

TRAFFIC AND PARKING IMPACT ASSESMENT OF A PROPOSED RESIDENTIAL SUBDIVISION IN COLLECTOR, NSW

Traffic and Parking Impact Assessment Report

Prepared for: LandTeam Australia Pty Ltd

(Version 1a)

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Motion Traffic Engineers Pty Ltd Telephone: 940 33588 sydney@motiontraffic.com.au

ACN 600201583



1. INTRODUCTION

Motion Traffic Engineers was commissioned by LandTeam Australia Pty Ltd to prepare a traffic and parking impact assessment of the proposed residential subdivision located near Collector, NSW.

In the course of preparing this assessment, the subject site and its environs have been inspected, plans of the subdivision examined, and all relevant traffic and parking data collected and analysed.

2. BACKGROUND AND EXISTING CONDITIONS

2.1 Location and Land Use

The proposed subdivision is located to the north east of Collector, NSW. The adjacent land uses are primarily residential dwellings on rural sized lots. There are local shops along Church Street and Murray Street. Collector Public School is located at the intersection of Goulburn Street and Lorn Street.

Figure 1 presents an aerial view of the subdivision site.

Figure 2 presents the location of the subdivision using street directory.

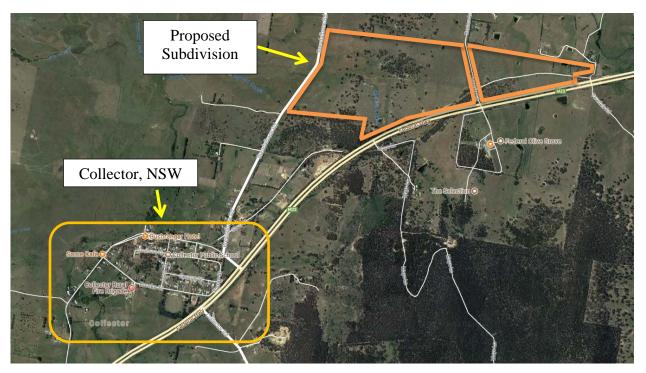


Figure 1: Location of the subdivision from an aerial view



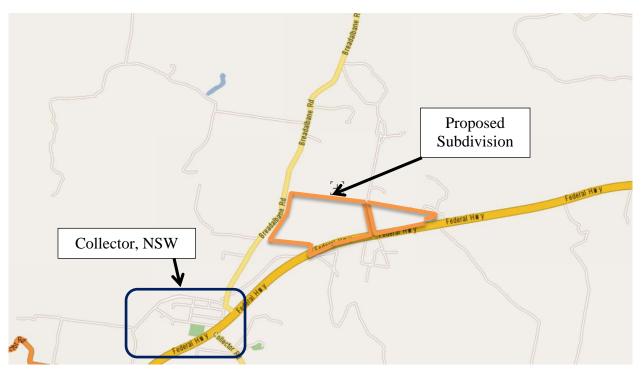


Figure 2: Location of the subdivision via Street Directory

2.2 Road Network

The subdivision is located along the Federal Highway north-east of Collector and has access to Church Street, Breadalbane Road, Baxters Lane and Federal Highway.

Church Street is a collector street with one lane each way with a sign posted speed limit of 50km/hr. The road has a road shoulder and is used for emergency parking. Figures 3 and 4 present photographs of Church Street looking towards Collector and the Federal Highway respectively. It is also a "town centre road" adjacent to the local shops where there are high number of parking manoeuvres during business hours and pedestrians crossing this road and walking along the footpaths.

Breadalbane Road is a distributor road with one lane each way with a sign posted speed limit of 60km/hr. The road has a road shoulder and is used for emergency parking.

Baxters Lane is a collector street with one lane each way with a sign posted speed limit of 50km/hr. The road has a road shoulder and is used for emergency parking. Figures 5 and 6 present photographs of Baxters Lane looking towards Collector and the Federal Highway respectively.



Federal Highway is a motorway and has two lanes each way at the midblock on a divided carriageway with a sign posted speed limit of 110 km/hr in NSW and a 100 km/hr sign posted speed limit within ACT.



Figure 3: Church Street view near the intersection with Federal Highway





Figure 4: Church Street intersection with Federal Highway



Figure 5: Baxters Lane view near the intersection with Federal Highway





Figure 6: Baxters Lane intersection with Federal Highway

2.3 Intersection Description

As part of the traffic impact assessment, the performance of two nearby intersections were surveyed and assessed:

- Priority intersection of Church Street with Federal Highway
- Priority intersection of Baxters Lane with Federal Highway

External traffic travelling to and from the subdivision will have to travel through one of the above intersections.

The priority intersection of Church Street with Federal Highway is a three-leg intersection with all turn movements permitted. Drivers from Church Street must yield and give way to traffic on Federal Highway. A storage area is located between the two carriageways for the right turn movements. Figure 7 shows the layout of the intersection using SIDRA.

