

Bayview Subdivision – Stage 11

Traffic Impact Assessment

Dover Investments Pty Ltd



September 2023



byrne.

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Definitions

| Abbreviation | Definition |
|--------------|---|
| AADT | Annual Average Daily Traffic |
| AGTM | Austrroads Guide to Traffic Management |
| ABS | Australian Bureau of Statistics |
| Byrne | Byrne Consultants |
| CoD | City of Darwin |
| DA | Development Application |
| DIPL | Department of Infrastructure and Planning |
| DoS | Degree of Saturation |
| Dover | Dover Investments Pty Ltd |
| LMR | Low-Medium Density Residential |
| LoS | Level of Service |
| LR | Low Density Residential |
| PB | Parsons Brinkerhoff |
| TIA | Traffic Impact Assessment |

1 Introduction

1.1 Project Background

Dover Investments Pty Ltd (Dover) has engaged Byrne Consultants (Byrne) to prepare a Traffic Impact Assessment (TIA) for the proposed development of Stage 11 within the Bayview Subdivision located in Darwin, Northern Territory. Dover have previously completed 10 stages to date with Stage 11 consisting of three (3) new development lots, those being:

1. Lot A – 12 x Low Density Residential (LR) lots
2. Lot B – 2 x LR lots (split existing lot)
3. Lot C – 3 x LR lots. 2 x Low-Medium Density Residential (LMR) lots

From the 2021 Census, Australian Bureau of Statistics (ABS), Bayview consists of approximately 672 habited properties containing 1,702 people within the suburb.

The locations of these development lots are identified in Figure 1.1.

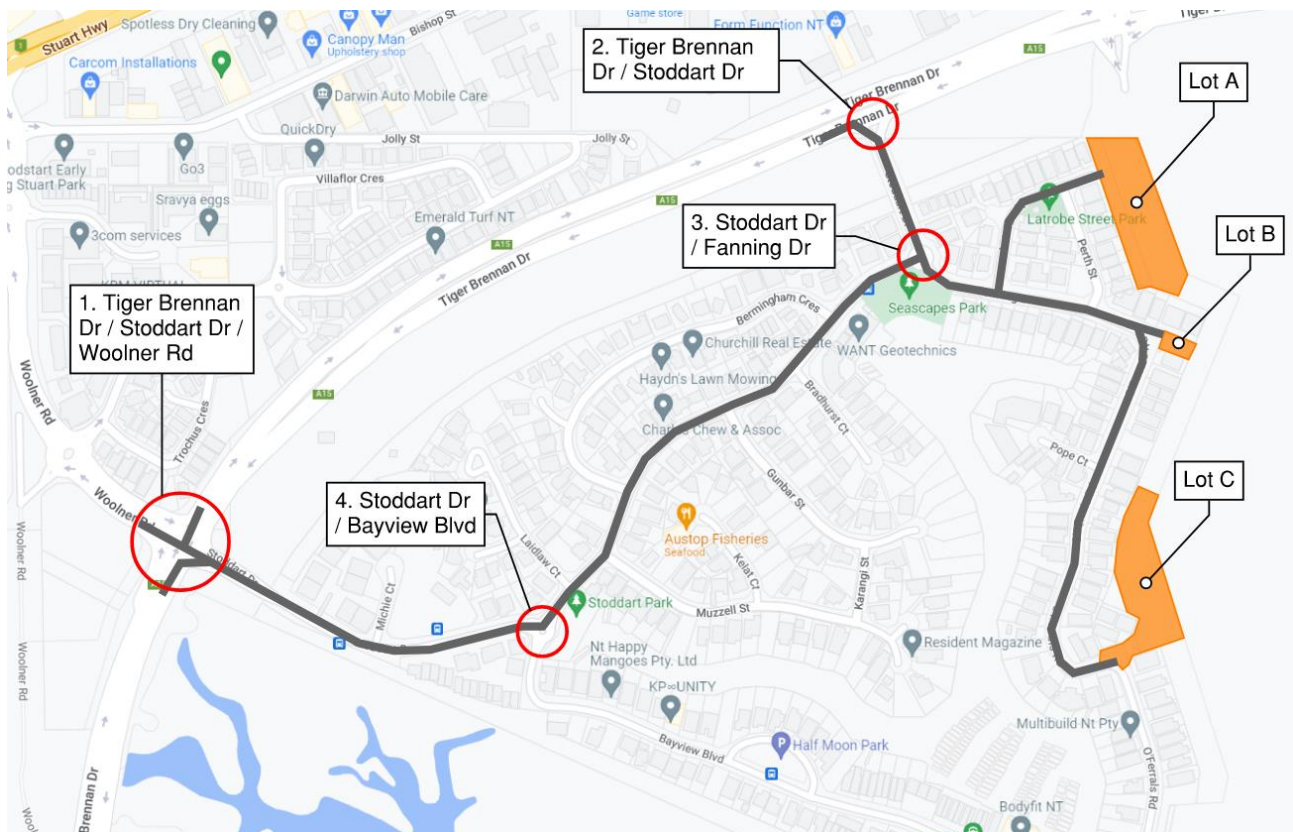


Figure 1.1 – Site Overview (source: Google)

The previous traffic impact study undertaken for the project area include:

1. *Assessment for Traffic Access for Bayview Stage 10*, Parsons Brinkerhoff (PB), June 2003

The information provided in this report has been reviewed for any relevant background information.

1.2 Purpose & Methodology

The purpose of this report is to prepare a TIA report to support the Development Application (DA) submission and identify any traffic generation impacts caused by the proposed development. Comparison between the existing traffic conditions and developed traffic conditions have been undertaken with the assessment scope including the following:

1. Review of background traffic information and previous reporting
2. Carry out peak hour (AM / PM) traffic count surveys at the following intersections
 - i. Stoddard Dr / Tiger Brennan Dr / Woolner Rd
 - ii. Stoddard Dr / Tiger Brennan Dr
 - iii. Stoddard Dr / Fanning Dr
 - iv. Stoddard Dr / Bayview Blvd
3. Calculate future development traffic potential and its impacts to the existing intersections (if any)
4. Calculate peak hour traffic trip generation by the proposed development and directional splits at the existing intersections.
5. Calculate traffic growth rates for the AM/PM peak hour movements at the intersections.
6. Undertake SIDRA intersection analysis for existing case (2022) and development cases (2027 and 2032) cases for the AM /PM peak hours.
7. Identify any upgrade requirements to intersections as a direct result of the development traffic generated by the proposed development (if any).

2 Existing Operations

2.1 Overview

The Bayview residential and development area is connected to Tiger Brennan Drive via Stoddard Drive, as per Figure 1.1 above, in which the 4 highlighted intersections will be the focus of this study including:

1. Stoddard Dr / Tiger Brennan Dr / Woolner Rd
2. Stoddard Dr / Tiger Brennan Dr
3. Stoddard Dr / Fanning Dr
4. Stoddard Dr / Bayview Blvd

2.2 Background Traffic Data

2.2.1 Parsons Brinckerhoff, 2003 Study

An *Assessment of Traffic Access for Bayview Stage 10* report was developed by Parsons Brinckerhoff in 2003. This study assessed the stage 10 expansion of 55 additional dwellings. While this was a similar traffic impact study, the development and information presented in the report is since outdated and was not used for any future assessments as part of this report. Refer to Appendix A for the full report.

2.2.2 Census Growth Data

A review was undertaken of the latest census data to further understand the Bayview subdivision population statistics. A population comparison was made between the 2016 and the 2021 census which outlined a population increase of 1.1% over 5 years. This increase is likely the result of larger occupancies within the existing properties as the Bayview subdivision has not increased in total size (i.e. no new

developments). To account for this potential increased occupancy growth, a 0.2% linear background growth rate was adopted for the Bayview subdivision.

2.2.3 Department of Infrastructure and Planning (DIPL) Traffic Counts

Within the project area, all local roads are controlled by the City of Darwin (CoD) aside from Tiger Brennan Drive which is a Department of Infrastructure Planning, and Logistics (DIPL) controlled asset. DIPL’s latest *Annual Traffic Report, 2021* was reviewed for recent traffic volume counts along Tiger Brennan Drive. The closest traffic count sites along Tiger Brennan Drive are outlined in Figure 2.1. Refer to Appendix B for output from the *Annual Traffic Report, 2021*.

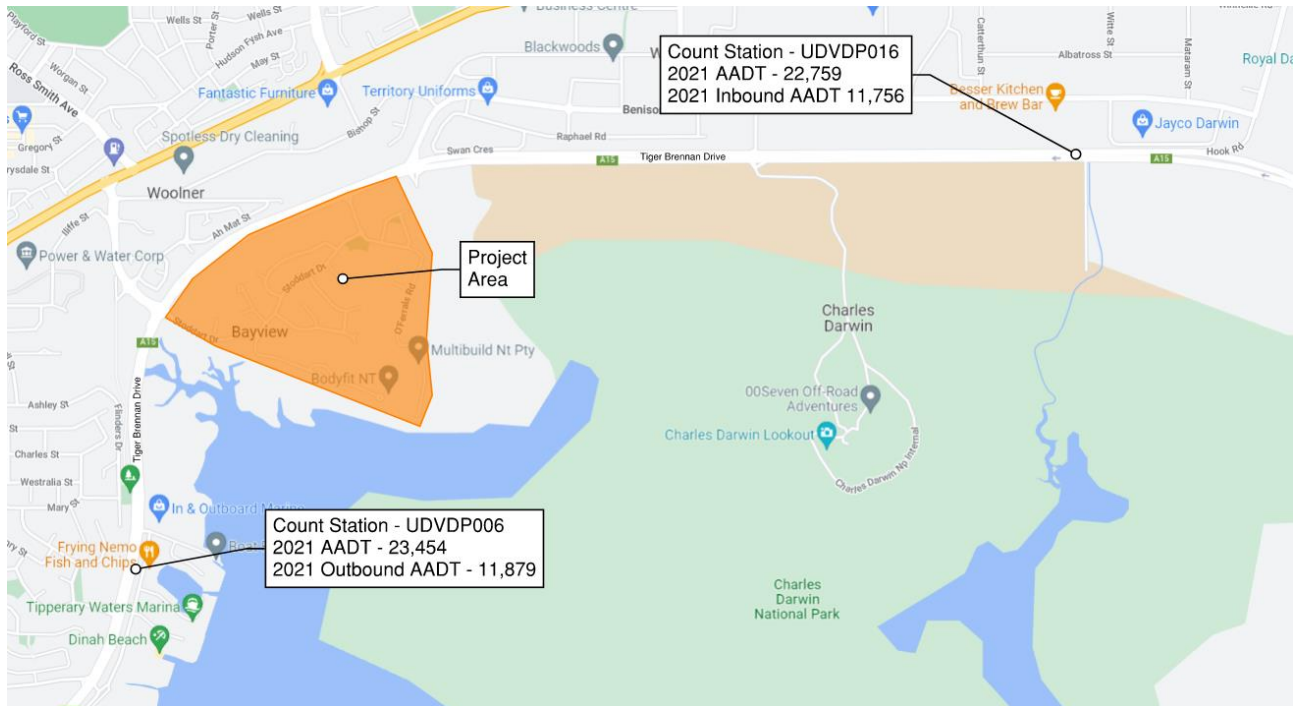


Figure 2.1 – Tiger Brennan Traffic Count Sites (source: Google)

This traffic count information is available annually from 2012-2021 and has been assessed to further understand the approximate traffic growths rate for the traffic catchment.

A large fluctuation was identified for the 2012 data and this was excluded from the assessment. This traffic count data was tabulated and a line of best fit was applied to understand the potential future growth. This line of best fit was nominated as linear due to several increases and decreases in traffic counts throughout the years, making an exponential model un-realistic. The three (3) scenarios for different linear growth lines were reviewed and compared as outlined in Figure 2.2 and Figure 2.3 below:

- Scenario 1 - DIPL traffic data linear line of best fit - Purple Line
- Scenario 2 - 1.5% growth (inbound), 2.0% growth (outbound) - Blue Line
- Scenario 3 - 3.0% growth - Grey Line

From this analysis, the blue line growth rates were adopted:

- Inbound – Linear growth rate of 1.5% adopted
- Outbound – Linear growth rate of 2.0% adopted

These adopted growth rates continue from the last available traffic count AADT (2021) and both exceed the existing linear growth rate model (purple line).

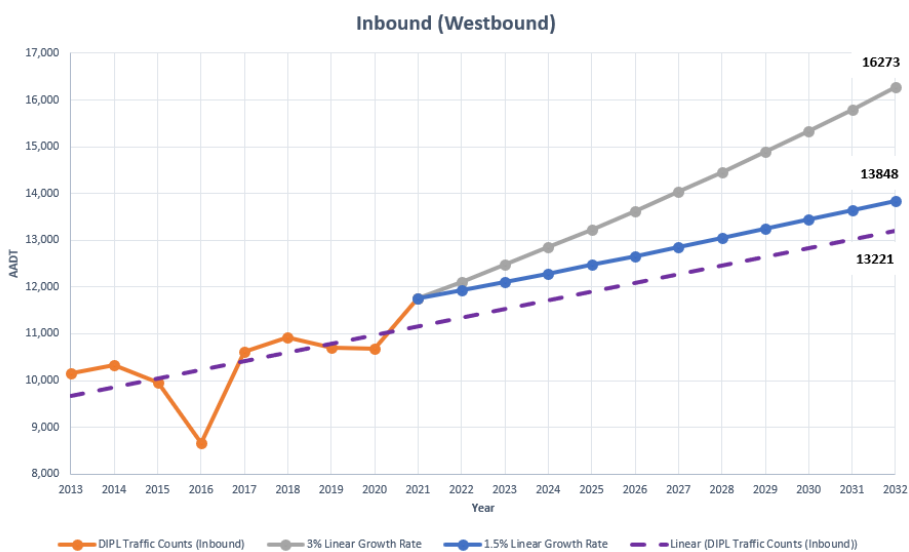


Figure 2.2 – Tiger Brennan Drive Inbound Traffic Growth Assessment

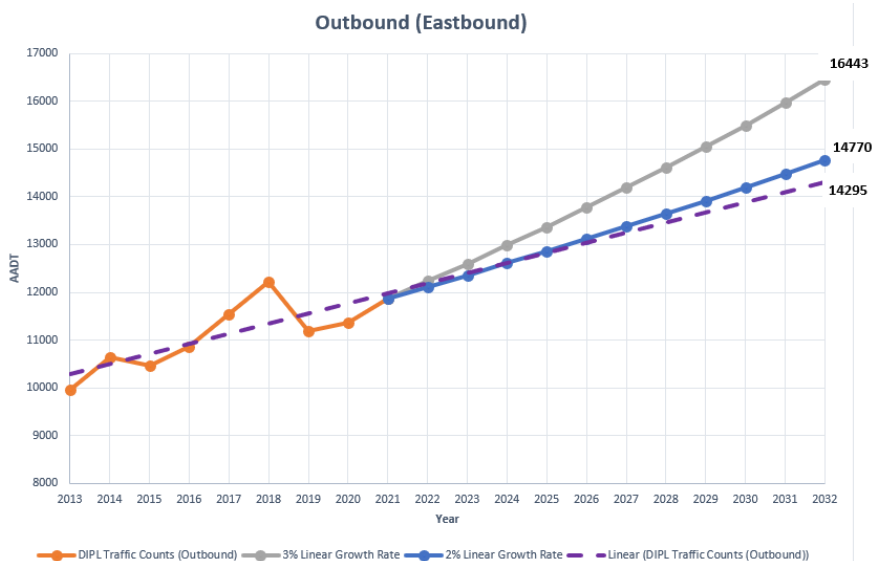


Figure 2.3 – Tiger Brennan Drive Outbound Traffic Growth Assessment

In addition, it should be noted that Tiger Brennan Drive underwent a major capacity upgrade in 2016 with comparison images (before and after) evident in Figure 2.4 below. This is likely to account for some of the traffic fluctuations around these years, particularly for the inbound data.



Figure 2.4 – Tiger Brennan Drive Upgrade Comparison Images (source: Nearmap)

2.2.4 City of Darwin Traffic Counts

Recent traffic count information was received by the City of Darwin within the project area. This included the following counting location, year and AADT:

- Stoddart Drive
 - #47, Aug 2020, 1625 Total Vehicles (7-day average)
 - #24, Sep 2016, 2179 Total Vehicles (7-day average)
- Bayview Boulevard
 - #53, Mar 2016, 684 Total Vehicles (7-day average)
 - #49, Mar 2016, 732 Total Vehicles (7-day average)
- Woolner Road
 - Top of Hill, Nov 2021, 6882 Total Vehicles (7-day average)
 - Bottom of Hill, Nov 2021, 6840 Total Vehicles (7-day average)
 - Bishop Street – Brewery Place, Sep 2015, 3642 Southbound Vehicles (7-day average)
 - Stuart highway - Bishop Street, Sep 2015, 3063 Southbound Vehicles (7-day average)

This information was reviewed however, it was difficult to determine any particular growth patterns or vehicle direction splits based on inconsistent information (i.e. Stoddart Drive decreasing in traffic volumes within a 5-year span, with counts occurring at slightly different locations).

This information was noted but ultimately disregarded in favour of the manual peak hour traffic counts collected. As the DIPL data had a constant and longer collection time, the growth rates along Tiger Brennan Drive have been adopted for Woolner Road for a consistent assessment approach. Refer to Appendix C for CoD traffic count reports.

2.2.5 Adopted Growth Rates

From reviewing the information outlined above, the following linear growth rates in Figure 2.5 have been adopted for this impact assessment.

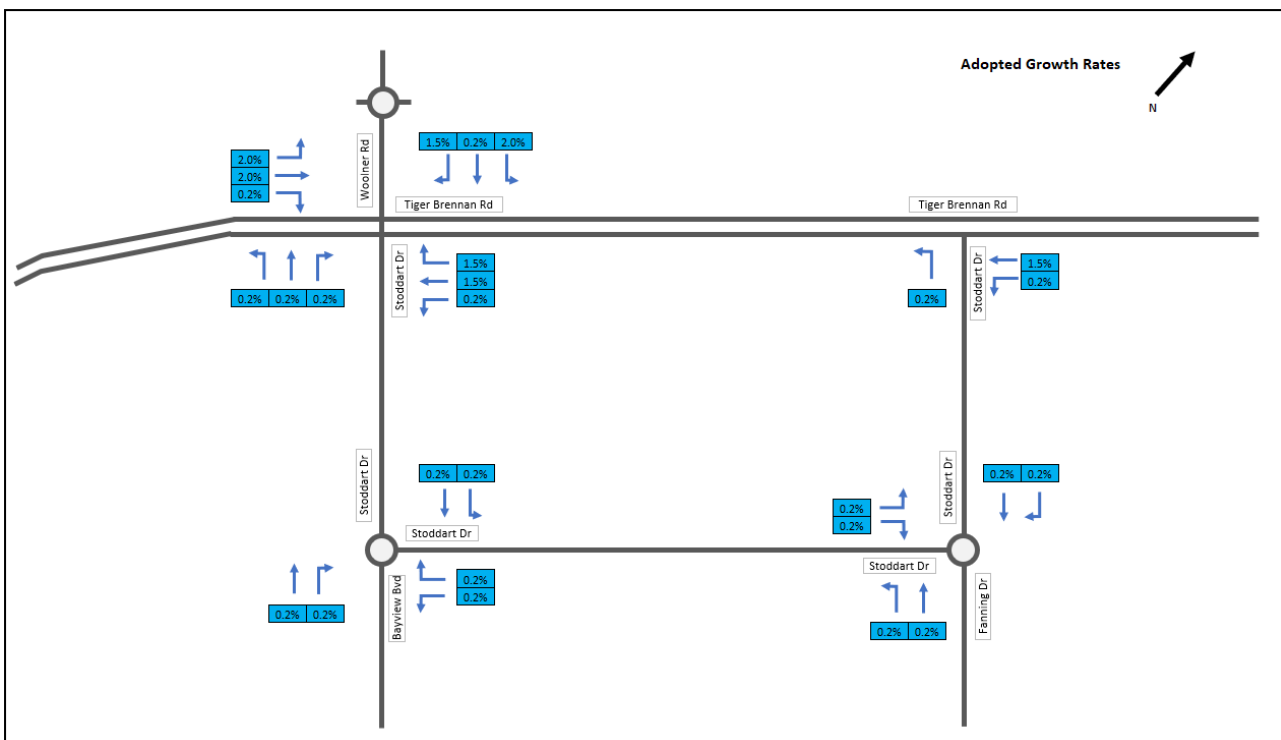


Figure 2.5 – Adopted Project Growth Rates

2.3 Traffic Survey Information

2.3.1 Intersection Traffic Counts

Byrne have conducted intersection traffic surveys for the peak hour traffic volumes (AM and PM) at each of the four (4) key intersections. These counts were undertaken on 1 day for each site, over a 2-hour AM/PM peak period and included counts of heavy vehicles and identified pedestrians / cyclists. The AM peak hour period surveyed was between 7:00AM – 9:00AM and the PM period between 4:00PM – 6:00PM. These volumes for each site are summarised in Figure 2.6 below with the heavy vehicle counts summarised in Figure 2.7.

For the full traffic count survey information, refer to Appendix D of this report.

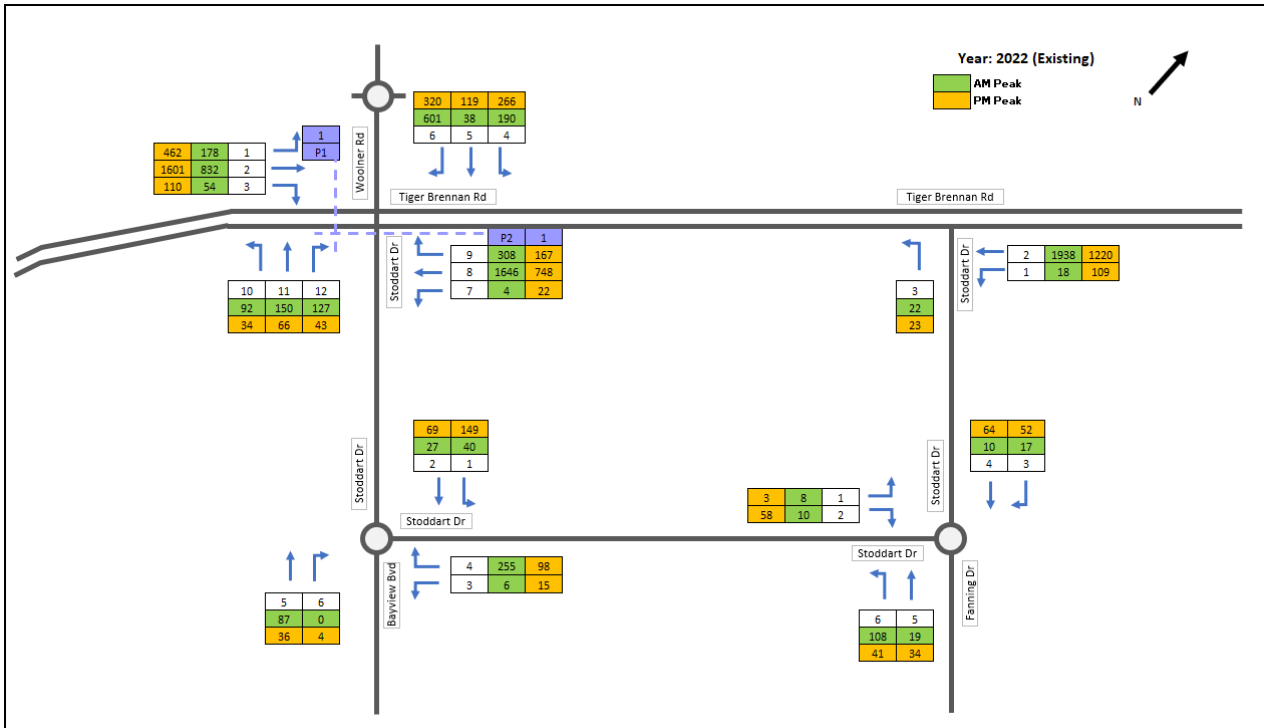


Figure 2.6 – Traffic Count Information Summary

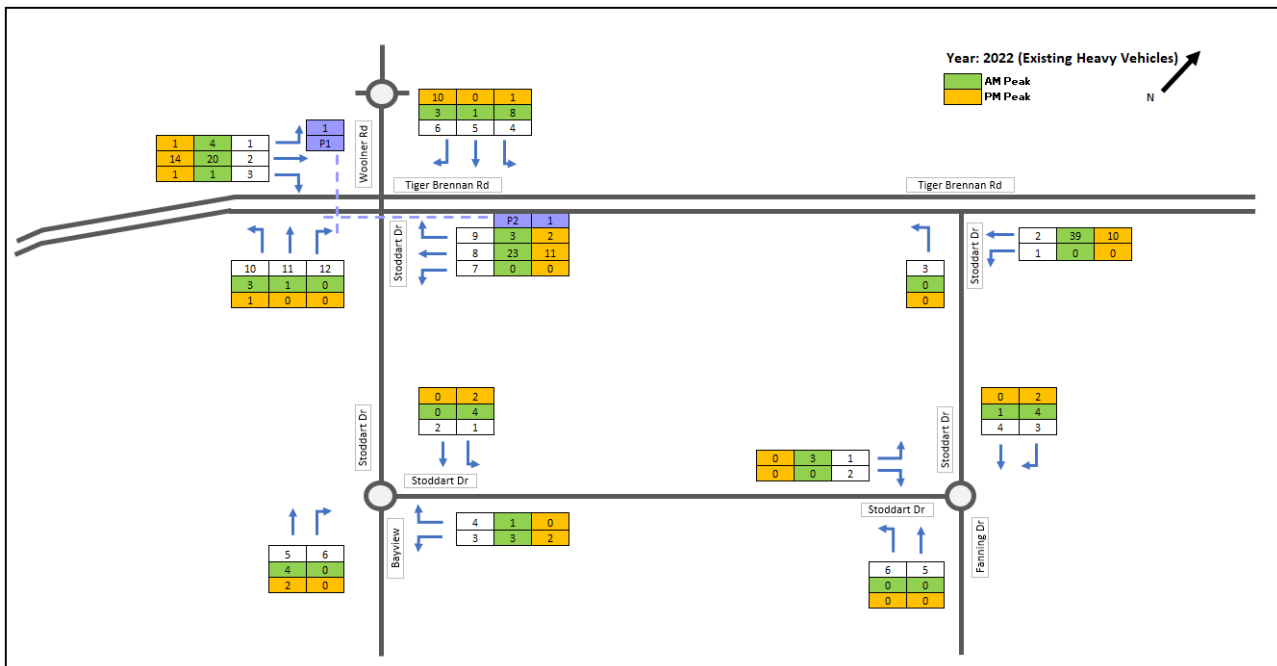


Figure 2.7 – Traffic Count Heavy Vehicle Summary

2.3.2 Traffic Movement Directional Splits

From the traffic count information, directional splits were calculated for any generated development traffic focussing on entering / exiting from Fanning Drive and how those volumes will be dispersed over the four (4) key intersections. These splits are summarised in Figure 2.8.

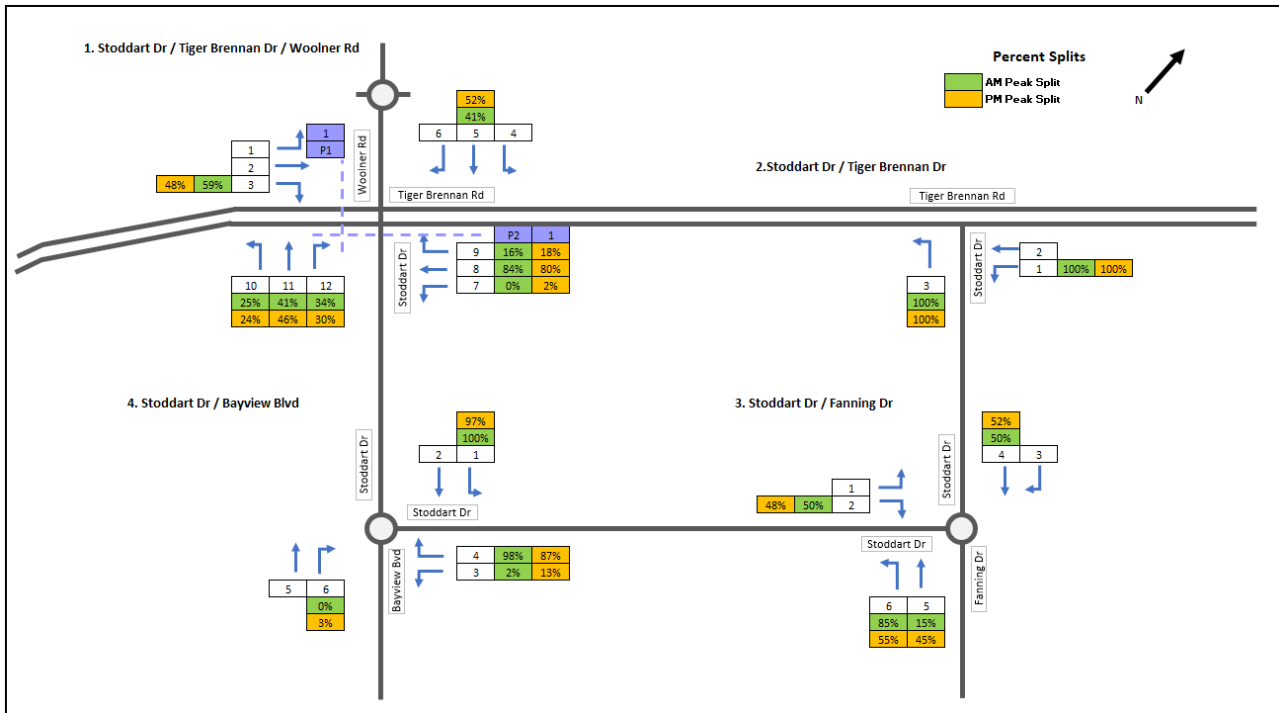


Figure 2.8 – Development Traffic Generation Splits

3 Development Traffic

3.1 Development Traffic Generation

The proposed development consists of 17 LR lots and 2 LMR lots. The LMR lots are assumed to account for approximately 8 individual residences, for a total of 28 residences. A trip generation factor of 10.7 was used per residency in accordance with *Austrads Guide to Traffic Management* (AGTM P12, 2020, Appendix D.1 Low Density Sydney). This is similar to the previous study conducted by PB who used a trip generation factor of 10 per residency. Using a nominated 10% AADT for peak hour flows, the total trips calculated during a peak hour period for the proposed development is estimated to be 31 vehicles. This is outlined in Table 3.1.

Table 3.1 – Development Trip Generation

| Development | Equivalent LR Lots | Development Daily Trip Generation (veh trips) | Development Peak Hour Trip Generation (10%) (veh trips) |
|---|--------------------|---|---|
| Lot A – 12 x LR lots | 12 | 150 | 15 |
| Lot B – 2 x LR lots | 2 | 22 | 3 |
| Lot C – 3 x LR lots. 2 x LMR lots (duplex + 7 townhouses) | 11 | 129 | 13 |
| TOTAL | 25 | 301 | 31 |

3.2 Development Traffic Distribution

With the development traffic generation estimated, these peak hour figures were then applied to the 4 intersections throughout the road network assessment area. Starting with Intersection 3 (Fanning Drive / Stoddart Drive), the 31 generated trips were distributed using the traffic movement splits identified in Section 2.3.2. The results are summarised in Figure 3.1.

In addition, Figure 3.2 outlines the percent increase for the generated development traffic for each vehicle movement. All intersections exhibit at least 1 leg with an increase of 5.0% or greater, in which assessment of the intersection is required. The development does not anticipate an increase of heavy vehicle volumes within the subdivision. It is anticipated that an increase in Equivalent Standard Axels (ESA) will be less than 5.0% and as such, no existing pavement assessment has been conducted.

