# PROPOSED RESIDENTIAL SUBDIVISION (51 LOTS) STRUCTURE PLAN

## COPPIN ROAD, GREAT EASTERN HIGHWAY & THOMAS ROAD, MUNDARING (SHIRE OF MUNDARING)

## TRANSPORT IMPACT ASSESSMENT

Final 2.1

Prepared by i3 consultants WA for

Statewest Planning

**Proposed Residential Subdivision (51 Lots) Structure Plan | Coppin Road, Great Eastern Highway & Thomas Road, Mundaring (Shire of Mundaring) | Transport Impact Assessment**


**Prepared by**

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**Description**

A Transport Impact Statement for the Structure Plan for a 51-lot residential development on an area north of Great Eastern Hwy, east of Coppin Rd, south of Thomas Rd and west of Grancey Ave in the Shire of Mundaring suburb of Mundaring prepared in accordance with Volume 2 (Planning Schemes, Structure Plans and Activity Centre Plans) of the 2016 WAPC Transport Impact Assessment Guidelines.

**Client**

Statewest Planning


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This is not an approved document unless certified below.

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**About the Author**

David Wilkins is an RTA NSW Certified Level 3 Lead Auditor (RSA-08-0178) and Main Roads Western Australia (MRWA) accredited Senior Road Safety Auditor (SRSA 0101). In addition to this, David is an MRWA accredited Crash Investigation Team Leader and Roadworks Traffic Manager (MRWA-RTM-10-RTM20). David has undertaken over 475 road safety audits in Australia since 2001 across the full range of stages from feasibility through to pre-opening, including roadworks, existing roads, schools, events & mine sites.

David specialises in undertaking and preparing traffic impact assessments in accordance with either the WAPC *Transport Impact Assessment Guidelines* or Austroads *Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments* (1). David has authored over 200 of these since 2001.

David is a member of Engineers Australia and committee member of Transport Australia society and is guided by its Charter and Code of Ethics which states that its members act in the interest of the community, ahead of sectional or personal interests towards a sustainable future.

CONTENTS

# 1 INTRODUCTION

This Transport Impact Assessment (*TIA*) report has been prepared in accordance with Volume 2 (Planning Schemes, Structure Plans and Activity Centre Plans) of the WAPC publication *Transport Impact Assessment Guidelines* (2).

The proposed Structure Plan covers an area of approximately 14.4 hectares and is therefore defined as a Local Structure Plan, i.e., less than 300 hectares for a District Structure Plan.

This *TIA* has been prepared by David Wilkins, Senior Traffic & Road Safety Engineer, i3 consultants WA (**the consultant)** for Statewest Planning (on behalf of **the applicant**).

The proposed subdivision contains 51 residential lots, public open space (7,272 $m^2$) and internal access roads within 16 m public road reserves. The internal access roads connect to the external road network via:

- Baggins End (to Coppin Road and then Great Eastern Highway)
- Gamgee Grove (to Coppin Road and then Great Eastern Highway)
- Hobbit Glade (to Thomas Road and then Coppin Road)
- New Road (to Thomas Road east of Hobbit Glade and then Coppin Road)
- Grancey Ave (to Great Eastern Highway)
- EMERGENCY ONLY (e.g., Bush Fire) access to Gill Lane to the east

There are no known previous reports for the proposed Structure Plan.

A plan showing the location and area of the proposed Structure Plan is provided as Figure 1 on the following page.

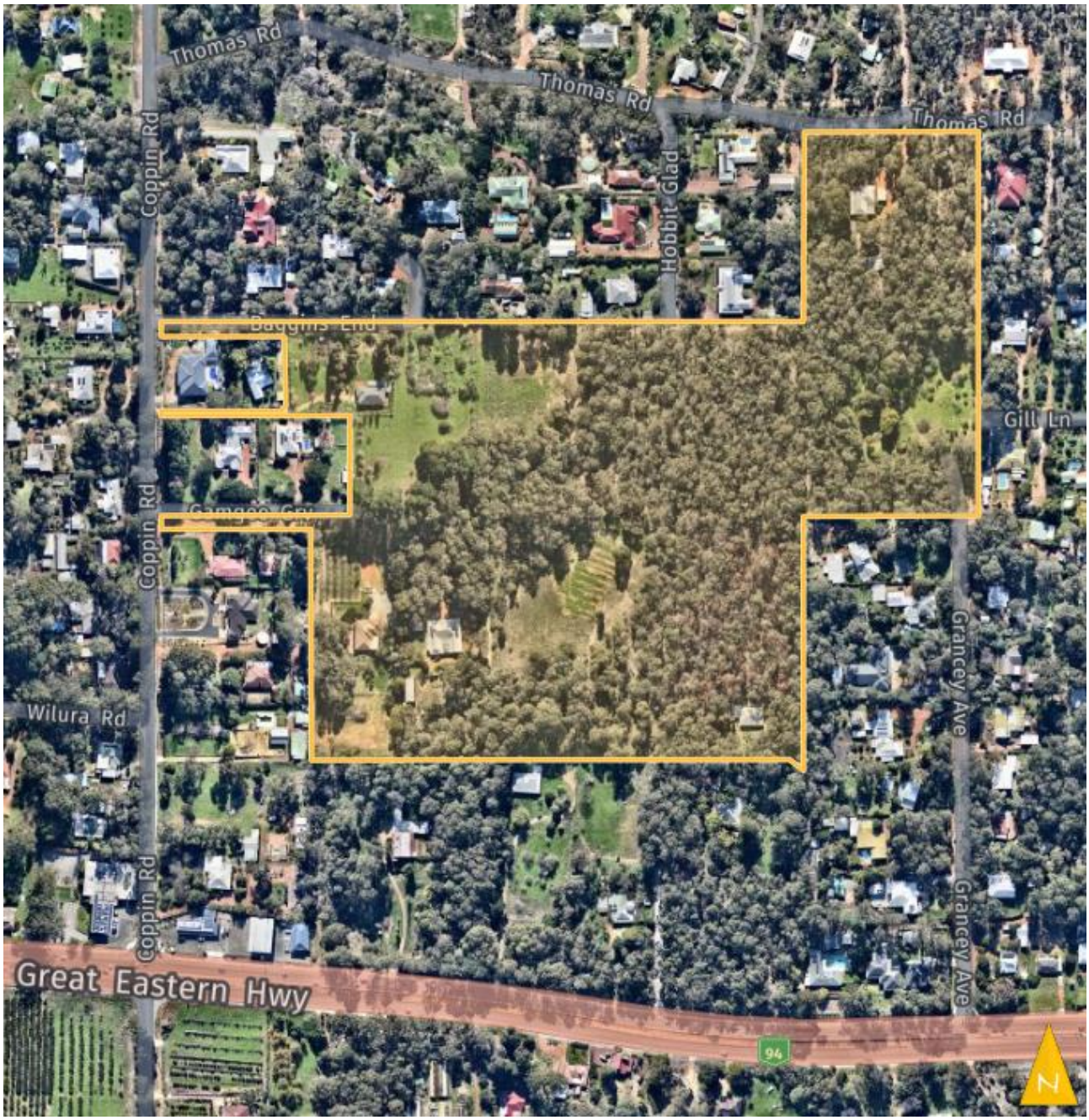



Figure 1 – Proposed Local Structure Plan location and area

# 2 SUMMARY

This Transport Impact Assessment has been prepared for a 51-lot residential structure plan in Mundaring in accordance with Volume 2 of the WAPC Transport Impact Assessment Guidelines.

The key transport issues are the operation of the intersections of Coppin Rd and Grancey Ave with Great Eastern Hwy as these are both currently Give Way controlled intersections.

The structure plan is forecast to generate a total of 408 trips per weekday. The forecast additional peak hour trips through the Coppin Rd/ GEH and GEH/Grancey Ave intersections are up to 18 trips and up to 24 trips respectively. Detailed analysis using a SIDRA Intersection 9 Network traffic model has indicated that the existing intersections currently perform at a good level with spare capacity and will continue to do so with the forecast additional trips and 2% growth per annum on GEH for the next 10 years.

An assessment of the crash record and sight lines on site has not revealed any concerns in this regard. It is noted that this section of the GEH was recently subjected to safety upgrades, including re-alignment, road safety barriers and removal of vegetation obstructing sight lines.

In summary, this TIA has found that the proposed Structure Plan can be implemented with very little impact on the road network in terms of the performance and safety criteria described in the WAPC Guidelines and other relevant traffic engineering guidelines such as the Austroads Guides.

# 3 INTRODUCTION AND BACKGROUND

As indicated in **Section 1**, it is proposed to develop 51 residential lots in the indicated area of Mundaring with access via Coppin Road, Thomas Road, and Grancey Avenue. All of these roads are 'Access Roads' in the Main Roads WA Functional Road Hierarchy, as shown in the extract provided as Figure 2 below.

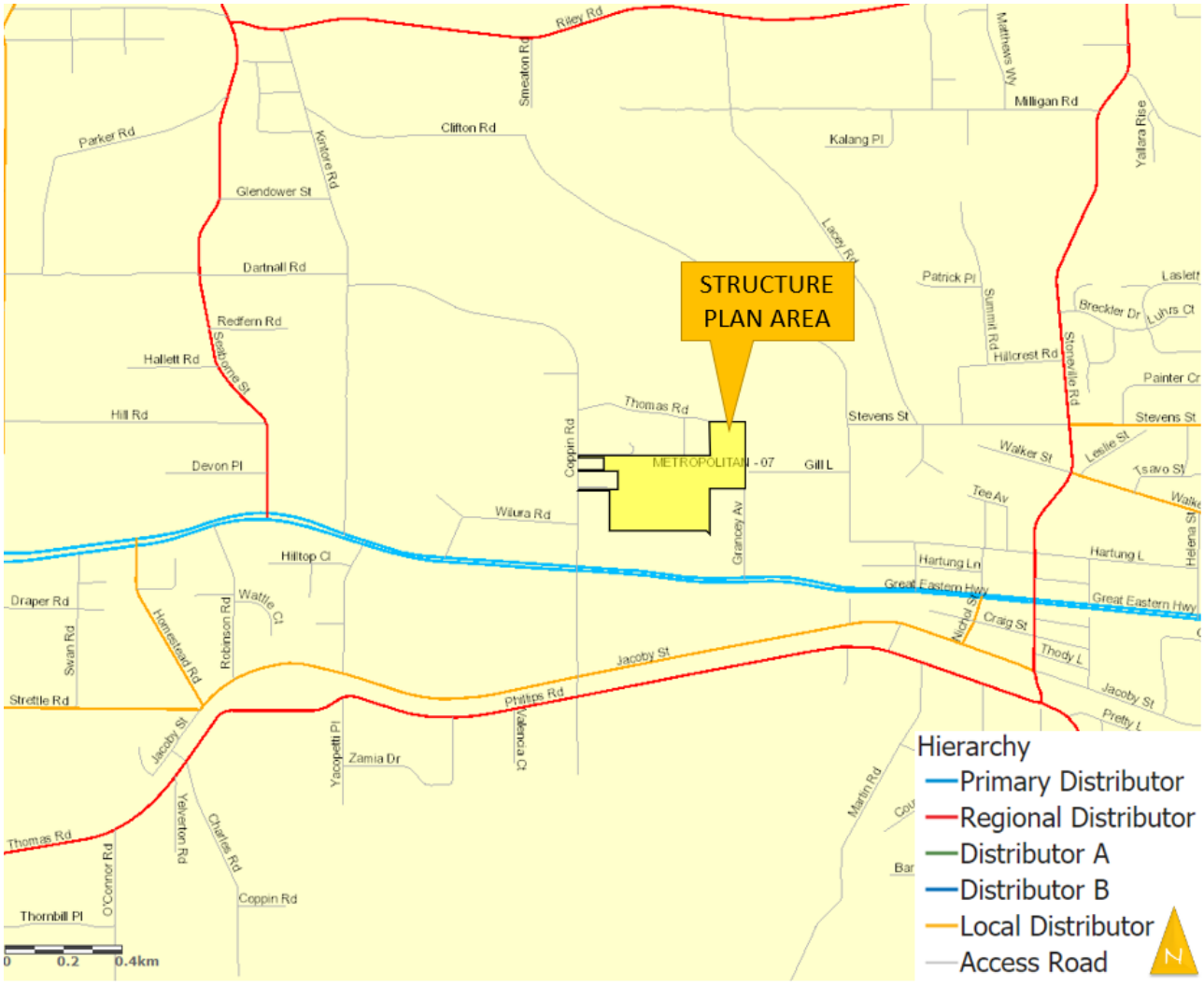



Figure 2 – Extract from Main Roads WA Functional Road Hierarchy plan with proposed Structure Plan area

As indicated in Figure 2, Coppin Rd, Grancey Ave and Thomas Rd are local Access Roads and as such, come under the care and control of the Shire of Mundaring.

The nearest distributor road to the proposed Structure Plan area is Great Eastern Hwy (GEH), to the south. GEH is a Primary Distributor Road that comes under the care and control of Main Roads WA. Coppin Rd and Grancey Ave connect to GEH via GIVE WAY controlled at-grade intersections. As such, the Key Transport issue is the impact on the capacity and safety performance of these two intersections due to increased traffic to and from the proposed subdivision. This is assessed in this *TIA*.

# 4 STRUCTURE PLAN PROPOSAL

The Shire of Mundaring is located on the eastern fringe of Perth, approximately 35 kilometres from the Perth CBD and had a population of 38,164 residents in the 2016 Census data.

It encompasses a total land mass of 644sqkm, of which nearly half is National Park, State Forest, or water catchments. The largest industries are construction, manufacturing , rental hiring, and real estate services.

The proposed Structure Plan area is 500 m west of the Mundaring townsite, as shown in Figure 3 below. It is anticipated that the majority of vehicular trips to and from the Structure Plan area will be to and from the townsite (supermarkets, specialist shops, medical services, café's, restaurants, hotels) and to and from locations east and west vis Great Eastern Hwy (employment and some schools). Attractors and generators to the north of the site are schools (Mundaring Christian College, Mundaring Primary School) and the townsites of Parkerville, Stoneville, and Mount Helena.