The priority intersection of Baxters Lane with Federal Highway is a three-leg intersection with all turn movements permitted. Drivers from Baxters Lane must



give way to traffic on Federal Highway. Figure 8 shows the layout of the intersection using SIDRA. Church Street **4**Ν Federal Highway **V**101 Federal Highway

Figure 7: Priority Intersection Layout of Church Street with Federal Highway (SIDRA)



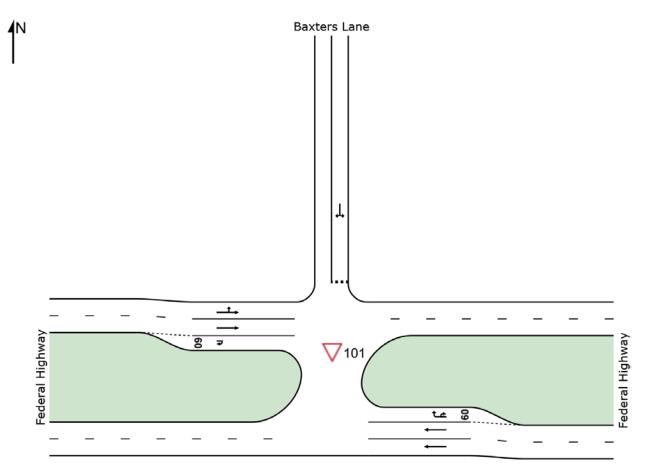


Figure 8 Priority Intersection Layout of Baxters Lane with Federal Highway (SIDRA)

2.4 Existing Traffic Volumes

Traffic volumes were collected as part of this project for the weekday AM and PM peak hours in March 2018 for the two surveyed intersections presented. The peak hours are from 7:30 AM to 8:30 AM and 4:45pm to 5:45pm.

Figures 9 and 10 presents in vehicle numbers the existing weekday AM and PM peak hour traffic volumes respectively. Car are unbracketed and heavy vehicles (trucks and buses) are bracketed.



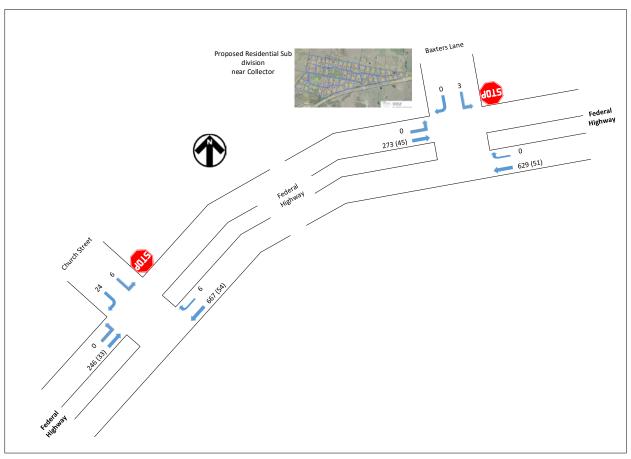


Figure 9: Weekday Existing AM Peak Hour Traffic Volumes



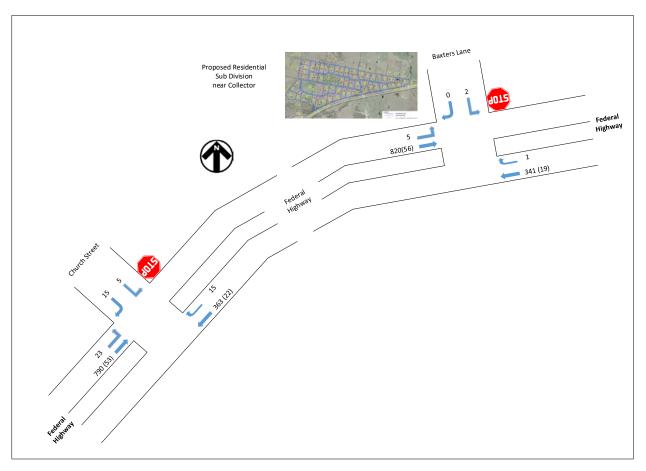


Figure 10: Weekday Existing PM Peak Hour Traffic Volumes

2.5 Intersection Assessment

An intersection assessment and survey has been undertaken for the weekday AM and PM peak hours for the two intersections.

The existing intersection operating performance was assessed using the SIDRA 7.0 software package to determine the Degree of Saturation (DS), Average Delay (AVD in seconds) and Level of Service (LoS) at each intersection. The SIDRA program provides Level of Service Criteria Tables for various intersection types. The key indicator of intersection performance is Level of Service, where results are placed on a continuum from 'A' to 'F', as shown in Table 1.



| LoS | Traffic Signal / Roundabout | Give Way / Stop Sign / T- Junction control |
|-----|---|---|
| А | Good operation | Good operation |
| В | Good with acceptable delays and spare capacity | Acceptable delays and spare capacity |
| C | Satisfactory | Satisfactory, but accident study required |
| D | Operating near capacity | Near capacity & accident study required |
| Е | At capacity, at signals incidents will cause excessive delays. | At capacity, requires other control mode |
| F | Unsatisfactory and requires additional capacity, Roundabouts require other control mode | At capacity, requires other control mode |

Table 1: Intersection Level of Service

The Average Vehicle Delay (AVD) provides a measure of the operational performance of an intersection as indicated below, which relates AVD to LOS. The AVD's should be taken as a guide only as longer delays could be tolerated in some locations (i.e. inner-city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route). For traffic signals, the average delay over all movements should be taken. For roundabouts and priority control intersections (sign control) the critical movement for level of service assessment should be that movement with the highest average delay.

| LoS | Average Delay per Vehicles (seconds/vehicle) |
|-----|--|
| А | Less than 14 |
| В | 15 to 28 |
| С | 29 to 42 |
| D | 43 to 56 |
| Е | 57 to 70 |
| F | >70 |

Table 2: Intersection Average Delay (AVD)

The degree of saturation (DS) is another measure of the operational performance of individual intersections. For intersections controlled by traffic signals both queue length and delay increase rapidly as DS approaches 1. It is usual to attempt to keep DS to less than 0.9. Degrees of Saturation in the order of 0.7 generally represent satisfactory intersection operation. When DS exceed 0.9 queues can be anticipated.