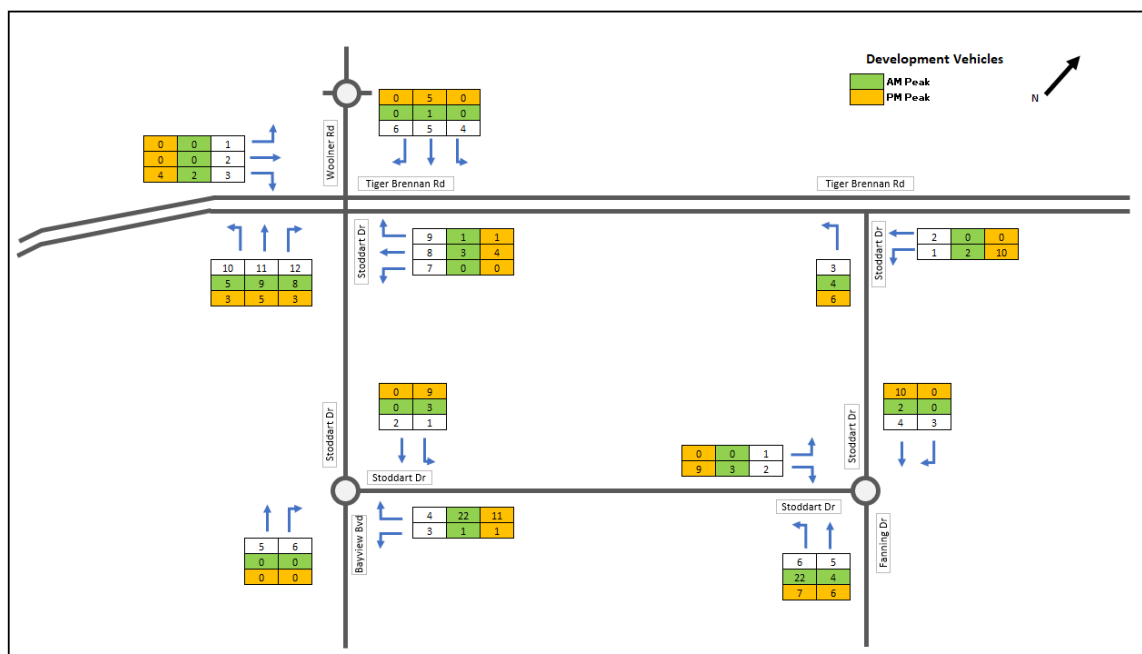


Figure 3.1 – Development Generated Vehicle Movements (2022)

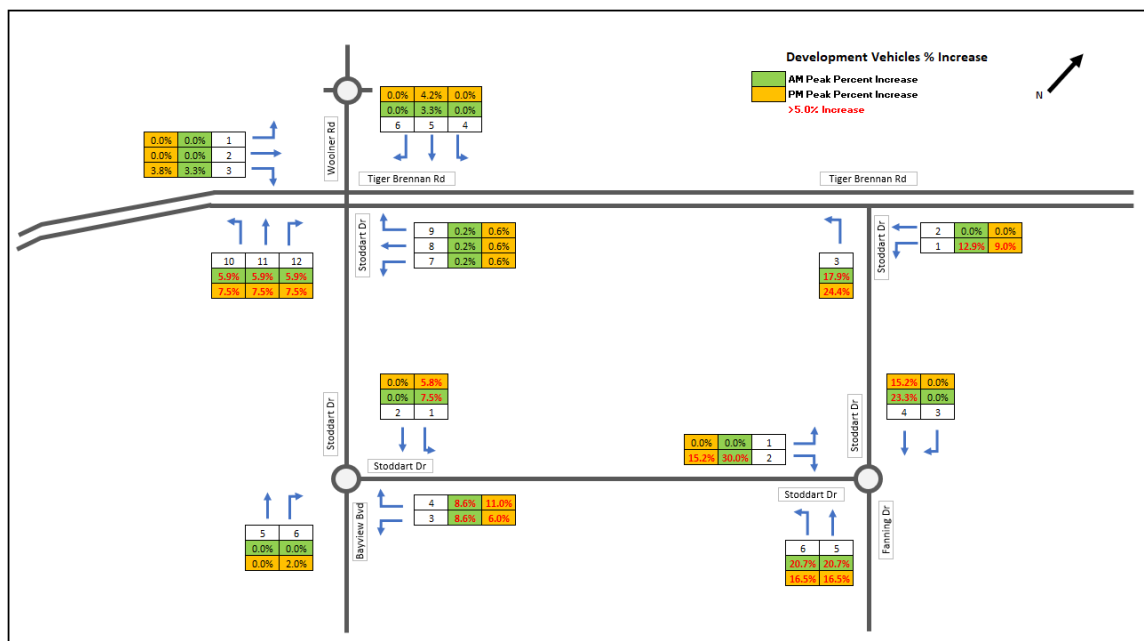


Figure 3.2 – Development Generated Vehicle Movement Percent Increases (2022)

4 Traffic Analysis

4.1 Growth Scenarios & Intersection Analysis

With the existing traffic counts, selected growth rates and estimated development vehicle generation, the following developed traffic scenarios were analysed:

- 2022 Background, AM and PM peak, Figure 2.6
- 2022 Background + Development, AM and PM peak, Figure 4.1
- 2027 Background + Development, AM and PM peak, Figure 4.2
- 2032 Background + Development, AM and PM peak, Figure 4.3

These traffic volume values are tabulated in Appendix E including heavy vehicle volumes. The scenarios were then modelled in SIDRA Intersection 9.0 software as separate intersections discussed in the following sections. Movement summary SIDRA modelling results for each intersection is compiled in Appendix F.

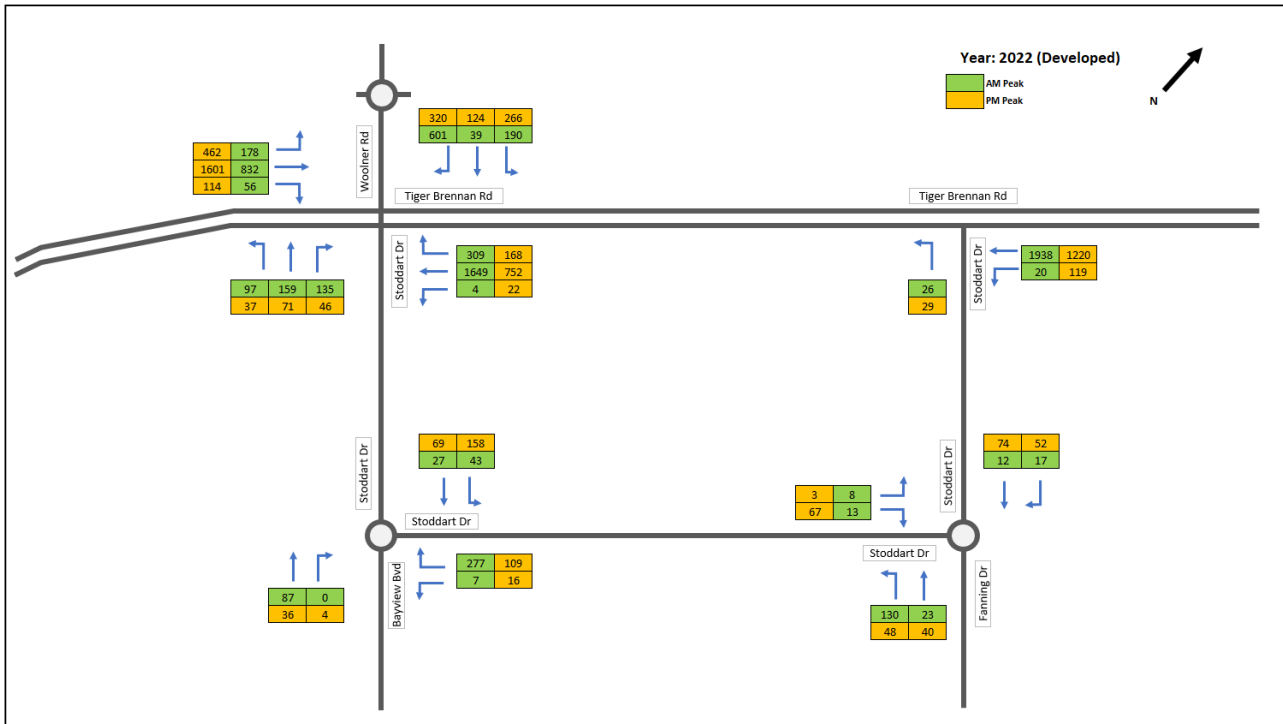


Figure 4.1 – 2022 Background + Development Peak Hours (Base Case)

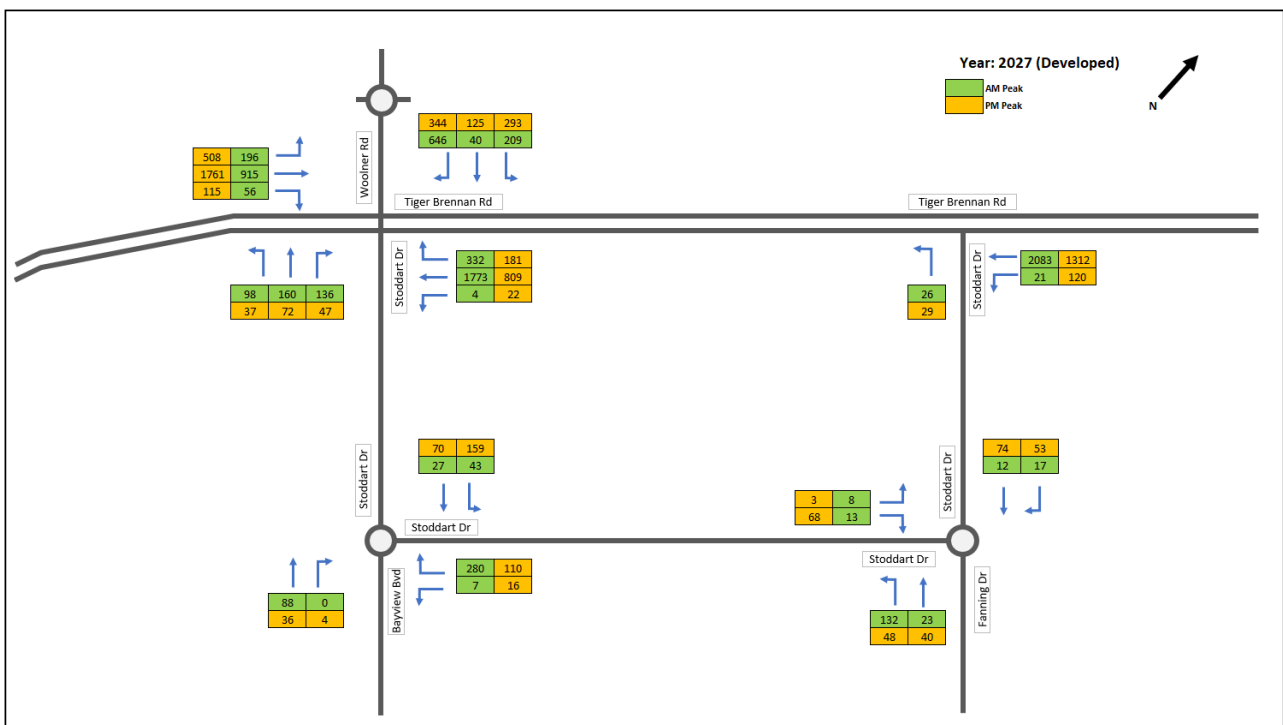


Figure 4.2 – 2027 Background + Development Peak Hours (5-Year Design Horizon)

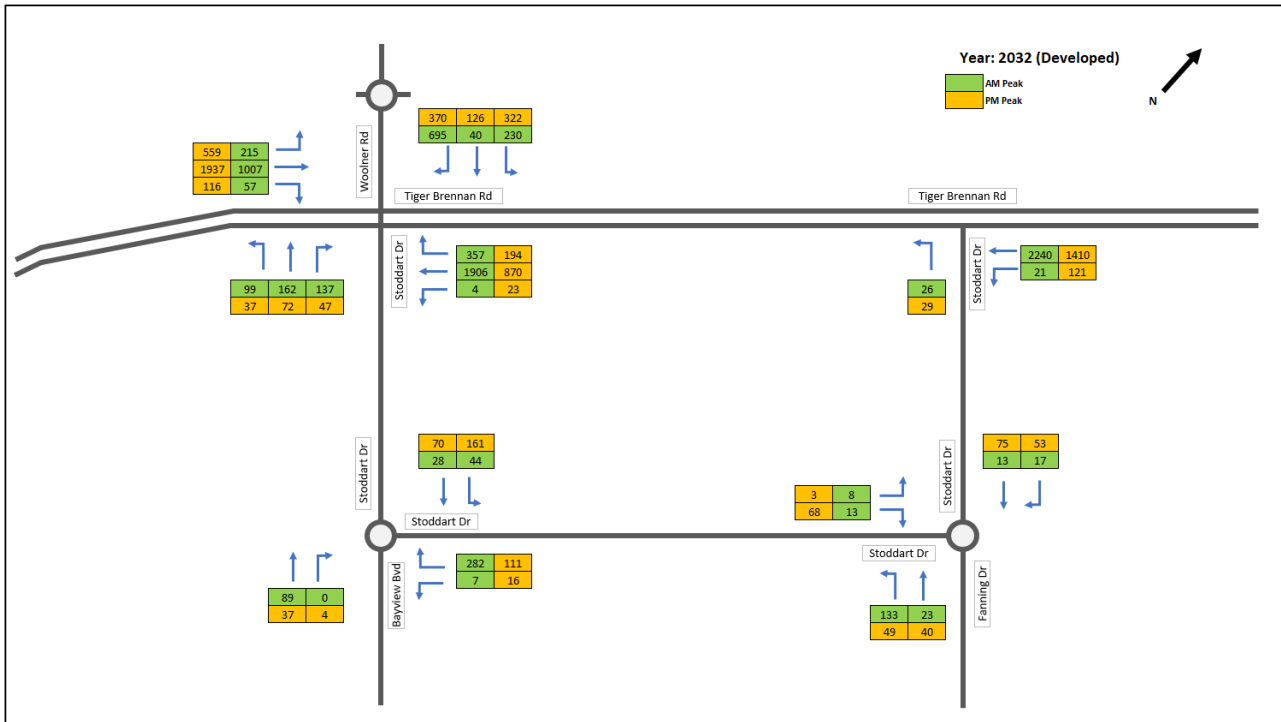


Figure 4.3 – 2032 Background + Development Peak Hours (10-Year Design Horizon)

4.1.1 SIDRA Intersection 1 Stoddard Dr / Tiger Brennan Dr / Woolner Rd

Intersection 1 (Stoddard Dr / Tiger Brennan Dr / Woolner Rd) is a major signalised intersection within the study area exhibiting large amount of lane configurations and complexities as per Figure 4.4. A fixed cycle time of 120 seconds was adopted to allow simpler comparison between the SIDRA models for the purposes of this study. In addition to the growth scenarios outlined above, the background traffic for 2027 and 2032 were modelled separately to further analyse the effect of the development traffic on the intersection.

An additional 31 vehicles are estimated to travel through during peak times and the modelling showed no capacity concerns. In comparing the Existing 2022 and the Developed 2022 volumes, the impact on this intersection is relatively minor. The majority of the intersection worsening is identified by the background growth along Tiger Brennan Drive and Woolner Road. Table 4.1, Table 4.2 and Table 4.3 outline the Degree of Saturation, Average Delay and Queue Length for this intersection.

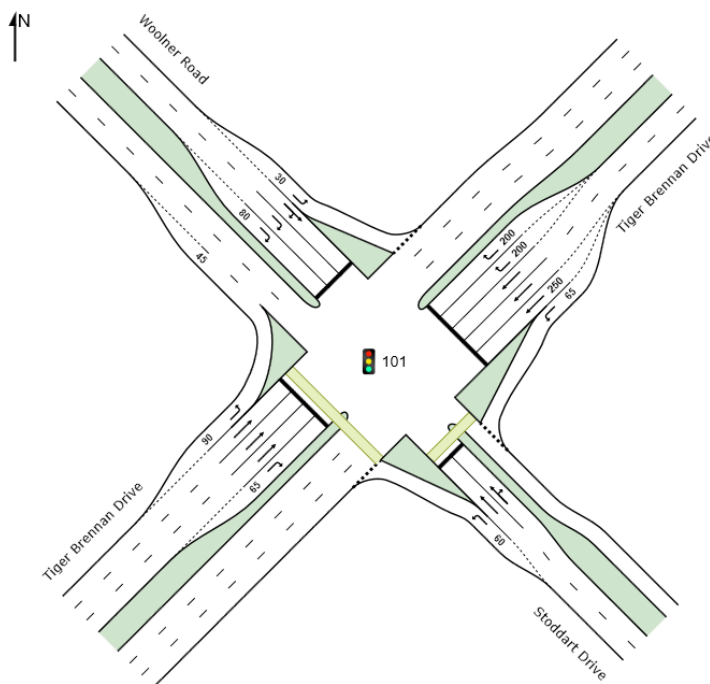


Figure 4.4 – Intersection 1 Modelled SIDRA Layout

Table 4.1 – Intersection 1 Degree of Saturation

| AM Peak Degree of Saturation | | | | | | |
|--------------------------------|--------|------------|--------|------------|--------|------------|
| Approach | E 2022 | B + D 2022 | B 2027 | B + D 2027 | B 2032 | B + D 2032 |
| SouthEast: Stoddart Drive | 0.767 | 0.751 | 0.777 | 0.821 | 0.857 | 0.829 |
| NorthEast: Tiger Brennan Drive | 0.753 | 0.756 | 0.809 | 0.812 | 0.87 | 0.872 |
| NorthWest: Woolner Road | 0.75 | 0.751 | 0.813 | 0.815 | 0.841 | 0.842 |
| SouthWest: Tiger Brennan Drive | 0.372 | 0.38 | 0.41 | 0.41 | 0.451 | 0.46 |
| PM Peak Degree of Saturation | | | | | | |
| Approach | E 2022 | B + D 2022 | B 2027 | B + D 2027 | B 2032 | B + D 2032 |
| SouthEast: Stoddart Drive | 0.6 | 0.644 | 0.613 | 0.663 | 0.619 | 0.663 |
| NorthEast: Tiger Brennan Drive | 0.477 | 0.443 | 0.561 | 0.517 | 0.661 | 0.604 |
| NorthWest: Woolner Road | 0.613 | 0.621 | 0.703 | 0.712 | 0.757 | 0.766 |
| SouthWest: Tiger Brennan Drive | 0.628 | 0.613 | 0.691 | 0.684 | 0.767 | 0.761 |

Table 4.2 – Intersection 1 Average Delay

| AM Peak Average Delay (s) | | | | | | |
|--------------------------------|--------|------------|--------|------------|--------|------------|
| Approach | E 2022 | B + D 2022 | B 2027 | B + D 2027 | B 2032 | B + D 2032 |
| SouthEast: Stoddart Drive | 52.1 | 51.1 | 52.9 | 54.6 | 57.5 | 55.8 |
| NorthEast: Tiger Brennan Drive | 37.5 | 38.3 | 39.5 | 39.6 | 44.7 | 47.5 |
| NorthWest: Woolner Road | 46.4 | 46.4 | 48.7 | 49 | 49.9 | 50 |
| SouthWest: Tiger Brennan Drive | 25.1 | 25.8 | 25.3 | 25.4 | 25.7 | 26.3 |
| PM Peak Average Delay (s) | | | | | | |
| Approach | E 2022 | B + D 2022 | B 2027 | B + D 2027 | B 2032 | B + D 2032 |
| SouthEast: Stoddart Drive | 53.3 | 52.9 | 52.9 | 53.3 | 52.9 | 53.5 |
| NorthEast: Tiger Brennan Drive | 25.9 | 26.2 | 25.4 | 25.7 | 25.6 | 25.7 |
| NorthWest: Woolner Road | 39.9 | 40 | 42.3 | 42.5 | 44.2 | 44.6 |
| SouthWest: Tiger Brennan Drive | 21 | 21.6 | 20.6 | 21.1 | 20.8 | 21.4 |

Table 4.3 – Intersection 1 Queue Length (m)

| AM Peak Queue Length (m) | | | | | | |
|--------------------------------|--------|------------|--------|------------|--------|------------|
| Approach | E 2022 | B + D 2022 | B 2027 | B + D 2027 | B 2032 | B + D 2032 |
| SouthEast: Stoddart Drive | 64.3 | 67.5 | 65.5 | 70.8 | 69.5 | 71.9 |
| NorthEast: Tiger Brennan Drive | 201.1 | 204.6 | 227.3 | 228.4 | 269.4 | 282 |
| NorthWest: Woolner Road | 99.9 | 100.2 | 113.1 | 113.8 | 125.6 | 125.9 |
| SouthWest: Tiger Brennan Drive | 84.3 | 85.5 | 94.4 | 94.4 | 106.1 | 107.7 |
| PM Peak Queue Length (m) | | | | | | |
| Approach | E 2022 | B + D 2022 | B 2027 | B + D 2027 | B 2032 | B + D 2032 |
| SouthEast: Stoddart Drive | 25.4 | 27.4 | 26 | 28.4 | 26.3 | 28.4 |
| NorthEast: Tiger Brennan Drive | 60.9 | 62.3 | 64 | 65.6 | 68.4 | 70.2 |
| NorthWest: Woolner Road | 64.2 | 65.2 | 72 | 73.2 | 79.4 | 80.8 |
| SouthWest: Tiger Brennan Drive | 171.1 | 174.7 | 211.3 | 209 | 243.5 | 249.7 |

4.1.2 SIDRA Intersection 2 Stoddard Dr / Tiger Brennan Dr

Intersection 2 (Stoddard Dr / Tiger Brennan Dr) is an unsignalised left in / left out intersection comprising of left slip lanes as per Figure 4.5. In comparing the Existing 2022 and the Developed 2022 volumes, the impact on this intersection is relatively minor. Table 4.4, Table 4.5 and Table 4.6 outline the Degree of Saturation, Average Delay and Queue Length for this intersection.

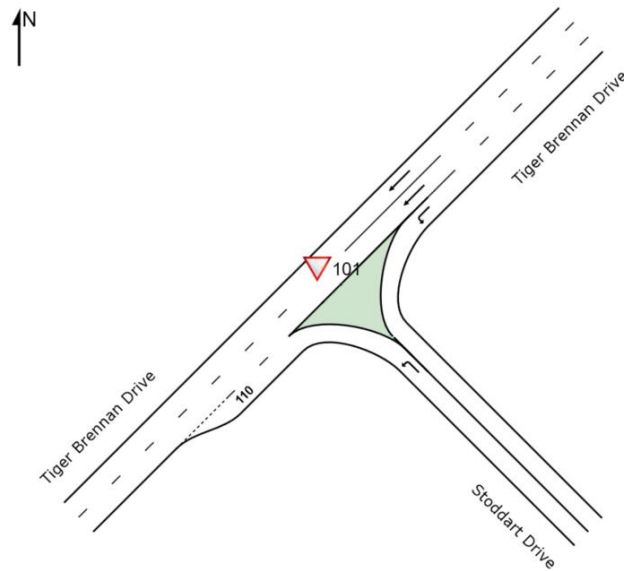


Figure 4.5 – Intersection 2 Modelled SIDRA Layout

Table 4.4 – Intersection 2 Degree of Saturation

| Approach | AM Peak Degree of Saturation | | | PM Peak Degree of Saturation | | |
|--------------------------------|------------------------------|------------|------------|------------------------------|------------|------------|
| | E 2022 | B + D 2022 | B + D 2032 | E 2022 | B + D 2022 | B + D 2032 |
| SouthEast: Stoddart Drive | 0.012 | 0.015 | 0.015 | 0.013 | 0.016 | 0.017 |
| NorthEast: Tiger Brennan Drive | 0.524 | 0.524 | 0.606 | 0.328 | 0.328 | 0.379 |

Table 4.5 – Intersection 2 Average Delay

| Approach | AM Peak Average Delay (s) | | | PM Peak Average Delay (s) | | |
|--------------------------------|---------------------------|------------|------------|---------------------------|------------|------------|
| | E 2022 | B + D 2022 | B + D 2032 | E 2022 | B + D 2022 | B + D 2032 |
| SouthEast: Stoddart Drive | 8.8 | 8.9 | 10.3 | 7 | 7 | 7.4 |
| NorthEast: Tiger Brennan Drive | 4.4 | 4.4 | 4.4 | 4.3 | 4.3 | 4.4 |

Table 4.6 – Intersection 2 Queue Length (m)

| Approach | AM Peak Queue Length (m) | | | PM Peak Queue Length (m) | | |
|--------------------------------|--------------------------|------------|------------|--------------------------|------------|------------|
| | E 2022 | B + D 2022 | B + D 2032 | E 2022 | B + D 2022 | B + D 2032 |
| SouthEast: Stoddart Drive | 0 | 0 | 0 | 0 | 0 | 0 |
| NorthEast: Tiger Brennan Drive | 0 | 0 | 0 | 0 | 0 | 0 |

4.1.3 SIDRA Intersection 3 Stoddard Dr / Fanning Dr

Intersection 3 (Stoddard Dr / Fanning Dr) is three-legged roundabout as per Figure 4.6. In comparing the Existing 2022 and the Developed 2022 volumes, the impact on this intersection is relatively minor. Table 4.7, Table 4.8 and Table 4.9 outline the Degree of Saturation, Average Delay and Queue Length for this intersection.

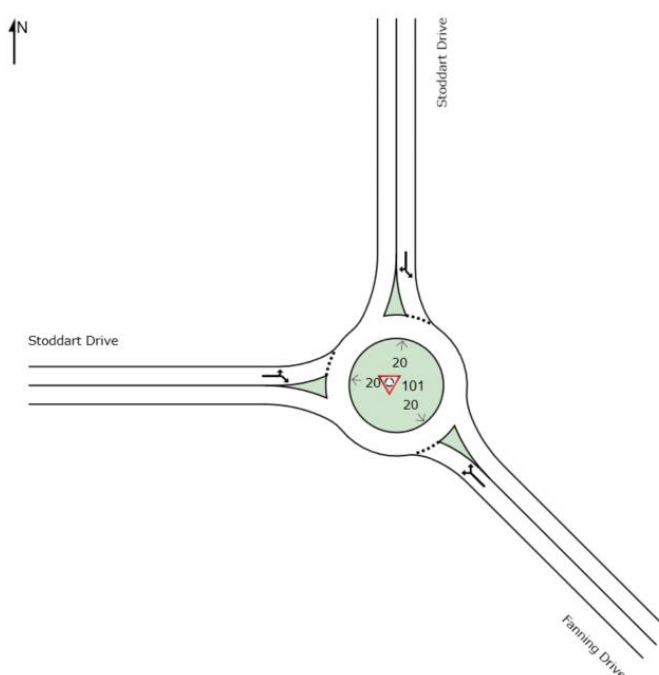


Figure 4.6 – Intersection 3 Modelled SIDRA Layout

Table 4.7 – Intersection 3 Degree of Saturation

| Approach | AM Peak Degree of Saturation | | | PM Peak Degree of Saturation | | |
|--------------------------|------------------------------|--------|--------|------------------------------|--------|--------|
| | E 2022 | D 2022 | D 2032 | E 2022 | D 2022 | D 2032 |
| SouthEast: Fanning Drive | 0.089 | 0.106 | 0.108 | 0.059 | 0.068 | 0.07 |
| North: Stoddart Drive | 0.021 | 0.023 | 0.024 | 0.09 | 0.099 | 0.101 |
| West: Stoddart Drive | 0.015 | 0.017 | 0.018 | 0.046 | 0.053 | 0.055 |

Table 4.8 – Intersection 3 Average Delay

| Approach | AM Peak Average Delay (s) | | | PM Peak Average Delay (s) | | |
|--------------------------|---------------------------|--------|--------|---------------------------|--------|--------|
| | E 2022 | D 2022 | D 2032 | E 2022 | D 2022 | D 2032 |
| SouthEast: Fanning Drive | 4.4 | 4.4 | 4.4 | 5.7 | 5.8 | 5.8 |
| North: Stoddart Drive | 7.1 | 6.9 | 6.8 | 6.2 | 6.1 | 6.1 |
| West: Stoddart Drive | 6.2 | 6.5 | 6.5 | 7.6 | 7.7 | 7.7 |

Table 4.9 – Intersection 3 Queue Length (m)

| Approach | AM Peak Queue Length (m) | | | PM Peak Queue Length (m) | | |
|--------------------------|--------------------------|--------|--------|--------------------------|--------|--------|
| | E 2022 | D 2022 | D 2032 | E 2022 | D 2022 | D 2032 |
| SouthEast: Fanning Drive | 3 | 3.7 | 3.8 | 2 | 2.4 | 2.5 |
| North: Stoddart Drive | 0.8 | 0.9 | 0.9 | 3.2 | 3.5 | 3.6 |
| West: Stoddart Drive | 0.5 | 0.6 | 0.7 | 1.6 | 1.8 | 1.9 |

4.1.4 SIDRA Intersection 4 Stoddard Dr / Bayview Blvd

Intersection 4 (Stoddard Dr / Bayview Blvd) is three-legged roundabout as per Figure 4.7. In comparing the Existing 2022 and the Developed 2022 volumes, the impact on this intersection is relatively minor. Table 4.10, Table 4.11 and Table 4.12 outline the Degree of Saturation, Average Delay and Queue Length for this intersection.

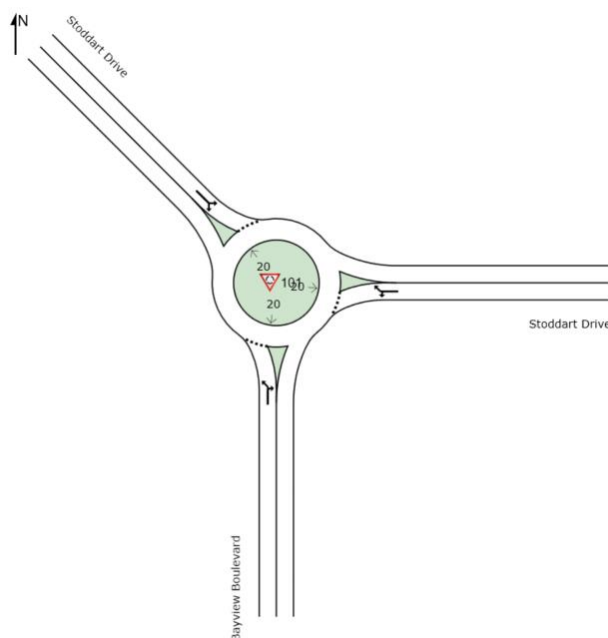


Figure 4.7 – Intersection 4 Modelled SIDRA Layout

Table 4.10 – Intersection 4 Degree of Saturation

| Approach | AM Peak Degree of Saturation | | | PM Peak Degree of Saturation | | |
|---------------------------|------------------------------|--------|--------|------------------------------|--------|--------|
| | E 2022 | D 2022 | D 2032 | E 2022 | D 2022 | D 2032 |
| South: Bayview Boulevard | 0.085 | 0.086 | 0.089 | 0.034 | 0.034 | 0.035 |
| East: Stoddart Drive | 0.181 | 0.196 | 0.2 | 0.09 | 0.098 | 0.099 |
| NorthWest: Stoddart Drive | 0.043 | 0.044 | 0.047 | 0.137 | 0.142 | 0.143 |

Table 4.11 – Intersection 4 Average Delay

| Approach | AM Peak Average Delay (s) | | | PM Peak Average Delay (s) | | |
|---------------------------|---------------------------|--------|--------|---------------------------|--------|--------|
| | E 2022 | D 2022 | D 2032 | E 2022 | D 2022 | D 2032 |
| South: Bayview Boulevard | 5.1 | 5.2 | 5.3 | 4.7 | 4.8 | 4.8 |
| East: Stoddart Drive | 7.7 | 7.7 | 7.7 | 7.5 | 7.5 | 7.5 |
| NorthWest: Stoddart Drive | 5.4 | 5.3 | 5.3 | 5 | 4.9 | 4.9 |

Table 4.12 – Intersection 4 Queue Length (m)

| Approach | AM Peak Queue Length (m) | | | PM Peak Queue Length (m) | | |
|---------------------------|--------------------------|--------|--------|--------------------------|--------|--------|
| | E 2022 | D 2022 | D 2032 | E 2022 | D 2022 | D 2032 |
| South: Bayview Boulevard | 3.1 | 3.1 | 3.3 | 1.2 | 1.2 | 1.2 |
| East: Stoddart Drive | 6.7 | 7.4 | 7.6 | 3.1 | 3.4 | 3.4 |
| NorthWest: Stoddart Drive | 1.7 | 1.7 | 1.8 | 5.3 | 5.5 | 5.6 |

5 Conclusions

A summary of the Traffic Impact Assessment modelling results are as follows:

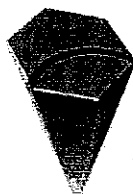
- Intersection 1 (Stoddard Dr / Tiger Brennan Dr / Woolner Rd) exhibited minor changes in the intersection performance due to the development traffic generation (no notable change). The intersection performance with respect to degree of saturation, average delay and queue length lowered during the 2027 and 2032 scenarios due to the applied background growth factors on Tiger Brennan Drive and Woolner Road, not the development traffic. It is beyond the scope of this TIA to suggest any upgrades to this intersection and impact by the proposed development is minimal.
- Intersection 2 (Stoddard Dr / Tiger Brennan Dr) exhibited a LoS of B and DoS ≤ 0.6 during the 2032 growth scenario (AM / PM) due to growth rates applied to Tiger Brennan Drive. This intersection performs satisfactorily with the proposed development traffic.
- Intersection 3 (Stoddard Dr / Fanning Dr) and Intersection 4 (Stoddard Dr / Bayview Blvd) exhibited a LoS of A and a DoS ≤ 0.2 for all growth scenarios performing satisfactorily with the proposed development traffic.

Appendix A Assessment for Traffic Access, PB, June 2003

Assessment of Traffic Access for Bayview Stage 10

12 June 2003

Bayview Haven Joint Venture



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1. Introduction

The existing Bayview development has been designed to accommodate some 750 dwellings in a mix of differing densities, located within 9 discrete residential stages (Figure 1.1). Approved traffic access arrangements to the estate comprise:

- Full movement access via a signalised four way intersection at Tiger Brennan Drive/Woolner Road/Bayview Drive
- A left in-left out arrangement at the intersection of Stoddart Drive with Tiger Brennan Drive, located some 1.25 km to the east of Woolner Road.

During initial development of Bayview, full access was provided via the Stoddart Drive/Tiger Brennan Drive intersection. The design provided for left in/left out access, plus a protected right turn into Stoddart Drive and a left turn deceleration lane from Tiger Brennan Drive into Stoddart Drive. Access at this location was subsequently down graded to the current left in-left out arrangement when access via the intersection at Woolner Road was later constructed. The current access arrangements effectively require:

- All traffic entering Bayview (other than from the east via Tiger Brennan Drive) to use the Woolner Road intersection. In particular, traffic to the eastern precincts of the estate (Stages 7b, 8a, 8b, and 9) must all enter via the Woolner Road intersection, requiring travel via the internal Bayview road network to their destinations. More direct access off Tiger Brennan Drive is not enabled as noted above.
- Traffic exiting Bayview can either travel via the Stoddart Drive/Tiger Brennan Drive (TBD) intersection (left turning vehicles) or via the Woolner Road intersection. The high volume of inbound traffic on TBD in the AM peak period to the CBD constrains the volume of traffic able to exit from Stoddart Drive, with a significant proportion expected to reroute through Bayview to exit via Woolner Road to reduce delay.

This present study was commissioned by the Bayview Joint Venture to undertake an assessment of traffic impacts of a possible extension to the existing Bayview development, in the form of approximately 55 additional dwellings in Stage 10, located in an area abutting the eastern fringe of Bayview, with access via Fanning Drive.