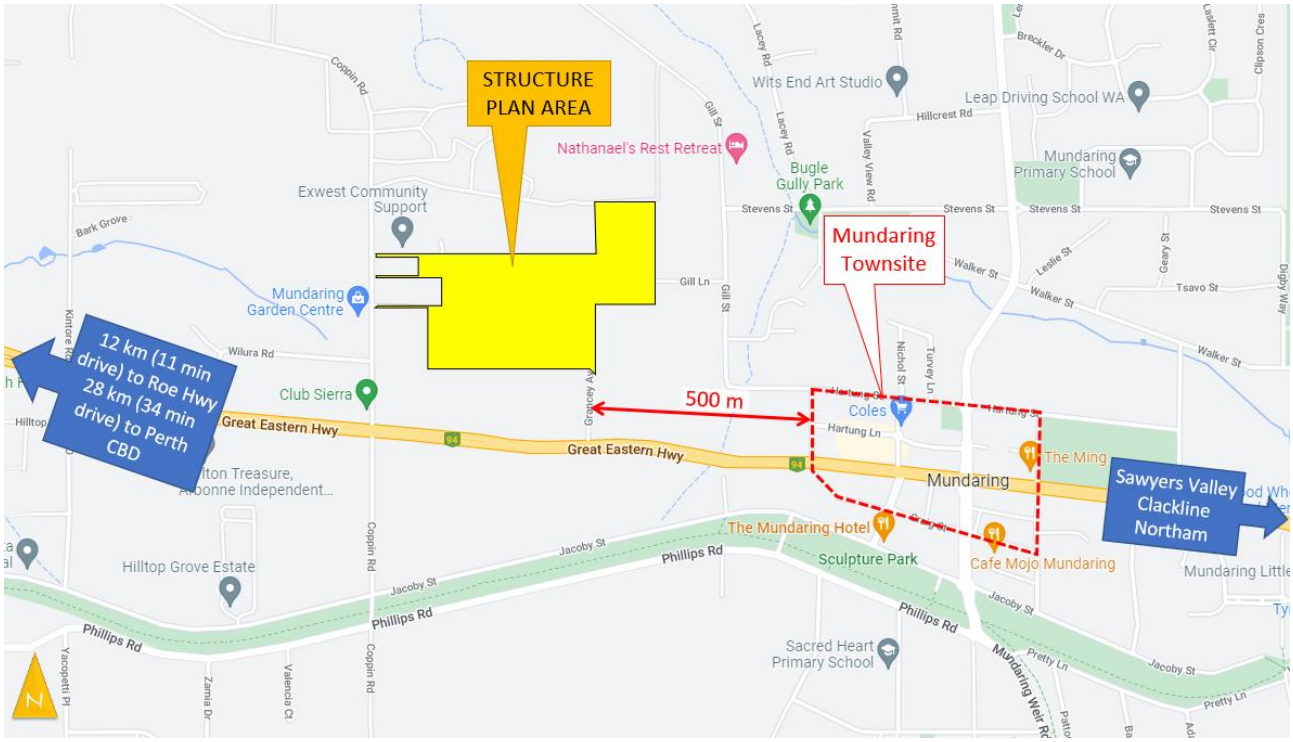



Figure 3 – Structure Plan area location, Mundaring Townsite and Great Eastern Hwy destinations

# 5 EXISTING SITUATION

The closest Distributor/ Arterial road to the subject site is Great Eastern Highway (GEH). GEH forms part of the designated national Highway 94 (Perth to Kalgoorlie). In addition to being a Primary Distributor State Road, it is designated for use by Restricted Access Vehicles (RAV) 2-4 without conditions. Transperth Bus Route 320 travels along GEH close to the subject site.

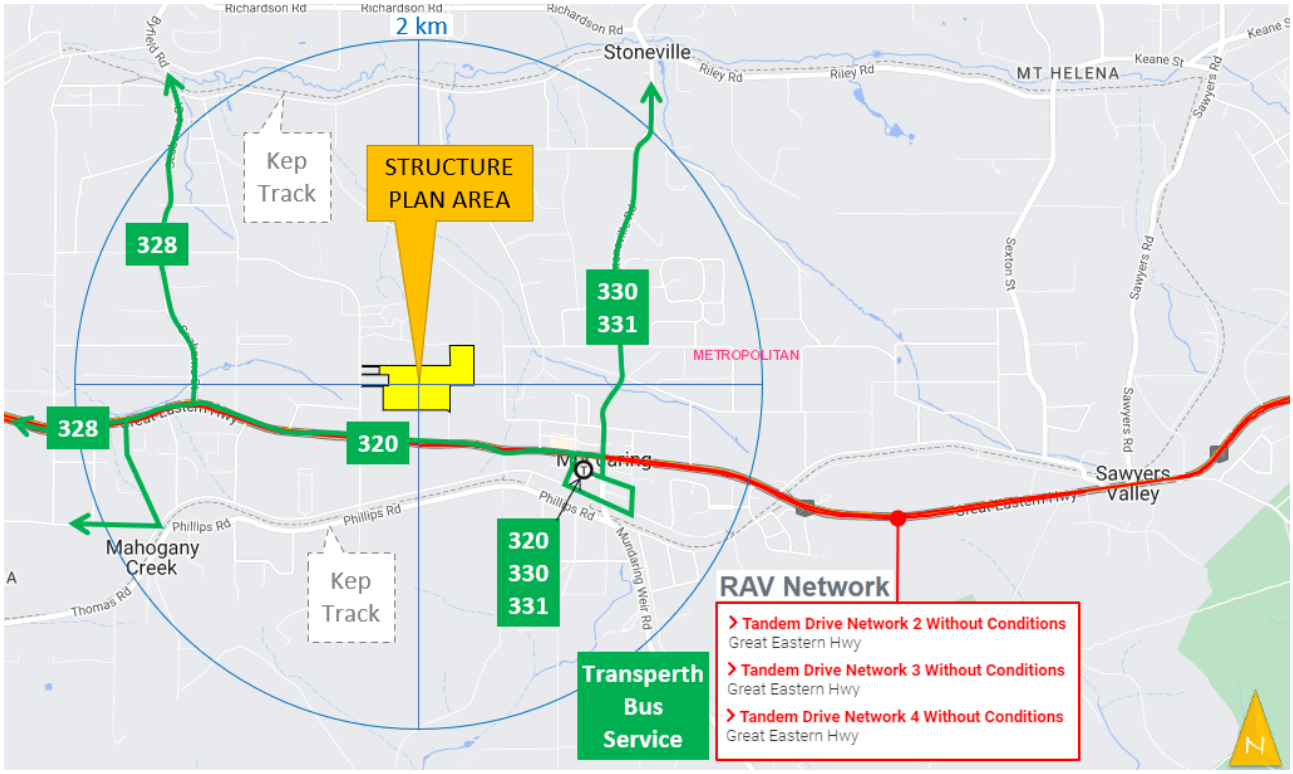



Figure 4 – Road, RAV, Bus, and Kep Track (Multipurpose walk/ ride trail) routes within 2 kms of subject site

As indicated in **Section 3**, the subject site connects to GEH via Coppin Rd and Grancey Ave at GIVE WAY controlled at-grade intersections. These two intersections are deemed to be 'Key Intersections' and are assessed in detail in this *TIA*, as 'Ki1' and 'Ki2' respectively. The intersection of Coppin Rd with Thomas Rd has also been assessed, primarily to estimate the percentage of arrival and departure trips during the peak hours for use in the trip distribution (IN/ OUT split) assessments. This intersection has been identified as a 'Secondary Intersection', designated as 'Si1'.

In the absence of existing detailed traffic volume data for the three indicated intersections, the author undertook high level video surveys of these between 6 AM and 7 PM on Tuesday 11th October 2022 and supplemented these with the 2021/22 average annual traffic volume data from the Main Roads WA data collection site on GEH east of Seaborne St to determine the weekday peak hours (i.e., 7– 8 AM and 3.15- 4:15 PM) and the volumes of different truck types along GEH for use in a SIDRA Intersection 9 Network model.

The assessed turning volumes during the indicated peak hours are shown in Figure 5 to Figure 7 on the following pages.