The results of the intersection assessment are as follows:



- Priority intersection of Church Street with Federal Highway
- Priority intersection of Baxters Lane with Federal Highway

Priority Intersection of Church Street with Federal Highway

- The intersection has a LoS A or B for the AM and PM peak hours for all turn movements
- There is spare capacity at this intersection

Priority Intersection of Baxters Lane with Federal Highway

- The intersection has a LoS A or B for the AM and PM peak hours for all turn movements
- There is spare capacity at this intersection

The full SIDRA results are presented in Appendix A for the existing conditions.

2.6 Public Transport

Access to public transport is currently unavailable at Collector. However, a privately-operated bus route (855), which runs between Canberra to Wollongong, provides Collector with mass transport options to nearby areas.

Figure 12 shows the transport route between Canberra and Goulburn via Collector. The site has no access to public transport.



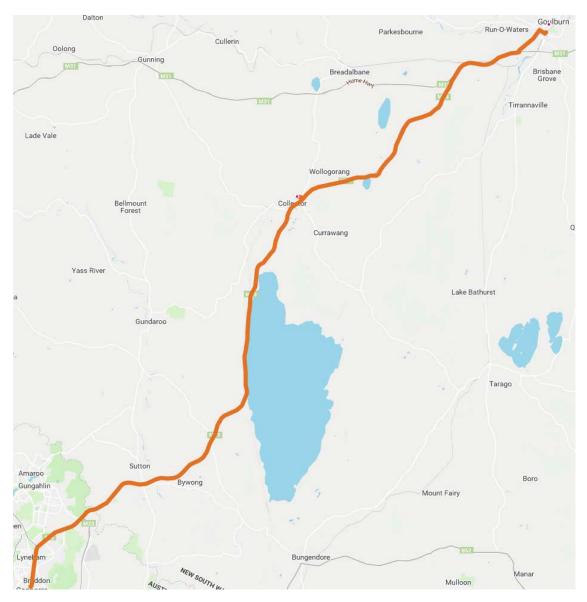


Figure 11: Bus Route 855 running between Goulburn and Canberra

2.7 Conclusions on the Existing Conditions

Overall there is spare capacity in the nearby road network.

The location of the subdivision currently has no access to public transport.

There is no on-street parking available surrounding the subdivision.



3. PROPOSED RESIDENTIAL SUBDIVISION

The land uses for the proposed subdivision are as follows:

Residential

- 51 residential lots
- An internal local road network providing access and egress
- Access and egress to the subdivision is via Breadabane Road and Baxter Lane (there is no access/egress from Federal Highway)

Car spaces are expected to be provided on each lot as per council's requirements.

Due to the width of the future subdivision roads, it is expected that on-street parking will be provided.

Figure 12 presents the sub division.

A full scaled plan of the proposed subdivision is provided as part of the Subdivision Application. Scaled measurements should use these plans.

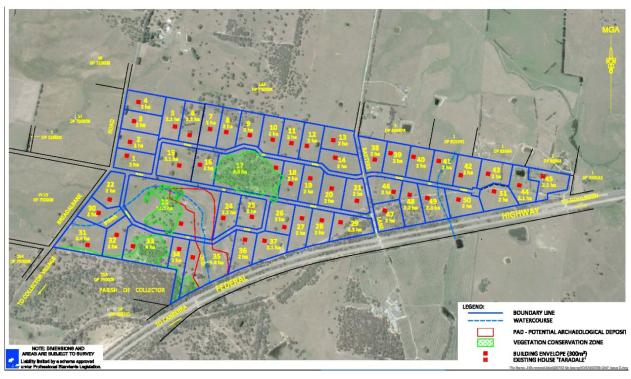


Figure 12: Proposed future subdivision road system (Source: LandTeam Australia Proposed Subdivision Plan)



4. CAR PARKING CONSIDERATIONS

4.1 Upper Lachlan Shire Council's Subdivision Control Plan

The car parking requirements for zone R2 low density residential subdivisions are presented in *Upper Lachlan Shire Council's Development Control Plan* with the car parking rates as follows:

<u>R2 Residential Subdivisions</u>

• 1 car space per dwelling

It is expected that the car spaces provided by each residential lot will comply with Upper Lachlan Shire Council's Development Control Plan.



5. VEHICLE TRAFFIC IMPACT CONSIDERATIONS

5.1 Traffic Generation

The RTA Guide to Traffic Generating Subdivisions publishes car trip rates as follows for the weekday peak hour for low density residential dwellings:

• 0.85 trips per dwelling for the AM and PM peak hours

Table 3 summarises the proposed trip generation for the proposed subdivision.