In particular, the study was to:

- Undertake an assessment of access arrangements to Bayview for the existing development, and thence to determine how these might be impacted upon by traffic growth on Tiger Brennan Drive past Bayview.
- Undertake a traffic assessment of the effects of the Stage 10, and thence to determine required changes in access requirements.
- Develop and assess options for upgrading the eastern access to Bayview at the Stoddart Drive/TBD intersection.

Upgrading of the Stoddart Drive/TBD intersection would deliver two main future benefits:

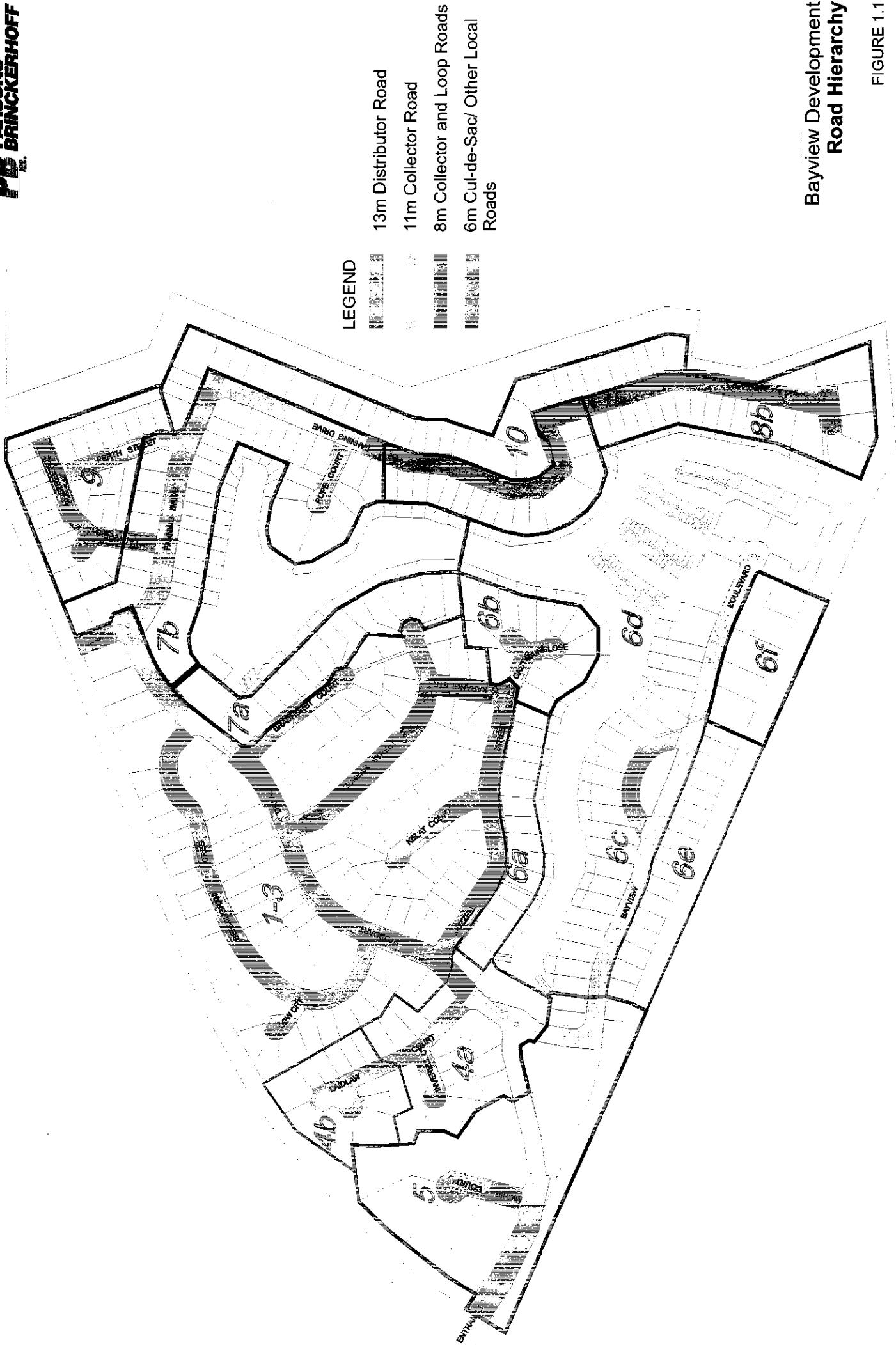
- Reducing the potential scope of and timing for further upgrading of the Woolner Road/TBD/Bayview Drive intersection in response to future development at Bayview.

- Reducing the through traffic impacts of demand generated by existing stages of Bayview to the east (Stages 7b, 8a, 8b, 9), and from the proposed Stage 10 extension, on residents within Bayview, by reducing the volume of through traffic on Stoddart Drive/Bayview Drive. The addition of new traffic from Stage 10 would impinge upon the amenity of existing residents along these existing routes.

1.1 Scope of Work

The tasks to be undertaken under the terms of this traffic study comprise:

- Review traffic forecast assumptions, based on current traffic counts and lot turnoffs.
- Update the traffic forecasting procedure to reflect observed Bayview traffic characteristics.
- Prepare revised traffic forecasts for:
 - ▶ The existing Bayview development
 - ▶ The addition of the proposed Stage 10
- Update peak hour traffic flow forecasts for Tiger Brennan Drive (to coincide with probable development of Stage 10).
- Undertake an assessment of traffic flows into/out of Bayview for the *status quo* case – maintaining the current form of the Stoddart Drive/TBD intersection.
- Develop alternative improvement options for the Stoddart Drive/TBD intersection.
- Assess the traffic performance of the improvement options, and the consequence of these improvements on the need to further upgrade the Woolner Road/TBD/Bayview Drive intersection.
- Recommend preferred staged improvements for the Stoddart Drive/TBD intersection.



**Bayview Development
Road Hierarchy**

FIGURE 1.1

2. Traffic Forecasts

2.1 Introduction

A forecasting procedure for assessing the traffic impacts of developments within Bayview was previously developed by Parsons Brinckerhoff (PB)¹. This procedure reflected the generation of traffic resulting from the planned distribution of residences throughout the estate, as a function of traffic parameters pertinent to Darwin. They took explicit account of recent AM peak hour traffic modelling work undertaken by PB for the then Department of Transport & Works (DTW) in Darwin². Forecasts of PM peak hour traffic volumes were derived from the AM peak volumes by the application of factors derived from permanent traffic count data sourced from DTW.

The opportunity has been taken as part of this study to update various parameters and assumptions in the forecasting process, based on traffic count data collected in December 2002. The particular updates comprise:

- Revisions to the vehicle trip generation rate for Bayview.
- Minor changes in the assumed distribution of trips between Bayview and other parts of Darwin.
- Updated AM and PM peak hour traffic forecasts for Tiger Brennan Drive.
- Updated forecasts for peak traffic movements to/from Woolner Road.

Section 2.2 describes the updating process, whilst Sections 2.3 to 2.5 report the main elements of the forecasting process and summary traffic forecasts.

2.2 Updating of Traffic Parameters

2.2.1 Trip Generation Rates

Average AM peak hour trip generation rates for Bayview were updated with reference to:

- AM peak entry/exit traffic data collected at Woolner Road (counts undertaken on 12 December 2002).
- Estimates of occupied dwellings within Bayview (provided by the Bayview Joint Venture).
- Allowances for construction related traffic.

An updated average AM peak hour generation rate of 1.0 trips per household was derived from an analysis of entry and exit volumes at Woolner Road, allowing for a proportion of construction traffic, plus allowing for a small exit volume from Stoddart Drive. Coupled with AM peak hour trips comprising 9.0% of daily traffic, this is equivalent to an overall level of 10.0 trips per household per day. The generation rate for PM peak hour trips was retained at a level of 95% of AM peak rates.

¹ *Bayview Haven Estate Traffic Impact Study*, prepared by PPK Environment & Infrastructure for Willing and Partners, October 1998.

² *Darwin – Development of an AM Peak Hour Traffic Forecasting Model*, prepared by PPK Environment & Infrastructure, August 1999 for the Department of Transport & Works.

2.2.2 Trip Destination for Traffic from Bayview

The previous analysis of traffic movements from Bayview to other sectors of Darwin assumed a bias to the CBD and inner Darwin (49% of trips), with 37% of trips to the northern suburbs, and 15% to the east (Winnellie, Palmerston etc). Observations of traffic movements during the AM peak counts on 12 December 2002 suggested a higher proportion of traffic departing from Bayview via Woolner Road to the Parap/Fannie Bay area and to the northern suburbs. The trip distribution pattern was updated to reflect this observation, as noted in section 2.4 below. In particular, the assumed proportion to the northern suburbs was increased from 37% to 47%.

2.2.3 Traffic Growth on Tiger Brennan Drive

Updated estimates of peak hour traffic volumes along Tiger Brennan Drive have been prepared for 2005, the approximate date at which the proposed Stage 10 development could be completed and occupied. The estimation procedure considered two alternative approaches, both relating to the application of growth factors to current 2002 traffic volumes:

- Growth factors reflecting historic traffic growth trends on TBD over the past 5-6 years.
- Growth factors based on an analysis of traffic forecasts prepared by PB for the then Department of Transport and Works^{3,4} (now Department of Infrastructure, Planning and Environment – DIPE).

The procedures for establishing the 2002 counts, and for deriving the respective growth factors, are described in the following paragraphs.

2002 Traffic Counts

Hourly traffic counts were provided by DIPE from permanent traffic counting stations on TBD just north of Gothenburg Crescent at Stuart Park, and just west of Benison Street at Winnellie. These volumes were in the form of directional counts by hour of day for the full month of September 2002. Counts in September can be reasonably taken as representing average annual volumes, not requiring further seasonal adjustment.

Previous analysis of traffic characteristics on TBD (PPK 1999) showed that the AM peak hour was from 7.30-8.30am. (Approximately 60% of the traffic volumes between 7 and 9am occur over this hour.) The 2002 DIPE counts were adjusted to reflect this peaking characteristic using data derived from counts in 1996/97. The final 2002 counts that form the basis for estimating the 2005 volumes are reported in Table 2.1.

A similar peaking analysis was undertaken for the PM peak hour.

Historic Growth Factors

These factors were derived for the period 1996-2002 (north of Gothenburg Crescent) and for 1997-2002 (west of Benison Street). Values adopted from this analysis for estimating AM peak hour demand in 2005 were:

³ Darwin – Development of an AM Peak Hour Traffic Forecasting Model, prepared by PPK Environment & Infrastructure for the Department of Transport & Works, August 1999

⁴ Updated Traffic Forecasts for the 120,000/150,000/200,000 Population Levels in Darwin, prepared by PPK Environment & Infrastructure for Department of Transport & Works, August 2000.

North of Gothenburg Crescent

- IN 2% p.a.
- OUT 3% p.a.

West of Benison Street

- IN 3% p.a.
- OUT 5% p.a.

Values adopted for the PM peak hour were the reverse of the AM peak values. This represented a reasonable approximation.

Table 2.1 Forecast Peak Traffic Flows on Tiger Brennan Drive

| Location/Year | AM Peak Hour | | PM Peak Hour | |
|---|--------------|-----|--------------|-------|
| | In | Out | In | Out |
| North of Gothenburg Cres⁽¹⁾ | | | | |
| 2002 | 1,700 | 570 | 550 | 1,520 |
| 2005 – Historic Growth Factors | 1,800 | 630 | 600 | 1,620 |
| 2005 – Modelled Growth Factors | 2,180 | 740 | 720 | 2,020 |
| West of Benison Street⁽²⁾ | | | | |
| 2002 | 1,200 | 520 | 470 | 1,160 |
| 2005 – Historic Growth Factors | 1,320 | 600 | 550 | 1,270 |
| 2005 – Modelled Growth Factors | 1,420 | 680 | 620 | 1,350 |

⁽¹⁾ On CBD approach to the Woolner Road/Tiger Brennan Drive/Bayview Drive intersection

⁽²⁾ On eastern approach to Tiger Brennan Drive/Stoddart Drive intersection

Source: Permanent traffic counts, traffic projections, and consultant estimates

Modelled Growth Factors

Growth factors were derived from an analysis of forecast traffic growth between 1996 and the design 120,000 population level. This analysis assumed that the 120,000 population level would be reached in about 2014, with factors from 2002 to 2005 being derived by interpolation. Values of these factors for the AM peak hour were:

North of Gothenburg Crescent

- IN 7.7% p.a.
- OUT 9.1% p.a.

West of Benison Street

- IN 5.8% p.a.
- OUT 9.4% p.a.

PM peak hour factors were assumed to be the reverse of the AM growth factors, as the traffic model only forecasts AM peak hour traffic flows.

Summary TBD Traffic Forecasts

Table 2.1 reports the 2005 traffic forecasts for TBD at the two respective locations.

The forecasts based on the DIPE traffic model are significantly higher than those based on historic growth rates. They reflect the assumed distribution of future growth in population

and employment in Darwin, together with assumptions regarding future road network improvements. For the analyses presented in later chapters of this report, we have adopted the historic growth factor forecasts as the basis for the analysis, with sensitivity tests being undertaken with the higher modelled forecasts. These latter tests reflect wider network interactions which are not possible with simple historic growth factor extrapolations. They represent a **realistic** upper level of traffic growth on the Darwin arterial road network for the purposes of assessing the timing of potential future road upgrading needs.

2.2.4 Traffic Growth on Woolner Road

Turning movement counts taken on Woolner Road in December 2002 indicated that peak traffic demand has not increased to levels previously forecast, particularly for the right turn movement into Tiger Brennan Drive (south). The AM peak hour count in December 2002 totalled some 468 (or 510 seasonally adjusted) right turning vehicles. Allowing for an average 3% per annum growth rate, revised forecasts of key turning movements between Woolner Road and TBD (south) for 2005 are as reported in Table 2.2. Corresponding estimates as incorporated in previous analyses of traffic access requirements for Bayview are also included in the table for comparison.

Table 2.2 Revised Turning Movements at Woolner Road/TBD

| Year | AM Peak Hour ⁽¹⁾ | | PM Peak Hour ⁽²⁾ | |
|---------------------|-----------------------------|----------|-----------------------------|----------|
| | Revised | Previous | Revised | Previous |
| 2002 | 510 | 650 | 150 | 180 |
| 2005 ⁽³⁾ | 560 | 820 | 160 | 190 |

⁽¹⁾ For right turn from Woolner Road into Tiger Brennan Drive (south)

⁽²⁾ For left turn from Tiger Brennan Drive (south) into Woolner Road

⁽³⁾ Assuming development of Bayview stages 1-9

Source: 12/12/02 Traffic Counts (Bayview Joint Venture) and consultant estimates

2.3 Traffic Generation

Traffic generated by the Bayview development, including stage 10, has been estimated as a function of average trip rates per dwelling (as updated in Section 2.2.1), and the number of dwellings located within each of the discrete subdivision areas.

The following traffic generation parameters have been adopted:

- Residential densities for each zoning category are:
 - ▶ 1 dwelling per R0/R1 zoned allotment
 - ▶ 1 dwelling per 300 m² for R2
 - ▶ 1 dwelling per 100 m² for R4.
- The daily number of trips generated per household is 10.0 trips, with 9% of these taking place in the AM peak hour.
- Trips taking place in the PM peak hour represent approximately 95% of the total AM peak flows, in the reverse direction. (This proportion was derived from an analysis of permanent traffic count data from Tiger Brennan Drive near to Gothenburg Crescent.)
- Commercial floor space is about 40% of the area zoned for commercial purposes.

- Trips attracted to the proposed commercial areas allowed for trips to work by employees and for travel by commercial vehicles.

2.4 Traffic Assignment

This section overviews the relative assignment of trips generated by the Bayview development. It is understood that there will be no schools or significant shopping facilities provided within Bayview, and so all such trips must necessarily travel to other such destinations elsewhere in Darwin. Assumptions upon which the assignment of Bayview traffic has been made comprise:

- Trip purpose during the AM peak hour comprises 50% for work trips, 10% for school, 20% for shopping, and 20% for other purposes. These values were derived from previous travel modelling work undertaken by PB in Darwin.
- Directional purpose movements from Bayview, as updated in accordance with the analysis outlined in section 2.2.2, were assumed as:
 - ▶ Work: south 50% north 40% east 10%
 - ▶ Shopping: south 25% north 70% east 5%
 - ▶ School: south 40% north 50% east 10%
 - ▶ Other: south 40% north 50% east 10%

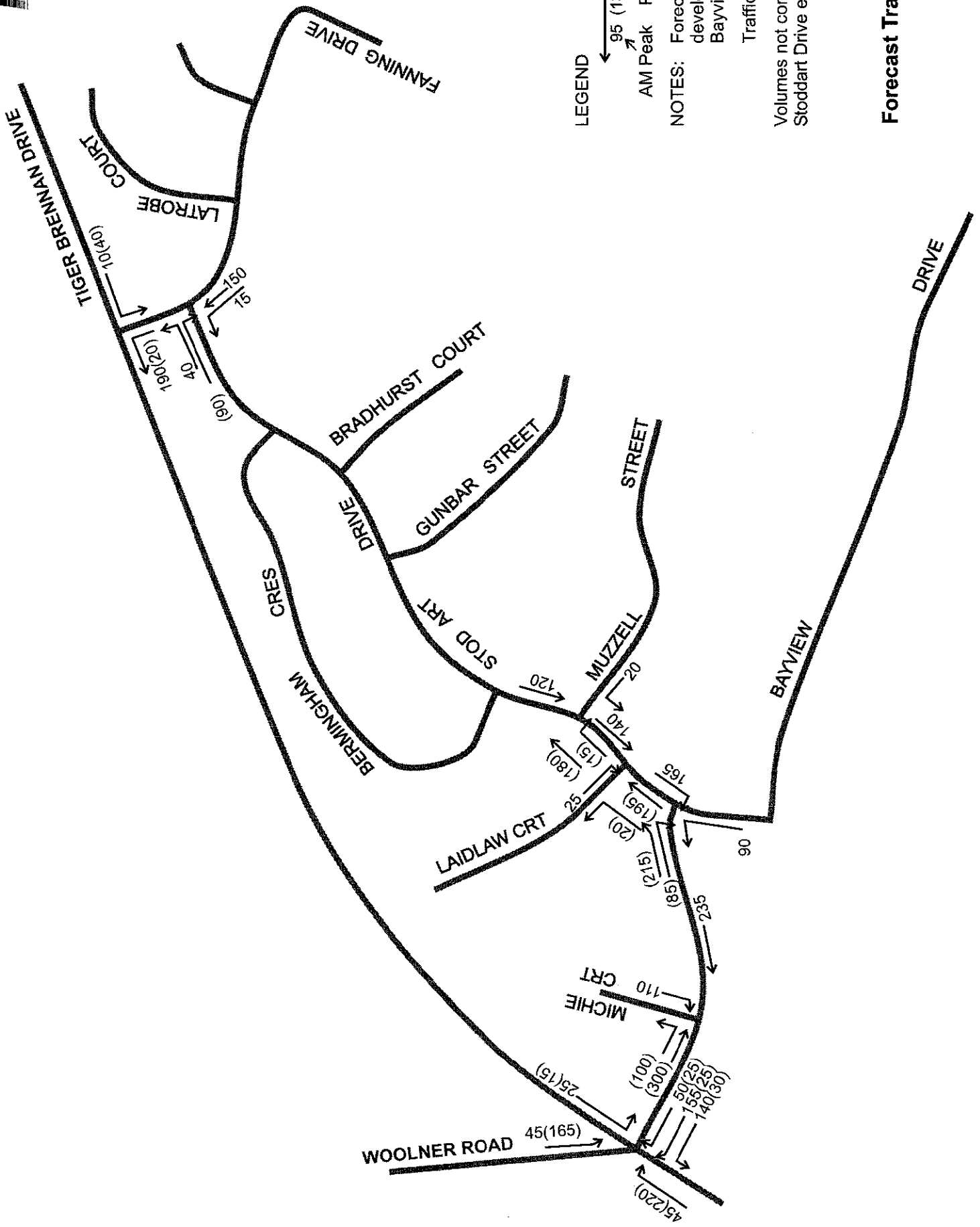
These directional movements imply the following broad trip destinations:

- ▶ South: Travel via Tiger Brennan Drive to the Darwin CBD area
- ▶ North: Travel via Woolner Road to the inner suburbs (Parap and Fannie Bay) and to the northern suburbs (Nightcliff, Casuarina and Sanderson)
- ▶ East: Travel via Tiger Brennan Drive to Winnellie, Berrimah and Palmerston.
- During the AM peak hour, 85% of trips leave Bayview, with 15% returning.
- The relative distribution of trips to the Woolner Road and Stoddart Drive exits varied by precinct, reflecting the proximity of each.

Traffic which would turn right from Stoddart Drive onto Tiger Brennan Drive, or right turn from TBD into Stoddart Drive, was assigned to the Woolner Road entry/exit point for the left in/left access option at Stoddart Drive.

2.5 Traffic Forecast Summary

Figure 2.1 summarises the key forecast AM and PM peak hour traffic volumes at the Stoddart Drive and Woolner Road access points and midblock movements along Stoddart and Bayview Drives. Appendix A contains a listing of the spreadsheet analysis undertaken to derive these estimates for 2005 (stage 10), based on the methodology described above.



LEGEND

95 (13)
 AM Peak PM Peak

NOTES: Forecasts assume complete development of all stages of Bayview Haven

Traffic volumes Stages 1 – 10
 Volumes not constrained by capacity of Stoddart Drive exit

Forecast Traffic Volumes, 2005

FIGURE 2.1

3. Traffic Impact Assessment (*Status Quo*)

3.1 Introduction

Access into/out of Bayview Haven is presently provided via:

- The existing left in/left out arrangement at Stoddart Drive/Tiger Brennan Drive
- The full movement four way intersection at Bayview Drive/Tiger Brennan Drive/Woolner Road.

The future performances of these intersections will be influenced by growth in regional traffic movements (Tiger Brennan Drive, Woolner Road), and by growth in traffic demand from Bayview as residential infill continues. It is the growth in traffic flows on Tiger Brennan Drive, however, that will have the most significant impact on future intersection performance.

In reflection of the external traffic impacts on Bayview access, this chapter presents the following analyses of the status quo access arrangements:

- Performance of Stoddart Drive/Tiger Brennan Drive for 2002 and 2005 (Stage 10 complete). This analysis demonstrates that the growth in traffic flows on TBD will constrain the effective volume of traffic that can exit (left turn) onto TBD in the AM peak hour, (with residual traffic expected to reroute through Bayview to use the intersection at Bayview Drive/TBD/Woolner Road).
- Performance of Woolner Road/TBD/Bayview Drive intersection for 2002 and 2005 (Stage 10 complete). This analysis shows the extent to which the performance of this intersection is expected to decline over the period to 2005, as a function of regional traffic growth (primarily) and infill in Bayview stages 1-9 and additional demand from the proposed stage 10. It enables some indicative conclusions to be drawn as to the need for, and timing of, improvements to the intersection whether or not stage 10 of Bayview is developed.
- Assessment of the intersection of Stoddart Drive with Bayview Drive, and a general overview of internal traffic flows with respect to nominal desirable capacities of the road hierarchy expressed in the internal Bayview road network.

This chapter also considers the expected need to increase capacity on Tiger Brennan Drive between Winnellie and Woolner Road, in response to growth in regional traffic demand.

3.2 Performance of Stoddart Drive/Tiger Brennan Drive

The intersection of Stoddart Drive and Tiger Brennan Drive is currently a left in/left out configuration and is unsignalised with give-way control of Stoddart Drive, as shown in Figure 3.1 below.

Forecasts of (unconstrained) peak hour traffic movements left turning into TBD in 2005 are:

- Bayview stages 1-9 complete: 155 AM peak, 20 PM peak.
- Bayview stages 1-10 complete: 190 AM peak, 25 PM peak.

Left turn volumes from TBD into Stoddart Drive are forecast to be minor.

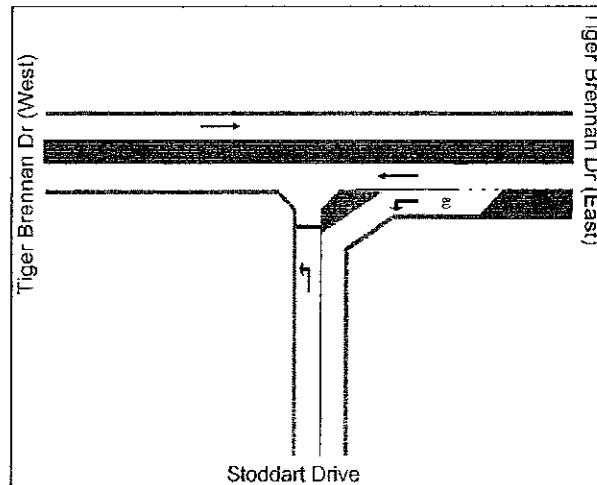


FIGURE 3.1
Intersection Geometry: Stoddart Drive left in/left out

Results from a SIDRA analysis undertaken for 2005 for the AM and PM peak hour periods are respectively summarised in Tables 3.1 and 3.2 below. The tables report the degree of saturation on Stoddart Drive and resultant queue length and delay for vehicles by 2005 for the Bayview stages 1-9 and 1-10 scenarios.

Table 3.1 AM peak performance – Stoddart Drive/Tiger Brennan Drive

| Year | Degree of Saturation for Stoddart Drive | Queue Length (m) | Delay (sec) |
|-----------------------|---|------------------|-------------|
| 2005 (stages 1 to 9) | 1.292 (L) | 224 | 360.6 |
| 2005 (stages 1 to 10) | 1.583 (L) | 375 | 605.2 |

Source: SIDRA Analysis

Table 3.2 PM peak performance – Stoddart Drive/Tiger Brennan Drive

| Year | Degree of Saturation for Stoddart Drive | Queue Length (m) | Delay (sec) |
|-----------------------|---|------------------|-------------|
| 2005 (stages 1 to 9) | 0.047 | 2 | 16.5 |
| 2005 (stages 1 to 10) | 0.047 | 2 | 16.5 |

Source: SIDRA Analysis

The main conclusions to be drawn from the above tables comprise:

- The high volume of inbound traffic on Tiger Brennan Drive in the AM peak period is expected to constrain the volume of traffic able to exit from Stoddart Drive due to insufficient gaps being available.

- Due to these gap constraints, a significant proportion of vehicles would likely choose to exit Bayview via the Woolner Road intersection to reduce queuing delays, leading to a higher level of internal traffic movements through Bayview on Stoddart Drive.
- The intersection performs satisfactorily during PM peak.

Assuming an acceptable delay of less than 60 seconds during the AM peak, only some 85 left turning vehicles will be able to find acceptable gaps at the Stoddart Drive exit by 2005. Therefore, some 70 (stages 1-9) and 105 (stages 1-10) vehicles would likely reroute to exit via the Woolner Road intersection, leading to increased queue length and delay for other vehicles already using that exit. This traffic shift from Stoddart Drive will also increase delays for traffic on the Woolner Road and Tiger Brennan Drive approaches as a consequence.

Estimates of resultant AM and PM peak hour traffic movements on the Bayview road network, assuming rerouting of surplus exiting traffic from Stoddart Drive to the Woolner Road intersection, are summarised in Figure 3.2 (for Bayview stages 1-10). These flows were subsequently used in the analysis of Woolner/Tiger Brennan Drive/Bayview Drive intersection (section 3.3) and the Stoddart Drive/Bayview Drive roundabout (section 3.5) to determine the consequences of no improvement at the Stoddart Drive exit.

3.3 Assessment of Woolner Road/Tiger Brennan Drive/Bayview Drive

The intersection of Woolner Road, Tiger Brennan Drive and Bayview Drive allows all traffic movements into and out of Bayview as illustrated in Figure 3.3. It is signalised, and for the purpose of this assessment, a 120 second cycle time has been assumed. Analysis of its performance assumed a rerouting of traffic from the Stoddart Drive exit (as described in section 3.2 above) during the AM peak period; details of the traffic volumes for each movement are provided in Appendix C.

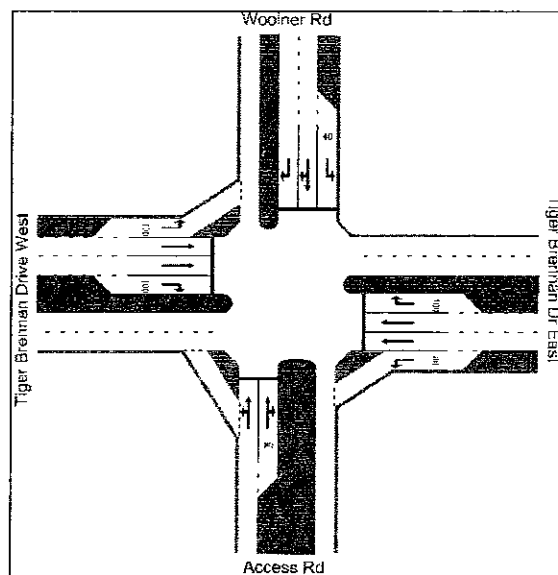


FIGURE 3.3
Intersection Geometry: Woolner Road/Tiger Brennan Drive/Bayview Drive

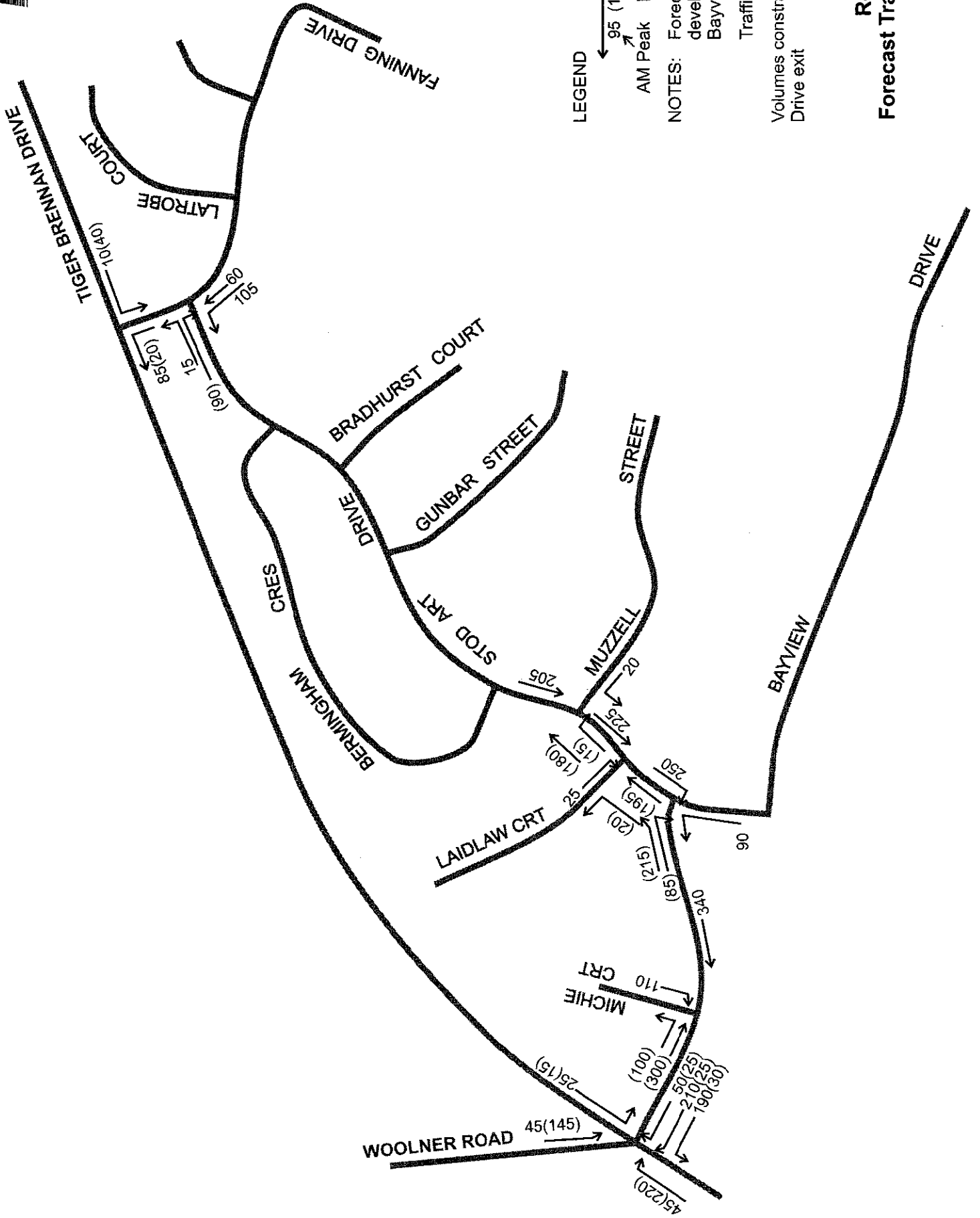


FIGURE 3.2

Results from the SIDRA analysis undertaken for 2005 for the AM and PM peak hours are summarised in Tables 3.3 and 3.4 respectively. The tables report the critical degree of saturation for each intersection approach, and compare the current traffic performance (from traffic counts 12th December 2002), and the currently approved stages 1 to 9 by 2005. Also shown in the tables are the performance results for stages 1-10 and the sensitivity test case, assuming higher regional traffic flows on TBD (refer section 2.2.3). For a summary of queue length and delay, refer to summaries in Appendix C.