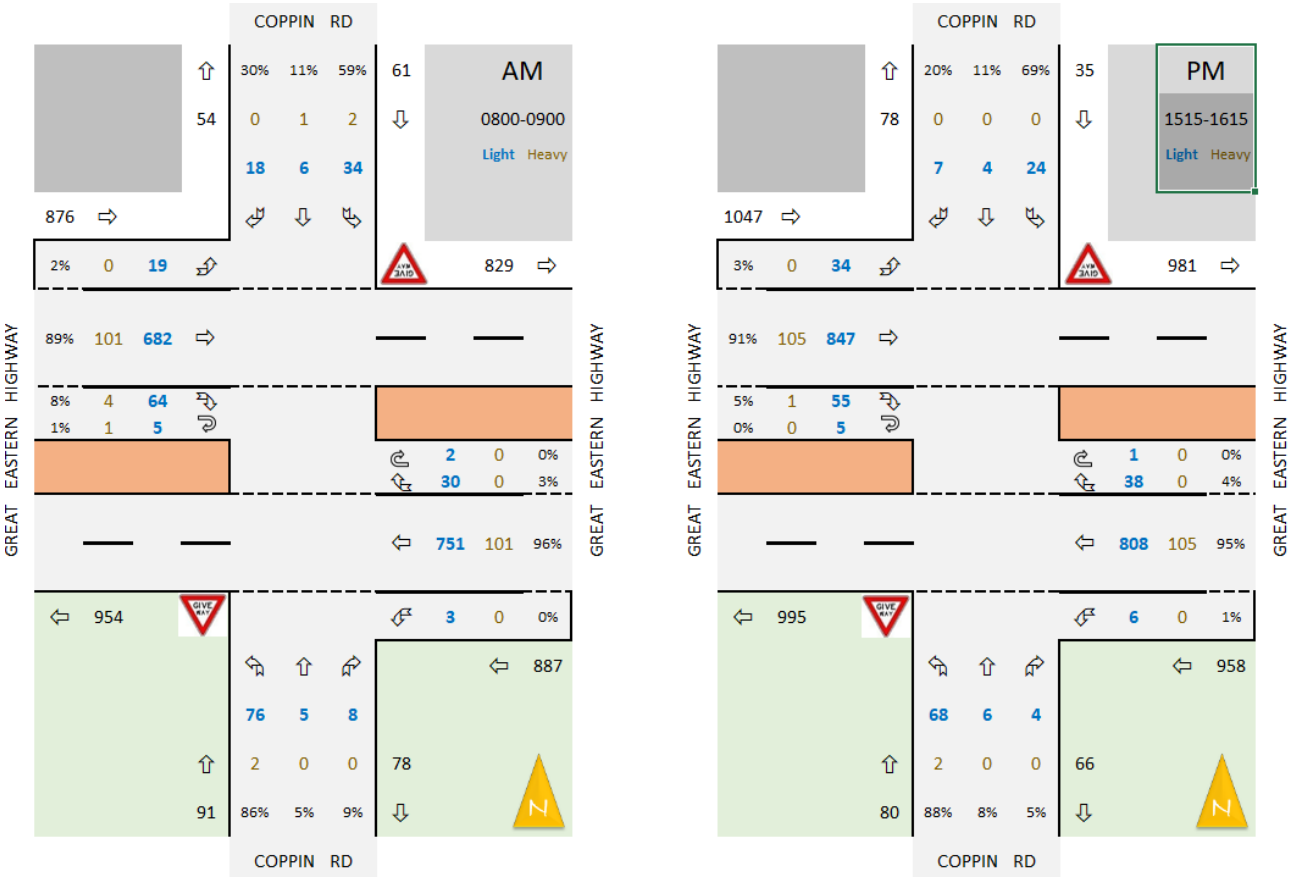



Figure 5 – AM and PM Peak Hour turning volumes at Coppin Rd/ GEH: Oct 2022

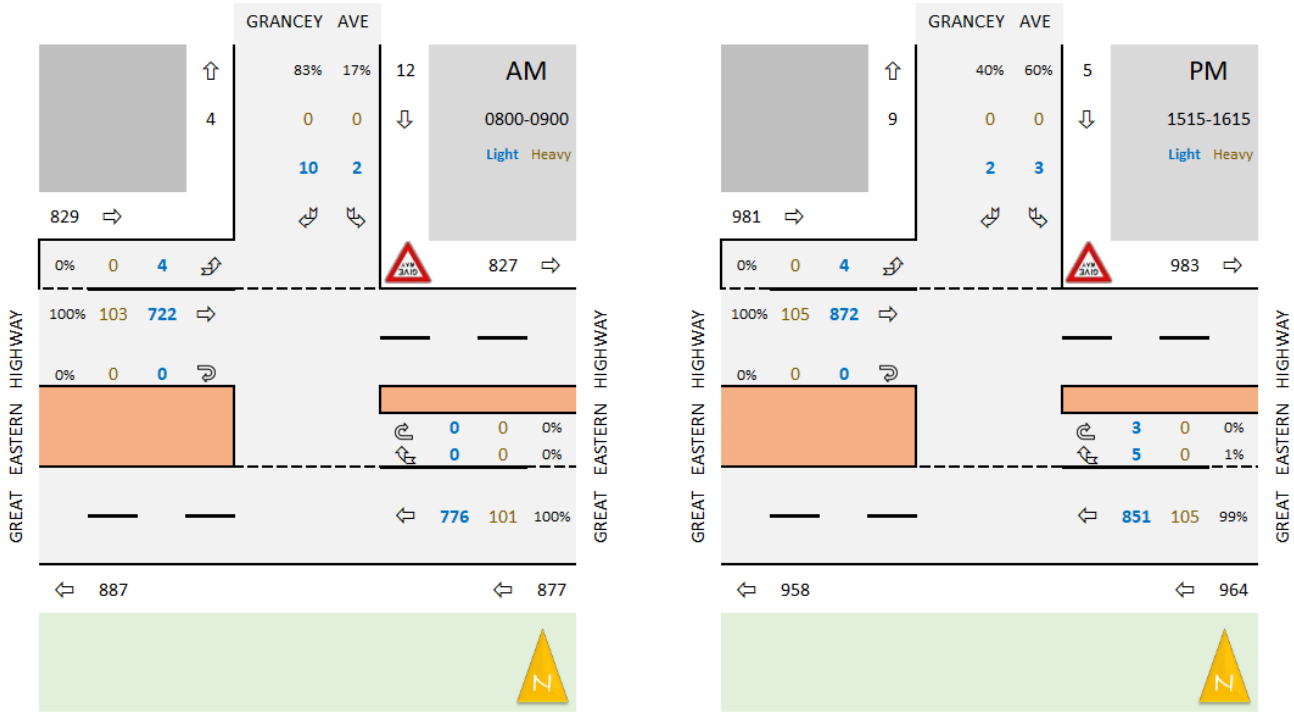



Figure 6 – AM and PM Peak Hour turning volumes at GEH/ Grancey Ave: Oct 2022

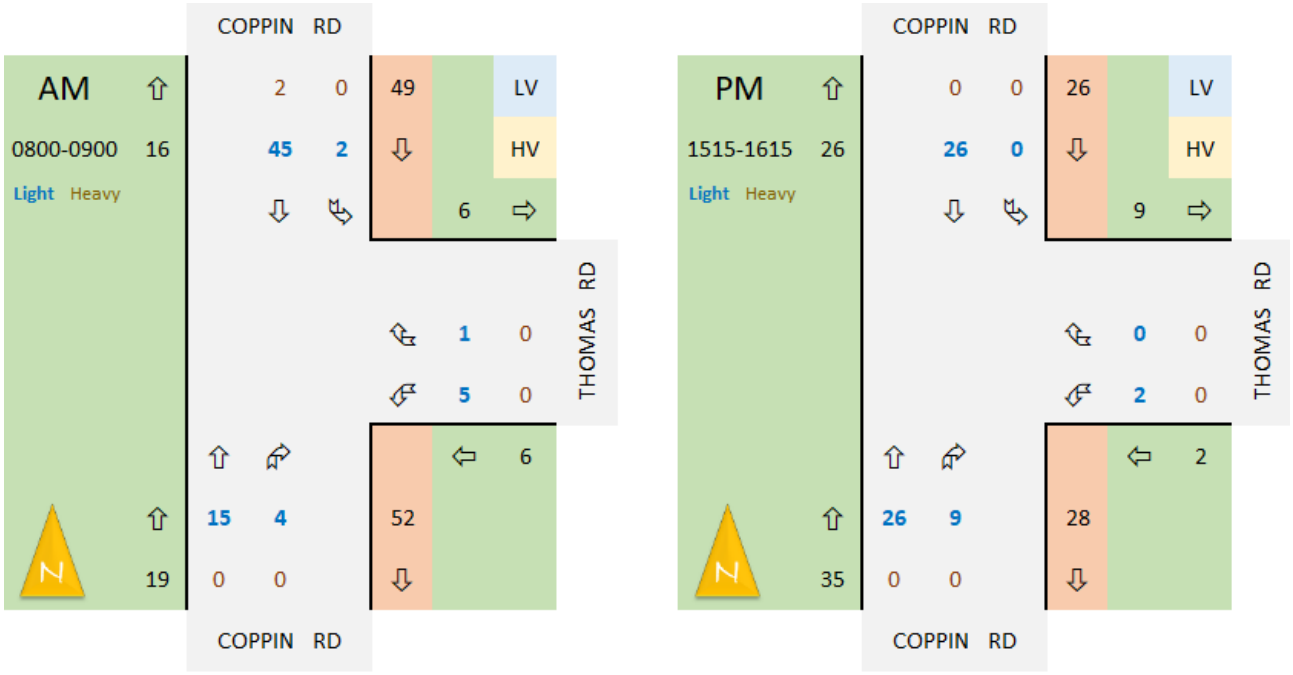
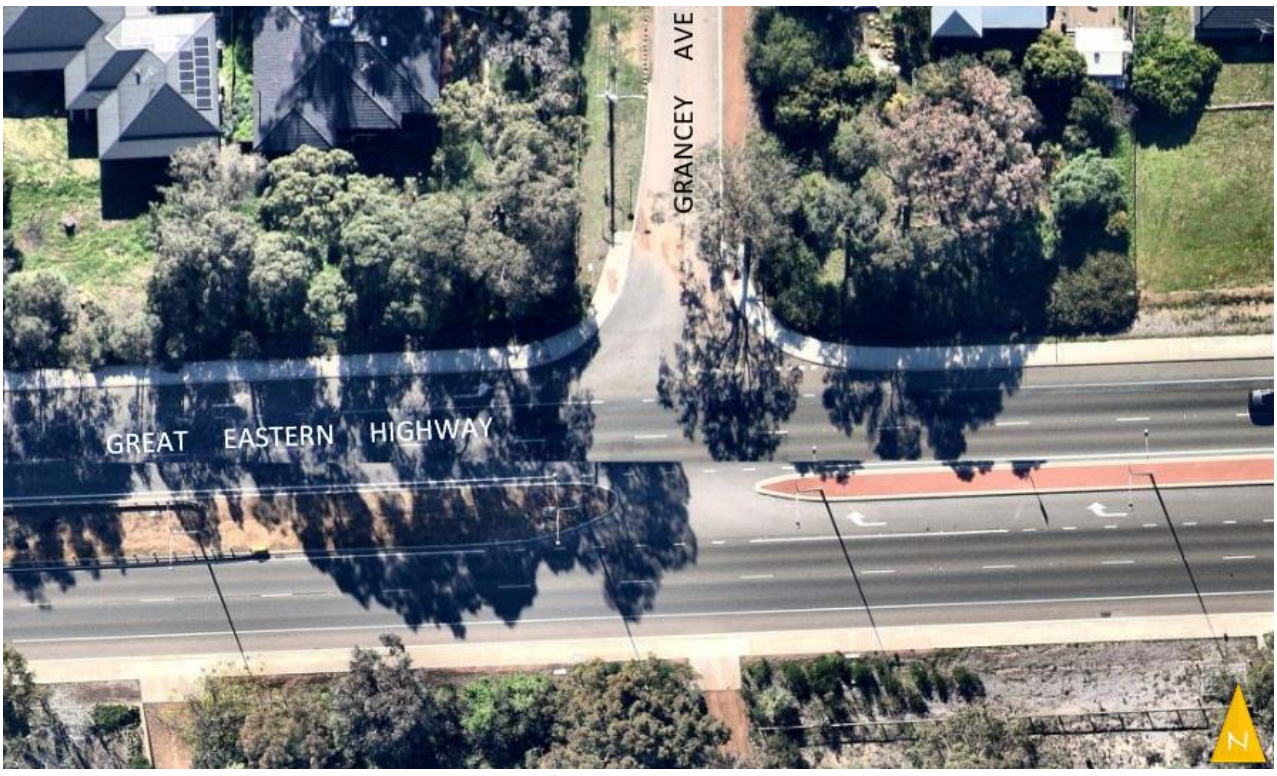



Figure 7 – AM and PM Peak Hour turning volumes at Coppin Rd/ Thomas Rd Oct 2022

The existing layouts of these three GIVE WAY controlled intersections are shown in Photograph 1 to Photograph 3 on the following pages.


Photograph 1 – Coppin Rd/ Great Eastern Hwy intersection (Ki1) Aerial




Photograph 2 – Grancey Ave/ Great Eastern Hwy intersection (Ki2) Aerial


Photograph 3 – Thomas Rd/ Coppin Rd intersection (Si1) Aerial

The peak hour traffic volume data was used to prepare a SIDRA Intersection 9 Network traffic model to assess the existing and forecast performance of the Key Intersections with and without the proposed Structure Plan. An assessment of the existing volumes, along with observations from the video surveys of key parameters such as queueing, and delay has indicated that the assessed intersections currently perform "*with good operation and plenty of space capacity*" (i.e., Degree of Saturation less than 0.6 – refer table of definitions and additional data and reports in **Appendix B**).

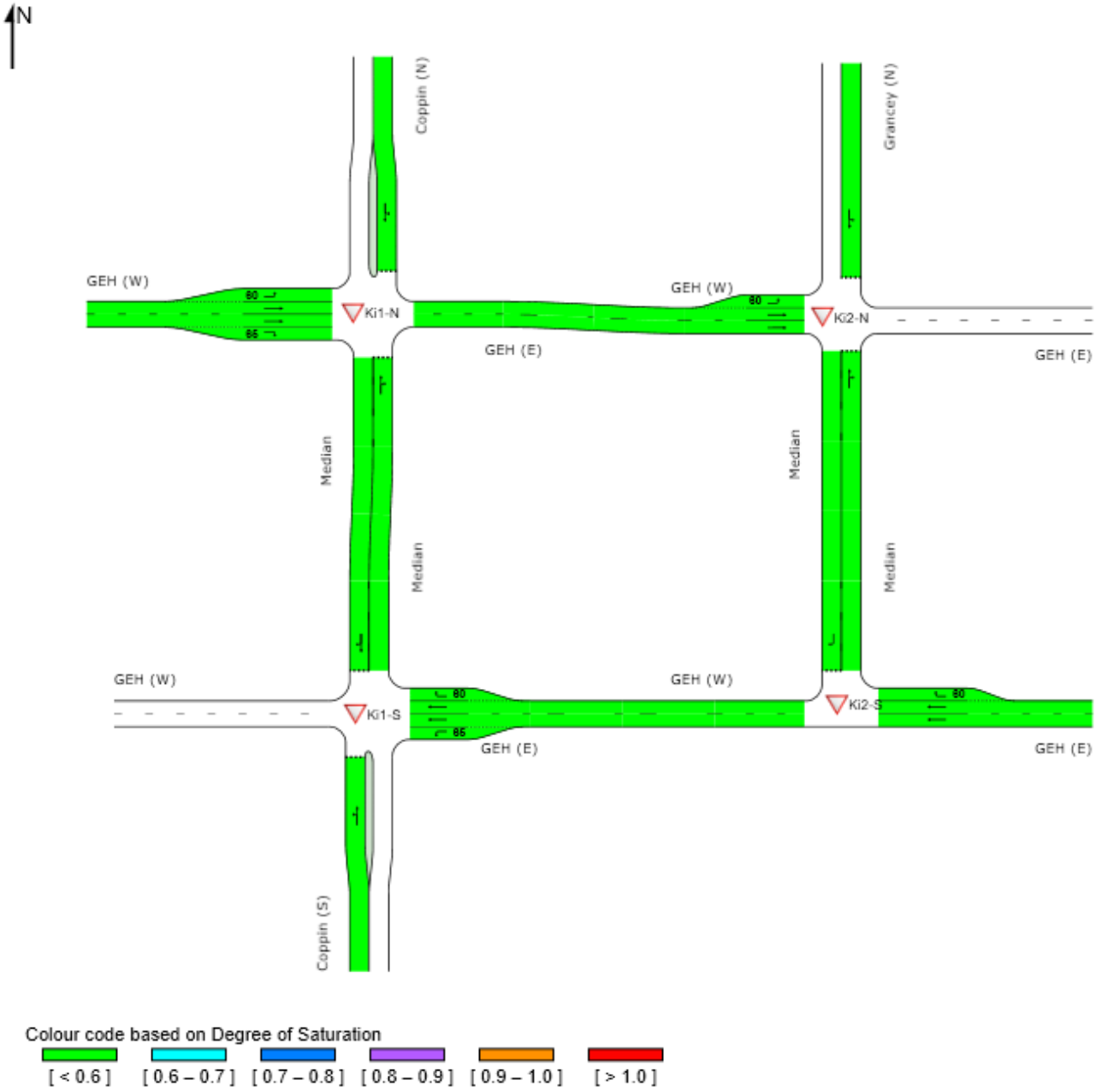



Figure 8 – Existing (Oct 2022) AM Peak Hour Intersection Performance based on Level of Service

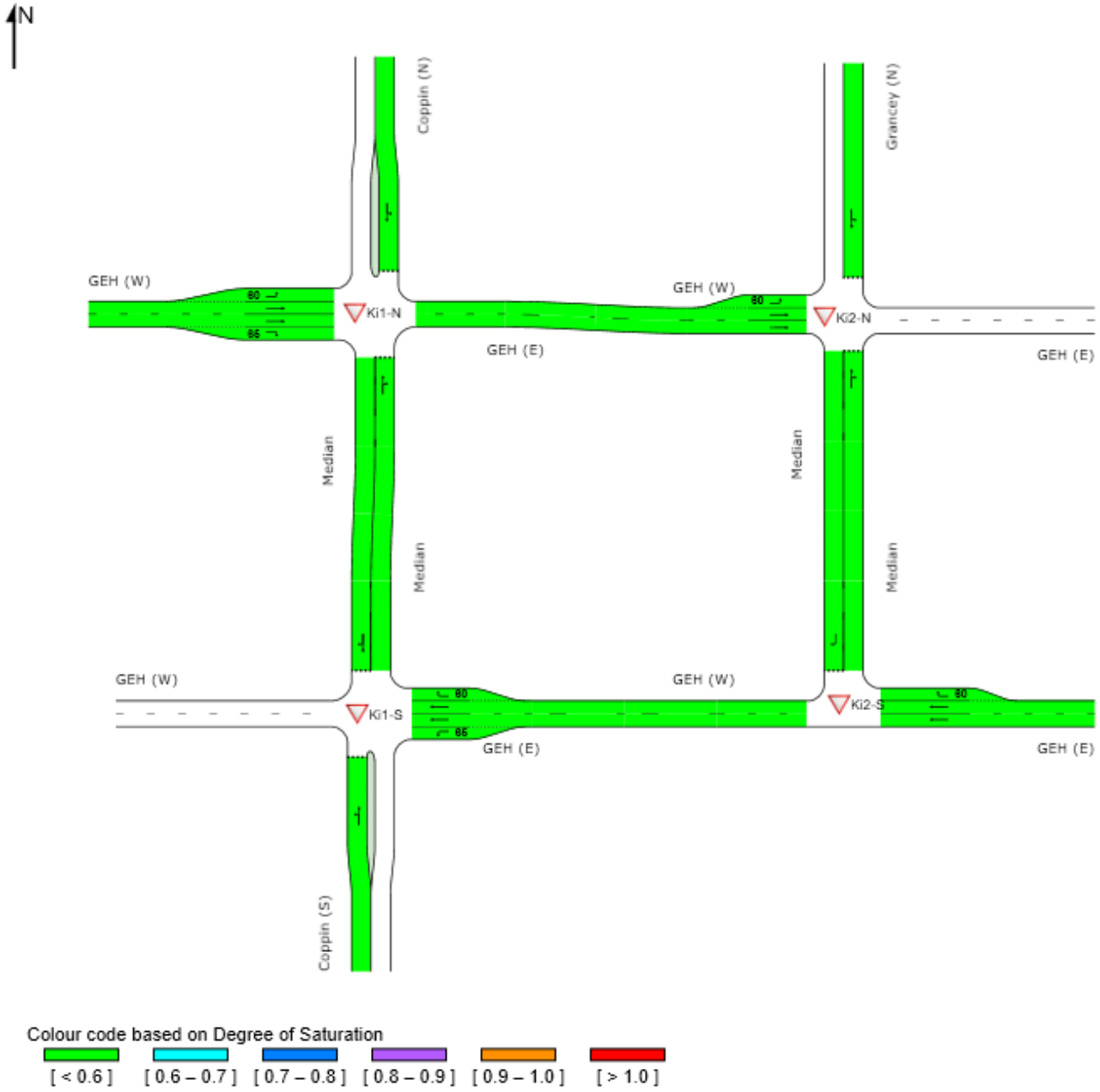



Figure 9 – Existing (Oct 2022) AM Peak Hour Intersection Performance based on Level of Service

# 6 PROPOSED INTERNAL TRANSPORT NETWORK

It is proposed to provide five (5) internal access roads, each within a 16 m road reserve. These access roads will connect to the external road network as described below:

- Baggins End (to Coppin Road and then Great Eastern Highway)
- Gamgee Grove (to Coppin Road and then Great Eastern Highway)
- Hobbit Glade (to Thomas Road and then Coppin Road)
- New Road (to Thomas Road east of Hobbit Glade and then Coppin Road)
- Grancey Ave (to Great Eastern Highway)
- EMERGENCY ONLY (e.g., Bush Fire) access to Gill Lane to the east

The proposal does not include any proposed cross sections. The assessment of forecast traffic volumes in Section 9 of this *TIA* indicates that no internal road is expected to carry more than 232 per day. On this basis, it is expected that an access road similar to that already provided for Hobbit Glade would be adequate, subject to the provision of a path or walkable verge space.