Table 4 summarises the trip distribution of the generated trips. The proposed subdivision is a low trip generator.

| Туре | Quantity | Trip Rate | Trips |
|------------------|----------|-----------|-------|
| Residential Lots | 51 | 0.85 | 44 |

Table 3: Trips Generated by the residential subdivision Weekday AM and PM Peak Hours

| Weekday | Origin | Destination | Total Net Trips |
|--------------|--------|-------------|------------------------|
| AM Peak Hour | 40 | 4 | 44 |
| PM Peak Hour | 4 | 40 | 44 |

Table 4: Trips Distribution of the residential subdivision in the Weekday AM Peak Hour

5.2 Forecast Traffic Volumes

The following presents the existing and with subdivision traffic volumes for the AM and PM peak hours distributed onto the three intersections with the subdivision traffic. The additional traffic is in red for origin trips and blue for destination trips.



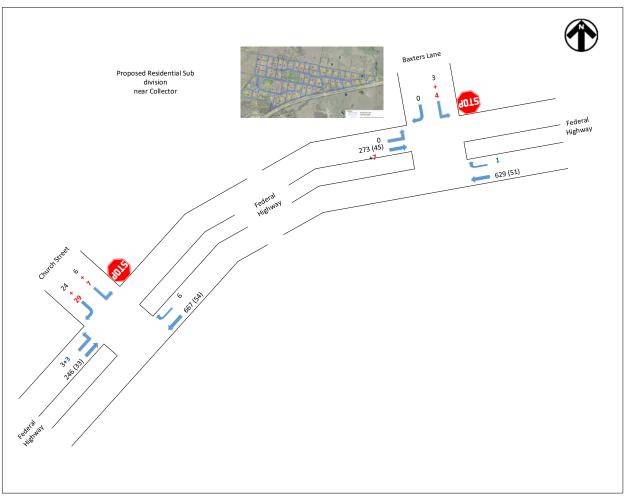


Figure 20: Weekday AM Peak Hour with additional subdivision Traffic in Red for Origin Trips and Blue for Destination Trips



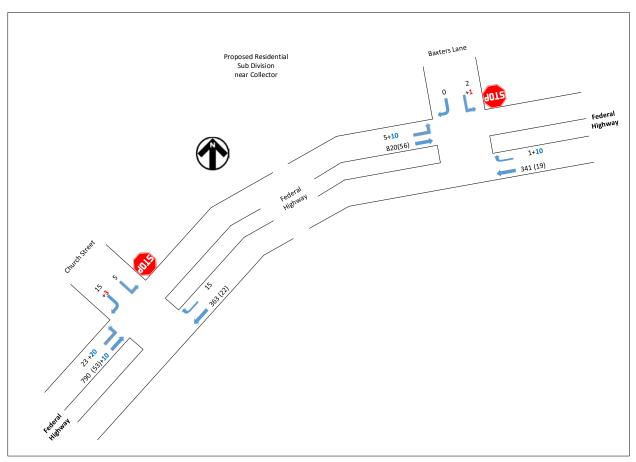


Figure 21: Weekday PM Peak Hour with additional subdivision Traffic in Red for Origin Trips and Blue for Destination Trips



5.3 Intersection Assessment Using Existing Intersection Layout

This section assesses the following intersections for the existing traffic with the subdivision traffic. The intersection results are as follows:

Priority Intersection of Church Street with Federal Highway

- The intersection has a LoS A or B for the AM and PM peak hours for all turn movements
- The additional trips do not change the LoS for the turn movements or the overall LoS for the intersection during the AM and PM peak hours.

Priority Intersection of Baxters Lane with Federal Highway

- The intersection has a LoS A or B for the AM and PM peak hours for all turn movements
- The additional trips do not change the LoS for the turn movements or the overall LoS for the intersection during the AM and PM peak hours.

The full SIDRA results are presented in Appendix B for the existing conditions with the subdivision traffic. The full SIDRA results are presented in Appendix A for the existing conditions.



6. CONCLUSIONS

Based on the considerations presented in this report, it is considered that:

<u>Parking</u>

• Each of the houses/lots will need to comply with Council's car parking requirements

<u>Traffic</u>

- The subdivision is a low trip generator in the AM and PM peak hours
- The additional subdivision trips can be accommodated in the nearby intersection without significantly affecting the performance or creating any additional delays or queues
- There are no traffic engineering reasons why a planning permit for the proposed subdivision in Collector should be refused.