Table 3.3 AM Peak Performance - Woolner Road/Tiger Brennan Drive/Bayview Drive

| Year | Critical Degree of Saturation x Approach | | | |
|---------------------------------|--|-------------------------|--------------|-----------------|
| | Tiger Brennan Drive (W) | Tiger Brennan Drive (E) | Woolner Road | Bayview Drive |
| 2002 | 0.301 (T) | 0.737 (T) | 0.713 (T, R) | 0.667 (L, T, R) |
| 2005 (stages 1 to 9) | 0.365 (T) | 0.901 (T) | 0.883 (T, R) | 0.894 (L, T, R) |
| 2005 (stages 1-10) | 0.371 (T) | 0.921 (T) | 0.920 (T, R) | 0.929 (L, T, R) |
| 2005 Sensitivity ⁽¹⁾ | 0.454 (T) | 0.972 (T) | 0.960 (T, R) | 0.945 (L, T, R) |

⁽¹⁾ Stages 1 to 10

Source: SIDRA Analysis

Table 3.4 PM Peak Performance - Woolner Road/Tiger Brennan Drive/Bayview Drive

| Year | Critical Degree of Saturation x Approach | | | |
|---------------------------------|--|-------------------------|--------------|-----------------|
| | Tiger Brennan Drive (W) | Tiger Brennan Drive (E) | Woolner Road | Bayview Drive |
| 2002 | 0.700 (T) | 0.235 (T) | 0.287 (T, R) | 0.382 (L, T, R) |
| 2005 (stages 1 to 9) | 0.753 (T) | 0.352 (R) | 0.546 (T, R) | 0.342 (T, R) |
| 2005 (stages 1-10) | 0.753 (T) | 0.352 (R) | 0.606 (T, R) | 0.342 (T, R) |
| 2005 Sensitivity ⁽¹⁾ | 0.808 (T) | 0.389 (R) | 0.606 (T, R) | 0.342 (T, R) |

⁽¹⁾ Stages 1 to 10

Source: SIDRA Analysis

3.3.1 Current Intersection Performance

Tables 3.3 and 3.4 show that the current intersection configuration performs satisfactorily in 2002 for all approaches in terms of degree of saturation for all movements. It is noted, however, that:

- Modelled queue lengths approach 215m on the TBD (east) approach in the AM peak hour. This length blocks both the right turn and left turn lanes. Average delays are approaching 30 seconds.
- Queue lengths on the Woolner Road approach are in the order of 120m, with a corresponding delay of 60 seconds, due to the high right turn volume.

3.3.2 Performance in 2005

In its current layout, the performance of this intersection can be expected to degrade by 2005. The analysis indicates that the Tiger Brennan Drive (east), Woolner Road and Bayview Drive approaches are expected to reach practical capacity (degree of saturation 0.9) by 2005 for full development of stages 1-9 and stage 10 within Bayview. The additional traffic generated by Stage 10 does not have a marked additional impact on the performance of the intersection. The sensitivity test shows high degrees of saturation on all approaches (excepting TBD west).

Key performance measures output from the Sidra analysis for the AM peak hour pertinent to this assessment comprise:

- Queue lengths on TBD (east) around 300m, with an average delay for the through traffic of 50-55 seconds.
- Queue lengths in the order of 160m on Woolner Road approach, with an average delay of over 70 seconds.
- Queues of over 120m and a corresponding average delay of over 60 seconds for traffic exiting from Bayview Drive.

These measures indicate that the intersection will not be performing well in 2005, and will likely need significant improvements to provide an acceptable level of service.

3.3.3 Need for Further Intersection Upgrading

In summary, the foregoing traffic analysis has shown:

- Upgrading of the intersection likely to be required by about 2005. Excessive degrees of saturation, queue lengths and delays are expected on the Tiger Brennan Drive (east), Woolner Road and Bayview Drive approaches.
- Traffic generated by the proposed Bayview Stage 10 development will not lead to a marked further degradation of intersection performance over and above that expected for stages 1-9 and background regional traffic growth.

More detailed analysis is needed to determine the optimum form of improvements, but will desirably include upgrading of the TBD (east) and Woolner Road approaches, and possibly the Bayview Drive approach. Such improvements would be the responsibility of DIPE.

The scope of improvements may, however, be influenced by the nature of potential improvements to Stoddart Drive, as discussed in Section 4.

3.4 Need for Upgrading of Tiger Brennan Drive

Significant growth in traffic demand along Tiger Brennan Drive is expected over the next 10-15 years as urban development in and around Darwin continues. Section 2.2.3 presented an analysis of peak hour growth near Gothenburg Crescent and near Benison Street, (as an input to the intersection analyses). This analysis needs to be taken further, as the extent of growth is expected to require upgrading of Tiger Brennan Drive in the medium term, and this can be expected to have an impact on future access arrangements to Bayview.

Forecast traffic flows on TBD by section are summarised in Table 3.5 for the AM and PM peak hours. This includes volumes for:

- 2002
- 2005 (Bayview stages 1-9)
- 2005 (Bayview stages 1-10)
- 2005 (sensitivity test)
- 2009

Table 3.5 Forecast Growth in Peak Traffic Demand on Tiger Brennan Drive

| Year/Scenario | Directional Peak Hour Traffic by Location | | |
|--------------------------------|---|--------------------------------|------------------------|
| | South of Woolner Road | Woolner Road to Stoddart Drive | East of Stoddart Drive |
| 2002 | | | |
| AM - In | 1,785 | 1,240 | 1,200 |
| PM - Out | 1,520 | 1,160 | 1,160 |
| 2005 (Stages 1-9) | | | |
| AM - In | 1,990 | 1,395 | 1,320 |
| PM - Out | 1,805 | 1,270 | 1,270 |
| 2005 (Stages 1-10) | | | |
| AM - In | 2,010 | 1,395 ⁽²⁾ | 1,320 |
| PM - Out | 1,940 | 1,270 ⁽²⁾ | 1,270 |
| 2005 (Sensitivity Test) | | | |
| AM - In | 2,180 | 1,495 | 1,420 |
| PM - Out | 2,020 | 1,350 | 1,350 |
| 2009⁽¹⁾ | | | |
| AM - In | 2,600 | 1,790 | 1,700 |
| PM - Out | 2,400 | 1,600 | 1,600 |

⁽¹⁾ Based on average growth rates determined from Darwin travel model – see section 2.2.3

⁽²⁾ Same as stages 1-9, due to AM peak capacity constraints for traffic left turning from Stoddart Drive onto TBD.

Source: Section 2.2.3, consultant estimates

The main conclusions that can be drawn from the table are:

- By 2005, the section of Tiger Brennan Drive between Woolner Road and the CBD is expected to require two outbound lanes to meet projected PM peak hour traffic demand. (The inbound carriageway was previously duplicated.)
- The sensitivity test at 2005 indicates that Tiger Brennan Drive (inbound) will be operating at about 85% of effective service capacity (taken as 1,850 veh/lane/hour) between Stoddart Drive and Woolner Road, and at about 80% of effective service capacity east of Stoddart Drive. These levels will further constrain the effectiveness of the existing left turn from Stoddart Drive onto TBD, with fewer gaps for merging traffic.
- The traffic estimates at 2009, 4 years after the potential completion of stage 10, are shown to be around effective service capacity limits for TBD east of Woolner Road. Duplication of TBD between Woolner Road and Winnellie would probably be warranted by about this time. The timing of such roadworks (the responsibility of DIPE) is important in the context of the type of potential improvements needed for upgrading the Stoddart Drive/TBD intersection (chapter 4).

3.5 Performance of Stoddart Drive/Bayview Drive

The intersection of Stoddart Drive and Bayview Drive is a two way roundabout with 3 approach legs, all 11m collector roads, as shown in Figure 3.4. All returning PM peak traffic (with the exception of traffic from the east) is required to enter via the Woolner Road intersection. This results in high PM peak flows through the roundabout. With the redistribution of traffic internally due to queue length and delay at the Stoddart Drive exit, AM peak movements will also be high.

With development of stage 10, the highest peak hourly traffic volumes which are likely to occur at the roundabout by 2005 are forecast as follows:

- AM Peak: Some 250 vehicles turning from Stoddart Drive to Bayview Drive (W) and 90 vehicles from Bayview Drive (S) to Bayview Drive (W).
- PM Peak: Some 300 vehicles entering via the Bayview Drive (W) approach with 85 continuing through to Bayview Drive (S) and the remaining 215 vehicles turning left onto Stoddart Drive.

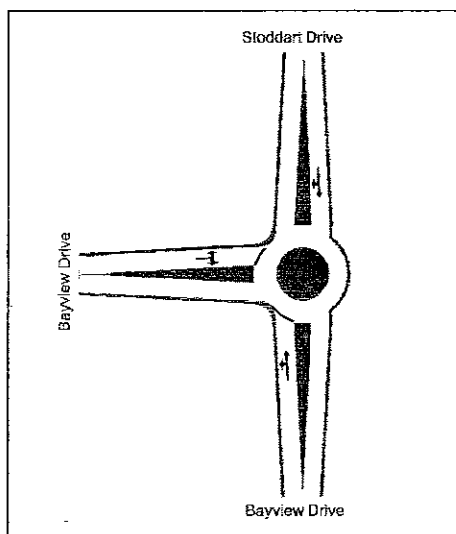


FIGURE 3.4
Intersection Geometry: Stoddart Drive/Bayview Drive

Results from a SIDRA analysis of this intersection are shown in Table 3.6. Additional queue length and delay statistics are provided in Appendix D.

Table 3.6 AM and PM Peak Performance – Stoddart Drive/Bayview Drive

| Year | Period | Critical Degree of Saturation x Approach | | |
|------|--------|--|-------------------|----------------|
| | | Bayview Drive (W) | Bayview Drive (S) | Stoddart Drive |
| 2005 | AM | 0.049 | 0.094 | 0.128 |
| 2005 | PM | 0.152 | 0.009 | 0.063 |

Source: SIDRA Analysis

The analysis demonstrates that congestion at this intersection will be low, even with full development of stage 10.

3.6 Road Network Assessment

Stoddart Drive and Bayview Drive have varying cross sections as illustrated in Figure 1.1 with pavement widths of:

- 8 m on Stoddart Drive between Laidlaw Court and Bradhurst Court.
- 11 m on Stoddart Drive between Bradhurst Court and Bermingham Crescent (east).
- 11 m Stoddart Drive between Laidlaw Court and Bayview Drive roundabout.
- 11 m along Bayview Drive between Michie Court and the roundabout with Stoddart Drive.
- 13 m on sections of both roads abutting Tiger Brennan Drive.

The estimated maximum PM peak hour traffic flow along Stoddart Drive by 2005 is 195 vehicles between Bayview Drive and Laidlaw Court. This volume decreases east of Laidlaw Court to 180 vehicles and continues to decrease to the east (Figures 2.1 and 3.2). The estimated total AM peak traffic flow by 2005 within the same section of Stoddart Drive is around 165 vehicles (Figure 2.1) but may increase to 250 vehicles (Figure 3.2) if vehicle flows from the Stoddart Drive exit are restricted.

It is important to put these volumes into context: the typical midblock capacity of one lane with an occasional parked vehicle is an estimated 600 vehicles per hour⁵. The volumes are therefore within estimated capacity limits. Given the pavement width of Stoddart Drive between Laidlaw Court and Bradhurst Court being only 8m, there is potential for parked vehicles along this section of Stoddart Drive to restrict the flow of vehicles. In this respect it is noted that previous recommendations⁶ for the construction of off-street parking bays have been accepted by the Bayview Joint Venture. In conjunction with appropriate parking controls, such bays will remove the potential for parked vehicles to impede through traffic movements.

⁵ *Roadway Capacity, Guide to Traffic Engineering Practice Part 2 (Page 28)*, AustRoads.

⁶ *Bayview Development Traffic Impact Study: Proposed Lease Extension*, prepared by PPK Environment & Infrastructure for Austcorp, August 2000.

4. Upgrading of Stoddart Drive/Tiger Brennan Drive

4.1 Introduction

This section investigates the potential to implement improvements to the Stoddart Drive / Tiger Brennan Drive intersection in such a way as to:

- Increase the capacity of the existing left in/left out arrangement
- Allow for right turn in/out access, thereby improving overall accessibility to the Bayview estate.

Improvements at Stoddart Drive would have a secondary benefit to the operation of the Woolner Road intersection, which is expected to need significant improvements within the next 3 years as indicated in chapter 3.

The approach taken in identifying and assessing potential improvements considered:

- The potential to implement improvements in a cost effective staged process
- The potential 'life' of improvements before further improvements become necessary due to regional traffic growth on Tiger Brennan Drive
- The need for (unsignalised) improvements to operate safely, given the high existing traffic volumes on Tiger Brennan Drive, and the high speed regime.

Development of the alternative options (Section 4.2) reflects this approach, and takes explicit account of the previous intersection configuration at Stoddart Drive/TBD, wherein a protected right turn lane from TBD into Stoddart Drive was provided, together with a left turn deceleration lane from TBD. We have sought to utilise this pavement as far as possible to reduce the costs of intersection upgrading, but bearing in mind the expected need for upgrading of Tiger Brennan Drive past Bayview as outlined in section 3.4.

4.2 Development of Improvement Options

This section describes a potential staged series of options to upgrade the capacity of the Stoddart Drive/TBD intersection. The process is aimed at enabling a trade-off in upgrading costs as a function of the effective life of the intersection being achieved at each stage of the process. The options comprise:

1. Upgrading of the existing left in/left out arrangement, without signalisation, with a 200 m long acceleration lane for traffic left turning from Stoddart Drive.
2. As for option 1, but restoring the right turn lane for traffic to right turn from TBD via a filter manoeuvre.
3. Signalise the intersection, to allow full movements into/out of Stoddart Drive. This would require an additional approach lane and exit lane (both about 150m in length) on Tiger Brennan Drive for the inbound and outbound directions.

4.3 Assessment of Improvement Options

4.3.1 Option 1

Option 1 comprises an acceleration lane out of Stoddart Drive into Tiger Brennan Drive with a 200 m minimum length⁷, as illustrated in Figure 4.1. The purpose of the acceleration lane is to allow turning traffic to accelerate up to speeds consistent with through traffic on TBD (in an 80 km/h speed zone), thereby enabling a safe zip merge procedure. This option does not include signalisation.

The analysis assumes that the upgraded intersection will not act as a constraint on left turning exit traffic i.e. there will be no rerouting of traffic to exit Bayview via the Woolner Road intersection, as described in chapter 3. (This assumption is consistent across all three improvement options.) Performance of this option in 2005 (stages 1 to 10) for the AM peak hour is reported in Table 4.1 and Appendix E. (Performance of the intersection in the PM peak is unaffected by this option.)

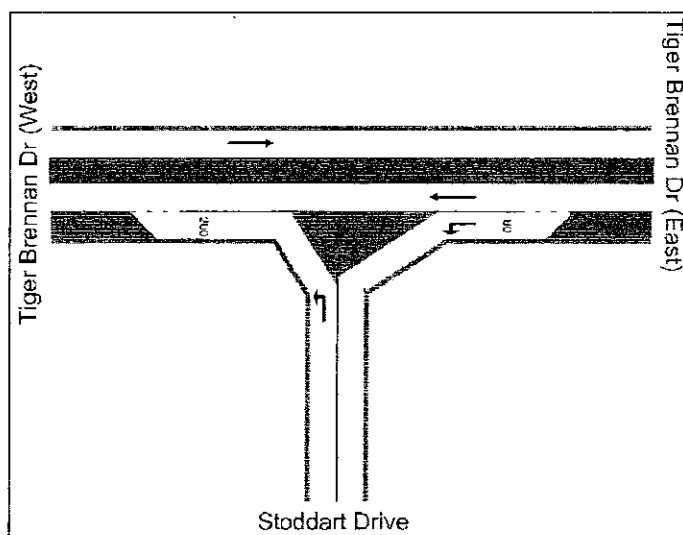


FIGURE 4.1
Intersection Geometry: Option 1

Table 4.1 Performance of Option 1 (2005)

| Period | Critical Degree of Saturation x Approach | | |
|---------|--|-------------------------|----------------|
| | Tiger Brennan Drive (W) ⁽¹⁾ | Tiger Brennan Drive (E) | Stoddart Drive |
| AM Peak | 0.305 | 0.732 | 0.103 |

⁽¹⁾ TBD (W) traffic is free flowing and therefore ultimately unaffected by this improvement option. The DoS for TBD (east) reflects the through volume as a proportion of the effective service capacity.

Source: SIDRA Analysis

The results presented in Table 4.1 show that the Stoddart Drive approach performs satisfactorily at 2005, though there may be some safety concerns with the merging of exiting traffic onto the high speed regime on Tiger Brennan Drive. The effective life of this option will, nevertheless, be influenced by the future rate of growth in traffic on the Tiger Brennan Drive (east) approach. Disruptions to traffic movements inbound on TBD are likely

⁷ Intersections At Grade, Guide to Traffic Engineering Practice Part 5 (Table 5.8), AustRoads

to become prevalent after traffic volumes exceed approximately 1,500 vehicles per hour. The analysis reported in section 3.4 indicates that this could occur shortly after 2005. Section 3.4 further suggests that upgrading of TBD (duplication) could be needed by about 2009.

4.3.2 Option 2

Option 2 (Figure 4.2) is similar to option 1, but allows traffic to turn right from Tiger Brennan Drive into Stoddart Drive. This will allow a decrease in the number of vehicles entering at Bayview Drive and lessen the amount of internal through traffic along Stoddart Drive. Most of the right turning will take place in the PM peak hour, when inbound volumes on TBD are forecast to be in the order of 550 vehicles per hour by 2005. The option would utilise the road pavement previously in place for the right turn manoeuvre. The left turn acceleration lane (option 1) has been included as part of this option, so that the overall benefits of a staged improvement can be assessed.

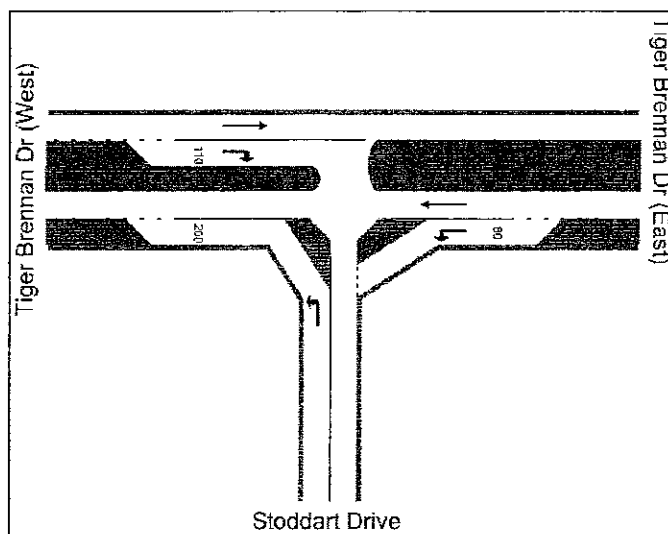


FIGURE 4.2
Intersection Geometry: Option 2

Summary peak hour performance of this option (stages 1-10 at Bayview) is reported in Table 4.2 and Appendix F.

Table 4.2 AM Peak Performance - Option 2 (2005)

| Period | Critical Degree of Saturation x Approach | | |
|---------|--|-------------------------|----------------|
| | Tiger Brennan Drive (W) | Tiger Brennan Drive (E) | Stoddart Drive |
| AM Peak | 0.308 (T) | 0.732 (T) | 0.103 (L) |
| PM Peak | 0.702 (T) | 0.289 (T) | 0.011 (L) |

Source: SIDRA Analysis

The results in Table 4.2 confirm that the combined improvements would provide an effective option for improving left turn exits from Stoddart Drive (mainly in the AM peak) and right turn

entry (into Stoddart Drive (mainly PM peak). Main issues and concerns with the option, however, are:

- Safety. There is some concern with the safe right turning of vehicles in the AM peak hour. Whilst the number of vehicles expected to turn is low, there may be some difficulties for drivers to safely pick suitable gaps in the inbound traffic flow on TBD, given the high volume and the 80 km/h speed regime. (There is not expected to be the same concern in the PM peak when inbound volumes are much lower.) The turn manoeuvres can probably be undertaken safely in the short term, but as traffic demand on TBD increases (Table 3.5) then safety concerns will arise.
- TBD development. Operation of the unsignalised arrangement would be unsafe when Tiger Brennan Drive is duplicated in due course, when right turning traffic would need to cross two lanes of heavy, high speed traffic. The timing of duplication of Tiger Brennan Drive will therefore impact upon how long an unsignalised arrangement could safely function.

In summary, this option offers a workable short term solution, but one which will have increasing safety concerns as traffic on TBD continues to increase.

4.3.3 Option 3

This option incorporates signalisation of the intersection, with the following main features:

- Full turn movements to be provided.
- The Tiger Brennan Drive approaches (east and west) would need to be upgraded to provide an additional 200m approach and exit lane. These additional lanes would be required to provide sufficient capacity for the through traffic movements on TBD.
- A right turn lane into Stoddart Drive would be needed, plus a deceleration/left turn lane into Stoddart Drive.

The concept is illustrated in Figure 4.3.

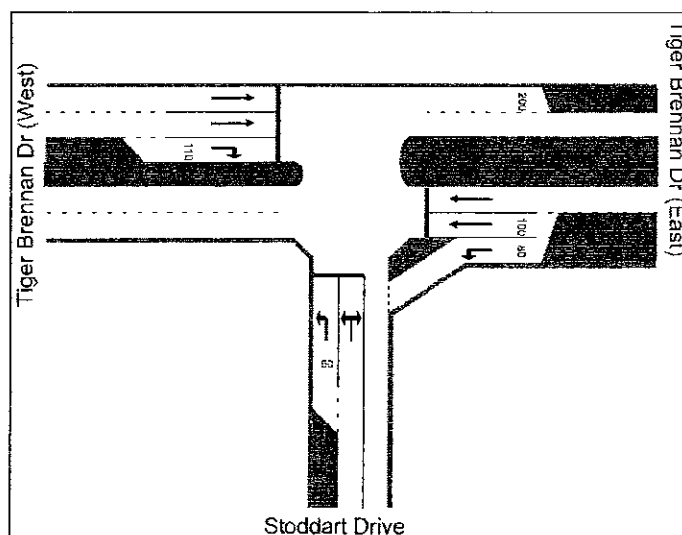


FIGURE 4.3
Intersection Geometry: Option 3

Performance of this option arrangement has been analysed using Sidra for Bayview stages 1-10, with the results presented in Table 4.3.

Table 4.3 AM Peak Performance – Option 3

| Period | Critical Degree of Saturation x Approach | | |
|---------|--|-------------------------|----------------|
| | Tiger Brennan Drive (W) | Tiger Brennan Drive (E) | Stoddart Drive |
| AM Peak | 0.360 (R) | 0.646 (T) | 0.590 (L, R) |
| PM Peak | 0.519 (T) | 0.379 (T) | 0.180 (R) |

Source: SIDRA Analysis

The results presented in Table 4.3 show that this option will operate efficiently at 2005 (and beyond). Modelled delays and queue lengths (Appendix F) are low on Tiger Brennan Drive. This option therefore represents a safe and efficient arrangement for at least the short to medium term. A separate analysis for this option (stages 1-9 in Appendix F) has also demonstrated that the addition of stage 10 at Bayview would lead to little net impact on intersection performance.

What needs to be considered with this option is the timing of future duplication of Tiger Brennan Drive by DIPE. Duplication would involve the construction of a second carriageway, with a substantial median (indicatively in the order of 5m or more). The Option 3 layout will become redundant when duplication takes place, with the intersection then needing to be reconstructed to reflect the dual carriageways and median. If the need for duplication is warranted by say 2008/09 as suggested in section 3.4, then the expenditure on this option may become redundant within a very short timeframe.

4.4 Implications for Woolner Road Intersection

Section 3.3 presented the results of an analysis of the performance of this intersection, assuming no upgrading of the Stoddart Drive/TBD intersection. It concluded that significant upgrading might be needed by around 2005, depending on the future growth in traffic on Tiger Brennan Drive. Such improvements would likely be needed irrespective of whether or not stage 10 is constructed at Bayview. In summary, conclusions reached were:

- Upgrading of the intersection would likely be required by about 2005, for most approaches.
- The incremental addition of traffic from the proposed stage 10 in Bayview is not likely to have any marked impact on upgrading requirements.

A reassessment of how the upgrading of the Stoddart Drive exit would impact on the need for further improvements to the Woolner Road intersection has been undertaken. This reanalysis (see detailed Sidra results in Appendix H) has shown that the need for improvements could be deferred for in the order of 3-4 years, due to the shifting of traffic movements to Stoddart Drive/TBD. This timing would be consistent with the expected need to upgrade Tiger Brennan Drive by about 2009 (section 3.4).

5. Summary

The performance of the Woolner Road and Stoddart Drive intersections have been documented respectively in Sections 3 and 4. A summary of the findings are presented in this section for further consideration, together with a proposed staged upgrading strategy for the Stoddart Drive/TBD intersection.

The analysis has clearly demonstrated that the addition of stage 10 at Bayview will not have any significant impact on the need for, or timing of, intersection upgrading requirements either at Stoddart Drive or at the Woolner Road intersection. This is discussed further below.

5.1 Summary

5.1.1 Woolner Road/Tiger Brennan Drive/Bayview Drive Intersection

Analysis undertaken assuming no upgrading of the Stoddart Drive/Tiger Brennan Drive intersection (Section 3) has demonstrated the following impacts at the intersection of Woolner Road with Tiger Brennan Drive and Bayview Drive:

- Upgrading of most approaches is likely to be required by about 2005. The forecast growth in AM peak hour regional traffic, plus increased traffic from Bayview as infill in the current 9 stages continues, will lead to increasingly poor levels of service on the Woolner Road, Tiger Brennan Drive (east) and Bayview Drive approaches. Intersection degrees of saturation (DoS) will exceed 0.90, and queue lengths and average delays will start to become excessive.
- Approval of Bayview stage 10 will not change the need for or scope of required improvements at the intersection. Traffic generated by the Stage 10 development would represent only a marginal increase in traffic flows.

Section 3.4 has also shown that the expected growth in traffic demand on Tiger Brennan Drive will require several sections to be duplicated, comprising:

- The outbound lane between the CBD and Woolner Road (from the current single lane to two lanes) – required to meet projected PM peak hour demand by about 2005.
- The carriageway between Woolner Road and Winnellie to a full 2+2 lane cross section, by about 2009. (The extent of duplication, probably to Amy Johnson Avenue, would need to be determined through a more detailed investigation.)

5.1.2 Improvements to Stoddart Drive/Tiger Brennan Drive

The intersection analyses reported in Section 4 considered a range of potential staged improvements to this intersection. In particular the analyses showed that improvements are desirable, whether or not stage 10 of Bayview proceeds.

- The left in/left out configuration of Stoddart Drive will not provide a satisfactory AM peak hour performance in 2005 due to gap constraints in the high volume inbound traffic flow on Tiger Brennan Drive. This constraint is expected to effectively lead to rerouting of a significant proportion of traffic through Bayview to exit via the Woolner Road intersection. The configuration was shown to be deficient for traffic from the currently approved stages 1 to 9.
- An acceleration lane for left turning traffic from Stoddart Drive into Tiger Brennan Drive (Option 1) would provide an acceptable level of service to enable unconstrained movements of traffic from Bayview (including stage 10) until about 2005. At this time the merging of traffic from Stoddart Drive is expected to begin to impact on inbound traffic flows on TBD (when AM peak hour traffic volumes are expected to reach about 1,500 veh/lane/hour). Disruptions to TBD traffic flows will start to become significant.
- The further provision of a right turn lane into Stoddart Drive (Option 2) would provide for more direct entry of traffic to the northern and eastern stages of Bayview (stages 7b, 8a/8b, 9, 10), bypassing entry at Woolner Road. This would benefit operations of the Woolner Road intersection, and also result in reduced internal traffic movements within Bayview. The main concerns with this option relate to safety, and the potential for crashes if right turning vehicles are not able to properly judge gaps in the high speed inbound peak traffic flows on TBD, particularly in the AM peak hour.
- A full access intersection at Stoddart Drive (Options 3) would need to be signalised for safety reasons. The intersection performance analysis showed that this option would provide an acceptable level of service beyond 2005, though its "life" would be constrained by the growth in traffic on TBD and the need for this road to be duplicated past Stoddart Drive (indicatively by around 2009 as noted in section 5.1.1).

The options analysed represent a potential staged sequence of improvements, utilising the previous pavement as far as possible as a means of containing construction costs.

5.2 Staged Improvements to Stoddart Drive/Tiger Brennan Drive Intersection

Developing a recommended staged program of improvements for this intersection is strongly influenced by the growth in regional traffic demand on Tiger Brennan Drive, and the consequential need to duplicate the section between Woolner Road and Winnellie in the medium term (by about 2009). The objective is to define improvements that will improve accessibility to Bayview at Stoddart Drive, that will be operationally and cost effective, but which will also provide an effective life before DIPE needs to upgrade TBD. In reflection of these objectives, the following alternative upgrading approaches could be considered:

- Construct a left turn acceleration lane for traffic exiting Bayview at the Stoddart Drive exit by say 2004. This would allow unconstrained left turning of traffic from Bayview up to about 2006, before these movements begin to cause significant impacts on inbound AM peak hour traffic flows on TBD. The effectiveness of this option would then begin to decline.
- The median be reopened to enable outbound traffic to turn right into Stoddart Drive from Tiger Brennan Drive, also by 2004. This would be a minimal cost option, but raises some safety concerns in the AM peak hour.

OR

- Signalise the intersection by 2005. This would avoid constructing the left turn acceleration lane, but would incur significant cost to widen the TBD approaches and exits to provide two lanes on each. This option is not regarded as cost effective, if the timetable for the duplication of this section of TBD is accepted as being about 2009.

A preferred and more realistic approach to improving traffic efficiency would be for DIPE to commence planning for upgrading Tiger Brennan Drive, with the objectives of:

- Duplicating TBD between Stoddart Drive and Woolner Road by approximately 2005/06.
- Signalising the Stoddart Drive intersection when duplication takes place.
- Upgrading the Woolner Road intersection as part of the works.

Duplication of the outbound lane on TBD between the CBD and Woolner Road would be also warranted by about 2005.

Upgrading of the Stoddart Drive exit by the Bayview Haven Joint Venture does not seem warranted, given the relatively short time frame prior to the more extensive regional road improvements being needed. Construction of the left turn acceleration lane will likely only provide limited efficient life before traffic conditions on TBD reduce its effectiveness.