Photograph 4 – Looking south on Hobbit Glade

# 7 CHANGES TO EXTERNAL TRANSPORT NETWORKS

There are no known changes to the external transport network.

Major upgrades along Great Eastern Hwy were completed in late 2019. This included intersection and safety works at the two key intersections of Coppin Rd/ Great Eastern Hwy and Great Eastern Hwy/ Grancey Ave.

Following a Road Safety Audit in May 2020, additional work was completed in 2021 to improve visibility at the intersections by clearing vegetation, relocating and modifying road safety barriers, relocating street lights and reapplying pavement markings.

# 8 INTEGRATION WITH SURROUNDING AREA

As indicated in **Sections 4** and **5**, the proposed Structure Plan area is within 500 m of the Mundaring town centre with good connections to the external distributor road network (i.e., Great Eastern Hwy), schools, shops, and medical facilities.

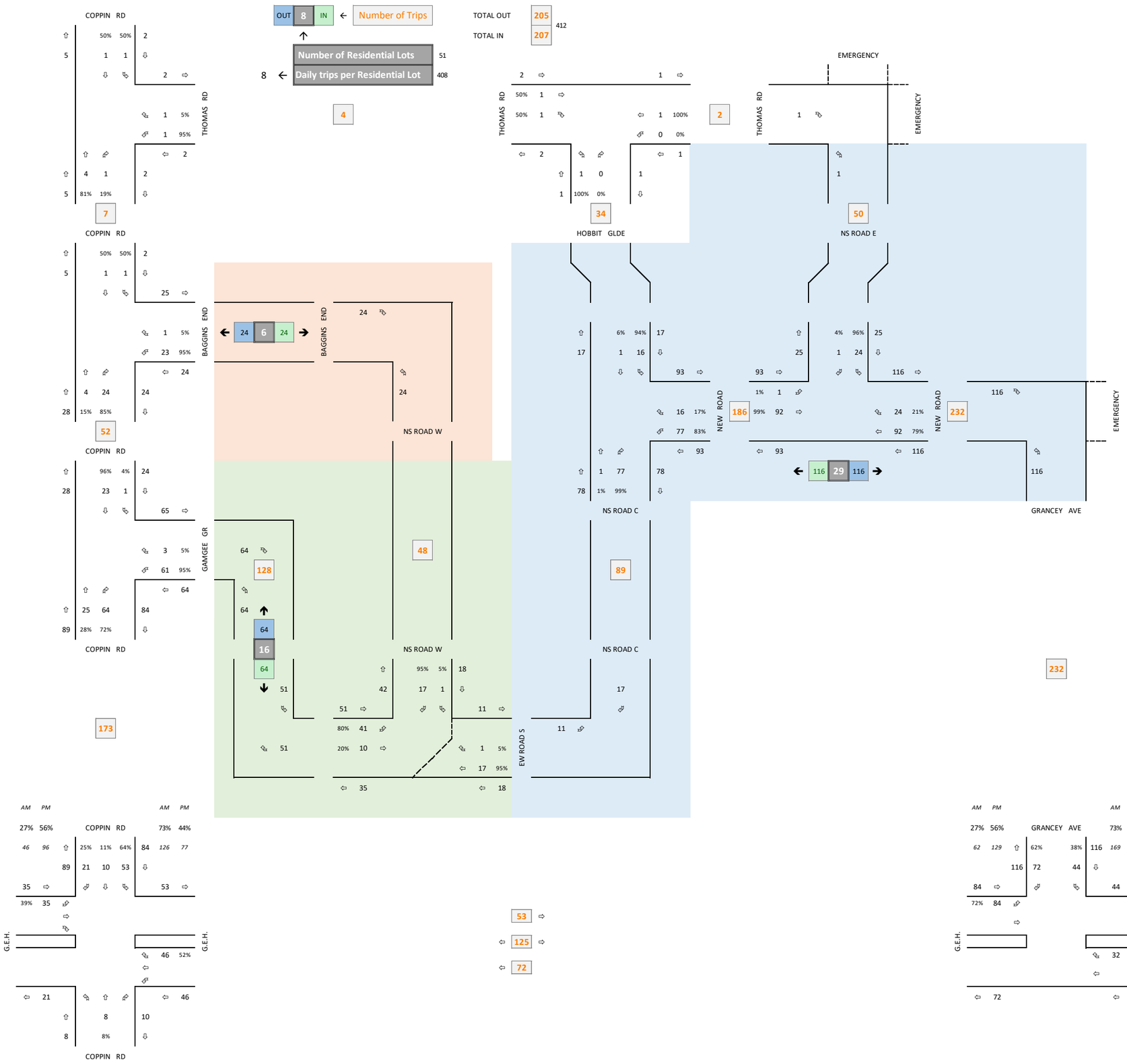
# 9 ANALYSIS OF TRANSPORT NETWORKS

## 9.1 INTERNAL

Based on the RTA/ WAPC Trip Generation rate of 8 trips per day per residence, the proposed Structure Plan area is expected to generate 408 trips per day.

A spreadsheet model has been prepared to determine likely daily trips within the Structure Plan area. A copy of this is provided on the following page.

The forecast internal trips are low, between 5 and 23 trips during the peak hours and as such, there are no assessed issues with the performance of the road or intersections within the site or at its direct connections within the external road network. Refer **Section 9.2** for the Great Eastern Highway impacts.


OUT 8 IN
Number of Trips
TOTAL OUT 205
TOTAL IN 207
412
Number of Residential Lots 51
8
Daily trips per Residential Lot 408
4
COPPIN RD
THOMAS RD
7
HOBBIT GLDE
34
EMERGENCY
NS ROAD E
50
BAGGINS END
24 6 24
NS ROAD W
48
NEW ROAD
186
232
NS ROAD C
89
GRANCEY AVE
52
GAMGEE GR
128
16
64
173
EW ROAD S
53
125
72
G.E.H.
AM PM
27% 56%
73% 44%

## 9.2 EXTERNAL

The forecast additional peak hour volumes at the two Great Eastern Hwy intersections are shown in Figure 10 below.

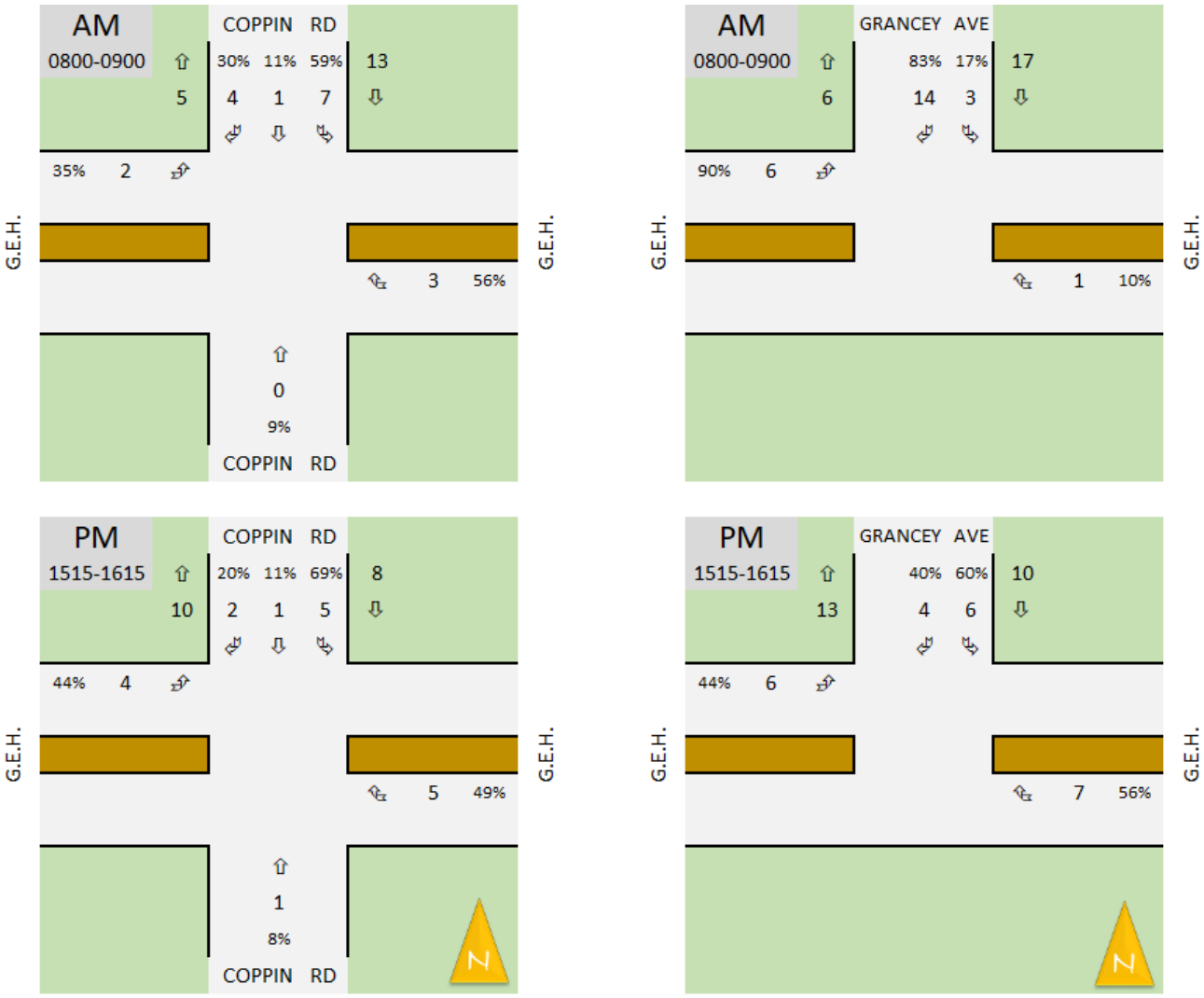



Figure 10 – Forecast additional peak hour volumes at GEH intersections as a result of the Structure Plan

These additional volumes are low and have shown that they have no or little impact on the assessed performance of these intersections when added to the SIDRA Intersection 9 Network model, as shown in Figure 11 on the following page.

Refer table of definitions and additional data and reports in **Appendix B**.

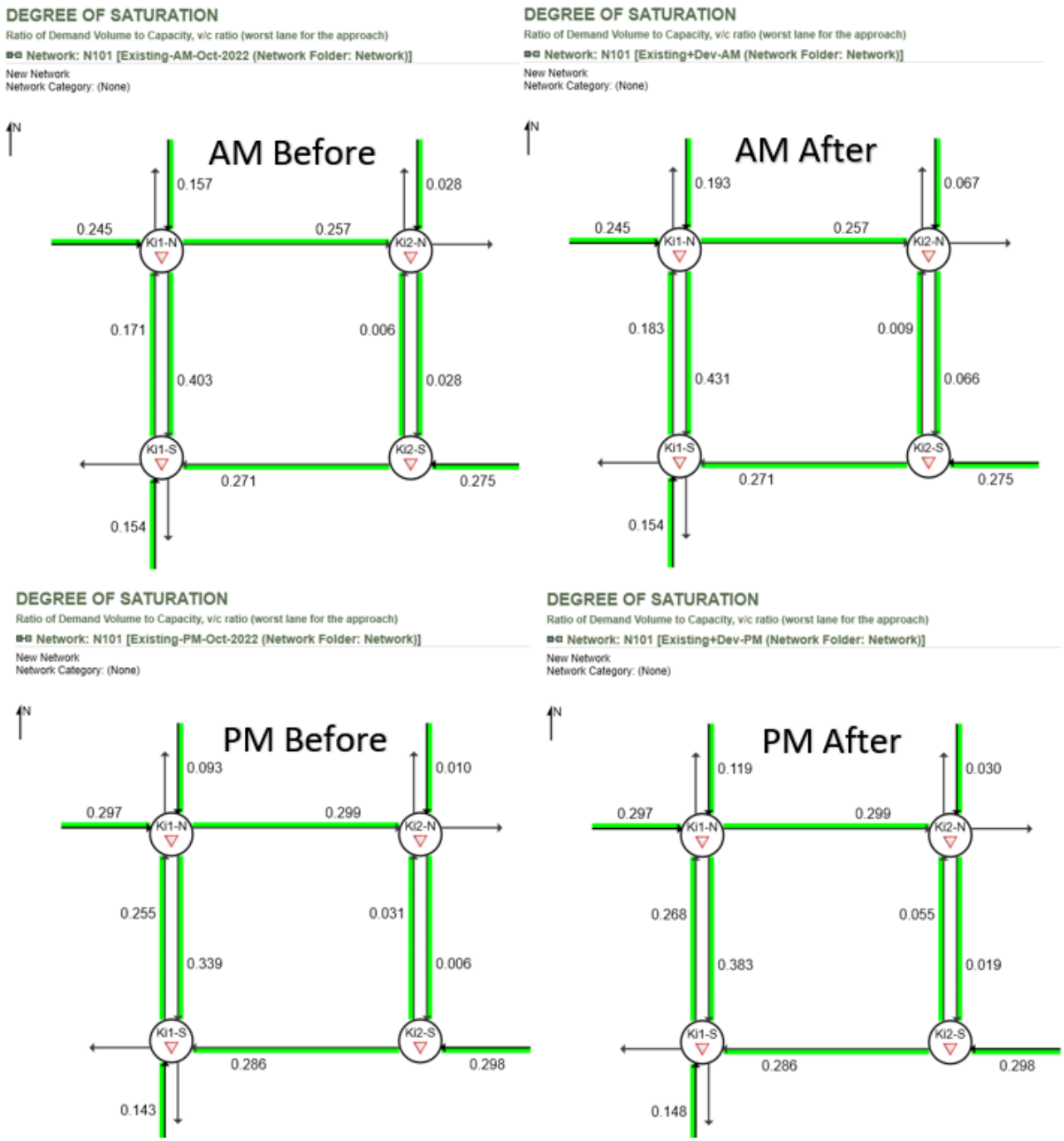



Figure 11 – Assessed before and after Degree of Saturation performance of the Key GEH Intersections

The proposed Structure Plan does not show, at this stage, proposed facilities for pedestrians and cyclists. It is recommended that these facilities are provided and provide a continuous link between the proposed Structure Plan area, the bus stops on Great Eastern Hwy and the Mundaring Town Centre.