APPENDIX A – SIDRA INTERSECTION EXISTING TRAFFIC CONDITIONS

| Movement Performance - Vehicles | | | | | | | | | | | |
|---------------------------------|-----------|--------------|--------|-------|---------|----------|----------|----------|--------|-----------|---------|
| Mover | nent Pe | rformance | - Veh | icles | | | | | | | |
| Mov | OD | Demand | Flows | Deg. | Average | Level of | 95% Back | of Queue | Prop. | Effective | Average |
| ID | Mov | Total | ΗV | Satn | Delay | Service | Vehicles | Distance | Queued | Stop Rate | Speed |
| | | veh/h | % | v/c | sec | | veh | m | | per veh | km/h |
| South: | Baxters | Lane | | | | | | | | | |
| 1 | L2 | 14 | 0.0 | 0.016 | 9.6 | LOS A | 0.1 | 0.4 | 0.38 | 0.86 | 51.2 |
| 3 | R2 | 56 | 0.0 | 0.078 | 9.8 | LOS A | 0.3 | 1.8 | 0.40 | 0.96 | 28.1 |
| Approa | ach | 69 | 0.0 | 0.078 | 9.7 | LOS A | 0.3 | 1.8 | 0.39 | 0.94 | 30.9 |
| East: F | ederal H | ighway wes | st | | | | | | | | |
| 4 | L2 | 6 | 0.0 | 0.083 | 5.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 58.1 |
| 5 | T1 | 294 | 11.8 | 0.083 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.01 | 59.9 |
| Approa | ach | 300 | 11.6 | 0.083 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.01 | 59.8 |
| West: I | Federal H | lighway eas | st | | | | | | | | |
| 11 | T1 | 759 | 7.5 | 0.207 | 0.0 | LOS A | 0.1 | 0.5 | 0.01 | 0.00 | 59.9 |
| 12 | R2 | 6 | 0.0 | 0.207 | 7.2 | LOS A | 0.1 | 0.5 | 0.02 | 0.01 | 58.2 |
| Approa | ach | 765 | 7.4 | 0.207 | 0.1 | NA | 0.1 | 0.5 | 0.01 | 0.00 | 59.9 |
| SouthV | Vest: Me | dian (RT Sta | age 2) | | | | | | | | |
| 32a | R1 | 56 | 0.0 | 0.098 | 4.7 | LOS A | 0.3 | 2.0 | 0.60 | 0.60 | 46.3 |
| Approa | ach | 56 | 0.0 | 0.098 | 4.7 | LOS A | 0.3 | 2.0 | 0.60 | 0.60 | 46.3 |
| All Veh | icles | 1191 | 7.7 | 0.207 | 0.9 | NA | 0.3 | 2.0 | 0.06 | 0.09 | 56.3 |

Table A1: Existing Priority Intersection Performance of Church Street with Federal Highway for the Weekday AM Peak Hour



| Move | ment Pe | rformance | - Vehi | cles | | | | | | | |
|---------|-----------|------------------|--------|-------|---------|----------|----------|----------|--------|-----------|---------|
| Mov | OD | Demand | Flows | Deg. | Average | Level of | 95% Back | of Queue | Prop. | Effective | Average |
| ID | Mov | Total | ΗV | Satn | Delay | Service | Vehicles | Distance | Queued | Stop Rate | Speed |
| | | veh/h | % | v/c | sec | | veh | m | | per veh | km/h |
| South: | Church | | /0 | 1/0 | 000 | | Von | | | porvon | |
| 1 | L2 | 7 | 0.0 | 0.009 | 9.8 | LOS A | 0.0 | 0.2 | 0.41 | 0.85 | 51.0 |
| 3 | R2 | 1 | 0.0 | 0.002 | 9.8 | LOS A | 0.0 | 0.0 | 0.41 | 0.87 | 28.1 |
| - | | - | | | | | | | | | |
| Approa | acn | 8 | 0.0 | 0.009 | 9.8 | LOS A | 0.0 | 0.2 | 0.41 | 0.85 | 46.3 |
| East: F | ederal H | lighway east | i | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 0.096 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 58.3 |
| 5 | T1 | 342 | 13.8 | 0.096 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 60.0 |
| Approa | ach | 343 | 13.8 | 0.096 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 60.0 |
| West: | Federal H | - Highway eas | t | | | | | | | | |
| 11 | T1 | 716 | 7.5 | 0.193 | 0.0 | LOS A | 0.0 | 0.1 | 0.00 | 0.00 | 60.0 |
| 12 | R2 | 1 | 0.0 | 0.193 | 7.5 | LOS A | 0.0 | 0.1 | 0.00 | 0.00 | 58.3 |
| Approa | ach | 717 | 7.5 | 0.193 | 0.0 | NA | 0.0 | 0.1 | 0.00 | 0.00 | 60.0 |
| South\ | Nest: Me | dian (RT Sta | age 2) | | | | | | | | |
| 32a | R1 | 1 | 0.0 | 0.002 | 3.8 | LOS A | 0.0 | 0.0 | 0.55 | 0.36 | 47.4 |
| Approa | ach | 1 | 0.0 | 0.002 | 3.8 | LOS A | 0.0 | 0.0 | 0.55 | 0.36 | 47.4 |
| All Veh | nicles | 1069 | 9.4 | 0.193 | 0.1 | NA | 0.0 | 0.2 | 0.00 | 0.01 | 59.8 |
| | | | | | | | | | | | |