Appendix B DIPL Annual Traffic Report Outputs

Urban Primary Count Stations

Year: 2021

Table: 1.1 AADT For Primary Stations - 10 Year Period

Region: Darwin

| Road Name / Location | ADT Station | Direction | Units | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------------------------------------|-------------|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Tiger Brennan Drive | | | | | | | | | | | | | |
| Outbound ramp to Roystonea Avenue | UDVDP032 | Outbound | Veh | | | | | | 2697 | 2892 | 2905 | 2791 | 2922 |
| SITE INSTALLED - 2017 - OUTBOUND ONLY | | | | | | | | | | | | | |
| Tiger Brennan Drive | | | | | | | | | | | | | |
| 800m West of Berrimah Road | UDVDP022 | Inbound | Veh | 8519 | 9243 | 9989 | 8708 | 7371 | 10335 | 10490 | 10295 | 9868 | 10794 |
| | | Outbound | Veh | 7087 | 7864 | 8676 | 8227 | 7704 | 9134 | 9390 | 9581 | 8965 | 10087 |
| | | Both | Veh | 15606 | 17107 | 18665 | 16935 | 15075 | 19469 | 19880 | 19876 | 18833 | 20881 |
| Tiger Brennan Drive | | | | | | | | | | | | | |
| 500m West of Hook Road | UDVDP016 | Inbound | Veh | 6465 | 10153 | 10341 | 9961 | 8672 | 10618 | 10919 | 10696 | 10687 | 11756 |
| | | Outbound | Veh | 9075 | 9477 | 9644 | 9616 | 8241 | 9949 | 10245 | 10006 | 10035 | 11003 |
| | | Both | Veh | 15540 | 19630 | 19985 | 19577 | 16913 | 20567 | 21164 | 20702 | 20722 | 22759 |
| Tiger Brennan Drive | | | | | | | | | | | | | |
| 200m North of Gothenberg Crescent | UDVDP006 | Inbound | Veh | 10464 | 9752 | 9908 | 10673 | 10283 | 10940 | 11280 | 10583 | 10667 | 11575 |
| | | Outbound | Veh | 10244 | 9957 | 10636 | 10473 | 10851 | 11544 | 12231 | 11189 | 11362 | 11879 |
| | | Both | Veh | 20708 | 19709 | 20544 | 21146 | 21134 | 22484 | 23511 | 21772 | 22029 | 23454 |
| Trower Road | | | | | | | | | | | | | |
| 50m West of Ryland Road | UDVDP009 | Inbound | Veh | 12928 | 13105 | 12948 | 13513 | 14552 | 14295 | 13919 | 13393 | 13550 | 14408 |
| | | Outbound | Veh | 11463 | 10532 | 13671 | 13455 | 14142 | 12492 | 13889 | 13616 | 13451 | 13734 |
| | | Both | Veh | 24391 | 23637 | 26619 | 26968 | 28694 | 26787 | 27808 | 27009 | 27001 | 28142 |
| Vanderlin Drive | | | | | | | | | | | | | |
| 100m West of Lee Point Road | UDVDP013 | Inbound | Veh | 10307 | 10403 | 10807 | 10692 | 10794 | 10420 | 10078 | 9909 | 9807 | 10194 |
| | | Outbound | Veh | 11158 | 10478 | 10890 | 10678 | 10663 | 10175 | 9821 | 9617 | 9486 | 9830 |
| | | Both | Veh | 21465 | 20881 | 21697 | 21370 | 21457 | 20595 | 19899 | 19526 | 19293 | 20024 |
| Vanderlin Drive | | | | | | | | | | | | | |
| 100m North of Manunda Terrace | UDVDP012 | Inbound | Veh | 7533 | 8042 | 8394 | 8614 | 8906 | 8252 | 8400 | 8296 | 8135 | 8678 |
| | | Outbound | Veh | 7473 | 7975 | 8284 | 8480 | 8753 | 8023 | 8485 | 8357 | 8230 | 8608 |
| | | Both | Veh | 15006 | 16017 | 16678 | 17094 | 17659 | 16275 | 16885 | 16653 | 16365 | 17286 |

Darwin Total = 31

Appendix C CoD Traffic Count Reports



Traffic Summary

Bayview - Stoddart Drive @ Number 47
0:00 Tuesday, 11 August 2020 to 0:00 Tuesday, 18 August 2020 (7.00 days)

Volume

| | All Days | Weekdays | Weekend | |
|------------------------|----------|----------|---------|--|
| Both directions | 11374 | 8359 | 3015 | |
| East (bound) | 4575 | 3257 | 1318 | |
| West (bound) | 6799 | 5102 | 1697 | |

Speed

| | All Days | Weekdays | Weekend | |
|-------------------------|--------------|----------|---------|------|
| Mean speed | 44.3 | 44.5 | 43.6 | km/h |
| Median speed | 44.6 | 45.0 | 43.9 | km/h |
| 85% speed | 51.8 | 52.2 | 51.1 | km/h |
| Peak speed | 77.7 (04:00) | - | - | km/h |
| Mean Exceeding | 54.2 | 54.2 | 54.0 | km/h |
| Number speeding | 2717 | 2096 | 621 | |
| Percent speeding | 23.9 | 25.1 | 20.6 | |

Posted speed limit = 50 km/h

Class

| Class | All Days | Weekdays | Weekend | |
|-----------------|----------|----------|---------|--|
| 1 - SV | 10684 | 7774 | 2910 | |
| 2 - SVT | 106 | 90 | 16 | |
| 3 - TB2 | 564 | 475 | 89 | |
| 4 - TB3 | 7 | 7 | 0 | |
| 5 - T4 | 7 | 7 | 0 | |
| 6 - ART3 | 1 | 1 | 0 | |
| 7 - ART4 | 4 | 4 | 0 | |
| 8 - ART5 | 0 | 0 | 0 | |
| 9 - ART6 | 1 | 1 | 0 | |
| 10 - BD | 0 | 0 | 0 | |
| 11 - DRT | 0 | 0 | 0 | |
| 12 - TRT | 0 | 0 | 0 | |



Traffic Summary

Stoddart Drive @ No.24 Bayview

0:00 Tuesday, 13 September 2016 to 0:00 Tuesday, 20 September 2016 (7.00 days)

Volume

| | All Days | Weekdays | Weekend | |
|------------------------|----------|----------|---------|--|
| Both directions | 15250 | 10997 | 4253 | |
| West (bound) | 8288 | 6051 | 2237 | |
| East (bound) | 6962 | 4946 | 2016 | |

Speed

| | All Days | Weekdays | Weekend | |
|-------------------------|--------------|----------|---------|------|
| Mean speed | 47.0 | 47.3 | 46.3 | km/h |
| Median speed | 47.9 | 47.9 | 47.2 | km/h |
| 85% speed | 55.1 | 55.4 | 54.7 | km/h |
| Peak speed | 93.7 (12:00) | - | - | km/h |
| Mean Exceeding | 55.0 | 55.1 | 54.9 | km/h |
| Number speeding | 6040 | 4493 | 1547 | |
| Percent speeding | 39.6 | 40.9 | 36.4 | |

Posted speed limit = 50 km/h

Class

| Class | All Days | Weekdays | Weekend | |
|-----------------|----------|----------|---------|--|
| 1 - SV | 14238 | 10203 | 4035 | |
| 2 - SVT | 152 | 104 | 48 | |
| 3 - TB2 | 804 | 642 | 162 | |
| 4 - TB3 | 30 | 24 | 6 | |
| 5 - T4 | 12 | 11 | 1 | |
| 6 - ART3 | 6 | 6 | 0 | |
| 7 - ART4 | 6 | 6 | 0 | |
| 8 - ART5 | 0 | 0 | 0 | |
| 9 - ART6 | 1 | 0 | 1 | |
| 10 - BD | 0 | 0 | 0 | |
| 11 - DRT | 1 | 1 | 0 | |
| 12 - TRT | 0 | 0 | 0 | |



Traffic Summary

Bayview Boulevard Bayview @ number 53
0:00 Tuesday, 15 March 2016 to 0:00 Tuesday, 22 March 2016 (7.00 days)

Volume

| | All Days | Weekdays | Weekend | |
|------------------------|----------|----------|---------|--|
| Both directions | 4786 | 3485 | 1301 | |
| West (bound) | 2369 | 1726 | 643 | |
| East (bound) | 2417 | 1759 | 658 | |

Speed

| | All Days | Weekdays | Weekend | |
|-------------------------|--------------|----------|---------|------|
| Mean speed | 36.3 | 36.4 | 35.9 | km/h |
| Median speed | 36.7 | 36.7 | 36.4 | km/h |
| 85% speed | 45.0 | 45.0 | 45.0 | km/h |
| Peak speed | 85.5 (22:00) | - | - | km/h |
| Mean Exceeding | 53.4 | 53.6 | 53.0 | km/h |
| Number speeding | 235 | 174 | 61 | |
| Percent speeding | 4.9 | 5.0 | 4.7 | |

Posted speed limit = 50 km/h

Class

| Class | All Days | Weekdays | Weekend | |
|-----------------|----------|----------|---------|--|
| 1 - SV | 4320 | 3114 | 1206 | |
| 2 - SVT | 19 | 7 | 12 | |
| 3 - TB2 | 415 | 337 | 78 | |
| 4 - TB3 | 25 | 20 | 5 | |
| 5 - T4 | 2 | 2 | 0 | |
| 6 - ART3 | 2 | 2 | 0 | |
| 7 - ART4 | 3 | 3 | 0 | |
| 8 - ART5 | 0 | 0 | 0 | |
| 9 - ART6 | 0 | 0 | 0 | |
| 10 - BD | 0 | 0 | 0 | |
| 11 - DRT | 0 | 0 | 0 | |
| 12 - TRT | 0 | 0 | 0 | |



Traffic Summary

Bayview Boulevard Bayview @ number 49
0:00 Tuesday, 15 March 2016 to 0:00 Tuesday, 22 March 2016 (7.00 days)

Volume

| | All Days | Weekdays | Weekend | |
|------------------------|----------|----------|---------|--|
| Both directions | 5124 | 3752 | 1372 | |
| West (bound) | 2559 | 1880 | 679 | |
| East (bound) | 2565 | 1872 | 693 | |

Speed

| | All Days | Weekdays | Weekend | |
|-------------------------|--------------|----------|---------|------|
| Mean speed | 39.7 | 39.7 | 39.6 | km/h |
| Median speed | 40.3 | 40.3 | 40.0 | km/h |
| 85% speed | 48.2 | 48.2 | 48.2 | km/h |
| Peak speed | 87.5 (22:00) | - | - | km/h |
| Mean Exceeding | 53.7 | 53.8 | 53.6 | km/h |
| Number speeding | 526 | 383 | 143 | |
| Percent speeding | 10.3 | 10.2 | 10.4 | |

Posted speed limit = 50 km/h

Class

| Class | All Days | Weekdays | Weekend | |
|-----------------|----------|----------|---------|--|
| 1 - SV | 4638 | 3362 | 1276 | |
| 2 - SVT | 26 | 13 | 13 | |
| 3 - TB2 | 414 | 344 | 70 | |
| 4 - TB3 | 42 | 29 | 13 | |
| 5 - T4 | 1 | 1 | 0 | |
| 6 - ART3 | 2 | 2 | 0 | |
| 7 - ART4 | 1 | 1 | 0 | |
| 8 - ART5 | 0 | 0 | 0 | |
| 9 - ART6 | 0 | 0 | 0 | |
| 10 - BD | 0 | 0 | 0 | |
| 11 - DRT | 0 | 0 | 0 | |
| 12 - TRT | 0 | 0 | 0 | |



TERRITORY TRAFFIC SURVEYS
DATA ACQUISITION SPECIALISTS

Traffic Summary

Woolner Rd @ top of hill, Woolner
0:00 Saturday, 30 October 2021 to 0:00 Saturday, 6 November 2021 (7 days)

Volume

| | All Days | Weekdays | Weekend | |
|------------------------|----------|----------|---------|--|
| Both directions | 48173 | 34543 | 13630 | |
| North | 24919 | 17602 | 7317 | |
| South | 23254 | 16941 | 6313 | |

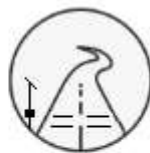
Speed

| | All Days | Weekdays | Weekend | |
|-------------------------|------------|----------|---------|------|
| Mean speed | 46.0 | 45.7 | 46.7 | km/h |
| Median speed | 46.6 | 46.4 | 46.8 | km/h |
| 85% speed | 52.7 | 52.6 | 52.9 | km/h |
| Peak speed | 130.9 (13) | - | - | km/h |
| Mean Exceeding | 63.9 | 63.9 | 63.8 | km/h |
| Number speeding | 867 | 596 | 271 | |
| Percent speeding | 1.800 | 1.725 | 1.988 | |

Posted speed limit = 60 km/h

Class

| Class | All Days | Weekdays | Weekend | |
|-----------------|----------|----------|---------|--|
| 1 - SV | 44867 | 31941 | 12926 | |
| 2 - SVT | 512 | 317 | 195 | |
| 3 - TB2 | 2367 | 1912 | 455 | |
| 4 - TB3 | 226 | 212 | 14 | |
| 5 - T4 | 61 | 48 | 13 | |
| 6 - ART3 | 47 | 43 | 4 | |
| 7 - ART4 | 38 | 26 | 12 | |
| 8 - ART5 | 8 | 8 | 0 | |
| 9 - ART6 | 41 | 32 | 9 | |
| 10 - BD | 2 | 1 | 1 | |
| 11 - DRT | 3 | 2 | 1 | |
| 12 - TRT | 1 | 1 | 0 | |



TERRITORY TRAFFIC SURVEYS
DATA ACQUISITION SPECIALISTS

Traffic Summary

Woolner Rd @ bottom of hill, Woolner
0:00 Saturday, 30 October 2021 to 0:00 Saturday, 6 November 2021 (7 days)

Volume

| | All Days | Weekdays | Weekend | |
|------------------------|----------|----------|---------|--|
| Both directions | 47877 | 34321 | 13556 | |
| North | 24340 | 17176 | 7164 | |
| South | 23537 | 17145 | 6392 | |

Speed

| | All Days | Weekdays | Weekend | |
|-------------------------|------------|----------|---------|------|
| Mean speed | 54.1 | 53.9 | 54.7 | km/h |
| Median speed | 54.4 | 54.2 | 54.5 | km/h |
| 85% speed | 60.3 | 60.1 | 60.5 | km/h |
| Peak speed | 107.7 (22) | - | - | km/h |
| Mean Exceeding | 63.7 | 63.7 | 63.9 | km/h |
| Number speeding | 7696 | 5357 | 2339 | |
| Percent speeding | 16.07 | 15.61 | 17.25 | |

Posted speed limit = 60 km/h

Class

| Class | All Days | Weekdays | Weekend | |
|-----------------|----------|----------|---------|--|
| 1 - SV | 42613 | 30234 | 12379 | |
| 2 - SVT | 425 | 240 | 185 | |
| 3 - TB2 | 4466 | 3547 | 919 | |
| 4 - TB3 | 147 | 139 | 8 | |
| 5 - T4 | 40 | 30 | 10 | |
| 6 - ART3 | 66 | 43 | 23 | |
| 7 - ART4 | 69 | 44 | 25 | |
| 8 - ART5 | 10 | 9 | 1 | |
| 9 - ART6 | 35 | 29 | 6 | |
| 10 - BD | 5 | 5 | 0 | |
| 11 - DRT | 0 | 0 | 0 | |
| 12 - TRT | 1 | 1 | 0 | |



Traffic Summary

Woolner Road Outbound between Bishop Street and Brewery Place
0:00 Friday, 18 September 2015 to 0:00 Friday, 25 September 2015 (7 days)

Volume

| | All Days | Weekdays | Weekend | |
|------------------------|----------|----------|---------|--|
| Both directions | 25495 | 19106 | 6389 | |
| South | 25495 | 19106 | 6389 | |
| North | 0 | 0 | 0 | |

Speed

| | All Days | Weekdays | Weekend | |
|-------------------------|--------------|----------|---------|------|
| Mean speed | 38.6 | 38.1 | 39.8 | km/h |
| Median speed | 38.9 | 38.5 | 40.0 | km/h |
| 85% speed | 43.9 | 43.9 | 45.0 | km/h |
| Peak speed | 77.4 (18:00) | - | - | km/h |
| Mean Exceeding | 63.7 | 64.7 | 62.4 | km/h |
| Number speeding | 19 | 11 | 8 | |
| Percent speeding | 0.1 | 0.1 | 0.1 | |

Posted speed limit = 60 km/h

Class

| Class | All Days | Weekdays | Weekend | |
|-----------------|----------|----------|---------|--|
| 1 - SV | 23351 | 17340 | 6011 | |
| 2 - SVT | 279 | 202 | 77 | |
| 3 - TB2 | 1563 | 1309 | 254 | |
| 4 - TB3 | 172 | 150 | 22 | |
| 5 - T4 | 54 | 45 | 9 | |
| 6 - ART3 | 18 | 13 | 5 | |
| 7 - ART4 | 20 | 13 | 7 | |
| 8 - ART5 | 6 | 6 | 0 | |
| 9 - ART6 | 32 | 28 | 4 | |
| 10 - BD | 0 | 0 | 0 | |
| 11 - DRT | 0 | 0 | 0 | |
| 12 - TRT | 0 | 0 | 0 | |



Traffic Summary

Woolner Road Outbound between Stuart Highway and Bishop Street
0:00 Friday, 18 September 2015 to 0:00 Friday, 25 September 2015 (7 days)

Volume

| | All Days | Weekdays | Weekend | |
|------------------------|----------|----------|---------|--|
| Both directions | 21442 | 15719 | 5723 | |
| South | 21441 | 15718 | 5723 | |
| North | 0 | 0 | 0 | |

Speed

| | All Days | Weekdays | Weekend | |
|-------------------------|--------------|----------|---------|------|
| Mean speed | 38.6 | 38.4 | 39.3 | km/h |
| Median speed | 38.5 | 38.5 | 39.2 | km/h |
| 85% speed | 43.6 | 43.2 | 43.9 | km/h |
| Peak speed | 72.8 (23:00) | - | - | km/h |
| Mean Exceeding | 64.0 | 63.3 | 64.8 | km/h |
| Number speeding | 24 | 13 | 11 | |
| Percent speeding | 0.1 | 0.1 | 0.2 | |

Posted speed limit = 60 km/h

Class

| Class | All Days | Weekdays | Weekend | |
|-----------------|----------|----------|---------|--|
| 1 - SV | 19744 | 14326 | 5418 | |
| 2 - SVT | 218 | 154 | 64 | |
| 3 - TB2 | 1089 | 919 | 170 | |
| 4 - TB3 | 258 | 210 | 48 | |
| 5 - T4 | 37 | 27 | 10 | |
| 6 - ART3 | 25 | 20 | 5 | |
| 7 - ART4 | 27 | 22 | 5 | |
| 8 - ART5 | 11 | 11 | 0 | |
| 9 - ART6 | 29 | 26 | 3 | |
| 10 - BD | 4 | 4 | 0 | |
| 11 - DRT | 0 | 0 | 0 | |
| 12 - TRT | 0 | 0 | 0 | |

Appendix D Traffic Count Information

1. Stoddart Dr / Tiger Brennan Dr / Woolner Rd

Date: Wednesday, 3 August 2022

AM Period Between 7-9am

| | | | |
|------------|------|-------------|------|
| Time Start | 7:00 | Time Finish | 9:00 |
|------------|------|-------------|------|

| Time Block (15mins) | Tiger Brennan Drive Eastbound | | | | | | | | | | | | Woolner Drive Southbound | | | | | | | | | | | | | | | |
|---------------------|-------------------------------|----|-------|------|-----------------------|----|-------|------|---------------------|----|-------|------|--------------------------|----|-------|------|-----------------------|----|-------|------|---------------------|----|-------|------|----|----|-------|------|
| | Direction 1 (Left) | | | | Direction 2 (Through) | | | | Direction 3 (Right) | | | | Direction 4 (Left) | | | | Direction 5 (Through) | | | | Direction 6 (Right) | | | | | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds |
| A - 7:00-7:15 | 28 | | | | 144 | 1 | | | 3 | | | | 30 | 2 | | | 4 | | | | 56 | 5 | 1 | | | | | |
| B - 7:15-7:30 | 35 | | | | 149 | 3 | | | 6 | 1 | | | 41 | 1 | | | 2 | 1 | | 1 | 109 | 3 | | | | | | |
| C - 7:30-7:45 | 37 | | | | 188 | | | | 10 | | | | 50 | 1 | 1 | | 5 | 1 | | | 132 | 2 | | | | | | |
| D - 7:45-8:00 | 49 | 1 | | | 256 | 7 | | | 13 | | | | 48 | 1 | | | 12 | | | | 151 | 1 | | | | | | |
| E - 8:00-8:15 | 43 | 3 | | | 182 | 10 | | | 23 | | | | 52 | 5 | | | 10 | | | | 178 | | | | | | | |
| F - 8:15-8:30 | 45 | | | | 186 | 3 | 1 | | 7 | 1 | | | 32 | 1 | | | 10 | | | | 134 | 3 | | | | | | |
| G - 8:30-8:45 | 59 | | | | 126 | 9 | | | 4 | 1 | | | 42 | 1 | | | 10 | | | | 101 | 2 | | | | | | |
| H - 8:45-9:00 | 42 | | | | 123 | 5 | | | 12 | 2 | | | 31 | | | | 10 | 2 | | | 100 | 4 | | | | | | |

| Peak Hour Calc | |
|----------------|------|
| A-D | 3579 |
| B-E | 4010 |
| C-F | 4150 |
| D-G | 3882 |
| E-H | 3275 |

| Time Block (15mins) | Tiger Brennan Drive Westbound | | | | | | | | | | | | Stoddart Drive Northbound | | | | | | | | | | | | | | | |
|---------------------|-------------------------------|----|-------|------|-----------------------|----|-------|------|---------------------|----|-------|------|---------------------------|----|-------|------|------------------------|----|-------|------|----------------------|----|-------|------|----|----|-------|------|
| | Direction 7 (Left) | | | | Direction 8 (Through) | | | | Direction 9 (Right) | | | | Direction 10 (Left) | | | | Direction 11 (Through) | | | | Direction 12 (Right) | | | | | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds |
| A - 7:00-7:15 | 1 | | | | 220 | 3 | | 2 | 19 | | 1 | | 7 | 1 | | | 13 | | | | 39 | | | 1 | | | | |
| B - 7:15-7:30 | 1 | | | | 340 | 10 | 2 | | 38 | 1 | | | 11 | 2 | | | 33 | 1 | 4 | | 27 | | | | | | | |
| C - 7:30-7:45 | 1 | | | | 441 | 5 | | | 97 | 1 | | | 17 | 2 | | | 43 | 1 | 1 | | 33 | | | | | | | |
| D - 7:45-8:00 | 1 | | | | 433 | 5 | | | 92 | 2 | | | 35 | | | | 41 | | | | 38 | | | | | | | |
| E - 8:00-8:15 | 0 | | | | 354 | 4 | | | 71 | | | | 17 | | | | 38 | | | | 27 | | | | | | | |
| F - 8:15-8:30 | 2 | | | | 395 | 9 | | | 45 | | | | 20 | 1 | | | 27 | | | 2 | 29 | | | | | | | |
| G - 8:30-8:45 | 1 | | | | 317 | 5 | | | 79 | 2 | | | 10 | | | | 18 | 1 | | | 19 | | | | | | | |
| H - 8:45-9:00 | 2 | | | | 184 | 8 | | | 28 | 2 | | | 10 | | | | 16 | 1 | 1 | | 4 | 2 | | | | | | |

Pedestrian Movements - Times crossing activated

| Time Block (15mins) | PD1 | PD2 |
|---------------------|-----|-----|
| A - 7:00-7:15 | | |
| B - 7:15-7:30 | 1 | |
| C - 7:30-7:45 | | |
| D - 7:45-8:00 | | |
| E - 8:00-8:15 | | |
| F - 8:15-8:30 | | 1 |
| G - 8:30-8:45 | | |
| H - 8:45-9:00 | | |

1. Stoddart Dr / Tiger Brennan Dr / Woolner Rd

Date: Tuesday, 2 August 2022

PM Period Between 4-6pm

| | | | |
|------------|-------|-------------|-------|
| Time Start | 16:00 | Time Finish | 18:00 |
|------------|-------|-------------|-------|

| Time Block (15mins) | Tiger Brennan Drive Eastbound | | | | | | | | | | | | Woolner Drive Southbound | | | | | | | | | | | | | | | | | | | |
|---------------------|-------------------------------|----|-------|------|-----------------------|----|-------|------|---------------------|----|-------|------|--------------------------|----|-------|------|-----------------------|----|-------|------|---------------------|----|-------|------|----|----|-------|------|--|--|--|--|
| | Direction 1 (Left) | | | | Direction 2 (Through) | | | | Direction 3 (Right) | | | | Direction 4 (Left) | | | | Direction 5 (Through) | | | | Direction 6 (Right) | | | | | | | | | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | | | | |
| A - 16:00-16:15 | 80 | 1 | | | 325 | 3 | | | 15 | | | | 60 | 2 | | | 20 | | | | 90 | 1 | | | | | | | | | | |
| B - 16:15-16:30 | 90 | | | | 277 | 3 | | | 12 | | | | 58 | 1 | | | 28 | | | | 61 | 1 | | | | | | | | | | |
| C - 16:30-16:45 | 110 | 1 | | | 425 | 3 | 1 | | 24 | | | | 72 | | | | 23 | | 1 | | 79 | 3 | 1 | | | | | | | | | |
| D - 16:45-17:00 | 125 | | | | 475 | 3 | | | 35 | 1 | | | 55 | | | | 31 | | | | 103 | 3 | 2 | | | | | | | | | |
| E - 17:00-17:15 | 136 | | | | 410 | 5 | | | 38 | | | | 80 | | | | 37 | | | | 67 | 3 | 1 | | | | | | | | | |
| F - 17:15-17:30 | 85 | | | | 120 | 2 | | | 40 | | | | 60 | | | | 36 | | | | 98 | 2 | 1 | | | | | | | | | |
| G - 17:30-17:45 | 86 | | | | 451 | 2 | 1 | | 16 | | | | 41 | | | | 24 | | | | 77 | 1 | | | | | | | | | | |
| H - 17:45-18:00 | 75 | 1 | | | 142 | 3 | | | 21 | 1 | | | 39 | | | | 18 | | | | 105 | 1 | 2 | | | | | | | | | |

| Peak Hour Calc | |
|----------------|------|
| A-D | 3789 |
| B-E | 3917 |
| C-F | 3828 |
| D-G | 3731 |
| E-H | 3198 |

| Time Block (15mins) | Tiger Brennan Drive Westbound | | | | | | | | | | | | Stoddart Drive Northbound | | | | | | | | | | | | | | | | | | | |
|---------------------|-------------------------------|----|-------|------|-----------------------|----|-------|------|---------------------|----|-------|------|---------------------------|----|-------|------|------------------------|----|-------|------|----------------------|----|-------|------|----|----|-------|------|--|--|--|--|
| | Direction 7 (Left) | | | | Direction 8 (Through) | | | | Direction 9 (Right) | | | | Direction 10 (Left) | | | | Direction 11 (Through) | | | | Direction 12 (Right) | | | | | | | | | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | | | | |
| A - 16:00-16:15 | 7 | 1 | | | 203 | 1 | | | 50 | 1 | | | 14 | 1 | | | 10 | 2 | | | 18 | | | | 20 | | | | | | | |
| B - 16:15-16:30 | 5 | | | | 173 | 3 | 3 | | 15 | 1 | | | 15 | | | | 12 | | | | 20 | | | | | | | | | | | |
| C - 16:30-16:45 | 7 | | | | 208 | 2 | 1 | | 43 | | | | 8 | | | | 16 | | | | 5 | | | | | | | | | | | |
| D - 16:45-17:00 | 8 | | | | 193 | 1 | 5 | | 57 | 1 | | | 8 | | | | 15 | | | | 6 | | | | | | | | | | | |
| E - 17:00-17:15 | 2 | | 1 | | 163 | 5 | 1 | | 50 | | | | 2 | 1 | | | 23 | | | | 12 | | | | | | | | | | | |
| F - 17:15-17:30 | 3 | | | | 158 | 3 | 1 | | 41 | | | | 6 | | | | 22 | | 1 | | 8 | | | | | | | | | | | |
| G - 17:30-17:45 | 3 | | | | 150 | | | | 37 | | 2 | | 7 | | | | 20 | | | | 11 | | | | | | | | | | | |
| H - 17:45-18:00 | 0 | | | | 119 | 3 | 1 | | 17 | | | | 7 | 1 | | | 23 | | | | 12 | | | | | | 1 | | | | | |

Pedestrian Movements - Times crossing activated

| Time Block (15mins) | PD1 | PD2 |
|---------------------|-----|-----|
| A - 16:00-16:15 | | |
| B - 16:15-16:30 | | |
| C - 16:30-16:45 | 1 | 1 |
| D - 16:45-17:00 | | |
| E - 17:00-17:15 | | |
| F - 17:15-17:30 | | |
| G - 17:30-17:45 | | 1 |
| H - 17:45-18:00 | | |

2.Stoddart Dr / Tiger Brennan Dr

Date: Thursday, 4 August 2022

AM Period Between 7-9am

| | | | |
|------------|------|-------------|------|
| Time Start | 7:30 | Time Finish | 8:30 |
|------------|------|-------------|------|

| Time Block (15mins) | Tiger Brennan Drive Westbound | | | | | | | | Stoddart Drive | | | |
|---------------------|-------------------------------|----|-------|------|-----------------------|----|-------|------|--------------------|----|-------|------|
| | Direction 1 (Left) | | | | Direction 2 (Through) | | | | Direction 3 (Left) | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds |
| A - 7:00-7:15 | 1 | 1 | | 1 | 271 | 6 | 1 | | 4 | | 1 | |
| B - 7:15-7:30 | 3 | 1 | | 1 | 339 | 3 | 1 | 1 | 0 | | 1 | 3 |
| C - 7:30-7:45 | 2 | | | 1 | 490 | 10 | | | 6 | | | 1 |
| D - 7:45-8:00 | 7 | | | 1 | 521 | 11 | | | 2 | | | |
| E - 8:00-8:15 | 5 | | | 1 | 464 | 11 | | | 7 | | | |
| F - 8:15-8:30 | 4 | | | | 424 | 7 | | 1 | 7 | | | |
| G - 8:30-8:45 | 9 | 1 | | | 353 | 12 | | | 7 | | | |
| H - 8:45-9:00 | 5 | | | | 228 | 10 | | 1 | 5 | | | |

| Peak Hour Calc | |
|----------------|------|
| A-D | 1646 |
| B-E | 1846 |
| C-F | 1939 |
| D-G | 1810 |
| E-H | 1518 |

Date: Wednesday, 3 August 2022

PM Period Between 4-6pm

| | | | |
|------------|-------|-------------|-------|
| Time Start | 16:30 | Time Finish | 17:30 |
|------------|-------|-------------|-------|

| Time Block (15mins) | Tiger Brennan Drive Westbound | | | | | | | | Stoddart Drive | | | |
|---------------------|-------------------------------|----|-------|------|-----------------------|----|-------|------|--------------------|----|-------|------|
| | Direction 1 (Left) | | | | Direction 2 (Through) | | | | Direction 3 (Left) | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds |
| A - 16:00-16:15 | 17 | | | | 187 | 2 | 1 | | 7 | | | |
| B - 16:15-16:30 | 27 | | | | 422 | 5 | 1 | | 3 | | | |
| C - 16:30-16:45 | 27 | | 1 | | 292 | 1 | 1 | | 3 | | | |
| D - 16:45-17:00 | 25 | | 1 | | 266 | 1 | 1 | | 8 | | | |
| E - 17:00-17:15 | 30 | | | | 230 | 3 | | | 9 | | | |
| F - 17:15-17:30 | 33 | | | | 250 | 4 | 2 | | 4 | | | |
| G - 17:30-17:45 | 23 | | | | 195 | | 3 | | 9 | | | |
| H - 17:45-18:00 | 17 | | | | 228 | 4 | 2 | | 5 | | | |

| Peak Hour Calc | |
|----------------|------|
| A-D | 1284 |
| B-E | 1342 |
| C-F | 1177 |
| D-G | 1082 |
| E-H | 1033 |

3. Stoddart Dr / Fanning Dr

Date: Friday, 5 August 2022

AM Period Between 7-9am

| | | | |
|------------|------|-------------|------|
| Time Start | 7:00 | Time Finish | 9:00 |
|------------|------|-------------|------|

| Time Block (15mins) | Stoddart Drive Eastbound | | | | | | | | Stoddart Drive Southbound | | | | | | | | Fanning Drive Northbound | | | | | | | |
|---------------------|--------------------------|----|-------|------|---------------------|----|-------|------|---------------------------|----|-------|------|-----------------------|----|-------|------|--------------------------|----|-------|------|--------------------|----|-------|------|
| | Direction 1 (Left) | | | | Direction 2 (Right) | | | | Direction 3 (Right) | | | | Direction 4 (Through) | | | | Direction 5 (Through) | | | | Direction 6 (Left) | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds |
| A - 7:00-7:15 | 0 | 1 | | | 2 | | | 1 | 2 | 1 | | | 2 | | | | 2 | | | 1 | 19 | | | 2 |
| B - 7:15-7:30 | 0 | 2 | | | 4 | | | 6 | 3 | 3 | | 1 | 3 | 1 | | 1 | 5 | | | 5 | 29 | | | 1 |
| C - 7:30-7:45 | 2 | 1 | 1 | | 2 | | 1 | 2 | 2 | 1 | | | 1 | | | | 5 | | | 2 | 22 | | | |
| D - 7:45-8:00 | 3 | | | | 2 | | 1 | | 6 | | | | 2 | | | 1 | 5 | | 1 | | 30 | | | |
| E - 8:00-8:15 | 0 | | | | 2 | | | 2 | 2 | | | | 3 | | | | 4 | | 1 | 1 | 27 | | 1 | |
| F - 8:15-8:30 | 0 | 1 | | | 3 | | | 1 | 7 | 1 | | | 2 | | | | 6 | | | | 10 | | | |
| G - 8:30-8:45 | 1 | | | | 6 | | | | 7 | 1 | | | 2 | | | | 3 | | | | 9 | | | |
| H - 8:45-9:00 | 1 | | | 1 | 9 | | | | 5 | | | | 5 | | | | 10 | | | | 18 | | | 1 |

| Peak Hour Calc | |
|----------------|-----|
| A-D | 153 |
| B-E | 164 |
| C-F | 148 |
| D-G | 142 |
| E-H | 142 |

Date: Thursday, 4 August 2022

PM Period Between 4-6pm

| | | | |
|------------|-------|-------------|-------|
| Time Start | 16:00 | Time Finish | 18:00 |
|------------|-------|-------------|-------|

| Time Block (15mins) | Stoddart Drive Eastbound | | | | | | | | Stoddart Drive Southbound | | | | | | | | Fanning Drive Northbound | | | | | | | |
|---------------------|--------------------------|----|-------|------|---------------------|----|-------|------|---------------------------|----|-------|------|-----------------------|----|-------|------|--------------------------|----|-------|------|--------------------|----|-------|------|
| | Direction 1 (Left) | | | | Direction 2 (Right) | | | | Direction 3 (Right) | | | | Direction 4 (Through) | | | | Direction 5 (Through) | | | | Direction 6 (Left) | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds |
| A - 16:00-16:15 | 1 | | | | 14 | | | | 4 | | | | 9 | | | | 6 | | | | 9 | | | |
| B - 16:15-16:30 | 3 | | | | 13 | | | | 7 | | | | 14 | | | | 7 | | | | 9 | | | |
| C - 16:30-16:45 | 0 | | | | 12 | | | | 2 | | | 1 | 25 | | | | 9 | | | | 6 | | | |
| D - 16:45-17:00 | 1 | | | | 10 | | | 1 | 13 | | | 2 | 19 | | | | 5 | | | | 4 | | | |
| E - 17:00-17:15 | 1 | | | | 11 | | | 1 | 9 | 1 | 1 | | 17 | | | | 6 | | | | 6 | | | 1 |
| F - 17:15-17:30 | 1 | | | | 16 | | | | 16 | | | | 21 | | 1 | | 6 | | | 1 | 13 | | | |
| G - 17:30-17:45 | 1 | | | | 20 | | 1 | 1 | 13 | | | | 13 | | 1 | | 16 | | 1 | 4 | 8 | | | 2 |
| H - 17:45-18:00 | 0 | | | 1 | 11 | | | 2 | 12 | 1 | | 2 | 13 | | | | 6 | | 2 | | 14 | | | |

| Peak Hour Calc | |
|----------------|-----|
| A-D | 202 |
| B-E | 209 |
| C-F | 229 |
| D-G | 246 |
| E-H | 250 |