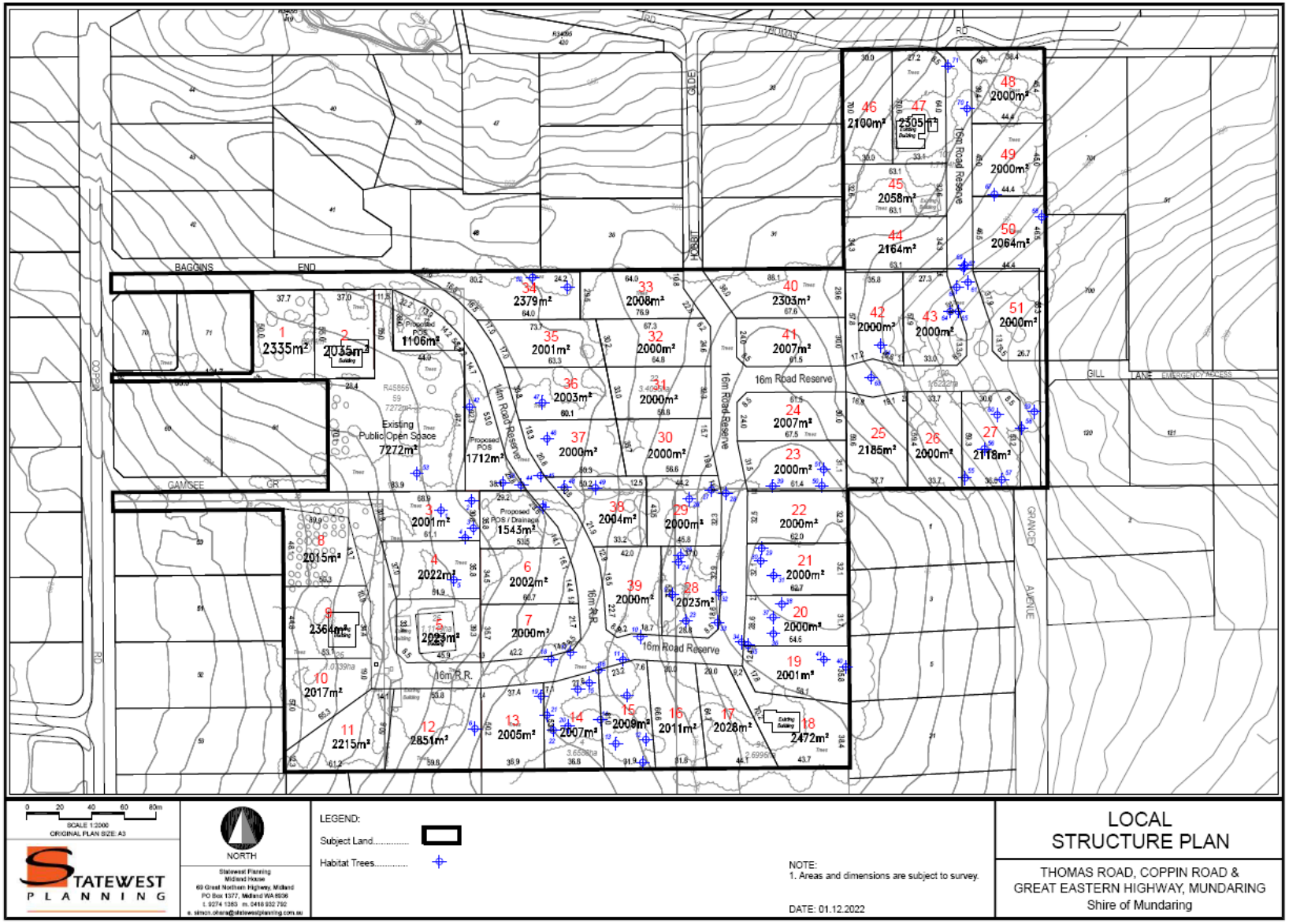
# References

1. **Austroads.** *Guide to Traffic Management Part 12: Integrated Transport Assessments for Developments.* Austroads. Sydney, NSW : Austroads Ltd, April 2020. p. 113, Guide to Traffic Management. ISBN 978-1-925854-86-2.

2. **Western Australian Planning Commission.** *Transport Impact Assessment Guidelines.* Department of Planning, Government of Western Australia. Perth, Western Australia : Western Australian Planning Commission, August 2016. p. 182, Revised August 2016. The current version of the TIA guidelines (August 2016) has been endorsed by the WAPC.

3. **Government of Western Australia.** *Planning and Development (Local Planning Schemes) Regulations 2015.* Perth : Government of Western Australia, As at 01 Jul 2016. p. 205. Version 00-d0-02.

# APPENDIX A STRUCTURE PLAN


BAGGINS END
COPPIN RD
GAMSEE CR
GLOBE
HOBBIT
RD
16m Road Reserve
GILL LANE EMERGENCY ACCESS
GRANCEY AVENUE
Existing Public Open Space 7272m²
Proposed POS 1712m²
Proposed POS 1106m²
Proposed POS / Drainage 1543m²
16m R.R.
1 2335m²
2 2035m²
3 2001m²
4 2022m²
5 2023m²
6 2002m²
7 2000m²
8 2015m²
9 2364m²
10 2017m²
11 2215m²
12 2851m²
13 2005m²
14 2007m²
15 2009m²
16 2011m²
17 2028m²
18 2472m²
19 2001m²
20 2000m²
21 2000m²
22 2000m²
23 2000m²
24 2007m²
25 2185m²
26 2000m²
27 2118m²
28 2023m²
29 2000m²
30 2000m²
31 2000m²
32 2000m²
33 2008m²
34 2379m²
35 2001m²
36 2003m²
37 2000m²
38 2004m²
39 2000m²
40 2303m²
41 2007m²
42 2000m²
43 2000m²
44 2164m²
45 2058m²
46 2100m²
47 2305m²
48 2000m²
49 2000m²
50 2064m²
51 2000m²
SCALE 1:2000
ORIGINAL PLAN SIZE: A3
NORTH
STATEWEST PLANNING
LEGEND:
Subject Land.....
Habitat Trees.....
NOTE:
1. Areas and dimensions are subject to survey.
DATE: 01.12.2022
LOCAL STRUCTURE PLAN
THOMAS ROAD, COPPIN ROAD & GREAT EASTERN HIGHWAY, MUNDARING
Shire of Mundaring

## APPENDIX B SIDRA INTERSECTION 9 DATA

| Degree of Saturation (DoS) Volume/ Capacity Ration (v/c) | LoS | Average Delay per vehicle (d) in seconds | | | | v/c Range | Performance Comments |
|---|---|---|---|---|---|---|---|
| | | Unsignalised intersections | Roundabouts | Signalised intersections | All (RTA) | | |
| < 0.6 | A | d ≤ 10 | d ≤ 10 | d ≤ 10 | d ≤ 14.5 | ≤ 0.44 | **Good operation and plenty of spare capacity** *Stable free flow conditions where drivers are able to select desired speeds and to easily manoeuvre within the traffic stream.* |
| | B | 10 < d ≤ 15 | 10 < d ≤ 20 | 10 < d ≤ 20 | 14.5 < d ≤ 28.5 | | |
| | C | 15 < d ≤ 25 | 20 < d ≤ 35 | 20 < d ≤ 35 | 28.5 < d ≤ 42.5 | 0.45 - 0.64 | **Acceptable delays and spare capacity** *Stable flow but most drivers are restricted to some extent in their ability to select their desired speed and to manoeuvre within the traffic stream.* |
| 0.6 - 0.7 | D | 25 < d ≤ 35 | 35 < d ≤ 50 | 35 < d ≤ 55 | 42.5 < d ≤ 56.5 | 0.65 - 0.84 | **Acceptable delays** (Expected typical peak hour conditions) *Close to the limit of stable flow. All drivers are restricted in their ability to select their desired speed and to manoeuvre within the traffic stream. Small increases in traffic flow may cause operational problems.* |
| 0.7 - 0.8 | | | | | | | |
| 0.8 - 0.9 | | | | | | | |
| 0.9 - 1.0 | E | 35 < d ≤ 50 | 50 < d ≤ 70 | 55 < d ≤ 80 | 56.5 < d ≤ 70.5 | 0.85 - 1.04 | **Near capacity and senstive to disturbances in flows** *Traffic volumes are close to capacity and there is virtually no freedom to select desired speeds. Flow is unstable and minor disturbances within the traffic stream will cause breakdown leading to long queues and delays.* |
| > 1.0 | F | 50 < d | 70 < d | 80 < d | 70.5 < d | > 1.25 | **At Capacity** - Requires other control mode and/ or additional lanes *In the zone of forced flow where the amount of traffic approaching the point under consideration exceeds that which can pass. Flow breakdown occurs and extensive queues and delays result.* |

Table 1 – SIDRA Intersection Performance Criteria descriptions

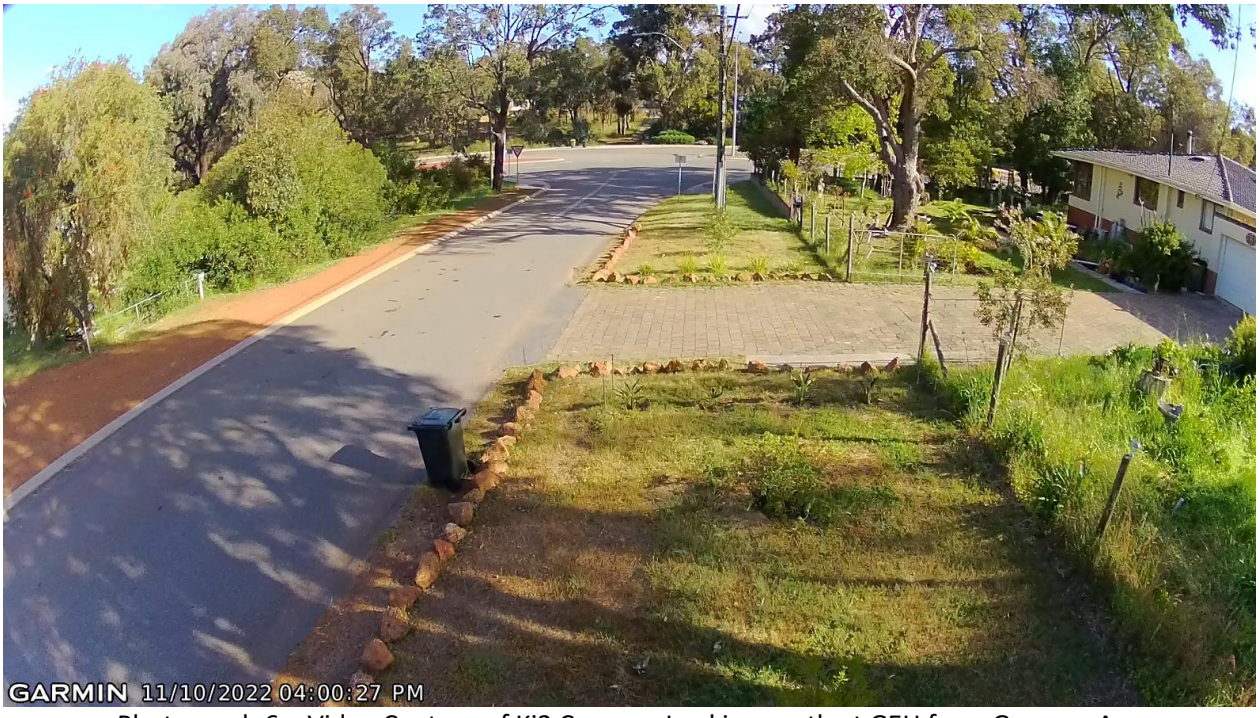
## METHODOLOGY

In the absence of existing detailed traffic volume data for the three indicated intersections, the author undertook high level video surveys of these between 6 AM and 7 PM on Tuesday 11th October 2022 and supplemented these with the 2021/22 average annual traffic volume data from the Main Roads WA data collection site on GEH east of Seaborne St to determine the weekday peak hours (i.e., 7– 8 AM and 3.15-4:15 PM) and the volumes of different truck types along GEH for use in a SIDRA Intersection 9 Network model.

Capture images from each camera are provided as Photograph 5 to Photograph 7 on the following pages.

GEH through data was sourced from the Main Roads WA data collection site on GEH east of Seaborne St. This data is Average Annual Weekday Data for 2022/ 21 and has been broken down into direction and classifications, as shown in Table 2 and Table 3 on page 34 for the data and Main Roads WA recommended movement classes in SIDRA Intersection models.