Table A2: Existing Priority Intersection Performance of Baxters Lane with Federal Highway for theWeekday AM Peak Hour

| Moven | nent Per | rformance - | · Vehi | icles | | | | | | | |
|---------|----------------|--------------|--------|-------|---------|----------|----------|----------|--------|-----------|---------|
| Mov | OD | Demand F | lows | Deg. | Average | Level of | 95% Back | of Queue | Prop. | Effective | Average |
| ID | Mov | Total | ΗV | Satn | Delay | Service | Vehicles | Distance | Queued | Stop Rate | Speed |
| | | veh/h | % | v/c | sec | | veh | m | | per veh | km/h |
| South: | Church S | Street | | | | | | | | | |
| 1 | L2 | 5 | 0.0 | 0.015 | 16.1 | LOS B | 0.0 | 0.3 | 0.71 | 0.94 | 47.3 |
| 3 | R2 | 19 | 0.0 | 0.068 | 18.5 | LOS B | 0.2 | 1.5 | 0.74 | 1.02 | 26.5 |
| Approa | ich | 24 | 0.0 | 0.068 | 18.0 | LOS B | 0.2 | 1.5 | 0.74 | 1.01 | 29.3 |
| East: F | ederal H | ighway west | | | | | | | | | |
| 4 | L2 | 45 | 0.0 | 0.252 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.06 | 57.8 |
| 5 | T1 | 898 | 6.2 | 0.252 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 59.7 |
| Approa | ich | 943 | 5.9 | 0.252 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 59.6 |
| West: F | - Federal ⊢ | lighway east | | | | | | | | | |
| 11 | T1 | 405 | 5.7 | 0.125 | 0.7 | LOS A | 0.4 | 3.3 | 0.09 | 0.02 | 58.9 |
| 12 | R2 | 16 | 0.0 | 0.125 | 13.2 | LOS A | 0.4 | 3.3 | 0.22 | 0.06 | 55.9 |
| Approa | ich | 421 | 5.5 | 0.125 | 1.2 | NA | 0.4 | 3.3 | 0.10 | 0.03 | 58.8 |
| SouthV | Vest: Mee | dian (RT Sta | ge 2) | | | | | | | | |
| 32a | R1 | 19 | 0.0 | 0.021 | 1.8 | LOS A | 0.1 | 0.4 | 0.42 | 0.29 | 50.0 |
| Approa | ich | 19 | 0.0 | 0.021 | 1.8 | LOS A | 0.1 | 0.4 | 0.42 | 0.29 | 50.0 |
| All Veh | icles | 1407 | 5.6 | 0.252 | 0.9 | NA | 0.4 | 3.3 | 0.05 | 0.05 | 58.2 |

Table A3: Existing Priority Intersection Performance of Church Street with Federal Highway for the Weekday PM Peak Hour



| Mover | nent Pe | rformance · | - Vehi | icles | | | | | | | |
|---------|-----------|---------------|--------|-------|---------|----------|----------|----------|--------|-----------|---------|
| Mov | OD | Demand F | lows | Deg. | Average | Level of | 95% Back | of Queue | Prop. | Effective | Average |
| ID | Mov | Total | ΗV | Satn | Delay | Service | Vehicles | Distance | Queued | Stop Rate | Speed |
| | | veh/h | % | v/c | sec | | veh | m | | per veh | km/h |
| South: | Baxters | Lane | | | | | | | | | |
| 1 | L2 | 3 | 0.0 | 0.009 | 16.2 | LOS B | 0.0 | 0.2 | 0.71 | 0.91 | 47.3 |
| 3 | R2 | 1 | 0.0 | 0.004 | 17.9 | LOS B | 0.0 | 0.1 | 0.73 | 0.90 | 26.6 |
| Approa | ich | 4 | 0.0 | 0.009 | 16.6 | LOS B | 0.0 | 0.2 | 0.71 | 0.91 | 39.6 |
| East: F | ederal H | lighway west | | | | | | | | | |
| 4 | L2 | 16 | 0.0 | 0.251 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.02 | 58.1 |
| 5 | T1 | 922 | 6.4 | 0.251 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.01 | 59.8 |
| Approa | ich | 938 | 6.3 | 0.251 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.01 | 59.8 |
| West: I | Federal H | -lighway east | : | | | | | | | | |
| 11 | T1 | 379 | 5.3 | 0.113 | 0.6 | LOS A | 0.3 | 2.4 | 0.08 | 0.02 | 59.1 |
| 12 | R2 | 12 | 0.0 | 0.113 | 13.0 | LOS A | 0.3 | 2.4 | 0.17 | 0.04 | 56.5 |
| Approa | ich | 391 | 5.1 | 0.113 | 1.0 | NA | 0.3 | 2.4 | 0.08 | 0.02 | 59.0 |
| SouthV | Vest: Me | dian (RT Sta | ge 2) | | | | | | | | |
| 32a | R1 | 1 | 0.0 | 0.001 | 1.5 | LOS A | 0.0 | 0.0 | 0.40 | 0.20 | 50.3 |
| Approa | ich | 1 | 0.0 | 0.001 | 1.5 | LOS A | 0.0 | 0.0 | 0.40 | 0.20 | 50.3 |
| All Veh | icles | 1334 | 5.9 | 0.251 | 0.4 | NA | 0.3 | 2.4 | 0.03 | 0.02 | 59.5 |

Table A4: Existing Priority Intersection Performance of Baxters Lane with Federal Highway for theWeekday PM Peak Hour