4. Stoddart Dr / Bayview Blvd

Date: Friday, 5 August 2022

AM Period Between 7-9am

| | | | |
|------------|------|-------------|------|
| Time Start | 7:00 | Time Finish | 9:00 |
|------------|------|-------------|------|

| Time Block (15mins) | Stoddart Drive Southbound | | | | | | | | Stoddart Drive Westbound | | | | | | | | Bayview Boulevard Northbound | | | | | | | | | | | | | | | |
|---------------------|---------------------------|----|-------|------|-----------------------|----|-------|------|--------------------------|----|-------|------|-----------------------|----|-------|------|------------------------------|----|-------|------|---------------------|----|-------|------|----|----|-------|------|--|--|--|---|
| | Direction 1 (Left) | | | | Direction 2 (Through) | | | | Direction 3 (Right) | | | | Direction 4 (Through) | | | | Direction 5 (Through) | | | | Direction 6 (Right) | | | | | | | | | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | | | | |
| A - 7:00-7:15 | 7 | | | | 0 | | | | | | | 1 | 42 | 1 | | | 16 | | | | 0 | | | | | | | | | | | 3 |
| B - 7:15-7:30 | 4 | 2 | | | 2 | | | | 1 | 2 | | | 52 | | 1 | | 21 | 2 | 1 | | 0 | | | | | | 1 | 1 | | | | |
| C - 7:30-7:45 | 2 | 1 | | | 3 | | | 1 | 1 | 1 | | 1 | 70 | 1 | 5 | 1 | 20 | 2 | | | 0 | | | | | | | | | | | |
| D - 7:45-8:00 | 17 | | | | 8 | | | | 1 | | | | 75 | | | | 25 | | 1 | | 0 | | | | | | | | | | | |
| E - 8:00-8:15 | 14 | | | 1 | 14 | | | | 0 | | | 1 | 57 | | | | 17 | | | | 0 | | | | | | | 2 | | | | |
| F - 8:15-8:30 | 14 | 1 | | | 2 | 1 | | | 0 | 1 | | | 40 | | | 2 | 15 | 1 | | | 0 | | | | | | | | | | | |
| G - 8:30-8:45 | 18 | | | | 9 | | | | 0 | | | | 28 | | | | 10 | 1 | | | 0 | | | | | | | | | | | |
| H - 8:45-9:00 | 12 | | | | 3 | | | | 3 | | | | 36 | | | | 12 | | 1 | | 0 | | | | | | | | | | | 1 |

| Peak Hour Calc | |
|----------------|-----|
| A-D | 367 |
| B-E | 404 |
| C-F | 395 |
| D-G | 364 |
| E-H | 304 |

Date: Thursday, 4 August 2022

PM Period Between 4-6pm

| | | | |
|------------|-------|-------------|-------|
| Time Start | 16:00 | Time Finish | 18:00 |
|------------|-------|-------------|-------|

| Time Block (15mins) | Stoddart Drive Southbound | | | | | | | | Stoddart Drive Westbound | | | | | | | | Bayview Boulevard Northbound | | | | | | | | | | | | | | | |
|---------------------|---------------------------|----|-------|------|-----------------------|----|-------|------|--------------------------|----|-------|------|-----------------------|----|-------|------|------------------------------|----|-------|------|---------------------|----|-------|------|----|----|-------|------|--|--|--|--|
| | Direction 1 (Left) | | | | Direction 2 (Through) | | | | Direction 3 (Right) | | | | Direction 4 (Through) | | | | Direction 5 (Through) | | | | Direction 6 (Right) | | | | | | | | | | | |
| | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | LV | HV | Cycle | Peds | | | | |
| A - 16:00-16:15 | 26 | | | | 2 | | | | 2 | | | | 20 | | | | 2 | | | | 2 | | | | 2 | | | | | | | |
| B - 16:15-16:30 | 19 | 1 | | | 14 | | | | 3 | | | | 21 | | | | 6 | | | | 3 | | | | 3 | | | | | | | |
| C - 16:30-16:45 | 39 | | | | 8 | | | | 4 | | | | 20 | 1 | | | 6 | | | | 0 | | | | | | | | | | | |
| D - 16:45-17:00 | 27 | | | | 13 | | | | 1 | | | | 12 | | | | 6 | | | | 1 | | | | 1 | | | 1 | | | | |
| E - 17:00-17:15 | 39 | 1 | | | 13 | | | | 1 | 1 | | | 18 | | | | 9 | 1 | | | 0 | | | | | | | | | | | |
| F - 17:15-17:30 | 35 | | 2 | | 17 | | | | 5 | | | 1 | 20 | | | | 6 | | | | 3 | | | | | | | 1 | | | | |
| G - 17:30-17:45 | 52 | | | | 18 | | | | 4 | | | | 33 | | 1 | 1 | 15 | | | | 0 | | | | | | | | | | | |
| H - 17:45-18:00 | 21 | 1 | | | 21 | | | | 3 | 1 | | | 27 | | | | 4 | 1 | | | 1 | | | | | | | | | | | |

| Peak Hour Calc | |
|----------------|-----|
| A-D | 257 |
| B-E | 283 |
| C-F | 303 |
| D-G | 348 |
| E-H | 365 |

Appendix E Traffic Volume Calculations Overview

AM Peaks

1. Stoddart Dr / Tiger Brennan Dr / Woolner Rd

| Approaching Road | Direction | Traffic Development (AADT) | | | | | | | Heavy Vehicles | | | | |
|------------------------------|-----------|----------------------------|-----------------|-----------------|---------------------|----------------|-------------------------|----------------|----------------|---------------|----------------|----------------|----------------|
| | | 2022 Existing | 2027 Background | 2032 Background | Development Traffic | 2022 Developed | Adopted Annual Growth % | 2027 Developed | 2032 Developed | 2022 Existing | 2022 Developed | 2027 Developed | 2032 Developed |
| Tiger Brennan Road Southwest | Left | 178 | 196 | 215 | 0 | 178 | 2.0% | 196 | 215 | 4 | 4 | 4 | 5 |
| | Through | 832 | 915 | 1007 | 0 | 832 | 2.0% | 915 | 1007 | 20 | 20 | 22 | 24 |
| | Right | 54 | 55 | 55 | 2 | 56 | 0.2% | 56 | 57 | 1 | 1 | 1 | 1 |
| Woolner Road Northwest | Left | 190 | 209 | 230 | 0 | 190 | 2.0% | 209 | 230 | 8 | 8 | 9 | 10 |
| | Through | 38 | 38 | 39 | 1 | 39 | 0.2% | 40 | 40 | 1 | 1 | 1 | 1 |
| | Right | 601 | 646 | 695 | 0 | 601 | 1.5% | 646 | 695 | 3 | 3 | 3 | 3 |
| Tiger Brennan Road Northeast | Left | 4 | 4 | 4 | 0 | 4 | 0.2% | 4 | 4 | 0 | 0 | 1 | 1 |
| | Through | 1646 | 1769 | 1902 | 3 | 1649 | 1.5% | 1773 | 1906 | 23 | 23 | 25 | 27 |
| | Right | 308 | 331 | 356 | 1 | 309 | 1.5% | 332 | 357 | 3 | 3 | 3 | 3 |
| Stoddart Drive Southeast | Left | 92 | 93 | 94 | 5 | 97 | 0.2% | 98 | 99 | 3 | 3 | 3 | 3 |
| | Through | 150 | 152 | 153 | 9 | 159 | 0.2% | 160 | 162 | 1 | 1 | 1 | 1 |
| | Right | 127 | 128 | 130 | 8 | 135 | 0.2% | 136 | 137 | 0 | 0 | 1 | 1 |

2. Stoddart Dr / Tiger Brennan Dr

| Approaching Road | Direction | Traffic Development (AADT) | | | | | | | Heavy Vehicles | | | | |
|------------------------------|-----------|----------------------------|-----------------|-----------------|---------------------|----------------|-------------------------|----------------|----------------|---------------|----------------|----------------|----------------|
| | | 2022 Existing | 2027 Background | 2032 Background | Development Traffic | 2022 Developed | Adopted Annual Growth % | 2027 Developed | 2032 Developed | 2022 Existing | 2022 Developed | 2027 Developed | 2032 Developed |
| Tiger Brennan Road Northeast | Left | 18 | 18 | 18 | 2 | 20 | 0.2% | 21 | 21 | 0 | 0 | 1 | 1 |
| | Through | 1938 | 2083 | 2240 | 0 | 1938 | 1.5% | 2083 | 2240 | 39 | 39 | 42 | 45 |
| Stoddart Drive Southeast | Left | 22 | 22 | 22 | 4 | 26 | 0.2% | 26 | 26 | 0 | 0 | 1 | 1 |

3. Stoddart Dr / Fanning Dr

| Approaching Road | Direction | Traffic Development (AADT) | | | | | | | Heavy Vehicles | | | | |
|-------------------------|-----------|----------------------------|-----------------|-----------------|---------------------|----------------|-------------------------|----------------|----------------|---------------|----------------|----------------|----------------|
| | | 2022 Existing | 2027 Background | 2032 Background | Development Traffic | 2022 Developed | Adopted Annual Growth % | 2027 Developed | 2032 Developed | 2022 Existing | 2022 Developed | 2027 Developed | 2032 Developed |
| Stoddart Drive West | Left | 8 | 8 | 8 | 0 | 8 | 0.2% | 8 | 8 | 3 | 3 | 3 | 3 |
| | Right | 10 | 10 | 10 | 3 | 13 | 0.2% | 13 | 13 | 0 | 0 | 1 | 1 |
| Stoddart Drive North | Right | 17 | 17 | 17 | 0 | 17 | 0.2% | 17 | 17 | 4 | 4 | 4 | 4 |
| | Through | 10 | 10 | 10 | 2 | 12 | 0.2% | 12 | 13 | 1 | 1 | 1 | 1 |
| Fanning Drive Southwest | Through | 19 | 19 | 19 | 4 | 23 | 0.2% | 23 | 23 | 0 | 0 | 1 | 1 |
| | Left | 108 | 109 | 110 | 22 | 130 | 0.2% | 132 | 133 | 0 | 0 | 1 | 1 |

4. Stoddart Dr / Bayview Blvd

| Approaching Road | Direction | Traffic Development (AADT) | | | | | | | Heavy Vehicles | | | | |
|--------------------------|-----------|----------------------------|-----------------|-----------------|---------------------|----------------|-------------------------|----------------|----------------|---------------|----------------|----------------|----------------|
| | | 2022 Existing | 2027 Background | 2032 Background | Development Traffic | 2022 Developed | Adopted Annual Growth % | 2027 Developed | 2032 Developed | 2022 Existing | 2022 Developed | 2027 Developed | 2032 Developed |
| Stoddart Drive Northwest | Left | 40 | 40 | 41 | 3 | 43 | 0.2% | 43 | 44 | 4 | 4 | 4 | 4 |
| | Right | 27 | 27 | 28 | 0 | 27 | 0.2% | 27 | 28 | 0 | 0 | 1 | 1 |
| Stoddart Drive East | Through | 6 | 6 | 6 | 1 | 7 | 0.2% | 7 | 7 | 3 | 3 | 3 | 3 |
| | Right | 255 | 258 | 260 | 22 | 277 | 0.2% | 280 | 282 | 1 | 1 | 1 | 1 |
| Bayview Blvd South | Through | 87 | 88 | 89 | 0 | 87 | 0.2% | 88 | 89 | 4 | 4 | 4 | 4 |
| | Right | 0 | 0 | 0 | 0 | 0 | 0.2% | 0 | 0 | 0 | 0 | 1 | 1 |

PM Peaks

1. Stoddart Dr / Tiger Brennan Dr / Woolner Rd

| Approaching Road | Direction | Traffic Development (AADT) | | | | | | | Heavy Vehicles | | | | |
|------------------------------|-----------|----------------------------|-----------------|-----------------|---------------------|----------------|-------------------------|----------------|----------------|---------------|----------------|----------------|----------------|
| | | 2022 Existing | 2027 Background | 2032 Background | Development Traffic | 2022 Developed | Adopted Annual Growth % | 2027 Developed | 2032 Developed | 2022 Existing | 2022 Developed | 2027 Developed | 2032 Developed |
| Tiger Brennan Road Southwest | Left | 462 | 508 | 559 | 0 | 462 | 2.0% | 508 | 559 | 1 | 1 | 1 | 1 |
| | Through | 1601 | 1761 | 1937 | 0 | 1601 | 2.0% | 1761 | 1937 | 14 | 14 | 15 | 17 |
| | Right | 110 | 111 | 112 | 4 | 114 | 0.2% | 115 | 116 | 1 | 1 | 1 | 1 |
| Woolner Road Northwest | Left | 266 | 293 | 322 | 0 | 266 | 2.0% | 293 | 322 | 1 | 1 | 1 | 1 |
| | Through | 119 | 120 | 121 | 5 | 124 | 0.2% | 125 | 126 | 0 | 0 | 1 | 1 |
| | Right | 320 | 344 | 370 | 0 | 320 | 1.5% | 344 | 370 | 10 | 10 | 11 | 12 |
| Tiger Brennan Road Northeast | Left | 22 | 22 | 22 | 0 | 22 | 0.2% | 22 | 23 | 0 | 0 | 1 | 1 |
| | Through | 748 | 804 | 864 | 4 | 752 | 1.5% | 809 | 870 | 11 | 11 | 12 | 13 |
| | Right | 167 | 180 | 193 | 1 | 168 | 1.5% | 181 | 194 | 2 | 2 | 2 | 2 |
| Stoddart Drive Southeast | Left | 34 | 34 | 35 | 3 | 37 | 0.2% | 37 | 37 | 1 | 1 | 1 | 1 |
| | Through | 66 | 67 | 67 | 5 | 71 | 0.2% | 72 | 72 | 0 | 0 | 1 | 1 |
| | Right | 43 | 43 | 44 | 3 | 46 | 0.2% | 47 | 47 | 0 | 0 | 1 | 1 |

2. Stoddart Dr / Tiger Brennan Dr

| Approaching Road | Direction | Traffic Development (AADT) | | | | | | | Heavy Vehicles | | | | |
|------------------------------|-----------|----------------------------|-----------------|-----------------|---------------------|----------------|-------------------------|----------------|----------------|---------------|----------------|----------------|----------------|
| | | 2022 Existing | 2027 Background | 2032 Background | Development Traffic | 2022 Developed | Adopted Annual Growth % | 2027 Developed | 2032 Developed | 2022 Existing | 2022 Developed | 2027 Developed | 2032 Developed |
| Tiger Brennan Road Northeast | Left | 109 | 110 | 111 | 0 | 109 | 0.2% | 120 | 121 | 0 | 0 | 1 | 1 |
| | Through | 1220 | 1312 | 1410 | 0 | 1220 | 1.5% | 1312 | 1410 | 10 | 10 | 11 | 12 |
| Stoddart Drive Southeast | Left | 23 | 23 | 23 | 6 | 29 | 0.2% | 29 | 29 | 0 | 0 | 1 | 1 |

3. Stoddart Dr / Fanning Dr

| Approaching Road | Direction | Traffic Development (AADT) | | | | | | | Heavy Vehicles | | | | |
|-------------------------|-----------|----------------------------|-----------------|-----------------|---------------------|----------------|-------------------------|----------------|----------------|---------------|----------------|----------------|----------------|
| | | 2022 Existing | 2027 Background | 2032 Background | Development Traffic | 2022 Developed | Adopted Annual Growth % | 2027 Developed | 2032 Developed | 2022 Existing | 2022 Developed | 2027 Developed | 2032 Developed |
| Stoddart Drive West | Left | 3 | 3 | 3 | 0 | 3 | 0.2% | 3 | 3 | 0 | 0 | 1 | 1 |
| | Right | 58 | 59 | 59 | 9 | 67 | 0.2% | 68 | 68 | 0 | 0 | 1 | 1 |
| Stoddart Drive North | Right | 52 | 53 | 53 | 0 | 52 | 0.2% | 53 | 53 | 2 | 2 | 2 | 2 |
| | Through | 64 | 65 | 65 | 10 | 74 | 0.2% | 74 | 75 | 0 | 0 | 1 | 1 |
| Fanning Drive Southwest | Through | 34 | 34 | 35 | 6 | 40 | 0.2% | 40 | 40 | 0 | 0 | 1 | 1 |
| | Left | 41 | 41 | 42 | 7 | 48 | 0.2% | 48 | 49 | 0 | 0 | 1 | 1 |

4. Stoddart Dr / Bayview Blvd

| Approaching Road | Direction | Traffic Development (AADT) | | | | | | | Heavy Vehicles | | | | |
|--------------------------|-----------|----------------------------|-----------------|-----------------|---------------------|----------------|-------------------------|----------------|----------------|---------------|----------------|----------------|----------------|
| | | 2022 Existing | 2027 Background | 2032 Background | Development Traffic | 2022 Developed | Adopted Annual Growth % | 2027 Developed | 2032 Developed | 2022 Existing | 2022 Developed | 2027 Developed | 2032 Developed |
| Stoddart Drive Northwest | Left | 149 | 150 | 152 | 9 | 158 | 0.2% | 159 | 161 | 2 | 2 | 2 | 2 |
| | Right | 69 | 70 | 70 | 0 | 69 | 0.2% | 70 | 70 | 0 | 0 | 1 | 1 |
| Stoddart Drive East | Through | 15 | 15 | 15 | 1 | 16 | 0.2% | 16 | 16 | 2 | 2 | 2 | 2 |
| | Right | 98 | 99 | 100 | 11 | 109 | 0.2% | 110 | 111 | 0 | 0 | 1 | 1 |
| Bayview Blvd South | Through | 36 | 36 | 37 | 0 | 36 | 0.2% | 36 | 37 | 2 | 2 | 2 | 2 |
| | Right | 4 | 4 | 4 | 0 | 4 | 0.2% | 4 | 4 | 0 | 0 | 1 | 1 |

Appendix F SIDRA Movement Summary Outputs

Intersection 1 AM 2022 Existing

MOVEMENT SUMMARY

Site: 101 [1. AM 2022 Background (Existing) (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 92 | 3 | 97 | 3.3 | 0.109 | 17.2 | LOS B | 2.6 | 18.6 | 0.53 | 0.66 | 0.53 | 45.4 |
| 22 | T1 | 150 | 1 | 158 | 0.7 | * 0.767 | 61.5 | LOS E | 9.1 | 64.3 | 1.00 | 0.90 | 1.16 | 27.3 |
| 23 | R2 | 127 | 0 | 134 | 0.0 | 0.767 | 66.2 | LOS E | 8.8 | 61.6 | 1.00 | 0.90 | 1.17 | 28.7 |
| Approach | | 369 | 4 | 388 | 1.1 | 0.767 | 52.1 | LOS D | 9.1 | 64.3 | 0.88 | 0.84 | 1.01 | 30.9 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 4 | 0 | 4 | 0.0 | 0.003 | 8.0 | LOS A | 0.0 | 0.2 | 0.15 | 0.62 | 0.15 | 54.7 |
| 25 | T1 | 1646 | 23 | 1733 | 1.4 | * 0.733 | 32.0 | LOS C | 28.4 | 201.1 | 0.91 | 0.81 | 0.91 | 47.2 |
| 26 | R2 | 308 | 3 | 324 | 1.0 | * 0.753 | 66.9 | LOS E | 9.8 | 69.4 | 1.00 | 0.86 | 1.14 | 29.2 |
| Approach | | 1958 | 26 | 2061 | 1.3 | 0.753 | 37.5 | LOS D | 28.4 | 201.1 | 0.92 | 0.82 | 0.94 | 43.1 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 190 | 8 | 200 | 4.2 | 0.202 | 8.6 | LOS A | 3.1 | 22.7 | 0.35 | 0.62 | 0.35 | 50.7 |
| 28 | T1 | 38 | 1 | 40 | 2.6 | * 0.750 | 52.6 | LOS D | 10.6 | 75.1 | 0.97 | 0.88 | 1.09 | 28.4 |
| 29 | R2 | 601 | 3 | 633 | 0.5 | 0.750 | 57.9 | LOS E | 14.2 | 99.9 | 0.99 | 0.88 | 1.09 | 30.6 |
| Approach | | 829 | 12 | 873 | 1.4 | 0.750 | 46.4 | LOS D | 14.2 | 99.9 | 0.84 | 0.82 | 0.92 | 33.5 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 178 | 4 | 187 | 2.2 | 0.103 | 8.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 65.5 |
| 31 | T1 | 832 | 20 | 876 | 2.4 | 0.372 | 26.4 | LOS C | 11.8 | 84.3 | 0.74 | 0.64 | 0.74 | 50.9 |
| 32 | R2 | 54 | 1 | 57 | 1.9 | 0.266 | 60.6 | LOS E | 3.1 | 22.2 | 0.95 | 0.75 | 0.95 | 30.6 |
| Approach | | 1064 | 25 | 1120 | 2.3 | 0.372 | 25.1 | LOS C | 11.8 | 84.3 | 0.63 | 0.64 | 0.63 | 51.1 |
| All Vehicles | | 4220 | 67 | 4442 | 1.6 | 0.767 | 37.4 | LOS D | 28.4 | 201.1 | 0.83 | 0.78 | 0.86 | 41.0 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 AM 2022 Existing

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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\Working\Bayview SIDRA Modelling.sip9

Intersection 1 AM 2022 Developed

MOVEMENT SUMMARY

Site: 101 [1. AM 2022 Background + Development (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 97 | 3 | 102 | 3.1 | 0.115 | 17.3 | LOS B | 2.7 | 19.7 | 0.53 | 0.66 | 0.53 | 45.4 |
| 22 | T1 | 159 | 1 | 167 | 0.6 | * 0.751 | 60.1 | LOS E | 9.6 | 67.5 | 1.00 | 0.89 | 1.14 | 27.6 |
| 23 | R2 | 135 | 0 | 142 | 0.0 | 0.751 | 64.8 | LOS E | 9.2 | 64.6 | 1.00 | 0.89 | 1.14 | 29.0 |
| Approach | | 391 | 4 | 412 | 1.0 | 0.751 | 51.1 | LOS D | 9.6 | 67.5 | 0.88 | 0.83 | 0.99 | 31.1 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 4 | 0 | 4 | 0.0 | 0.003 | 8.0 | LOS A | 0.0 | 0.2 | 0.15 | 0.62 | 0.15 | 54.7 |
| 25 | T1 | 1649 | 23 | 1736 | 1.4 | * 0.749 | 33.0 | LOS C | 28.9 | 204.6 | 0.92 | 0.82 | 0.92 | 46.7 |
| 26 | R2 | 309 | 3 | 325 | 1.0 | * 0.756 | 67.0 | LOS E | 9.9 | 69.7 | 1.00 | 0.86 | 1.14 | 29.2 |
| Approach | | 1962 | 26 | 2065 | 1.3 | 0.756 | 38.3 | LOS D | 28.9 | 204.6 | 0.93 | 0.83 | 0.95 | 42.7 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 190 | 8 | 200 | 4.2 | 0.202 | 8.6 | LOS A | 3.1 | 22.7 | 0.35 | 0.62 | 0.35 | 50.7 |
| 28 | T1 | 39 | 1 | 41 | 2.6 | * 0.751 | 52.6 | LOS D | 10.7 | 75.3 | 0.97 | 0.88 | 1.09 | 28.4 |
| 29 | R2 | 601 | 3 | 633 | 0.5 | 0.751 | 58.0 | LOS E | 14.3 | 100.2 | 0.99 | 0.88 | 1.09 | 30.6 |
| Approach | | 830 | 12 | 874 | 1.4 | 0.751 | 46.4 | LOS D | 14.3 | 100.2 | 0.84 | 0.82 | 0.92 | 33.5 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 178 | 4 | 187 | 2.2 | 0.103 | 8.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 65.5 |
| 31 | T1 | 832 | 20 | 876 | 2.4 | 0.380 | 27.1 | LOS C | 12.0 | 85.5 | 0.75 | 0.65 | 0.75 | 50.4 |
| 32 | R2 | 56 | 1 | 59 | 1.8 | 0.276 | 60.7 | LOS E | 3.2 | 23.0 | 0.95 | 0.75 | 0.95 | 30.6 |
| Approach | | 1066 | 25 | 1122 | 2.3 | 0.380 | 25.8 | LOS C | 12.0 | 85.5 | 0.64 | 0.65 | 0.64 | 50.6 |
| All Vehicles | | 4249 | 67 | 4473 | 1.6 | 0.756 | 37.9 | LOS D | 28.9 | 204.6 | 0.84 | 0.78 | 0.87 | 40.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 AM 2022 Developed

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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\Working\Bayview SIDRA Modelling.sip9

Intersection 1 AM 2027 Background

MOVEMENT SUMMARY

Site: 101 [1. AM 2027 Background (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 93 | 3 | 98 | 3.2 | 0.117 | 19.3 | LOS B | 2.8 | 20.4 | 0.57 | 0.67 | 0.57 | 44.3 |
| 22 | T1 | 152 | 1 | 160 | 0.7 | *0.777 | 61.9 | LOS E | 9.3 | 65.5 | 1.00 | 0.91 | 1.18 | 27.2 |
| 23 | R2 | 128 | 1 | 135 | 0.8 | 0.777 | 66.6 | LOS E | 8.9 | 62.8 | 1.00 | 0.91 | 1.19 | 28.6 |
| Approach | | 373 | 5 | 393 | 1.3 | 0.777 | 52.9 | LOS D | 9.3 | 65.5 | 0.89 | 0.85 | 1.03 | 30.7 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 4 | 1 | 4 | 25.0 | 0.003 | 8.4 | LOS A | 0.0 | 0.2 | 0.15 | 0.62 | 0.15 | 54.2 |
| 25 | T1 | 1769 | 27 | 1862 | 1.5 | *0.788 | 34.0 | LOS C | 32.1 | 227.3 | 0.94 | 0.85 | 0.95 | 46.1 |
| 26 | R2 | 331 | 3 | 348 | 0.9 | *0.809 | 69.3 | LOS E | 10.9 | 76.8 | 1.00 | 0.89 | 1.21 | 28.6 |
| Approach | | 2104 | 31 | 2215 | 1.5 | 0.809 | 39.5 | LOS D | 32.1 | 227.3 | 0.95 | 0.86 | 0.99 | 42.1 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 209 | 9 | 220 | 4.3 | 0.228 | 9.0 | LOS A | 3.7 | 26.6 | 0.37 | 0.63 | 0.37 | 50.3 |
| 28 | T1 | 38 | 1 | 40 | 2.6 | *0.813 | 55.9 | LOS E | 11.5 | 81.1 | 0.97 | 0.94 | 1.19 | 27.7 |
| 29 | R2 | 646 | 3 | 680 | 0.5 | 0.813 | 61.2 | LOS E | 16.1 | 113.1 | 0.99 | 0.93 | 1.17 | 29.8 |
| Approach | | 893 | 13 | 940 | 1.5 | 0.813 | 48.7 | LOS D | 16.1 | 113.1 | 0.85 | 0.86 | 0.98 | 32.8 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 196 | 4 | 206 | 2.0 | 0.113 | 8.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 65.6 |
| 31 | T1 | 915 | 22 | 963 | 2.4 | 0.410 | 26.9 | LOS C | 13.2 | 94.4 | 0.76 | 0.65 | 0.76 | 50.6 |
| 32 | R2 | 55 | 1 | 58 | 1.8 | 0.271 | 60.7 | LOS E | 3.2 | 22.6 | 0.95 | 0.75 | 0.95 | 30.6 |
| Approach | | 1166 | 27 | 1227 | 2.3 | 0.410 | 25.3 | LOS C | 13.2 | 94.4 | 0.64 | 0.65 | 0.64 | 51.0 |
| All Vehicles | | 4536 | 76 | 4775 | 1.7 | 0.813 | 38.8 | LOS D | 32.1 | 227.3 | 0.84 | 0.80 | 0.90 | 40.4 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 AM 2027 Background

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 1 AM 2027 Developed

MOVEMENT SUMMARY

Site: 101 [1. AM 2027 Background + Development (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 98 | 3 | 103 | 3.1 | 0.124 | 19.9 | LOS B | 3.0 | 21.9 | 0.58 | 0.67 | 0.58 | 44.0 |
| 22 | T1 | 160 | 1 | 168 | 0.6 | * 0.821 | 63.9 | LOS E | 10.1 | 70.8 | 1.00 | 0.95 | 1.25 | 26.9 |
| 23 | R2 | 136 | 1 | 143 | 0.7 | 0.821 | 68.6 | LOS E | 9.6 | 67.8 | 1.00 | 0.95 | 1.25 | 28.1 |
| Approach | | 394 | 5 | 415 | 1.3 | 0.821 | 54.6 | LOS D | 10.1 | 70.8 | 0.90 | 0.88 | 1.08 | 30.2 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 4 | 1 | 4 | 25.0 | 0.003 | 8.4 | LOS A | 0.0 | 0.2 | 0.15 | 0.62 | 0.15 | 54.2 |
| 25 | T1 | 1773 | 27 | 1866 | 1.5 | * 0.790 | 34.1 | LOS C | 32.2 | 228.4 | 0.94 | 0.86 | 0.96 | 46.0 |
| 26 | R2 | 332 | 3 | 349 | 0.9 | * 0.812 | 69.4 | LOS E | 10.9 | 77.1 | 1.00 | 0.89 | 1.22 | 28.6 |
| Approach | | 2109 | 31 | 2220 | 1.5 | 0.812 | 39.6 | LOS D | 32.2 | 228.4 | 0.95 | 0.86 | 1.00 | 42.0 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 209 | 9 | 220 | 4.3 | 0.230 | 9.3 | LOS A | 3.8 | 27.6 | 0.38 | 0.63 | 0.38 | 50.1 |
| 28 | T1 | 40 | 1 | 42 | 2.5 | * 0.815 | 56.1 | LOS E | 11.5 | 81.4 | 0.97 | 0.94 | 1.19 | 27.7 |
| 29 | R2 | 646 | 3 | 680 | 0.5 | 0.815 | 61.4 | LOS E | 16.2 | 113.8 | 0.99 | 0.93 | 1.17 | 29.8 |
| Approach | | 895 | 13 | 942 | 1.5 | 0.815 | 49.0 | LOS D | 16.2 | 113.8 | 0.85 | 0.86 | 0.99 | 32.8 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 196 | 4 | 206 | 2.0 | 0.113 | 8.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 65.6 |
| 31 | T1 | 915 | 22 | 963 | 2.4 | 0.410 | 26.9 | LOS C | 13.2 | 94.4 | 0.76 | 0.65 | 0.76 | 50.6 |
| 32 | R2 | 56 | 1 | 59 | 1.8 | 0.276 | 60.7 | LOS E | 3.2 | 23.0 | 0.95 | 0.75 | 0.95 | 30.6 |
| Approach | | 1167 | 27 | 1228 | 2.3 | 0.410 | 25.4 | LOS C | 13.2 | 94.4 | 0.64 | 0.65 | 0.64 | 50.9 |
| All Vehicles | | 4565 | 76 | 4805 | 1.7 | 0.821 | 39.1 | LOS D | 32.2 | 228.4 | 0.85 | 0.81 | 0.91 | 40.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 AM 2027 Developed

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 1 AM 2032 Background

MOVEMENT SUMMARY

Site: 101 [1. AM 2032 Background (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 94 | 3 | 99 | 3.2 | 0.129 | 22.8 | LOS C | 3.2 | 22.9 | 0.62 | 0.68 | 0.62 | 42.5 |
| 22 | T1 | 153 | 1 | 161 | 0.7 | *0.857 | 66.9 | LOS E | 9.9 | 69.5 | 1.00 | 0.99 | 1.33 | 26.3 |
| 23 | R2 | 130 | 1 | 137 | 0.8 | 0.857 | 71.7 | LOS E | 9.5 | 66.6 | 1.00 | 0.99 | 1.34 | 27.5 |
| Approach | | 377 | 5 | 397 | 1.3 | 0.857 | 57.5 | LOS E | 9.9 | 69.5 | 0.91 | 0.91 | 1.15 | 29.5 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 4 | 1 | 4 | 25.0 | 0.003 | 8.4 | LOS A | 0.0 | 0.2 | 0.15 | 0.62 | 0.15 | 54.2 |
| 25 | T1 | 1902 | 27 | 2002 | 1.4 | *0.847 | 39.3 | LOS D | 38.0 | 269.4 | 0.97 | 0.93 | 1.05 | 43.2 |
| 26 | R2 | 356 | 3 | 375 | 0.8 | *0.870 | 73.7 | LOS E | 12.3 | 86.4 | 1.00 | 0.94 | 1.33 | 27.7 |
| Approach | | 2262 | 31 | 2381 | 1.4 | 0.870 | 44.7 | LOS D | 38.0 | 269.4 | 0.98 | 0.93 | 1.09 | 39.7 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 230 | 10 | 242 | 4.3 | 0.258 | 9.8 | LOS A | 4.5 | 32.4 | 0.40 | 0.64 | 0.40 | 49.8 |
| 28 | T1 | 39 | 1 | 41 | 2.6 | *0.841 | 57.6 | LOS E | 12.2 | 86.2 | 0.97 | 0.97 | 1.23 | 27.4 |
| 29 | R2 | 695 | 3 | 732 | 0.4 | 0.841 | 62.7 | LOS E | 17.9 | 125.6 | 0.99 | 0.96 | 1.21 | 29.4 |
| Approach | | 964 | 14 | 1015 | 1.5 | 0.841 | 49.9 | LOS D | 17.9 | 125.6 | 0.85 | 0.88 | 1.01 | 32.5 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 215 | 5 | 226 | 2.3 | 0.124 | 8.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 65.5 |
| 31 | T1 | 1007 | 24 | 1060 | 2.4 | 0.451 | 27.4 | LOS C | 14.9 | 106.1 | 0.78 | 0.67 | 0.78 | 50.2 |
| 32 | R2 | 55 | 1 | 58 | 1.8 | 0.271 | 60.7 | LOS E | 3.2 | 22.6 | 0.95 | 0.75 | 0.95 | 30.6 |
| Approach | | 1277 | 30 | 1344 | 2.3 | 0.451 | 25.7 | LOS C | 14.9 | 106.1 | 0.65 | 0.66 | 0.65 | 50.8 |
| All Vehicles | | 4880 | 80 | 5137 | 1.6 | 0.870 | 41.7 | LOS D | 38.0 | 269.4 | 0.86 | 0.85 | 0.97 | 39.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 AM 2032 Background