Photograph 5 – Video Capture of Ki1 Camera: Looking north at Coppin Rd from south side of GEH




Photograph 6 – Video Capture of Ki2 Camera: Looking south at GEH from Grancey Ave


Photograph 7 – Video Capture from Si1 Camera: Looking east at Coppin Rd from Thomas Rd

| Traffic Year | Statistic Type | Direction | Hour | Class 1 | Class 2 | Class 3 | Class 4 | Class 5 | Class 6 | Class 7 | Class 8 | Class 9 | Class 10 | Class 11 | Class 12 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2021/22 | Monday to Friday | Eastbound | TOTAL | 10921 | 230 | 752 | 358 | 40 | 20 | 44 | 34 | 152 | 118 | 97 | 1 | 12767 |
| 2021/22 | Monday to Friday | Westbound | 00:00 | 19 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 2 | 7 | 3 | 0 | 35 |
| 2021/22 | Monday to Friday | Westbound | 01:00 | 19 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 3 | 7 | 1 | 0 | 34 |
| 2021/22 | Monday to Friday | Westbound | 02:00 | 15 | 1 | 1 | 2 | 1 | 0 | 1 | 0 | 4 | 5 | 3 | 0 | 33 |
| 2021/22 | Monday to Friday | Westbound | 03:00 | 33 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 4 | 7 | 2 | 0 | 51 |
| 2021/22 | Monday to Friday | Westbound | 04:00 | 115 | 2 | 12 | 2 | 0 | 0 | 0 | 0 | 4 | 5 | 3 | 0 | 143 |
| 2021/22 | Monday to Friday | Westbound | 05:00 | 350 | 5 | 26 | 6 | 1 | 1 | 2 | 1 | 6 | 7 | 4 | 0 | 409 |
| 2021/22 | Monday to Friday | Westbound | 06:00 | 586 | 14 | 49 | 10 | 2 | 1 | 4 | 3 | 11 | 13 | 11 | 0 | 704 |
| 2021/22 | Monday to Friday | Westbound | 07:00 | 803 | 14 | 60 | 9 | 2 | 2 | 3 | 2 | 13 | 14 | 8 | 0 | 930 |
| 2021/22 | Monday to Friday | Westbound | 08:00 | 831 | 19 | 57 | 9 | 3 | 2 | 3 | 1 | 7 | 13 | 9 | 0 | 954 |
| 2021/22 | Monday to Friday | Westbound | 09:00 | 693 | 23 | 65 | 9 | 2 | 4 | 2 | 2 | 13 | 13 | 12 | 0 | 838 |
| 2021/22 | Monday to Friday | Westbound | 10:00 | 620 | 19 | 67 | 9 | 3 | 1 | 3 | 2 | 14 | 8 | 15 | 0 | 761 |
| 2021/22 | Monday to Friday | Westbound | 11:00 | 611 | 24 | 55 | 7 | 2 | 3 | 4 | 4 | 11 | 10 | 11 | 0 | 742 |
| 2021/22 | Monday to Friday | Westbound | 12:00 | 589 | 24 | 54 | 12 | 2 | 3 | 4 | 2 | 14 | 8 | 11 | 0 | 723 |
| 2021/22 | Monday to Friday | Westbound | 13:00 | 563 | 22 | 62 | 10 | 2 | 1 | 5 | 2 | 12 | 10 | 11 | 0 | 700 |
| 2021/22 | Monday to Friday | Westbound | 14:00 | 659 | 23 | 55 | 11 | 2 | 3 | 4 | 2 | 12 | 9 | 13 | 0 | 793 |
| 2021/22 | Monday to Friday | Westbound | 15:00 | 819 | 23 | 63 | 12 | 2 | 3 | 5 | 2 | 11 | 8 | 8 | 0 | 956 |

Table 2 – Example of Main Roads WA Average Annual Weekday Data for 2022/ 21

| Austroads Vehicle Class | Vehicle Mass (kg)[16] | Power (kw)[16] | Length (m)[16] | PCE (pcu/veh)[17] |
|---|---|---|---|---|
| **1** | 1600 | 120 | 4.85 | 1 |
| **2, 3, 4, and 5** | 35500 | 160 | 12.5 | 2 |
| **6, 7, 8 and 9** | 64000 | 350 | 20 | 3 |
| **10** | 92500 | 410 | 30 | 4 |
| **11** | 134500 | 522 | 42 | 4 |
| **12** | 200000 | 522 | 60 | 5 |

Table 3 – Recommended Movement Classes by Main Roads (Source Table 4-2: Main Roads WA Operational Modelling Guidelines – Version 2.0)

An example of input data using the recommended classifications for GEH traffic is provided as Figure 12 below.

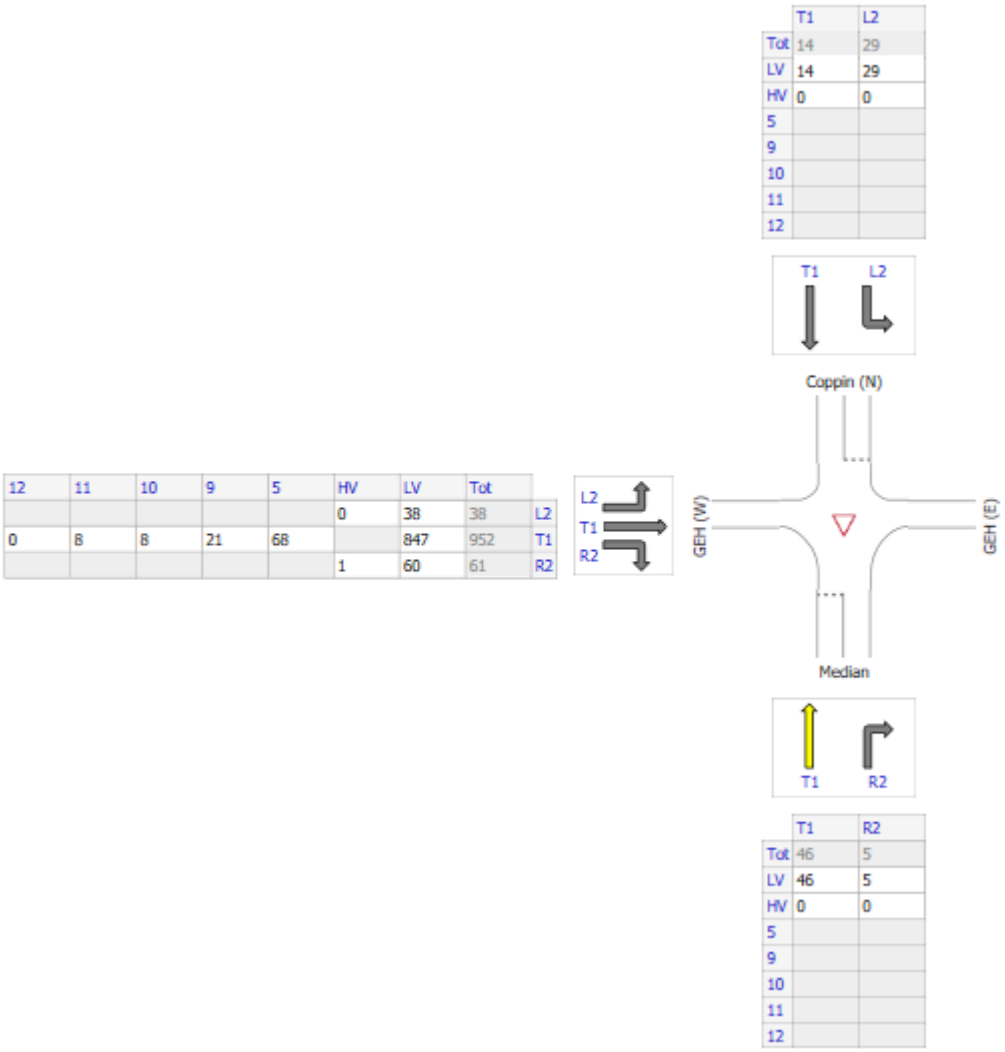
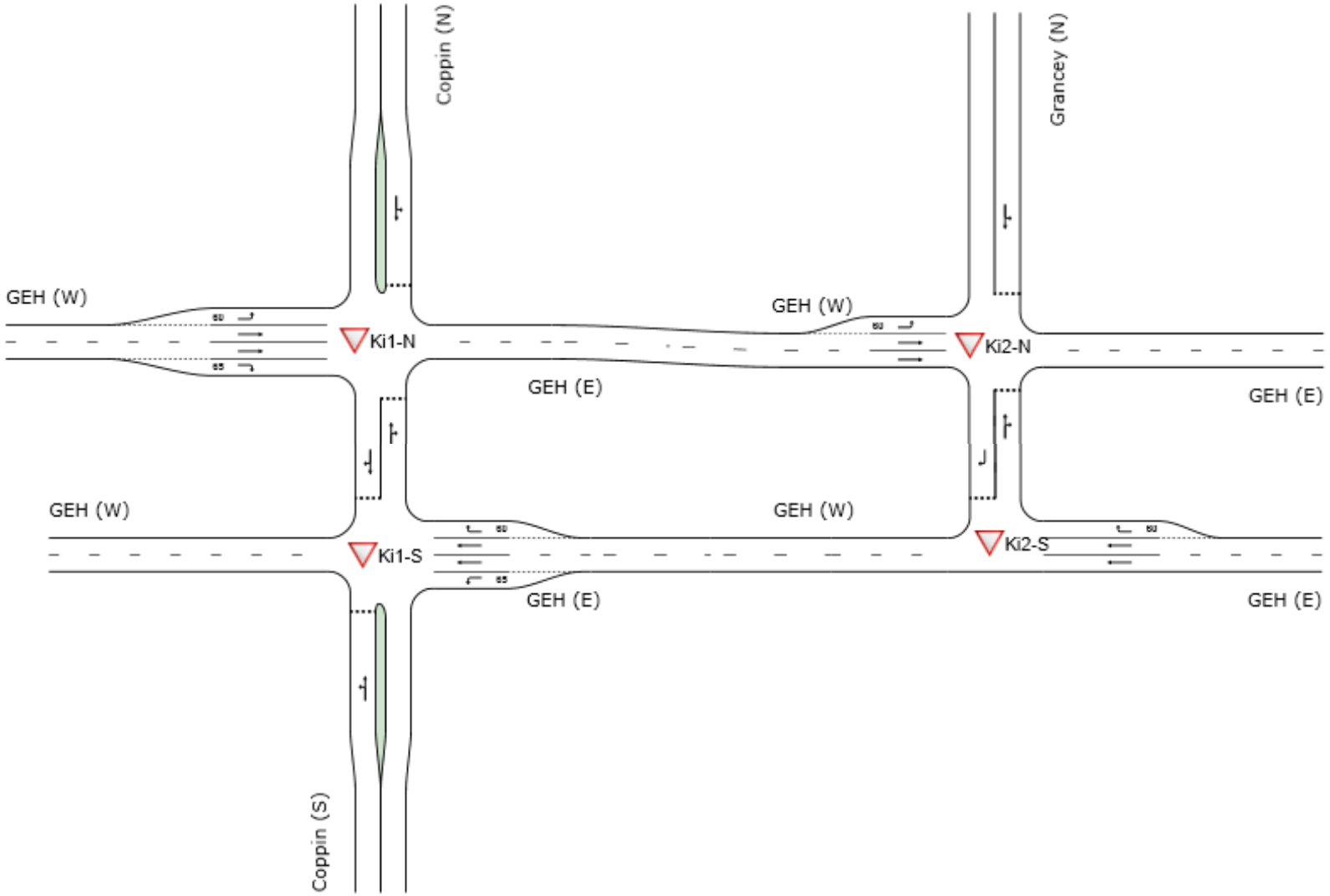



Figure 12 – Example of input volume data (Ki1 North C'way PM peak hour with development)

## NETWORK LAYOUT



# EXISTING (OCT 2022) INTERSECTION PERFORMANCE REPORTS

## MOVEMENT SUMMARY

**Site: Ki1-N [Coppin-GEH-North-Leg-AM-2022 (Site Folder: Exisiting Oct 2022)]**

**Network: N101 [Existing-AM-Oct-2022 (Network Folder: Network)]**

Northern side of Coppin Rd/ GEH intersection with existing Oct 2022 surveyed AM Peak Hour volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Median | | | | | | | | | | | | | | |
| ST | T1 | 37 | 0.0 | 37 | 0.0 | 0.171 | 13.3 | LOS B | 0.2 | 1.7 | 0.80 | 0.88 | 0.80 | 30.6 |
| SR | R2 | 11 | 0.0 | 11 | 0.0 | 0.171 | 18.7 | LOS C | 0.2 | 1.7 | 0.80 | 0.88 | 0.80 | 5.0 |
| Approach | | 47 | 0.0 | 47 | 0.0 | 0.171 | 14.5 | LOS B | 0.2 | 1.7 | 0.80 | 0.88 | 0.80 | 27.8 |
| North: Coppin (N) | | | | | | | | | | | | | | |
| NL | L2 | 38 | 5.6 | 38 | 5.6 | 0.157 | 7.0 | LOS A | 0.2 | 1.5 | 0.61 | 0.76 | 0.61 | 34.0 |
| NT | T1 | 26 | 4.0 | 26 | 4.0 | 0.157 | 16.2 | LOS C | 0.2 | 1.5 | 0.61 | 0.76 | 0.61 | 34.0 |
| Approach | | 64 | 4.9 | 64 | 4.9 | 0.157 | 10.8 | LOS B | 0.2 | 1.5 | 0.61 | 0.76 | 0.61 | 34.0 |
| West: GEH (W) | | | | | | | | | | | | | | |
| WL | L2 | 20 | 0.0 | 20 | 0.0 | 0.011 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 61.5 |
| WT | T1 | 824 | 12.9 | 824 | 12.9 | 0.245 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| WR | R2 | 78 | 6.8 | 78 | 6.8 | 0.060 | 6.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 60.2 |
| Approach | | 922 | 12.1 | 922 | 12.1 | 0.245 | 0.8 | NA | 0.0 | 0.0 | 0.00 | 0.07 | 0.00 | 76.9 |
| All Vehicles | | 1034 | 11.1 | 1034 | 11.1 | 0.245 | 2.0 | NA | 0.2 | 1.7 | 0.07 | 0.15 | 0.07 | 69.7 |

## MOVEMENT SUMMARY

**Site: Ki1-S [Coppin-GEH-South-Leg-AM-2022 (Site Folder: Exisiting Oct 2022)]**

**Network: N101 [Existing-AM-Oct-2022 (Network Folder: Network)]**

Southern side of Coppin Rd/ GEH intersection with existing Oct 2022 surveyed AM Peak Hour volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Coppin (S) | | | | | | | | | | | | | | |
| SL | L2 | 82 | 2.6 | 82 | 2.6 | 0.154 | 7.3 | LOS A | 0.2 | 1.6 | 0.55 | 0.75 | 0.55 | 54.0 |
| ST | T1 | 14 | 0.0 | 14 | 0.0 | 0.154 | 17.0 | LOS C | 0.2 | 1.6 | 0.55 | 0.75 | 0.55 | 38.8 |
| Approach | | 96 | 2.2 | 96 | 2.2 | 0.154 | 8.7 | LOS A | 0.2 | 1.6 | 0.55 | 0.75 | 0.55 | 52.8 |
| East: GEH (E) | | | | | | | | | | | | | | |
| EL | L2 | 3 | 0.0 | 3 | 0.0 | 0.002 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 65.0 |
| ET | T1 | 897 | 11.9 | 897 | 11.9 | 0.271 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| ER | R2 | 34 | 0.0 | 34 | 0.0 | 0.018 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 63.7 |
| Approach | | 934 | 11.4 | 934 | 11.4 | 0.271 | 0.3 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 79.4 |
| North: Median | | | | | | | | | | | | | | |
| NT | T1 | 79 | 6.7 | 79 | 6.7 | 0.403 | 20.0 | LOS C | 0.7 | 5.0 | 0.86 | 1.00 | 1.13 | 29.2 |
| NR | R2 | 19 | 0.0 | 19 | 0.0 | 0.403 | 26.6 | LOS D | 0.7 | 5.0 | 0.86 | 1.00 | 1.13 | 44.8 |
| Approach | | 98 | 5.4 | 98 | 5.4 | 0.403 | 21.3 | LOS C | 0.7 | 5.0 | 0.86 | 1.00 | 1.13 | 32.5 |
| All Vehicles | | 1127 | 10.1 | 1127 | 10.1 | 0.403 | 2.9 | NA | 0.7 | 5.0 | 0.12 | 0.17 | 0.15 | 72.9 |