APPENDIX B – SIDRA INTERSECTION EXISTING WITH ADDITIONAL SUBDIVISION TRAFFIC

| Mover | nent Pe | rformance | - Vehi | icles | | | | | | | |
|---------|-----------|--------------|--------|-------|---------|----------|----------|----------|--------|-----------|---------|
| Mov | OD | Demand | Flows | Deg. | Average | Level of | 95% Back | of Queue | Prop. | Effective | Average |
| ID | Mov | Total | ΗV | Satn | Delay | Service | Vehicles | Distance | Queued | Stop Rate | Speed |
| | | veh/h | % | v/c | sec | | veh | m | | per veh | km/h |
| South: | Church | Street | | | | | | | | | |
| 1 | L2 | 7 | 0.0 | 0.009 | 9.8 | LOS A | 0.0 | 0.2 | 0.41 | 0.85 | 51.0 |
| 3 | R2 | 1 | 0.0 | 0.002 | 9.8 | LOS A | 0.0 | 0.0 | 0.41 | 0.87 | 28.1 |
| Approa | ach | 8 | 0.0 | 0.009 | 9.8 | LOS A | 0.0 | 0.2 | 0.41 | 0.85 | 46.3 |
| East: F | ederal ⊢ | lighway east | t | | | | | | | | |
| 4 | L2 | 1 | 0.0 | 0.096 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 58.3 |
| 5 | T1 | 342 | 13.8 | 0.096 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 60.0 |
| Approa | ach | 343 | 13.8 | 0.096 | 0.0 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 60.0 |
| West: I | Federal H | Highway eas | st | | | | | | | | |
| 11 | T1 | 716 | 7.5 | 0.193 | 0.0 | LOS A | 0.0 | 0.1 | 0.00 | 0.00 | 60.0 |
| 12 | R2 | 1 | 0.0 | 0.193 | 7.5 | LOS A | 0.0 | 0.1 | 0.00 | 0.00 | 58.3 |
| Approa | ach | 717 | 7.5 | 0.193 | 0.0 | NA | 0.0 | 0.1 | 0.00 | 0.00 | 60.0 |
| SouthV | Vest: Me | dian (RT Sta | age 2) | | | | | | | | |
| 32a | R1 | 1 | 0.0 | 0.002 | 3.8 | LOS A | 0.0 | 0.0 | 0.55 | 0.36 | 47.4 |
| Approa | ach | 1 | 0.0 | 0.002 | 3.8 | LOS A | 0.0 | 0.0 | 0.55 | 0.36 | 47.4 |
| All Veh | nicles | 1069 | 9.4 | 0.193 | 0.1 | NA | 0.0 | 0.2 | 0.00 | 0.01 | 59.8 |

 Table B1: Existing Priority Intersection Performance of Church Street with Federal Highway for the Weekday AM Peak Hour with Subdivision Traffic



| Mover | nent Pe | rformance | - Vehi | icles | | | | | | | |
|-----------|-----------|-----------------|-------------|--------------|------------------|---------------------|------------------------|----------------------|-----------------|------------------------|------------------|
| Mov ID | OD Mov | Demand Total | Flows HV | Deg. Satn | Average Delay | Level of Service | 95% Back (Vehicles | of Queue Distance | Prop. Queued | Effective Stop Rate | Average Speed |
| | | veh/h | % | v/c | sec | | veh | m | | per veh | km/h |
| South: | Baxters | Lane | | | | | | | | | |
| 1 | L2 | 14 | 0.0 | 0.016 | 9.6 | LOS A | 0.1 | 0.4 | 0.38 | 0.86 | 51.2 |
| 3 | R2 | 56 | 0.0 | 0.078 | 9.8 | LOS A | 0.3 | 1.8 | 0.40 | 0.96 | 28.1 |
| Approa | ich | 69 | 0.0 | 0.078 | 9.7 | LOS A | 0.3 | 1.8 | 0.39 | 0.94 | 30.9 |
| East: F | ederal H | lighway wes | t | | | | | | | | |
| 4 | L2 | 6 | 0.0 | 0.083 | 5.5 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 58.1 |
| 5 | T1 | 294 | 11.8 | 0.083 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.01 | 59.9 |
| Approa | ich | 300 | 11.6 | 0.083 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.01 | 59.8 |
| West: I | Federal H | Highway eas | t | | | | | | | | |
| 11 | T1 | 759 | 7.5 | 0.207 | 0.0 | LOS A | 0.1 | 0.5 | 0.01 | 0.00 | 59.9 |
| 12 | R2 | 6 | 0.0 | 0.207 | 7.2 | LOS A | 0.1 | 0.5 | 0.02 | 0.01 | 58.2 |
| Approa | ich | 765 | 7.4 | 0.207 | 0.1 | NA | 0.1 | 0.5 | 0.01 | 0.00 | 59.9 |
| SouthV | Vest: Me | dian (RT Sta | age 2) | | | | | | | | |
| 32a | R1 | 56 | 0.0 | 0.098 | 4.7 | LOS A | 0.3 | 2.0 | 0.60 | 0.60 | 46.3 |
| Approa | ich | 56 | 0.0 | 0.098 | 4.7 | LOS A | 0.3 | 2.0 | 0.60 | 0.60 | 46.3 |
| All Veh | icles | 1191 | 7.7 | 0.207 | 0.9 | NA | 0.3 | 2.0 | 0.06 | 0.09 | 56.3 |