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 1 AM 2032 Developed

MOVEMENT SUMMARY

Site: 101 [1. AM 2032 Background + Development (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 99 | 3 | 104 | 3.0 | 0.137 | 23.5 | LOS C | 3.4 | 24.7 | 0.63 | 0.69 | 0.63 | 42.2 |
| 22 | T1 | 162 | 1 | 171 | 0.6 | * 0.829 | 64.3 | LOS E | 10.2 | 71.9 | 1.00 | 0.96 | 1.26 | 26.8 |
| 23 | R2 | 137 | 1 | 144 | 0.7 | 0.829 | 69.1 | LOS E | 9.8 | 68.9 | 1.00 | 0.96 | 1.27 | 28.0 |
| Approach | | 398 | 5 | 419 | 1.3 | 0.829 | 55.8 | LOS E | 10.2 | 71.9 | 0.91 | 0.89 | 1.11 | 29.9 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 4 | 1 | 4 | 25.0 | 0.003 | 8.4 | LOS A | 0.0 | 0.2 | 0.15 | 0.62 | 0.15 | 54.2 |
| 25 | T1 | 1906 | 27 | 2006 | 1.4 | * 0.867 | 42.6 | LOS D | 39.8 | 282.0 | 0.99 | 0.97 | 1.10 | 41.6 |
| 26 | R2 | 357 | 3 | 376 | 0.8 | * 0.872 | 74.0 | LOS E | 12.3 | 86.9 | 1.00 | 0.94 | 1.33 | 27.6 |
| Approach | | 2267 | 31 | 2386 | 1.4 | 0.872 | 47.5 | LOS D | 39.8 | 282.0 | 0.99 | 0.96 | 1.13 | 38.6 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 230 | 10 | 242 | 4.3 | 0.257 | 10.1 | LOS B | 4.6 | 33.3 | 0.41 | 0.64 | 0.41 | 49.6 |
| 28 | T1 | 40 | 1 | 42 | 2.5 | * 0.842 | 57.7 | LOS E | 12.3 | 86.4 | 0.97 | 0.97 | 1.24 | 27.4 |
| 29 | R2 | 695 | 3 | 732 | 0.4 | 0.842 | 62.8 | LOS E | 17.9 | 125.9 | 0.99 | 0.96 | 1.21 | 29.4 |
| Approach | | 965 | 14 | 1016 | 1.5 | 0.842 | 50.0 | LOS D | 17.9 | 125.9 | 0.85 | 0.88 | 1.02 | 32.5 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 215 | 5 | 226 | 2.3 | 0.124 | 8.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 65.5 |
| 31 | T1 | 1007 | 24 | 1060 | 2.4 | 0.460 | 28.2 | LOS C | 15.1 | 107.7 | 0.79 | 0.68 | 0.79 | 49.6 |
| 32 | R2 | 57 | 1 | 60 | 1.8 | 0.280 | 60.8 | LOS E | 3.3 | 23.4 | 0.95 | 0.76 | 0.95 | 30.5 |
| Approach | | 1279 | 30 | 1346 | 2.3 | 0.460 | 26.3 | LOS C | 15.1 | 107.7 | 0.66 | 0.67 | 0.66 | 50.3 |
| All Vehicles | | 4909 | 80 | 5167 | 1.6 | 0.872 | 43.2 | LOS D | 39.8 | 282.0 | 0.87 | 0.87 | 0.98 | 38.6 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 AM 2032 Developed

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 1 PM 2022 Existing

MOVEMENT SUMMARY

Site: 101 [1. PM 2022 Background (Existing) (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 32 | 1 | 34 | 3.1 | 0.028 | 7.5 | LOS A | 0.4 | 3.0 | 0.28 | 0.57 | 0.28 | 51.7 |
| 22 | T1 | 66 | 0 | 69 | 0.0 | * 0.600 | 64.9 | LOS E | 3.6 | 25.4 | 1.00 | 0.78 | 1.07 | 26.6 |
| 23 | R2 | 43 | 0 | 45 | 0.0 | 0.600 | 69.5 | LOS E | 3.5 | 24.4 | 1.00 | 0.78 | 1.08 | 28.1 |
| Approach | | 141 | 1 | 148 | 0.7 | 0.600 | 53.3 | LOS D | 3.6 | 25.4 | 0.84 | 0.73 | 0.89 | 30.4 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 22 | 0 | 23 | 0.0 | 0.016 | 9.3 | LOS A | 0.2 | 1.6 | 0.23 | 0.64 | 0.23 | 53.6 |
| 25 | T1 | 748 | 11 | 787 | 1.5 | 0.267 | 17.7 | LOS B | 8.6 | 60.9 | 0.61 | 0.52 | 0.61 | 57.8 |
| 26 | R2 | 167 | 2 | 176 | 1.2 | 0.477 | 64.4 | LOS E | 5.1 | 35.8 | 0.99 | 0.78 | 0.99 | 29.8 |
| Approach | | 937 | 13 | 986 | 1.4 | 0.477 | 25.9 | LOS C | 8.6 | 60.9 | 0.67 | 0.57 | 0.67 | 49.4 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 266 | 1 | 280 | 0.4 | 0.353 | 12.3 | LOS B | 6.6 | 46.4 | 0.49 | 0.68 | 0.49 | 48.9 |
| 28 | T1 | 119 | 0 | 125 | 0.0 | * 0.613 | 52.8 | LOS D | 8.2 | 57.5 | 0.98 | 0.79 | 0.98 | 29.1 |
| 29 | R2 | 320 | 10 | 337 | 3.1 | 0.613 | 58.0 | LOS E | 8.9 | 64.2 | 0.99 | 0.81 | 0.99 | 30.4 |
| Approach | | 705 | 11 | 742 | 1.6 | 0.613 | 39.9 | LOS D | 8.9 | 64.2 | 0.80 | 0.76 | 0.80 | 35.1 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 462 | 1 | 486 | 0.2 | 0.262 | 7.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 66.1 |
| 31 | T1 | 1601 | 14 | 1685 | 0.9 | * 0.602 | 21.7 | LOS C | 24.3 | 171.1 | 0.75 | 0.67 | 0.75 | 54.4 |
| 32 | R2 | 110 | 1 | 116 | 0.9 | * 0.628 | 65.8 | LOS E | 6.8 | 48.2 | 1.00 | 0.80 | 1.04 | 29.3 |
| Approach | | 2173 | 16 | 2287 | 0.7 | 0.628 | 21.0 | LOS C | 24.3 | 171.1 | 0.60 | 0.66 | 0.60 | 54.1 |
| All Vehicles | | 3956 | 41 | 4164 | 1.0 | 0.628 | 26.7 | LOS C | 24.3 | 171.1 | 0.66 | 0.66 | 0.66 | 47.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 PM 2022 Existing

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 1 PM 2022 Developed

MOVEMENT SUMMARY

Site: 101 [1. PM 2022 Background + Development (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 37 | 1 | 39 | 2.7 | 0.033 | 7.5 | LOS A | 0.5 | 3.4 | 0.28 | 0.57 | 0.28 | 51.7 |
| 22 | T1 | 71 | 0 | 75 | 0.0 | * 0.644 | 65.4 | LOS E | 3.9 | 27.4 | 1.00 | 0.80 | 1.11 | 26.5 |
| 23 | R2 | 46 | 0 | 48 | 0.0 | 0.644 | 70.0 | LOS E | 3.8 | 26.4 | 1.00 | 0.80 | 1.12 | 28.0 |
| Approach | | 154 | 1 | 162 | 0.6 | 0.644 | 52.9 | LOS D | 3.9 | 27.4 | 0.83 | 0.74 | 0.91 | 30.5 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 22 | 0 | 23 | 0.0 | 0.016 | 9.3 | LOS A | 0.2 | 1.6 | 0.23 | 0.64 | 0.23 | 53.6 |
| 25 | T1 | 752 | 11 | 792 | 1.5 | 0.273 | 18.4 | LOS B | 8.8 | 62.3 | 0.62 | 0.53 | 0.62 | 57.2 |
| 26 | R2 | 168 | 2 | 177 | 1.2 | 0.443 | 63.2 | LOS E | 5.0 | 35.5 | 0.98 | 0.78 | 0.98 | 30.1 |
| Approach | | 942 | 13 | 992 | 1.4 | 0.443 | 26.2 | LOS C | 8.8 | 62.3 | 0.67 | 0.58 | 0.67 | 49.2 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 266 | 1 | 280 | 0.4 | 0.349 | 12.2 | LOS B | 6.6 | 46.1 | 0.49 | 0.68 | 0.49 | 48.9 |
| 28 | T1 | 124 | 0 | 131 | 0.0 | * 0.621 | 52.9 | LOS D | 8.2 | 57.9 | 0.98 | 0.79 | 0.99 | 29.1 |
| 29 | R2 | 320 | 10 | 337 | 3.1 | 0.621 | 58.2 | LOS E | 9.1 | 65.2 | 0.99 | 0.81 | 1.00 | 30.4 |
| Approach | | 710 | 11 | 747 | 1.5 | 0.621 | 40.0 | LOS D | 9.1 | 65.2 | 0.80 | 0.76 | 0.80 | 35.1 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 462 | 1 | 486 | 0.2 | 0.262 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 66.1 |
| 31 | T1 | 1601 | 14 | 1685 | 0.9 | * 0.613 | 22.5 | LOS C | 24.8 | 174.7 | 0.76 | 0.68 | 0.76 | 53.8 |
| 32 | R2 | 114 | 1 | 120 | 0.9 | * 0.600 | 64.3 | LOS E | 7.0 | 49.2 | 1.00 | 0.80 | 1.01 | 29.7 |
| Approach | | 2177 | 16 | 2292 | 0.7 | 0.613 | 21.6 | LOS C | 24.8 | 174.7 | 0.61 | 0.67 | 0.61 | 53.7 |
| All Vehicles | | 3983 | 41 | 4193 | 1.0 | 0.644 | 27.2 | LOS C | 24.8 | 174.7 | 0.67 | 0.67 | 0.67 | 46.9 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 PM 2022 Developed

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 1 PM 2027 Background

MOVEMENT SUMMARY

Site: 101 [1. PM 2027 Background (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 34 | 1 | 36 | 2.9 | 0.030 | 7.7 | LOS A | 0.5 | 3.3 | 0.29 | 0.57 | 0.29 | 51.5 |
| 22 | T1 | 67 | 1 | 71 | 1.5 | * 0.613 | 65.1 | LOS E | 3.7 | 26.0 | 1.00 | 0.78 | 1.08 | 26.5 |
| 23 | R2 | 43 | 1 | 45 | 2.3 | 0.613 | 69.8 | LOS E | 3.5 | 25.1 | 1.00 | 0.78 | 1.09 | 27.9 |
| Approach | | 144 | 3 | 152 | 2.1 | 0.613 | 52.9 | LOS D | 3.7 | 26.0 | 0.83 | 0.73 | 0.90 | 30.5 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 22 | 1 | 23 | 4.5 | 0.017 | 9.3 | LOS A | 0.2 | 1.7 | 0.23 | 0.64 | 0.23 | 53.6 |
| 25 | T1 | 804 | 12 | 846 | 1.5 | 0.278 | 16.8 | LOS B | 9.0 | 64.0 | 0.59 | 0.51 | 0.59 | 58.7 |
| 26 | R2 | 180 | 2 | 189 | 1.1 | 0.561 | 66.0 | LOS E | 5.6 | 39.2 | 1.00 | 0.78 | 1.00 | 29.4 |
| Approach | | 1006 | 15 | 1059 | 1.5 | 0.561 | 25.4 | LOS C | 9.0 | 64.0 | 0.66 | 0.56 | 0.66 | 49.7 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 293 | 1 | 308 | 0.3 | 0.461 | 15.1 | LOS B | 8.7 | 61.1 | 0.58 | 0.72 | 0.58 | 47.1 |
| 28 | T1 | 120 | 1 | 126 | 0.8 | * 0.703 | 55.4 | LOS E | 8.5 | 60.4 | 0.99 | 0.85 | 1.08 | 28.5 |
| 29 | R2 | 344 | 11 | 362 | 3.2 | 0.703 | 60.9 | LOS E | 10.0 | 72.0 | 1.00 | 0.85 | 1.07 | 29.7 |
| Approach | | 757 | 13 | 797 | 1.7 | 0.703 | 42.3 | LOS D | 10.0 | 72.0 | 0.83 | 0.80 | 0.88 | 34.4 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 508 | 1 | 535 | 0.2 | 0.288 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 66.1 |
| 31 | T1 | 1761 | 15 | 1854 | 0.9 | * 0.686 | 21.2 | LOS C | 30.0 | 211.3 | 0.76 | 0.68 | 0.76 | 54.8 |
| 32 | R2 | 111 | 1 | 117 | 0.9 | * 0.691 | 67.9 | LOS E | 7.1 | 49.8 | 1.00 | 0.82 | 1.10 | 28.8 |
| Approach | | 2380 | 17 | 2505 | 0.7 | 0.691 | 20.6 | LOS C | 30.0 | 211.3 | 0.61 | 0.67 | 0.61 | 54.5 |
| All Vehicles | | 4287 | 48 | 4513 | 1.1 | 0.703 | 26.6 | LOS C | 30.0 | 211.3 | 0.67 | 0.67 | 0.68 | 47.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 PM 2027 Background

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 1 PM 2027 Developed

MOVEMENT SUMMARY

Site: 101 [1. PM 2027 Background + Development (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 37 | 1 | 39 | 2.7 | 0.033 | 7.7 | LOS A | 0.5 | 3.6 | 0.29 | 0.57 | 0.29 | 51.6 |
| 22 | T1 | 72 | 1 | 76 | 1.4 | * 0.663 | 65.7 | LOS E | 4.0 | 28.4 | 1.00 | 0.81 | 1.13 | 26.4 |
| 23 | R2 | 47 | 1 | 49 | 2.1 | 0.663 | 70.3 | LOS E | 3.8 | 27.4 | 1.00 | 0.81 | 1.14 | 27.8 |
| Approach | | 156 | 3 | 164 | 1.9 | 0.663 | 53.3 | LOS D | 4.0 | 28.4 | 0.83 | 0.75 | 0.93 | 30.4 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 22 | 1 | 23 | 4.5 | 0.017 | 9.5 | LOS A | 0.2 | 1.7 | 0.24 | 0.64 | 0.24 | 53.4 |
| 25 | T1 | 809 | 12 | 852 | 1.5 | 0.284 | 17.4 | LOS B | 9.3 | 65.6 | 0.60 | 0.52 | 0.60 | 58.1 |
| 26 | R2 | 181 | 2 | 191 | 1.1 | 0.517 | 64.7 | LOS E | 5.5 | 38.9 | 0.99 | 0.78 | 0.99 | 29.7 |
| Approach | | 1012 | 15 | 1065 | 1.5 | 0.517 | 25.7 | LOS C | 9.3 | 65.6 | 0.67 | 0.57 | 0.67 | 49.6 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 293 | 1 | 308 | 0.3 | 0.458 | 15.0 | LOS B | 8.6 | 60.5 | 0.57 | 0.71 | 0.57 | 47.2 |
| 28 | T1 | 125 | 1 | 132 | 0.8 | * 0.712 | 55.6 | LOS E | 8.6 | 60.9 | 0.99 | 0.85 | 1.09 | 28.5 |
| 29 | R2 | 344 | 11 | 362 | 3.2 | 0.712 | 61.1 | LOS E | 10.2 | 73.2 | 1.00 | 0.86 | 1.08 | 29.6 |
| Approach | | 762 | 13 | 802 | 1.7 | 0.712 | 42.5 | LOS D | 10.2 | 73.2 | 0.83 | 0.80 | 0.89 | 34.3 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 508 | 1 | 535 | 0.2 | 0.288 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 66.1 |
| 31 | T1 | 1761 | 15 | 1854 | 0.9 | * 0.684 | 21.9 | LOS C | 29.6 | 209.0 | 0.77 | 0.69 | 0.77 | 54.2 |
| 32 | R2 | 115 | 1 | 121 | 0.9 | * 0.656 | 66.2 | LOS E | 7.2 | 50.7 | 1.00 | 0.81 | 1.06 | 29.2 |
| Approach | | 2384 | 17 | 2509 | 0.7 | 0.684 | 21.1 | LOS C | 29.6 | 209.0 | 0.62 | 0.68 | 0.62 | 54.1 |
| All Vehicles | | 4314 | 48 | 4541 | 1.1 | 0.712 | 27.1 | LOS C | 29.6 | 209.0 | 0.67 | 0.68 | 0.69 | 47.0 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 PM 2027 Developed

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 1 PM 2032 Background

MOVEMENT SUMMARY

Site: 101 [1. PM 2032 Background (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 35 | 1 | 37 | 2.9 | 0.032 | 8.2 | LOS A | 0.5 | 3.6 | 0.30 | 0.58 | 0.30 | 51.2 |
| 22 | T1 | 67 | 1 | 71 | 1.5 | * 0.619 | 65.2 | LOS E | 3.7 | 26.3 | 1.00 | 0.79 | 1.09 | 26.5 |
| 23 | R2 | 44 | 1 | 46 | 2.3 | 0.619 | 69.8 | LOS E | 3.6 | 25.4 | 1.00 | 0.79 | 1.09 | 27.9 |
| Approach | | 146 | 3 | 154 | 2.1 | 0.619 | 52.9 | LOS D | 3.7 | 26.3 | 0.83 | 0.74 | 0.90 | 30.5 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 22 | 1 | 23 | 4.5 | 0.017 | 9.3 | LOS A | 0.2 | 1.7 | 0.23 | 0.64 | 0.23 | 53.6 |
| 25 | T1 | 864 | 13 | 909 | 1.5 | 0.294 | 16.4 | LOS B | 9.6 | 68.4 | 0.59 | 0.51 | 0.59 | 59.1 |
| 26 | R2 | 193 | 2 | 203 | 1.0 | 0.661 | 68.5 | LOS E | 6.1 | 43.3 | 1.00 | 0.81 | 1.08 | 28.8 |
| Approach | | 1079 | 16 | 1136 | 1.5 | 0.661 | 25.6 | LOS C | 9.6 | 68.4 | 0.66 | 0.57 | 0.67 | 49.7 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 322 | 1 | 339 | 0.3 | 0.527 | 18.3 | LOS B | 11.2 | 78.4 | 0.66 | 0.75 | 0.66 | 45.3 |
| 28 | T1 | 121 | 1 | 127 | 0.8 | * 0.757 | 57.0 | LOS E | 8.9 | 62.7 | 0.99 | 0.89 | 1.15 | 28.1 |
| 29 | R2 | 370 | 12 | 389 | 3.2 | 0.757 | 62.6 | LOS E | 11.0 | 79.4 | 1.00 | 0.89 | 1.13 | 29.3 |
| Approach | | 813 | 14 | 856 | 1.7 | 0.757 | 44.2 | LOS D | 11.2 | 79.4 | 0.86 | 0.83 | 0.95 | 33.8 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 559 | 1 | 588 | 0.2 | 0.317 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 66.1 |
| 31 | T1 | 1937 | 17 | 2039 | 0.9 | * 0.746 | 21.6 | LOS C | 34.5 | 243.5 | 0.78 | 0.71 | 0.78 | 54.5 |
| 32 | R2 | 112 | 1 | 118 | 0.9 | * 0.767 | 70.8 | LOS E | 7.3 | 51.8 | 1.00 | 0.86 | 1.20 | 28.2 |
| Approach | | 2608 | 19 | 2745 | 0.7 | 0.767 | 20.8 | LOS C | 34.5 | 243.5 | 0.63 | 0.69 | 0.63 | 54.4 |
| All Vehicles | | 4646 | 52 | 4891 | 1.1 | 0.767 | 27.0 | LOS C | 34.5 | 243.5 | 0.68 | 0.69 | 0.71 | 47.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 PM 2032 Background

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 1 PM 2032 Developed

MOVEMENT SUMMARY

Site: 101 [1. PM 2032 Background + Development (Site Folder: 1. Tiger Brennan Dr / Woolner Rd / Stoddart Dr AM)]

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site User-Given Cycle Time)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|---------------|------------|---------------|--------|-----------|-------------|------------------|-------------------|----------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h | HV] veh/h | [Total veh/h | HV] % | | | | [Veh. veh | Dist] m | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 37 | 1 | 39 | 2.7 | 0.034 | 8.2 | LOS A | 0.5 | 3.8 | 0.30 | 0.58 | 0.30 | 51.2 |
| 22 | T1 | 72 | 1 | 76 | 1.4 | * 0.663 | 65.7 | LOS E | 4.0 | 28.4 | 1.00 | 0.81 | 1.13 | 26.4 |
| 23 | R2 | 47 | 1 | 49 | 2.1 | 0.663 | 70.3 | LOS E | 3.8 | 27.4 | 1.00 | 0.81 | 1.14 | 27.8 |
| Approach | | 156 | 3 | 164 | 1.9 | 0.663 | 53.5 | LOS D | 4.0 | 28.4 | 0.83 | 0.75 | 0.94 | 30.4 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 23 | 1 | 24 | 4.3 | 0.017 | 9.5 | LOS A | 0.2 | 1.8 | 0.24 | 0.64 | 0.24 | 53.4 |
| 25 | T1 | 870 | 13 | 916 | 1.5 | 0.301 | 17.0 | LOS B | 9.9 | 70.2 | 0.60 | 0.52 | 0.60 | 58.5 |
| 26 | R2 | 194 | 2 | 204 | 1.0 | 0.604 | 66.6 | LOS E | 6.0 | 42.6 | 1.00 | 0.79 | 1.03 | 29.3 |
| Approach | | 1087 | 16 | 1144 | 1.5 | 0.604 | 25.7 | LOS C | 9.9 | 70.2 | 0.67 | 0.57 | 0.67 | 49.6 |
| NorthWest: Woolner Road | | | | | | | | | | | | | | |
| 27 | L2 | 322 | 1 | 339 | 0.3 | 0.522 | 18.7 | LOS B | 11.2 | 78.6 | 0.66 | 0.75 | 0.66 | 45.1 |
| 28 | T1 | 126 | 1 | 133 | 0.8 | * 0.766 | 57.3 | LOS E | 8.9 | 63.2 | 0.99 | 0.90 | 1.16 | 28.1 |
| 29 | R2 | 370 | 12 | 389 | 3.2 | 0.766 | 62.9 | LOS E | 11.2 | 80.8 | 1.00 | 0.90 | 1.14 | 29.2 |
| Approach | | 818 | 14 | 861 | 1.7 | 0.766 | 44.6 | LOS D | 11.2 | 80.8 | 0.87 | 0.84 | 0.95 | 33.7 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 30 | L2 | 559 | 1 | 588 | 0.2 | 0.317 | 8.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.60 | 0.00 | 66.1 |
| 31 | T1 | 1937 | 17 | 2039 | 0.9 | * 0.761 | 22.4 | LOS C | 35.4 | 249.7 | 0.80 | 0.72 | 0.80 | 53.9 |
| 32 | R2 | 116 | 1 | 122 | 0.9 | * 0.722 | 68.6 | LOS E | 7.4 | 52.5 | 1.00 | 0.84 | 1.13 | 28.7 |
| Approach | | 2612 | 19 | 2749 | 0.7 | 0.761 | 21.4 | LOS C | 35.4 | 249.7 | 0.64 | 0.70 | 0.64 | 53.9 |
| All Vehicles | | 4673 | 52 | 4919 | 1.1 | 0.766 | 27.5 | LOS C | 35.4 | 249.7 | 0.69 | 0.70 | 0.71 | 46.8 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

| Pedestrian Movement Performance | | | | | | | | | | | | |
|---------------------------------|----------|------------|-----------|-------------|------------------|-----------------------|----------|-----------|---------------------|-------------|--------------|-------------|
| Mov ID | Crossing | Input Vol. | Dem. Flow | Aver. Delay | Level of Service | AVERAGE BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Travel Time | Travel Dist. | Aver. Speed |
| | | | | | | [Ped ped | Dist] m | | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | |
| P5 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 218.7 | 213.9 | 0.98 |
| SouthWest: Tiger Brennan Drive | | | | | | | | | | | | |
| P8 | Full | 1 | 1 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 228.8 | 227.1 | 0.99 |
| All | | 2 | 2 | 54.2 | LOS E | 0.0 | 0.0 | 0.95 | 0.95 | 223.8 | 220.5 | 0.99 |

Intersection 1 PM 2032 Developed

Pedestrians

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Intersection 2 AM 2022 Existing

MOVEMENT SUMMARY

Site: 101 [2. AM 2022 Existing (Site Folder: Tiger Brennan Dr / Stoddart Dr)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 22 | 0 | 23 | 0.0 | 0.012 | 8.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| Approach | | 22 | 0 | 23 | 0.0 | 0.012 | 8.8 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 18 | 0 | 19 | 0.0 | 0.010 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| 25 | T1 | 1938 | 39 | 2040 | 2.0 | 0.524 | 4.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.5 |
| Approach | | 1956 | 39 | 2059 | 2.0 | 0.524 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.5 |
| All Vehicles | | 1978 | 39 | 2082 | 2.0 | 0.524 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.5 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 2 AM 2022 Developed

MOVEMENT SUMMARY

Site: 101 [2. AM 2022 Developed (Site Folder: Tiger Brennan Dr / Stoddart Dr)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 26 | 0 | 27 | 0.0 | 0.015 | 8.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| Approach | | 26 | 0 | 27 | 0.0 | 0.015 | 8.9 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 20 | 0 | 21 | 0.0 | 0.011 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| 25 | T1 | 1938 | 39 | 2040 | 2.0 | 0.524 | 4.3 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.5 |
| Approach | | 1958 | 39 | 2061 | 2.0 | 0.524 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.5 |
| All Vehicles | | 1984 | 39 | 2088 | 2.0 | 0.524 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.5 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 2 AM 2027 Developed

MOVEMENT SUMMARY

Site: 101 [2. AM 2027 Developed (Site Folder: Tiger Brennan Dr / Stoddart Dr)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 26 | 1 | 27 | 3.8 | 0.015 | 9.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| Approach | | 26 | 1 | 27 | 3.8 | 0.015 | 9.5 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 21 | 1 | 22 | 4.8 | 0.012 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| 25 | T1 | 2083 | 42 | 2193 | 2.0 | 0.564 | 4.4 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.5 |
| Approach | | 2104 | 43 | 2215 | 2.0 | 0.564 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.5 |
| All Vehicles | | 2130 | 44 | 2242 | 2.1 | 0.564 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.5 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 2 AM 2032 Developed

MOVEMENT SUMMARY

Site: 101 [2. AM 2032 Developed (Site Folder: Tiger Brennan Dr / Stoddart Dr)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 26 | 1 | 27 | 3.8 | 0.015 | 10.3 | LOS B | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| Approach | | 26 | 1 | 27 | 3.8 | 0.015 | 10.3 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 21 | 1 | 22 | 4.8 | 0.012 | 5.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| 25 | T1 | 2240 | 45 | 2358 | 2.0 | 0.606 | 4.4 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.4 |
| Approach | | 2261 | 46 | 2380 | 2.0 | 0.606 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.4 |
| All Vehicles | | 2287 | 47 | 2407 | 2.1 | 0.606 | 4.5 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.4 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 2 PM 2022 Existing

MOVEMENT SUMMARY

Site: 101 [2. PM 2022 Existing (Site Folder: Tiger Brennan Dr / Stoddart Dr)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 23 | 0 | 24 | 0.0 | 0.013 | 7.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| Approach | | 23 | 0 | 24 | 0.0 | 0.013 | 7.0 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 109 | 0 | 115 | 0.0 | 0.061 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| 25 | T1 | 1220 | 10 | 1284 | 0.8 | 0.328 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.7 |
| Approach | | 1329 | 10 | 1399 | 0.8 | 0.328 | 4.3 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| All Vehicles | | 1352 | 10 | 1423 | 0.7 | 0.328 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 2 PM 2022 Developed

MOVEMENT SUMMARY

Site: 101 [2. PM 2022 Developed (Site Folder: Tiger Brennan Dr / Stoddart Dr)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 29 | 0 | 31 | 0.0 | 0.016 | 7.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| Approach | | 29 | 0 | 31 | 0.0 | 0.016 | 7.0 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 119 | 0 | 125 | 0.0 | 0.067 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| 25 | T1 | 1220 | 10 | 1284 | 0.8 | 0.328 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.7 |
| Approach | | 1339 | 10 | 1409 | 0.7 | 0.328 | 4.3 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| All Vehicles | | 1368 | 10 | 1440 | 0.7 | 0.328 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 2 PM 2027 Developed

MOVEMENT SUMMARY

Site: 101 [2. PM 2027 Developed (Site Folder: Tiger Brennan Dr / Stoddart Dr)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 29 | 1 | 31 | 3.4 | 0.017 | 7.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| Approach | | 29 | 1 | 31 | 3.4 | 0.017 | 7.2 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 120 | 1 | 126 | 0.8 | 0.068 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| 25 | T1 | 1312 | 11 | 1381 | 0.8 | 0.352 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.7 |
| Approach | | 1432 | 12 | 1507 | 0.8 | 0.352 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.7 |
| All Vehicles | | 1461 | 13 | 1538 | 0.9 | 0.352 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 2 PM 2032 Developed

MOVEMENT SUMMARY

Site: 101 [2. PM 2032 Developed (Site Folder: Tiger Brennan Dr / Stoddart Dr)]

New Site
 Site Category: (None)
 Give-Way (Two-Way)

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|--------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Stoddart Drive | | | | | | | | | | | | | | |
| 21 | L2 | 29 | 1 | 31 | 3.4 | 0.017 | 7.4 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| Approach | | 29 | 1 | 31 | 3.4 | 0.017 | 7.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.8 |
| NorthEast: Tiger Brennan Drive | | | | | | | | | | | | | | |
| 24 | L2 | 121 | 1 | 127 | 0.8 | 0.068 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.9 |
| 25 | T1 | 1410 | 12 | 1484 | 0.9 | 0.379 | 4.2 | LOS A | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.7 |
| Approach | | 1531 | 13 | 1612 | 0.8 | 0.379 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.7 |
| All Vehicles | | 1560 | 14 | 1642 | 0.9 | 0.379 | 4.4 | NA | 0.0 | 0.0 | 0.00 | 0.53 | 0.00 | 54.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 3 AM 2022 Existing

MOVEMENT SUMMARY

Site: 101 [3. AM 2022 Existing (Site Folder: Stoddart Dr / Fanning Dr)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Fanning Drive | | | | | | | | | | | | | | |
| 21a | L1 | 108 | 0 | 114 | 0.0 | 0.089 | 3.8 | LOS A | 0.4 | 3.0 | 0.09 | 0.44 | 0.09 | 55.9 |
| 23a | R1 | 19 | 0 | 20 | 0.0 | 0.089 | 7.8 | LOS A | 0.4 | 3.0 | 0.09 | 0.44 | 0.09 | 55.8 |
| Approach | | 127 | 0 | 134 | 0.0 | 0.089 | 4.4 | LOS A | 0.4 | 3.0 | 0.09 | 0.44 | 0.09 | 55.9 |
| North: Stoddart Drive | | | | | | | | | | | | | | |
| 7a | L1 | 10 | 1 | 11 | 10.0 | 0.021 | 3.8 | LOS A | 0.1 | 0.8 | 0.06 | 0.56 | 0.06 | 54.0 |
| 9 | R2 | 17 | 4 | 18 | 23.5 | 0.021 | 9.0 | LOS A | 0.1 | 0.8 | 0.06 | 0.56 | 0.06 | 53.6 |
| Approach | | 27 | 5 | 28 | 18.5 | 0.021 | 7.1 | LOS A | 0.1 | 0.8 | 0.06 | 0.56 | 0.06 | 53.8 |
| West: Stoddart Drive | | | | | | | | | | | | | | |
| 10 | L2 | 8 | 3 | 8 | 37.5 | 0.015 | 4.3 | LOS A | 0.1 | 0.5 | 0.10 | 0.55 | 0.10 | 52.3 |
| 12a | R1 | 10 | 0 | 11 | 0.0 | 0.015 | 7.8 | LOS A | 0.1 | 0.5 | 0.10 | 0.55 | 0.10 | 54.2 |
| Approach | | 18 | 3 | 19 | 16.7 | 0.015 | 6.2 | LOS A | 0.1 | 0.5 | 0.10 | 0.55 | 0.10 | 53.3 |
| All Vehicles | | 172 | 8 | 181 | 4.7 | 0.089 | 5.0 | LOS A | 0.4 | 3.0 | 0.09 | 0.47 | 0.09 | 55.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 3 AM 2022 Developed

MOVEMENT SUMMARY

Site: 101 [3. AM 2022 Developed (Site Folder: Stoddart Dr / Fanning Dr)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Fanning Drive | | | | | | | | | | | | | | |
| 21a | L1 | 130 | 0 | 137 | 0.0 | 0.106 | 3.8 | LOS A | 0.5 | 3.7 | 0.09 | 0.44 | 0.09 | 55.9 |
| 23a | R1 | 23 | 0 | 24 | 0.0 | 0.106 | 7.8 | LOS A | 0.5 | 3.7 | 0.09 | 0.44 | 0.09 | 55.8 |
| Approach | | 153 | 0 | 161 | 0.0 | 0.106 | 4.4 | LOS A | 0.5 | 3.7 | 0.09 | 0.44 | 0.09 | 55.9 |
| North: Stoddart Drive | | | | | | | | | | | | | | |
| 7a | L1 | 12 | 1 | 13 | 8.3 | 0.023 | 3.8 | LOS A | 0.1 | 0.9 | 0.08 | 0.55 | 0.08 | 54.2 |
| 9 | R2 | 17 | 4 | 18 | 23.5 | 0.023 | 9.0 | LOS A | 0.1 | 0.9 | 0.08 | 0.55 | 0.08 | 53.8 |
| Approach | | 29 | 5 | 31 | 17.2 | 0.023 | 6.9 | LOS A | 0.1 | 0.9 | 0.08 | 0.55 | 0.08 | 53.9 |
| West: Stoddart Drive | | | | | | | | | | | | | | |
| 10 | L2 | 8 | 3 | 8 | 37.5 | 0.017 | 4.4 | LOS A | 0.1 | 0.6 | 0.11 | 0.55 | 0.11 | 52.1 |
| 12a | R1 | 13 | 0 | 14 | 0.0 | 0.017 | 7.8 | LOS A | 0.1 | 0.6 | 0.11 | 0.55 | 0.11 | 54.0 |
| Approach | | 21 | 3 | 22 | 14.3 | 0.017 | 6.5 | LOS A | 0.1 | 0.6 | 0.11 | 0.55 | 0.11 | 53.2 |
| All Vehicles | | 203 | 8 | 214 | 3.9 | 0.106 | 5.0 | LOS A | 0.5 | 3.7 | 0.09 | 0.47 | 0.09 | 55.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 3 AM 2027 Developed

