	Loading Bays Required	Extent	Loading Bays Required	Extent	Loading Bays Required	Extent	Loading Bays Required
Office	0 - 5 000m^2	0 bays	1 403 m^2	0	1 403 m^2	0	1 403 m^2	0	13 062 m^2	1	13 062 m^2	1	13 062 m^2	1
	5 001 - 15 000m^2	1 bay												
Retail	5 001 - 10 000m^2	3 bays	8 379 m^2	3	8 379 m^2	3	8 379 m^2	3	8 379 m^2	3	8 379 m^2	3	8 379 m^2	3
Total				**3**		**3**		**3**		**4**		**4**		**4**