Table B2: Existing Priority Intersection Performance of Baxters Lane with Federal Highway for the Weekday AM Peak Hour with Subdivision Traffic

| Mover | nent Pe | rformance - | Vehi | icles | | | | | | | |
|---------|-----------|---------------|-------|-------|---------|----------|----------|----------|--------|-----------|---------|
| Mov | OD | Demand F | lows | Deg. | Average | Level of | 95% Back | of Queue | Prop. | Effective | Average |
| ID | Mov | Total | ΗV | Satn | Delay | Service | Vehicles | Distance | Queued | Stop Rate | Speed |
| | | veh/h | % | v/c | sec | | veh | m | | per veh | km/h |
| South: | Church | Street | | | | | | | | | |
| 1 | L2 | 5 | 0.0 | 0.015 | 16.1 | LOS B | 0.0 | 0.3 | 0.71 | 0.94 | 47.3 |
| 3 | R2 | 19 | 0.0 | 0.068 | 18.5 | LOS B | 0.2 | 1.5 | 0.74 | 1.02 | 26.5 |
| Approa | ich | 24 | 0.0 | 0.068 | 18.0 | LOS B | 0.2 | 1.5 | 0.74 | 1.01 | 29.3 |
| East: F | ederal H | lighway west | | | | | | | | | |
| 4 | L2 | 45 | 0.0 | 0.252 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.06 | 57.8 |
| 5 | T1 | 898 | 6.2 | 0.252 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.03 | 59.7 |
| Approa | ich | 943 | 5.9 | 0.252 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 59.6 |
| West: F | Federal H | lighway east | | | | | | | | | |
| 11 | T1 | 405 | 5.7 | 0.125 | 0.7 | LOS A | 0.4 | 3.3 | 0.09 | 0.02 | 58.9 |
| 12 | R2 | 16 | 0.0 | 0.125 | 13.2 | LOS A | 0.4 | 3.3 | 0.22 | 0.06 | 55.9 |
| Approa | ich | 421 | 5.5 | 0.125 | 1.2 | NA | 0.4 | 3.3 | 0.10 | 0.03 | 58.8 |
| SouthV | Vest: Me | dian (RT Stag | ge 2) | | | | | | | | |
| 32a | R1 | 19 | 0.0 | 0.021 | 1.8 | LOS A | 0.1 | 0.4 | 0.42 | 0.29 | 50.0 |
| Approa | ich | 19 | 0.0 | 0.021 | 1.8 | LOS A | 0.1 | 0.4 | 0.42 | 0.29 | 50.0 |
| All Veh | icles | 1407 | 5.6 | 0.252 | 0.9 | NA | 0.4 | 3.3 | 0.05 | 0.05 | 58.2 |

Table B3: Existing Priority Intersection Performance of Church Street with Federal Highway for the Weekday PM Peak Hour with Subdivision Traffic



| Mover | ment Pe | rformance · | - Vehi | cles | | | | | | | |
|--------------------------------|-----------|--------------|--------|-------|---------|----------|----------|----------|--------|-----------|---------|
| Mov | OD | Demand F | lows | Deg. | Average | Level of | 95% Back | of Queue | Prop. | Effective | Average |
| ID | Mov | Total | ΗV | Satn | Delay | Service | Vehicles | Distance | Queued | Stop Rate | Speed |
| | | veh/h | % | v/c | sec | | veh | m | | per veh | km/h |
| South: | Baxters | Lane | | | | | | | | · · | |
| 1 | L2 | 3 | 0.0 | 0.009 | 16.2 | LOS B | 0.0 | 0.2 | 0.71 | 0.91 | 47.3 |
| 3 | R2 | 1 | 0.0 | 0.004 | 17.9 | LOS B | 0.0 | 0.1 | 0.73 | 0.90 | 26.6 |
| Approa | ach | 4 | 0.0 | 0.009 | 16.6 | LOS B | 0.0 | 0.2 | 0.71 | 0.91 | 39.6 |
| East: F | ederal H | lighway west | | | | | | | | | |
| 4 | L2 | 16 | 0.0 | 0.251 | 5.6 | LOS A | 0.0 | 0.0 | 0.00 | 0.02 | 58.1 |
| 5 | T1 | 922 | 6.4 | 0.251 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.01 | 59.8 |
| Approa | ach | 938 | 6.3 | 0.251 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.01 | 59.8 |
| West: | Federal H | Highway east | : | | | | | | | | |
| 11 | T1 | 379 | 5.3 | 0.113 | 0.6 | LOS A | 0.3 | 2.4 | 0.08 | 0.02 | 59.1 |
| 12 | R2 | 12 | 0.0 | 0.113 | 13.0 | LOS A | 0.3 | 2.4 | 0.17 | 0.04 | 56.5 |
| Approa | ach | 391 | 5.1 | 0.113 | 1.0 | NA | 0.3 | 2.4 | 0.08 | 0.02 | 59.0 |
| SouthWest: Median (RT Stage 2) | | | | | | | | | | | |
| 32a | R1 | 1 | 0.0 | 0.001 | 1.5 | LOS A | 0.0 | 0.0 | 0.40 | 0.20 | 50.3 |
| Approa | ach | 1 | 0.0 | 0.001 | 1.5 | LOS A | 0.0 | 0.0 | 0.40 | 0.20 | 50.3 |
| All Veh | nicles | 1334 | 5.9 | 0.251 | 0.4 | NA | 0.3 | 2.4 | 0.03 | 0.02 | 59.5 |

Table B4: Existing Priority Intersection Performance of Baxters Lane with Federal Highway for theWeekday PM Peak Hour with Subdivision Traffic