MOVEMENT SUMMARY

 Site: 101 [3. AM 2027 Developed (Site Folder: Stoddart Dr / Fanning Dr)]

New Site
 Site Category: (None)
 Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Fanning Drive | | | | | | | | | | | | | | |
| 21a | L1 | 132 | 1 | 139 | 0.8 | 0.108 | 3.8 | LOS A | 0.5 | 3.8 | 0.09 | 0.44 | 0.09 | 55.9 |
| 23a | R1 | 23 | 1 | 24 | 4.3 | 0.108 | 7.8 | LOS A | 0.5 | 3.8 | 0.09 | 0.44 | 0.09 | 55.6 |
| Approach | | 155 | 2 | 163 | 1.3 | 0.108 | 4.4 | LOS A | 0.5 | 3.8 | 0.09 | 0.44 | 0.09 | 55.9 |
| North: Stoddart Drive | | | | | | | | | | | | | | |
| 7a | L1 | 12 | 1 | 13 | 8.3 | 0.023 | 3.8 | LOS A | 0.1 | 0.9 | 0.08 | 0.55 | 0.08 | 54.2 |
| 9 | R2 | 17 | 4 | 18 | 23.5 | 0.023 | 9.0 | LOS A | 0.1 | 0.9 | 0.08 | 0.55 | 0.08 | 53.8 |
| Approach | | 29 | 5 | 31 | 17.2 | 0.023 | 6.9 | LOS A | 0.1 | 0.9 | 0.08 | 0.55 | 0.08 | 53.9 |
| West: Stoddart Drive | | | | | | | | | | | | | | |
| 10 | L2 | 8 | 3 | 8 | 37.5 | 0.018 | 4.4 | LOS A | 0.1 | 0.7 | 0.11 | 0.55 | 0.11 | 52.1 |
| 12a | R1 | 13 | 1 | 14 | 7.7 | 0.018 | 7.9 | LOS A | 0.1 | 0.7 | 0.11 | 0.55 | 0.11 | 53.7 |
| Approach | | 21 | 4 | 22 | 19.0 | 0.018 | 6.5 | LOS A | 0.1 | 0.7 | 0.11 | 0.55 | 0.11 | 53.1 |
| All Vehicles | | 205 | 11 | 216 | 5.4 | 0.108 | 5.0 | LOS A | 0.5 | 3.8 | 0.09 | 0.46 | 0.09 | 55.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 Vehicle movement LOS values are based on average delay per movement.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection 3 AM 2032 Developed

MOVEMENT SUMMARY

 Site: 101 [3. AM 2032 Developed (Site Folder: Stoddart Dr / Fanning Dr)]

New Site
 Site Category: (None)
 Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Fanning Drive | | | | | | | | | | | | | | |
| 21a | L1 | 133 | 1 | 140 | 0.8 | 0.108 | 3.8 | LOS A | 0.5 | 3.8 | 0.09 | 0.44 | 0.09 | 55.9 |
| 23a | R1 | 23 | 1 | 24 | 4.3 | 0.108 | 7.8 | LOS A | 0.5 | 3.8 | 0.09 | 0.44 | 0.09 | 55.6 |
| Approach | | 156 | 2 | 164 | 1.3 | 0.108 | 4.4 | LOS A | 0.5 | 3.8 | 0.09 | 0.44 | 0.09 | 55.9 |
| North: Stoddart Drive | | | | | | | | | | | | | | |
| 7a | L1 | 13 | 1 | 14 | 7.7 | 0.024 | 3.8 | LOS A | 0.1 | 0.9 | 0.08 | 0.54 | 0.08 | 54.3 |
| 9 | R2 | 17 | 4 | 18 | 23.5 | 0.024 | 9.0 | LOS A | 0.1 | 0.9 | 0.08 | 0.54 | 0.08 | 53.8 |
| Approach | | 30 | 5 | 32 | 16.7 | 0.024 | 6.8 | LOS A | 0.1 | 0.9 | 0.08 | 0.54 | 0.08 | 54.0 |
| West: Stoddart Drive | | | | | | | | | | | | | | |
| 10 | L2 | 8 | 3 | 8 | 37.5 | 0.018 | 4.4 | LOS A | 0.1 | 0.7 | 0.11 | 0.55 | 0.11 | 52.1 |
| 12a | R1 | 13 | 1 | 14 | 7.7 | 0.018 | 7.9 | LOS A | 0.1 | 0.7 | 0.11 | 0.55 | 0.11 | 53.7 |
| Approach | | 21 | 4 | 22 | 19.0 | 0.018 | 6.5 | LOS A | 0.1 | 0.7 | 0.11 | 0.55 | 0.11 | 53.1 |
| All Vehicles | | 207 | 11 | 218 | 5.3 | 0.108 | 4.9 | LOS A | 0.5 | 3.8 | 0.09 | 0.46 | 0.09 | 55.3 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 Vehicle movement LOS values are based on average delay per movement.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection 3 PM 2022 Existing

MOVEMENT SUMMARY

Site: 101 [3. PM 2022 Existing (Site Folder: Stoddart Dr / Fanning Dr)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Fanning Drive | | | | | | | | | | | | | | |
| 21a | L1 | 41 | 0 | 43 | 0.0 | 0.059 | 3.9 | LOS A | 0.3 | 2.0 | 0.18 | 0.50 | 0.18 | 54.7 |
| 23a | R1 | 34 | 0 | 36 | 0.0 | 0.059 | 7.9 | LOS A | 0.3 | 2.0 | 0.18 | 0.50 | 0.18 | 54.6 |
| Approach | | 75 | 0 | 79 | 0.0 | 0.059 | 5.7 | LOS A | 0.3 | 2.0 | 0.18 | 0.50 | 0.18 | 54.6 |
| North: Stoddart Drive | | | | | | | | | | | | | | |
| 7a | L1 | 64 | 0 | 67 | 0.0 | 0.090 | 4.0 | LOS A | 0.4 | 3.2 | 0.19 | 0.52 | 0.19 | 54.4 |
| 9 | R2 | 52 | 2 | 55 | 3.8 | 0.090 | 9.0 | LOS A | 0.4 | 3.2 | 0.19 | 0.52 | 0.19 | 54.6 |
| Approach | | 116 | 2 | 122 | 1.7 | 0.090 | 6.2 | LOS A | 0.4 | 3.2 | 0.19 | 0.52 | 0.19 | 54.5 |
| West: Stoddart Drive | | | | | | | | | | | | | | |
| 10 | L2 | 3 | 0 | 3 | 0.0 | 0.046 | 4.0 | LOS A | 0.2 | 1.6 | 0.13 | 0.58 | 0.13 | 52.5 |
| 12a | R1 | 58 | 0 | 61 | 0.0 | 0.046 | 7.8 | LOS A | 0.2 | 1.6 | 0.13 | 0.58 | 0.13 | 53.2 |
| Approach | | 61 | 0 | 64 | 0.0 | 0.046 | 7.6 | LOS A | 0.2 | 1.6 | 0.13 | 0.58 | 0.13 | 53.2 |
| All Vehicles | | 252 | 2 | 265 | 0.8 | 0.090 | 6.4 | LOS A | 0.4 | 3.2 | 0.17 | 0.53 | 0.17 | 54.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Working\Bayview SIDRA Modelling.sip9

Intersection 3 PM 2022 Developed

MOVEMENT SUMMARY

Site: 101 [3. PM 2022 Developed (Site Folder: Stoddart Dr / Fanning Dr)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Fanning Drive | | | | | | | | | | | | | | |
| 21a | L1 | 48 | 0 | 51 | 0.0 | 0.068 | 3.9 | LOS A | 0.3 | 2.4 | 0.18 | 0.51 | 0.18 | 54.7 |
| 23a | R1 | 40 | 0 | 42 | 0.0 | 0.068 | 7.9 | LOS A | 0.3 | 2.4 | 0.18 | 0.51 | 0.18 | 54.5 |
| Approach | | 88 | 0 | 93 | 0.0 | 0.068 | 5.8 | LOS A | 0.3 | 2.4 | 0.18 | 0.51 | 0.18 | 54.6 |
| North: Stoddart Drive | | | | | | | | | | | | | | |
| 7a | L1 | 74 | 0 | 78 | 0.0 | 0.099 | 4.0 | LOS A | 0.5 | 3.5 | 0.21 | 0.52 | 0.21 | 54.4 |
| 9 | R2 | 52 | 2 | 55 | 3.8 | 0.099 | 9.1 | LOS A | 0.5 | 3.5 | 0.21 | 0.52 | 0.21 | 54.6 |
| Approach | | 126 | 2 | 133 | 1.6 | 0.099 | 6.1 | LOS A | 0.5 | 3.5 | 0.21 | 0.52 | 0.21 | 54.5 |
| West: Stoddart Drive | | | | | | | | | | | | | | |
| 10 | L2 | 3 | 0 | 3 | 0.0 | 0.053 | 4.0 | LOS A | 0.3 | 1.8 | 0.15 | 0.58 | 0.15 | 52.4 |
| 12a | R1 | 67 | 0 | 71 | 0.0 | 0.053 | 7.9 | LOS A | 0.3 | 1.8 | 0.15 | 0.58 | 0.15 | 53.1 |
| Approach | | 70 | 0 | 74 | 0.0 | 0.053 | 7.7 | LOS A | 0.3 | 1.8 | 0.15 | 0.58 | 0.15 | 53.1 |
| All Vehicles | | 284 | 2 | 299 | 0.7 | 0.099 | 6.4 | LOS A | 0.5 | 3.5 | 0.18 | 0.53 | 0.18 | 54.2 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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\Working\Bayview SIDRA Modelling.sip9

Intersection 3 PM 2027 Developed

MOVEMENT SUMMARY

 Site: 101 [3. PM 2027 Developed (Site Folder: Stoddart Dr / Fanning Dr)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Fanning Drive | | | | | | | | | | | | | | |
| 21a | L1 | 48 | 1 | 51 | 2.1 | 0.069 | 4.0 | LOS A | 0.3 | 2.4 | 0.18 | 0.50 | 0.18 | 54.6 |
| 23a | R1 | 40 | 1 | 42 | 2.5 | 0.069 | 8.0 | LOS A | 0.3 | 2.4 | 0.18 | 0.50 | 0.18 | 54.4 |
| Approach | | 88 | 2 | 93 | 2.3 | 0.069 | 5.8 | LOS A | 0.3 | 2.4 | 0.18 | 0.50 | 0.18 | 54.5 |
| North: Stoddart Drive | | | | | | | | | | | | | | |
| 7a | L1 | 74 | 1 | 78 | 1.4 | 0.100 | 4.0 | LOS A | 0.5 | 3.6 | 0.21 | 0.52 | 0.21 | 54.4 |
| 9 | R2 | 53 | 2 | 56 | 3.8 | 0.100 | 9.1 | LOS A | 0.5 | 3.6 | 0.21 | 0.52 | 0.21 | 54.6 |
| Approach | | 127 | 3 | 134 | 2.4 | 0.100 | 6.1 | LOS A | 0.5 | 3.6 | 0.21 | 0.52 | 0.21 | 54.5 |
| West: Stoddart Drive | | | | | | | | | | | | | | |
| 10 | L2 | 3 | 1 | 3 | 33.3 | 0.055 | 4.4 | LOS A | 0.3 | 1.9 | 0.15 | 0.58 | 0.15 | 51.4 |
| 12a | R1 | 68 | 1 | 72 | 1.5 | 0.055 | 7.9 | LOS A | 0.3 | 1.9 | 0.15 | 0.58 | 0.15 | 53.0 |
| Approach | | 71 | 2 | 75 | 2.8 | 0.055 | 7.7 | LOS A | 0.3 | 1.9 | 0.15 | 0.58 | 0.15 | 53.0 |
| All Vehicles | | 286 | 7 | 301 | 2.4 | 0.100 | 6.4 | LOS A | 0.5 | 3.6 | 0.19 | 0.53 | 0.19 | 54.1 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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\Working\Bayview SIDRA Modelling.sip9

Intersection 3 PM 2032 Developed

MOVEMENT SUMMARY

Site: 101 [3. PM 2032 Developed (Site Folder: Stoddart Dr / Fanning Dr)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| SouthEast: Fanning Drive | | | | | | | | | | | | | | |
| 21a | L1 | 49 | 1 | 52 | 2.0 | 0.070 | 4.0 | LOS A | 0.3 | 2.5 | 0.18 | 0.50 | 0.18 | 54.6 |
| 23a | R1 | 40 | 1 | 42 | 2.5 | 0.070 | 8.0 | LOS A | 0.3 | 2.5 | 0.18 | 0.50 | 0.18 | 54.4 |
| Approach | | 89 | 2 | 94 | 2.2 | 0.070 | 5.8 | LOS A | 0.3 | 2.5 | 0.18 | 0.50 | 0.18 | 54.5 |
| North: Stoddart Drive | | | | | | | | | | | | | | |
| 7a | L1 | 75 | 1 | 79 | 1.3 | 0.101 | 4.0 | LOS A | 0.5 | 3.6 | 0.21 | 0.52 | 0.21 | 54.4 |
| 9 | R2 | 53 | 2 | 56 | 3.8 | 0.101 | 9.1 | LOS A | 0.5 | 3.6 | 0.21 | 0.52 | 0.21 | 54.6 |
| Approach | | 128 | 3 | 135 | 2.3 | 0.101 | 6.1 | LOS A | 0.5 | 3.6 | 0.21 | 0.52 | 0.21 | 54.5 |
| West: Stoddart Drive | | | | | | | | | | | | | | |
| 10 | L2 | 3 | 1 | 3 | 33.3 | 0.055 | 4.4 | LOS A | 0.3 | 1.9 | 0.15 | 0.58 | 0.15 | 51.4 |
| 12a | R1 | 68 | 1 | 72 | 1.5 | 0.055 | 7.9 | LOS A | 0.3 | 1.9 | 0.15 | 0.58 | 0.15 | 53.0 |
| Approach | | 71 | 2 | 75 | 2.8 | 0.055 | 7.7 | LOS A | 0.3 | 1.9 | 0.15 | 0.58 | 0.15 | 53.0 |
| All Vehicles | | 288 | 7 | 303 | 2.4 | 0.101 | 6.4 | LOS A | 0.5 | 3.6 | 0.19 | 0.53 | 0.19 | 54.1 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 4 AM 2022 Existing

MOVEMENT SUMMARY

 Site: 101 [4. AM 2022 Existing (Site Folder: Stoddart Dr / Bayview Bvd)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| South: Bayview Boulevard | | | | | | | | | | | | | | |
| 1a | L1 | 87 | 4 | 92 | 4.6 | 0.085 | 5.0 | LOS A | 0.4 | 3.1 | 0.41 | 0.50 | 0.41 | 54.8 |
| 3 | R2 | 1 | 0 | 1 | 0.0 | 0.085 | 10.0 | LOS A | 0.4 | 3.1 | 0.41 | 0.50 | 0.41 | 55.3 |
| Approach | | 88 | 4 | 93 | 4.5 | 0.085 | 5.1 | LOS A | 0.4 | 3.1 | 0.41 | 0.50 | 0.41 | 54.9 |
| East: Stoddart Drive | | | | | | | | | | | | | | |
| 4 | L2 | 6 | 3 | 6 | 50.0 | 0.181 | 4.5 | LOS A | 0.9 | 6.7 | 0.12 | 0.59 | 0.12 | 51.0 |
| 6a | R1 | 255 | 1 | 268 | 0.4 | 0.181 | 7.8 | LOS A | 0.9 | 6.7 | 0.12 | 0.59 | 0.12 | 53.1 |
| Approach | | 261 | 4 | 275 | 1.5 | 0.181 | 7.7 | LOS A | 0.9 | 6.7 | 0.12 | 0.59 | 0.12 | 53.1 |
| NorthWest: Stoddart Drive | | | | | | | | | | | | | | |
| 27a | L1 | 40 | 4 | 42 | 10.0 | 0.043 | 3.8 | LOS A | 0.2 | 1.7 | 0.02 | 0.52 | 0.02 | 55.1 |
| 29a | R1 | 27 | 0 | 28 | 0.0 | 0.043 | 7.7 | LOS A | 0.2 | 1.7 | 0.02 | 0.52 | 0.02 | 55.2 |
| Approach | | 67 | 4 | 71 | 6.0 | 0.043 | 5.4 | LOS A | 0.2 | 1.7 | 0.02 | 0.52 | 0.02 | 55.1 |
| All Vehicles | | 416 | 12 | 438 | 2.9 | 0.181 | 6.8 | LOS A | 0.9 | 6.7 | 0.17 | 0.56 | 0.17 | 53.8 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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\Working\Bayview SIDRA Modelling.sip9

Intersection 4 AM 2022 Developed

MOVEMENT SUMMARY

 Site: 101 [4. AM 2022 Developed (Site Folder: Stoddart Dr / Bayview Bvd)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| South: Bayview Boulevard | | | | | | | | | | | | | | |
| 1a | L1 | 87 | 4 | 92 | 4.6 | 0.086 | 5.2 | LOS A | 0.4 | 3.1 | 0.43 | 0.51 | 0.43 | 54.8 |
| 3 | R2 | 1 | 0 | 1 | 0.0 | 0.086 | 10.1 | LOS B | 0.4 | 3.1 | 0.43 | 0.51 | 0.43 | 55.3 |
| Approach | | 88 | 4 | 93 | 4.5 | 0.086 | 5.2 | LOS A | 0.4 | 3.1 | 0.43 | 0.51 | 0.43 | 54.8 |
| East: Stoddart Drive | | | | | | | | | | | | | | |
| 4 | L2 | 7 | 3 | 7 | 42.9 | 0.196 | 4.5 | LOS A | 1.0 | 7.4 | 0.12 | 0.59 | 0.12 | 51.2 |
| 6a | R1 | 277 | 1 | 292 | 0.4 | 0.196 | 7.8 | LOS A | 1.0 | 7.4 | 0.12 | 0.59 | 0.12 | 53.1 |
| Approach | | 284 | 4 | 299 | 1.4 | 0.196 | 7.7 | LOS A | 1.0 | 7.4 | 0.12 | 0.59 | 0.12 | 53.1 |
| NorthWest: Stoddart Drive | | | | | | | | | | | | | | |
| 27a | L1 | 43 | 4 | 45 | 9.3 | 0.044 | 3.8 | LOS A | 0.2 | 1.7 | 0.02 | 0.51 | 0.02 | 55.2 |
| 29a | R1 | 27 | 0 | 28 | 0.0 | 0.044 | 7.7 | LOS A | 0.2 | 1.7 | 0.02 | 0.51 | 0.02 | 55.3 |
| Approach | | 70 | 4 | 74 | 5.7 | 0.044 | 5.3 | LOS A | 0.2 | 1.7 | 0.02 | 0.51 | 0.02 | 55.2 |
| All Vehicles | | 442 | 12 | 465 | 2.7 | 0.196 | 6.8 | LOS A | 1.0 | 7.4 | 0.17 | 0.56 | 0.17 | 53.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 4 AM 2027 Developed

MOVEMENT SUMMARY

 Site: 101 [4. AM 2027 Developed (Site Folder: Stoddart Dr / Bayview Bvd)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| South: Bayview Boulevard | | | | | | | | | | | | | | |
| 1a | L1 | 88 | 4 | 93 | 4.5 | 0.088 | 5.2 | LOS A | 0.4 | 3.2 | 0.43 | 0.52 | 0.43 | 54.7 |
| 3 | R2 | 1 | 1 | 1 | 100.0 | 0.088 | 12.8 | LOS B | 0.4 | 3.2 | 0.43 | 0.52 | 0.43 | 51.3 |
| Approach | | 89 | 5 | 94 | 5.6 | 0.088 | 5.3 | LOS A | 0.4 | 3.2 | 0.43 | 0.52 | 0.43 | 54.7 |
| East: Stoddart Drive | | | | | | | | | | | | | | |
| 4 | L2 | 7 | 3 | 7 | 42.9 | 0.198 | 4.5 | LOS A | 1.1 | 7.5 | 0.12 | 0.59 | 0.12 | 51.2 |
| 6a | R1 | 280 | 1 | 295 | 0.4 | 0.198 | 7.8 | LOS A | 1.1 | 7.5 | 0.12 | 0.59 | 0.12 | 53.1 |
| Approach | | 287 | 4 | 302 | 1.4 | 0.198 | 7.7 | LOS A | 1.1 | 7.5 | 0.12 | 0.59 | 0.12 | 53.1 |
| NorthWest: Stoddart Drive | | | | | | | | | | | | | | |
| 27a | L1 | 43 | 4 | 45 | 9.3 | 0.045 | 3.8 | LOS A | 0.2 | 1.8 | 0.02 | 0.51 | 0.02 | 55.2 |
| 29a | R1 | 27 | 1 | 28 | 3.7 | 0.045 | 7.7 | LOS A | 0.2 | 1.8 | 0.02 | 0.51 | 0.02 | 55.1 |
| Approach | | 70 | 5 | 74 | 7.1 | 0.045 | 5.3 | LOS A | 0.2 | 1.8 | 0.02 | 0.51 | 0.02 | 55.2 |
| All Vehicles | | 446 | 14 | 469 | 3.1 | 0.198 | 6.9 | LOS A | 1.1 | 7.5 | 0.17 | 0.56 | 0.17 | 53.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 4 AM 2032 Developed

MOVEMENT SUMMARY

Site: 101 [4. AM 2032 Developed (Site Folder: Stoddart Dr / Bayview Blvd)]

New Site
 Site Category: (None)
 Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| South: Bayview Boulevard | | | | | | | | | | | | | | |
| 1a | L1 | 89 | 4 | 94 | 4.5 | 0.089 | 5.2 | LOS A | 0.4 | 3.3 | 0.44 | 0.52 | 0.44 | 54.7 |
| 3 | R2 | 1 | 1 | 1 | 100.0 | 0.089 | 12.8 | LOS B | 0.4 | 3.3 | 0.44 | 0.52 | 0.44 | 51.3 |
| Approach | | 90 | 5 | 95 | 5.6 | 0.089 | 5.3 | LOS A | 0.4 | 3.3 | 0.44 | 0.52 | 0.44 | 54.7 |
| East: Stoddart Drive | | | | | | | | | | | | | | |
| 4 | L2 | 7 | 3 | 7 | 42.9 | 0.200 | 4.5 | LOS A | 1.1 | 7.6 | 0.13 | 0.59 | 0.13 | 51.2 |
| 6a | R1 | 282 | 1 | 297 | 0.4 | 0.200 | 7.8 | LOS A | 1.1 | 7.6 | 0.13 | 0.59 | 0.13 | 53.1 |
| Approach | | 289 | 4 | 304 | 1.4 | 0.200 | 7.7 | LOS A | 1.1 | 7.6 | 0.13 | 0.59 | 0.13 | 53.1 |
| NorthWest: Stoddart Drive | | | | | | | | | | | | | | |
| 27a | L1 | 44 | 4 | 46 | 9.1 | 0.047 | 3.8 | LOS A | 0.2 | 1.8 | 0.02 | 0.51 | 0.02 | 55.2 |
| 29a | R1 | 28 | 1 | 29 | 3.6 | 0.047 | 7.7 | LOS A | 0.2 | 1.8 | 0.02 | 0.51 | 0.02 | 55.1 |
| Approach | | 72 | 5 | 76 | 6.9 | 0.047 | 5.3 | LOS A | 0.2 | 1.8 | 0.02 | 0.51 | 0.02 | 55.2 |
| All Vehicles | | 451 | 14 | 475 | 3.1 | 0.200 | 6.9 | LOS A | 1.1 | 7.6 | 0.17 | 0.56 | 0.17 | 53.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 Vehicle movement LOS values are based on average delay per movement.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Intersection 4 PM 2022 Existing

MOVEMENT SUMMARY

Site: 101 [4. PM 2022 Existing (Site Folder: Stoddart Dr / Bayview Blvd)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| South: Bayview Boulevard | | | | | | | | | | | | | | |
| 1a | L1 | 36 | 2 | 38 | 5.6 | 0.034 | 4.2 | LOS A | 0.2 | 1.2 | 0.25 | 0.44 | 0.25 | 55.2 |
| 3 | R2 | 4 | 0 | 4 | 0.0 | 0.034 | 9.2 | LOS A | 0.2 | 1.2 | 0.25 | 0.44 | 0.25 | 55.7 |
| Approach | | 40 | 2 | 42 | 5.0 | 0.034 | 4.7 | LOS A | 0.2 | 1.2 | 0.25 | 0.44 | 0.25 | 55.3 |
| East: Stoddart Drive | | | | | | | | | | | | | | |
| 4 | L2 | 15 | 2 | 16 | 13.3 | 0.090 | 4.4 | LOS A | 0.4 | 3.1 | 0.20 | 0.58 | 0.20 | 52.1 |
| 6a | R1 | 98 | 0 | 103 | 0.0 | 0.090 | 8.0 | LOS A | 0.4 | 3.1 | 0.20 | 0.58 | 0.20 | 53.2 |
| Approach | | 113 | 2 | 119 | 1.8 | 0.090 | 7.5 | LOS A | 0.4 | 3.1 | 0.20 | 0.58 | 0.20 | 53.0 |
| NorthWest: Stoddart Drive | | | | | | | | | | | | | | |
| 27a | L1 | 149 | 2 | 157 | 1.3 | 0.137 | 3.7 | LOS A | 0.7 | 5.3 | 0.04 | 0.49 | 0.04 | 55.6 |
| 29a | R1 | 69 | 0 | 73 | 0.0 | 0.137 | 7.7 | LOS A | 0.7 | 5.3 | 0.04 | 0.49 | 0.04 | 55.5 |
| Approach | | 218 | 2 | 229 | 0.9 | 0.137 | 5.0 | LOS A | 0.7 | 5.3 | 0.04 | 0.49 | 0.04 | 55.5 |
| All Vehicles | | 371 | 6 | 391 | 1.6 | 0.137 | 5.7 | LOS A | 0.7 | 5.3 | 0.11 | 0.51 | 0.11 | 54.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 4 PM 2022 Developed

MOVEMENT SUMMARY

Site: 101 [4. PM 2022 Developed (Site Folder: Stoddart Dr / Bayview Bvd)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| South: Bayview Boulevard | | | | | | | | | | | | | | |
| 1a | L1 | 36 | 2 | 38 | 5.6 | 0.034 | 4.3 | LOS A | 0.2 | 1.2 | 0.26 | 0.45 | 0.26 | 55.1 |
| 3 | R2 | 4 | 0 | 4 | 0.0 | 0.034 | 9.2 | LOS A | 0.2 | 1.2 | 0.26 | 0.45 | 0.26 | 55.7 |
| Approach | | 40 | 2 | 42 | 5.0 | 0.034 | 4.8 | LOS A | 0.2 | 1.2 | 0.26 | 0.45 | 0.26 | 55.2 |
| East: Stoddart Drive | | | | | | | | | | | | | | |
| 4 | L2 | 16 | 2 | 17 | 12.5 | 0.098 | 4.4 | LOS A | 0.5 | 3.4 | 0.20 | 0.58 | 0.20 | 52.1 |
| 6a | R1 | 109 | 0 | 115 | 0.0 | 0.098 | 8.0 | LOS A | 0.5 | 3.4 | 0.20 | 0.58 | 0.20 | 53.2 |
| Approach | | 125 | 2 | 132 | 1.6 | 0.098 | 7.5 | LOS A | 0.5 | 3.4 | 0.20 | 0.58 | 0.20 | 53.0 |
| NorthWest: Stoddart Drive | | | | | | | | | | | | | | |
| 27a | L1 | 158 | 2 | 166 | 1.3 | 0.142 | 3.7 | LOS A | 0.8 | 5.5 | 0.04 | 0.49 | 0.04 | 55.6 |
| 29a | R1 | 69 | 0 | 73 | 0.0 | 0.142 | 7.7 | LOS A | 0.8 | 5.5 | 0.04 | 0.49 | 0.04 | 55.5 |
| Approach | | 227 | 2 | 239 | 0.9 | 0.142 | 4.9 | LOS A | 0.8 | 5.5 | 0.04 | 0.49 | 0.04 | 55.6 |
| All Vehicles | | 392 | 6 | 413 | 1.5 | 0.142 | 5.7 | LOS A | 0.8 | 5.5 | 0.11 | 0.51 | 0.11 | 54.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 4 PM 2027 Developed

MOVEMENT SUMMARY

 Site: 101 [4. PM 2027 Developed (Site Folder: Stoddart Dr / Bayview Bvd)]

New Site
Site Category: (None)
Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| South: Bayview Boulevard | | | | | | | | | | | | | | |
| 1a | L1 | 36 | 2 | 38 | 5.6 | 0.035 | 4.3 | LOS A | 0.2 | 1.2 | 0.26 | 0.44 | 0.26 | 55.2 |
| 3 | R2 | 4 | 1 | 4 | 25.0 | 0.035 | 9.6 | LOS A | 0.2 | 1.2 | 0.26 | 0.44 | 0.26 | 54.7 |
| Approach | | 40 | 3 | 42 | 7.5 | 0.035 | 4.8 | LOS A | 0.2 | 1.2 | 0.26 | 0.44 | 0.26 | 55.2 |
| East: Stoddart Drive | | | | | | | | | | | | | | |
| 4 | L2 | 16 | 2 | 17 | 12.5 | 0.099 | 4.4 | LOS A | 0.5 | 3.4 | 0.20 | 0.58 | 0.20 | 52.1 |
| 6a | R1 | 109 | 1 | 115 | 0.9 | 0.099 | 8.0 | LOS A | 0.5 | 3.4 | 0.20 | 0.58 | 0.20 | 53.1 |
| Approach | | 125 | 3 | 132 | 2.4 | 0.099 | 7.5 | LOS A | 0.5 | 3.4 | 0.20 | 0.58 | 0.20 | 53.0 |
| NorthWest: Stoddart Drive | | | | | | | | | | | | | | |
| 27a | L1 | 158 | 2 | 166 | 1.3 | 0.143 | 3.7 | LOS A | 0.8 | 5.6 | 0.04 | 0.49 | 0.04 | 55.6 |
| 29a | R1 | 69 | 1 | 73 | 1.4 | 0.143 | 7.7 | LOS A | 0.8 | 5.6 | 0.04 | 0.49 | 0.04 | 55.4 |
| Approach | | 227 | 3 | 239 | 1.3 | 0.143 | 4.9 | LOS A | 0.8 | 5.6 | 0.04 | 0.49 | 0.04 | 55.6 |
| All Vehicles | | 392 | 9 | 413 | 2.3 | 0.143 | 5.8 | LOS A | 0.8 | 5.6 | 0.12 | 0.51 | 0.12 | 54.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Roundabout LOS Method: SIDRA Roundabout LOS.

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Geometric Delay is included).

Queue Model: SIDRA Standard.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Intersection 4 PM 2032 Developed

MOVEMENT SUMMARY

Site: 101 [4. PM 2032 Developed (Site Folder: Stoddart Dr / Bayview Bvd)]

New Site
 Site Category: (None)
 Roundabout

| Vehicle Movement Performance | | | | | | | | | | | | | | |
|------------------------------|------|-----------------|--------------|-----------------|----------|-----------|-------------|------------------|-------------------|------------|-----------|---------------------|------------------|-------------|
| Mov ID | Turn | INPUT VOLUMES | | DEMAND FLOWS | | Deg. Satn | Aver. Delay | Level of Service | 95% BACK OF QUEUE | | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed |
| | | [Total veh/h] | [HV veh/h] | [Total veh/h] | [HV %] | | | | [Veh. veh] | [Dist m] | | | | |
| South: Bayview Boulevard | | | | | | | | | | | | | | |
| 1a | L1 | 37 | 2 | 39 | 5.4 | 0.036 | 4.3 | LOS A | 0.2 | 1.3 | 0.27 | 0.44 | 0.27 | 55.2 |
| 3 | R2 | 4 | 1 | 4 | 25.0 | 0.036 | 9.6 | LOS A | 0.2 | 1.3 | 0.27 | 0.44 | 0.27 | 54.7 |
| Approach | | 41 | 3 | 43 | 7.3 | 0.036 | 4.8 | LOS A | 0.2 | 1.3 | 0.27 | 0.44 | 0.27 | 55.2 |
| East: Stoddart Drive | | | | | | | | | | | | | | |
| 4 | L2 | 16 | 2 | 17 | 12.5 | 0.101 | 4.4 | LOS A | 0.5 | 3.5 | 0.21 | 0.58 | 0.21 | 52.1 |
| 6a | R1 | 111 | 1 | 117 | 0.9 | 0.101 | 8.0 | LOS A | 0.5 | 3.5 | 0.21 | 0.58 | 0.21 | 53.1 |
| Approach | | 127 | 3 | 134 | 2.4 | 0.101 | 7.6 | LOS A | 0.5 | 3.5 | 0.21 | 0.58 | 0.21 | 53.0 |
| NorthWest: Stoddart Drive | | | | | | | | | | | | | | |
| 27a | L1 | 161 | 2 | 169 | 1.2 | 0.146 | 3.7 | LOS A | 0.8 | 5.7 | 0.04 | 0.48 | 0.04 | 55.6 |
| 29a | R1 | 70 | 1 | 74 | 1.4 | 0.146 | 7.7 | LOS A | 0.8 | 5.7 | 0.04 | 0.48 | 0.04 | 55.4 |
| Approach | | 231 | 3 | 243 | 1.3 | 0.146 | 4.9 | LOS A | 0.8 | 5.7 | 0.04 | 0.48 | 0.04 | 55.6 |
| All Vehicles | | 399 | 9 | 420 | 2.3 | 0.146 | 5.8 | LOS A | 0.8 | 5.7 | 0.12 | 0.51 | 0.12 | 54.7 |

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
 Roundabout LOS Method: SIDRA Roundabout LOS.
 Vehicle movement LOS values are based on average delay per movement.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Roundabout Capacity Model: SIDRA Standard.
 Delay Model: SIDRA Standard (Geometric Delay is included).
 Queue Model: SIDRA Standard.
 Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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