## MOVEMENT SUMMARY

**Site: Ki2-N [GEH-Grancey-North-Leg-AM-2022 (Site Folder: Exisiting Oct 2022)]**

**Network: N101 [Existing-AM-Oct-2022 (Network Folder: Network)]**

Northern side of Grancey Ave/ GEH intersection with existing Oct 2022 surveyed AM Peak Hour volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Median | | | | | | | | | | | | | | |
| ST | T1 | 1 | 0.0 | 1 | 0.0 | 0.006 | 8.8 | LOS A | 0.0 | 0.1 | 0.72 | 0.71 | 0.72 | 35.5 |
| SR | R2 | 1 | 0.0 | 1 | 0.0 | 0.006 | 11.8 | LOS B | 0.0 | 0.1 | 0.72 | 0.71 | 0.72 | 51.8 |
| Approach | | 2 | 0.0 | 2 | 0.0 | 0.006 | 10.3 | LOS B | 0.0 | 0.1 | 0.72 | 0.71 | 0.72 | 44.1 |
| North: Grancey (N) | | | | | | | | | | | | | | |
| NL | L2 | 2 | 0.0 | 2 | 0.0 | 0.028 | 6.2 | LOS A | 0.0 | 0.3 | 0.66 | 0.75 | 0.66 | 51.3 |
| NT | T1 | 11 | 0.0 | 11 | 0.0 | 0.028 | 11.3 | LOS B | 0.0 | 0.3 | 0.66 | 0.75 | 0.66 | 35.6 |
| Approach | | 13 | 0.0 | 13 | 0.0 | 0.028 | 10.4 | LOS B | 0.0 | 0.3 | 0.66 | 0.75 | 0.66 | 39.8 |
| West: GEH (W) | | | | | | | | | | | | | | |
| WL | L2 | 4 | 0.0 | 4 | 0.0 | 0.002 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 64.3 |
| WT | T1 | 868 | 12.5 | 868 | 12.5 | 0.257 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| Approach | | 873 | 12.4 | 873 | 12.4 | 0.257 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.7 |
| All Vehicles | | 887 | 12.2 | 887 | 12.2 | 0.257 | 0.3 | NA | 0.0 | 0.3 | 0.01 | 0.02 | 0.01 | 79.2 |

## MOVEMENT SUMMARY

**Site: Ki2-S [GEH-Grancey-South-Leg-AM-2022 (Site Folder: Exisiting Oct 2022)]**

**Network: N101 [Existing-AM-Oct-2022 (Network Folder: Network)]**

Southern side of GEH/ Grancey Ave intersection with existing Oct 2022 AM Peak Hour surveyed volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: GEH (E) | | | | | | | | | | | | | | |
| ET | T1 | 923 | 11.5 | 923 | 11.5 | 0.275 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| ER | R2 | 1 | 0.0 | 1 | 0.0 | 0.001 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 63.7 |
| Approach | | 924 | 11.5 | 924 | 11.5 | 0.275 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| North: Median | | | | | | | | | | | | | | |
| NR | R2 | 11 | 0.0 | 11 | 0.0 | 0.028 | 9.9 | LOS A | 0.0 | 0.3 | 0.72 | 0.82 | 0.72 | 6.0 |
| Approach | | 11 | 0.0 | 11 | 0.0 | 0.028 | 9.9 | LOS A | 0.0 | 0.3 | 0.72 | 0.82 | 0.72 | 6.0 |
| All Vehicles | | 935 | 11.4 | 935 | 11.4 | 0.275 | 0.2 | NA | 0.0 | 0.3 | 0.01 | 0.01 | 0.01 | 79.4 |

## MOVEMENT SUMMARY

**Site: Ki1-N [Coppin-GEH-North-Leg-PM-2022 (Site Folder: Exisiting Oct 2022)]** — **Network: N101 [Existing-PM-Oct-2022 (Network Folder: Network)]**

Northern side of Coppin Rd/ GEH intersection with existing Oct 2022 PM Peak Hour surveyed volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Median | | | | | | | | | | | | | | |
| ST | T1 | 46 | 0.0 | 46 | 0.0 | 0.255 | 21.4 | LOS C | 0.4 | 2.6 | 0.87 | 0.95 | 0.97 | 25.6 |
| SR | R2 | 5 | 0.0 | 5 | 0.0 | 0.255 | 27.6 | LOS D | 0.4 | 2.6 | 0.87 | 0.95 | 0.97 | 3.5 |
| Approach | | 52 | 0.0 | 52 | 0.0 | 0.255 | 22.1 | LOS C | 0.4 | 2.6 | 0.87 | 0.95 | 0.97 | 24.3 |
| North: Coppin (N) | | | | | | | | | | | | | | |
| NL | L2 | 25 | 0.0 | 25 | 0.0 | 0.093 | 7.5 | LOS A | 0.1 | 0.8 | 0.64 | 0.78 | 0.64 | 33.1 |
| NT | T1 | 12 | 0.0 | 12 | 0.0 | 0.093 | 20.8 | LOS C | 0.1 | 0.8 | 0.64 | 0.78 | 0.64 | 33.1 |
| Approach | | 37 | 0.0 | 37 | 0.0 | 0.093 | 11.7 | LOS B | 0.1 | 0.8 | 0.64 | 0.78 | 0.64 | 33.1 |
| West: GEH (W) | | | | | | | | | | | | | | |
| WL | L2 | 36 | 0.0 | 36 | 0.0 | 0.019 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 61.5 |
| WT | T1 | 1002 | 11.0 | 1002 | 11.0 | 0.297 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| WR | R2 | 64 | 1.6 | 64 | 1.6 | 0.041 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 60.2 |
| Approach | | 1102 | 10.1 | 1102 | 10.1 | 0.297 | 0.7 | NA | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 77.1 |
| All Vehicles | | 1191 | 9.4 | 1191 | 9.4 | 0.297 | 1.9 | NA | 0.4 | 2.6 | 0.06 | 0.12 | 0.06 | 70.8 |

## MOVEMENT SUMMARY

**Site: Ki1-S [Coppin-GEH-South-Leg-PM-2022 (Site Folder: Exisiting Oct 2022)]** — **Network: N101 [Existing-PM-Oct-2022 (Network Folder: Network)]**

Southern side of Coppin Rd/ GEH intersection with existing Oct 2022 PM Peak Hour surveyed volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Coppin (S) | | | | | | | | | | | | | | |
| SL | L2 | 74 | 2.9 | 74 | 2.9 | 0.143 | 7.6 | LOS A | 0.2 | 1.5 | 0.57 | 0.76 | 0.57 | 53.7 |
| ST | T1 | 11 | 0.0 | 11 | 0.0 | 0.143 | 19.2 | LOS C | 0.2 | 1.5 | 0.57 | 0.76 | 0.57 | 38.4 |
| Approach | | 84 | 2.5 | 84 | 2.5 | 0.143 | 9.0 | LOS A | 0.2 | 1.5 | 0.57 | 0.76 | 0.57 | 52.6 |
| East: GEH (E) | | | | | | | | | | | | | | |
| EL | L2 | 6 | 0.0 | 6 | 0.0 | 0.003 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 65.0 |
| ET | T1 | 961 | 11.5 | 961 | 11.5 | 0.286 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| ER | R2 | 41 | 0.0 | 41 | 0.0 | 0.023 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 63.7 |
| Approach | | 1008 | 11.0 | 1008 | 11.0 | 0.286 | 0.4 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 79.3 |
| North: Median | | | | | | | | | | | | | | |
| NT | T1 | 63 | 1.7 | 63 | 1.7 | 0.339 | 20.3 | LOS C | 0.5 | 3.8 | 0.87 | 0.98 | 1.05 | 29.1 |
| NR | R2 | 13 | 0.0 | 13 | 0.0 | 0.339 | 28.5 | LOS D | 0.5 | 3.8 | 0.87 | 0.98 | 1.05 | 44.6 |
| Approach | | 76 | 1.4 | 76 | 1.4 | 0.339 | 21.7 | LOS C | 0.5 | 3.8 | 0.87 | 0.98 | 1.05 | 31.9 |
| All Vehicles | | 1168 | 9.7 | 1168 | 9.7 | 0.339 | 2.4 | NA | 0.5 | 3.8 | 0.10 | 0.14 | 0.11 | 74.1 |

## MOVEMENT SUMMARY

**Site: Ki2-N [GEH-Grancey-North-Leg-PM-2022 (Site Folder: Exisiting Oct 2022)]**

**Network: N101 [Existing-PM-Oct-2022 (Network Folder: Network)]**

Northern side of Grancey Ave/ GEH intersection with existing Oct 2022 surveyed AM Peak Hour volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Median | | | | | | | | | | | | | | |
| ST | T1 | 5 | 0.0 | 5 | 0.0 | 0.031 | 12.1 | LOS B | 0.0 | 0.3 | 0.79 | 0.87 | 0.79 | 32.6 |
| SR | R2 | 3 | 0.0 | 3 | 0.0 | 0.031 | 16.3 | LOS C | 0.0 | 0.3 | 0.79 | 0.87 | 0.79 | 47.9 |
| Approach | | 8 | 0.0 | 8 | 0.0 | 0.031 | 13.7 | LOS B | 0.0 | 0.3 | 0.79 | 0.87 | 0.79 | 38.7 |
| North: Grancey (N) | | | | | | | | | | | | | | |
| NL | L2 | 3 | 0.0 | 3 | 0.0 | 0.010 | 6.6 | LOS A | 0.0 | 0.1 | 0.61 | 0.66 | 0.61 | 51.9 |
| NT | T1 | 2 | 0.0 | 2 | 0.0 | 0.010 | 14.1 | LOS B | 0.0 | 0.1 | 0.61 | 0.66 | 0.61 | 36.5 |
| Approach | | 5 | 0.0 | 5 | 0.0 | 0.010 | 9.6 | LOS A | 0.0 | 0.1 | 0.61 | 0.66 | 0.61 | 47.8 |
| West: GEH (W) | | | | | | | | | | | | | | |
| WL | L2 | 4 | 0.0 | 4 | 0.0 | 0.002 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 64.3 |
| WT | T1 | 1028 | 10.7 | 1028 | 10.7 | 0.299 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| Approach | | 1033 | 10.7 | 1033 | 10.7 | 0.299 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.7 |
| All Vehicles | | 1046 | 10.6 | 1046 | 10.6 | 0.299 | 0.3 | NA | 0.0 | 0.3 | 0.01 | 0.01 | 0.01 | 79.3 |

## MOVEMENT SUMMARY

**Site: Ki2-S [GEH-Grancey-South-Leg-PM-2022 (Site Folder: Exisiting Oct 2022)]**

**Network: N101 [Existing-PM-Oct-2022 (Network Folder: Network)]**

Southern side of GEH/ Grancey Ave intersection with existing Oct 2022 AM Peak Hour surveyed volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: GEH (E) | | | | | | | | | | | | | | |
| ET | T1 | 1006 | 11.0 | 1006 | 11.0 | 0.298 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| ER | R2 | 8 | 0.0 | 8 | 0.0 | 0.005 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 63.7 |
| Approach | | 1015 | 10.9 | 1015 | 10.9 | 0.298 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.01 | 0.00 | 79.6 |
| North: Median | | | | | | | | | | | | | | |
| NR | R2 | 2 | 0.0 | 2 | 0.0 | 0.006 | 11.2 | LOS B | 0.0 | 0.1 | 0.75 | 0.76 | 0.75 | 5.4 |
| Approach | | 2 | 0.0 | 2 | 0.0 | 0.006 | 11.2 | LOS B | 0.0 | 0.1 | 0.75 | 0.76 | 0.75 | 5.4 |
| All Vehicles | | 1017 | 10.9 | 1017 | 10.9 | 0.298 | 0.2 | NA | 0.0 | 0.1 | 0.00 | 0.01 | 0.00 | 79.5 |

# FORECAST (EXISTING + DEVELOPMENT) INTERSECTION PERFORMANCE REPORTS

# MOVEMENT SUMMARY

**Site: Ki1-N [Coppin-GEH-North-Leg-AM-2022+Dev (Site Folder: Exisiting + Development)]**

**Network: N101 [Existing+Dev-AM (Network Folder: Network)]**

Northern side of Coppin Rd/ GEH intersection with existing Oct 2022 surveyed AM Peak Hour volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Median | | | | | | | | | | | | | | |
| ST | T1 | 40 | 0.0 | 40 | 0.0 | 0.183 | 13.6 | LOS B | 0.3 | 1.8 | 0.80 | 0.88 | 0.81 | 30.4 |
| SR | R2 | 11 | 0.0 | 11 | 0.0 | 0.183 | 19.4 | LOS C | 0.3 | 1.8 | 0.80 | 0.88 | 0.81 | 4.9 |
| Approach | | 51 | 0.0 | 51 | 0.0 | 0.183 | 14.8 | LOS B | 0.3 | 1.8 | 0.80 | 0.88 | 0.81 | 27.8 |
| North: Coppin (N) | | | | | | | | | | | | | | |
| NL | L2 | 45 | 4.7 | 45 | 4.7 | 0.193 | 7.0 | LOS A | 0.2 | 1.7 | 0.61 | 0.77 | 0.61 | 33.9 |
| NT | T1 | 32 | 3.3 | 32 | 3.3 | 0.193 | 16.3 | LOS C | 0.2 | 1.7 | 0.61 | 0.77 | 0.61 | 33.9 |
| Approach | | 77 | 4.1 | 77 | 4.1 | 0.193 | 10.8 | LOS B | 0.2 | 1.7 | 0.61 | 0.77 | 0.61 | 33.9 |
| West: GEH (W) | | | | | | | | | | | | | | |
| WL | L2 | 22 | 0.0 | 22 | 0.0 | 0.012 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 61.5 |
| WT | T1 | 824 | 12.9 | 824 | 12.9 | 0.245 | 0.0 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| WR | R2 | 78 | 6.8 | 78 | 6.8 | 0.064 | 6.8 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 60.2 |
| Approach | | 924 | 12.1 | 924 | 12.1 | 0.245 | 0.8 | NA | 0.0 | 0.0 | 0.00 | 0.07 | 0.00 | 76.8 |
| All Vehicles | | 1052 | 10.9 | 1052 | 10.9 | 0.245 | 2.2 | NA | 0.3 | 1.8 | 0.08 | 0.16 | 0.08 | 68.8 |

# MOVEMENT SUMMARY

**Site: Ki1-S [Coppin-GEH-South-Leg-AM-2022+Dev (Site Folder: Exisiting + Development)]**

**Network: N101 [Existing+Dev-AM (Network Folder: Network)]**

Southern side of Coppin Rd/ GEH intersection with existing Oct 2022 surveyed AM Peak Hour volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Coppin (S) | | | | | | | | | | | | | | |
| SL | L2 | 82 | 2.6 | 82 | 2.6 | 0.154 | 7.3 | LOS A | 0.2 | 1.6 | 0.56 | 0.75 | 0.56 | 54.0 |
| ST | T1 | 14 | 0.0 | 14 | 0.0 | 0.154 | 17.1 | LOS C | 0.2 | 1.6 | 0.56 | 0.75 | 0.56 | 38.8 |
| Approach | | 96 | 2.2 | 96 | 2.2 | 0.154 | 8.7 | LOS A | 0.2 | 1.6 | 0.56 | 0.75 | 0.56 | 52.8 |
| East: GEH (E) | | | | | | | | | | | | | | |
| EL | L2 | 3 | 0.0 | 3 | 0.0 | 0.002 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 65.0 |
| ET | T1 | 897 | 11.9 | 897 | 11.9 | 0.271 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| ER | R2 | 37 | 0.0 | 37 | 0.0 | 0.020 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 63.7 |
| Approach | | 937 | 11.3 | 937 | 11.3 | 0.271 | 0.4 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 79.4 |
| North: Median | | | | | | | | | | | | | | |
| NT | T1 | 80 | 6.6 | 80 | 6.6 | 0.431 | 20.8 | LOS C | 0.8 | 5.5 | 0.87 | 1.02 | 1.17 | 28.7 |
| NR | R2 | 23 | 0.0 | 23 | 0.0 | 0.431 | 27.5 | LOS D | 0.8 | 5.5 | 0.87 | 1.02 | 1.17 | 44.1 |
| Approach | | 103 | 5.1 | 103 | 5.1 | 0.431 | 22.3 | LOS C | 0.8 | 5.5 | 0.87 | 1.02 | 1.17 | 32.4 |
| All Vehicles | | 1136 | 10.0 | 1136 | 10.0 | 0.431 | 3.1 | NA | 0.8 | 5.5 | 0.13 | 0.18 | 0.15 | 72.7 |

## MOVEMENT SUMMARY

**Site: Ki2-N [GEH-Grancey-North-Leg-AM-2022+Dev (Site Folder: Exisiting + Development)]**

**Network: N101 [Existing+Dev-AM (Network Folder: Network)]**

Northern side of Grancey Ave/ GEH intersection with existing Oct 2022 surveyed AM Peak Hour volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Median | | | | | | | | | | | | | | |
| ST | T1 | 2 | 0.0 | 2 | 0.0 | 0.009 | 8.9 | LOS A | 0.0 | 0.1 | 0.72 | 0.72 | 0.72 | 35.8 |
| SR | R2 | 1 | 0.0 | 1 | 0.0 | 0.009 | 12.2 | LOS B | 0.0 | 0.1 | 0.72 | 0.72 | 0.72 | 52.2 |
| Approach | | 3 | 0.0 | 3 | 0.0 | 0.009 | 10.0 | LOS B | 0.0 | 0.1 | 0.72 | 0.72 | 0.72 | 41.6 |
| North: Grancey (N) | | | | | | | | | | | | | | |
| NL | L2 | 5 | 0.0 | 5 | 0.0 | 0.067 | 6.3 | LOS A | 0.1 | 0.7 | 0.67 | 0.80 | 0.67 | 51.1 |
| NT | T1 | 25 | 0.0 | 25 | 0.0 | 0.067 | 11.6 | LOS B | 0.1 | 0.7 | 0.67 | 0.80 | 0.67 | 35.4 |
| Approach | | 31 | 0.0 | 31 | 0.0 | 0.067 | 10.7 | LOS B | 0.1 | 0.7 | 0.67 | 0.80 | 0.67 | 39.7 |
| West: GEH (W) | | | | | | | | | | | | | | |
| WL | L2 | 11 | 0.0 | 11 | 0.0 | 0.006 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 64.3 |
| WT | T1 | 868 | 12.5 | 868 | 12.5 | 0.257 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| Approach | | 879 | 12.3 | 879 | 12.3 | 0.257 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.01 | 0.00 | 79.6 |
| All Vehicles | | 913 | 11.9 | 913 | 11.9 | 0.257 | 0.5 | NA | 0.1 | 0.7 | 0.02 | 0.04 | 0.02 | 78.5 |

## MOVEMENT SUMMARY

**Site: Ki2-S [GEH-Grancey-South-Leg-AM-2022+Dev (Site Folder: Exisiting + Development)]**

**Network: N101 [Existing+Dev-AM (Network Folder: Network)]**

Southern side of GEH/ Grancey Ave intersection with existing Oct 2022 AM Peak Hour surveyed volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: GEH (E) | | | | | | | | | | | | | | |
| ET | T1 | 923 | 11.5 | 923 | 11.5 | 0.275 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| ER | R2 | 2 | 0.0 | 2 | 0.0 | 0.001 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 63.7 |
| Approach | | 925 | 11.5 | 925 | 11.5 | 0.275 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.7 |
| North: Median | | | | | | | | | | | | | | |
| NR | R2 | 25 | 0.0 | 25 | 0.0 | 0.066 | 10.2 | LOS B | 0.1 | 0.6 | 0.73 | 0.85 | 0.73 | 5.8 |
| Approach | | 25 | 0.0 | 25 | 0.0 | 0.066 | 10.2 | LOS B | 0.1 | 0.6 | 0.73 | 0.85 | 0.73 | 5.8 |
| All Vehicles | | 951 | 11.2 | 951 | 11.2 | 0.275 | 0.4 | NA | 0.1 | 0.6 | 0.02 | 0.02 | 0.02 | 78.9 |

# MOVEMENT SUMMARY

**Site: Ki1-N [Coppin-GEH-North-Leg-PM-2022+Dev (Site Folder: Exisiting + Development)]**

**Network: N101 [Existing+Dev-PM (Network Folder: Network)]**

Northern side of Coppin Rd/ GEH intersection with existing Oct 2022 PM Peak Hour surveyed volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Median | | | | | | | | | | | | | | |
| ST | T1 | 48 | 0.0 | 48 | 0.0 | 0.268 | 21.9 | LOS C | 0.4 | 2.8 | 0.87 | 0.95 | 0.98 | 25.3 |
| SR | R2 | 5 | 0.0 | 5 | 0.0 | 0.268 | 28.4 | LOS D | 0.4 | 2.8 | 0.87 | 0.95 | 0.98 | 3.4 |
| Approach | | 54 | 0.0 | 54 | 0.0 | 0.268 | 22.5 | LOS C | 0.4 | 2.8 | 0.87 | 0.95 | 0.98 | 24.1 |
| North: Coppin (N) | | | | | | | | | | | | | | |
| NL | L2 | 31 | 0.0 | 31 | 0.0 | 0.119 | 7.5 | LOS A | 0.2 | 1.1 | 0.65 | 0.80 | 0.65 | 32.8 |
| NT | T1 | 15 | 0.0 | 15 | 0.0 | 0.119 | 21.1 | LOS C | 0.2 | 1.1 | 0.65 | 0.80 | 0.65 | 32.8 |
| Approach | | 45 | 0.0 | 45 | 0.0 | 0.119 | 11.9 | LOS B | 0.2 | 1.1 | 0.65 | 0.80 | 0.65 | 32.8 |
| West: GEH (W) | | | | | | | | | | | | | | |
| WL | L2 | 40 | 0.0 | 40 | 0.0 | 0.022 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 61.5 |
| WT | T1 | 1002 | 11.0 | 1002 | 11.0 | 0.297 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| WR | R2 | 64 | 1.6 | 64 | 1.6 | 0.044 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 60.2 |
| Approach | | 1106 | 10.1 | 1106 | 10.1 | 0.297 | 0.7 | NA | 0.0 | 0.0 | 0.00 | 0.06 | 0.00 | 77.0 |
| All Vehicles | | 1205 | 9.3 | 1205 | 9.3 | 0.297 | 2.1 | NA | 0.4 | 2.8 | 0.06 | 0.13 | 0.07 | 70.1 |

# MOVEMENT SUMMARY

**Site: Ki1-S [Coppin-GEH-South-Leg-PM-2022+Dev (Site Folder: Exisiting + Development)]**

**Network: N101 [Existing+Dev-PM (Network Folder: Network)]**

Southern side of Coppin Rd/ GEH intersection with existing Oct 2022 PM Peak Hour surveyed volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Coppin (S) | | | | | | | | | | | | | | |
| SL | L2 | 74 | 2.9 | 74 | 2.9 | 0.148 | 7.6 | LOS A | 0.2 | 1.5 | 0.57 | 0.76 | 0.57 | 53.6 |
| ST | T1 | 12 | 0.0 | 12 | 0.0 | 0.148 | 19.3 | LOS C | 0.2 | 1.5 | 0.57 | 0.76 | 0.57 | 38.3 |
| Approach | | 85 | 2.5 | 85 | 2.5 | 0.148 | 9.2 | LOS A | 0.2 | 1.5 | 0.57 | 0.76 | 0.57 | 52.4 |
| East: GEH (E) | | | | | | | | | | | | | | |
| EL | L2 | 6 | 0.0 | 6 | 0.0 | 0.003 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 65.0 |
| ET | T1 | 961 | 11.5 | 961 | 11.5 | 0.286 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| ER | R2 | 46 | 0.0 | 46 | 0.0 | 0.026 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 63.7 |
| Approach | | 1014 | 10.9 | 1014 | 10.9 | 0.286 | 0.4 | NA | 0.0 | 0.0 | 0.00 | 0.03 | 0.00 | 79.3 |
| North: Median | | | | | | | | | | | | | | |
| NT | T1 | 68 | 1.5 | 68 | 1.5 | 0.383 | 21.5 | LOS C | 0.6 | 4.4 | 0.88 | 1.00 | 1.11 | 28.4 |
| NR | R2 | 16 | 0.0 | 16 | 0.0 | 0.383 | 29.9 | LOS D | 0.6 | 4.4 | 0.88 | 1.00 | 1.11 | 43.5 |
| Approach | | 84 | 1.3 | 84 | 1.3 | 0.383 | 23.0 | LOS C | 0.6 | 4.4 | 0.88 | 1.00 | 1.11 | 31.5 |
| All Vehicles | | 1183 | 9.6 | 1183 | 9.6 | 0.383 | 2.7 | NA | 0.6 | 4.4 | 0.10 | 0.15 | 0.12 | 73.7 |

## MOVEMENT SUMMARY

**Site: Ki2-N [GEH-Grancey-North-Leg-PM-2022+Dev (Site Folder: Exisiting + Development)]**

**Network: N101 [Existing+Dev-PM (Network Folder: Network)]**

Northern side of Grancey Ave/ GEH intersection with existing Oct 2022 surveyed AM Peak Hour volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| South: Median | | | | | | | | | | | | | | |
| ST | T1 | 13 | 0.0 | 13 | 0.0 | 0.055 | 12.4 | LOS B | 0.1 | 0.5 | 0.79 | 0.87 | 0.79 | 32.9 |
| SR | R2 | 3 | 0.0 | 3 | 0.0 | 0.055 | 16.8 | LOS C | 0.1 | 0.5 | 0.79 | 0.87 | 0.79 | 48.3 |
| Approach | | 16 | 0.0 | 16 | 0.0 | 0.055 | 13.3 | LOS B | 0.1 | 0.5 | 0.79 | 0.87 | 0.79 | 36.2 |
| North: Grancey (N) | | | | | | | | | | | | | | |
| NL | L2 | 9 | 0.0 | 9 | 0.0 | 0.030 | 6.7 | LOS A | 0.0 | 0.3 | 0.62 | 0.72 | 0.62 | 51.8 |
| NT | T1 | 6 | 0.0 | 6 | 0.0 | 0.030 | 14.5 | LOS B | 0.0 | 0.3 | 0.62 | 0.72 | 0.62 | 36.3 |
| Approach | | 16 | 0.0 | 16 | 0.0 | 0.030 | 9.8 | LOS A | 0.0 | 0.3 | 0.62 | 0.72 | 0.62 | 47.6 |
| West: GEH (W) | | | | | | | | | | | | | | |
| WL | L2 | 11 | 0.0 | 11 | 0.0 | 0.006 | 6.9 | LOS A | 0.0 | 0.0 | 0.00 | 0.63 | 0.00 | 64.3 |
| WT | T1 | 1028 | 10.7 | 1028 | 10.7 | 0.299 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| Approach | | 1039 | 10.6 | 1039 | 10.6 | 0.299 | 0.1 | NA | 0.0 | 0.0 | 0.00 | 0.01 | 0.00 | 79.6 |
| All Vehicles | | 1071 | 10.3 | 1071 | 10.3 | 0.299 | 0.5 | NA | 0.1 | 0.5 | 0.02 | 0.03 | 0.02 | 78.6 |

## MOVEMENT SUMMARY

**Site: Ki2-S [GEH-Grancey-South-Leg-PM-2022+Dev (Site Folder: Exisiting + Development)]**

**Network: N101 [Existing+Dev-PM (Network Folder: Network)]**

Southern side of GEH/ Grancey Ave intersection with existing Oct 2022 AM Peak Hour surveyed volumes.
Site Category: Existing Design
Give-Way (Two-Way)

**Vehicle Movement Performance**

| Mov ID | Turn | DEMAND FLOWS [ Total veh/h | HV ] % | ARRIVAL FLOWS [ Total veh/h | HV ] % | Deg. Satn v/c | Aver. Delay sec | Level of Service | AVERAGE BACK OF QUEUE [ Veh. veh | Dist ] m | Prop. Que | Effective Stop Rate | Aver. No. Cycles | Aver. Speed km/h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| East: GEH (E) | | | | | | | | | | | | | | |
| ET | T1 | 1006 | 11.0 | 1006 | 11.0 | 0.298 | 0.1 | LOS A | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 79.8 |
| ER | R2 | 16 | 0.0 | 16 | 0.0 | 0.009 | 6.7 | LOS A | 0.0 | 0.0 | 0.00 | 0.64 | 0.00 | 63.7 |
| Approach | | 1022 | 10.8 | 1022 | 10.8 | 0.298 | 0.2 | NA | 0.0 | 0.0 | 0.00 | 0.01 | 0.00 | 79.5 |
| North: Median | | | | | | | | | | | | | | |
| NR | R2 | 6 | 0.0 | 6 | 0.0 | 0.019 | 11.5 | LOS B | 0.0 | 0.2 | 0.76 | 0.84 | 0.76 | 5.2 |
| Approach | | 6 | 0.0 | 6 | 0.0 | 0.019 | 11.5 | LOS B | 0.0 | 0.2 | 0.76 | 0.84 | 0.76 | 5.2 |
| All Vehicles | | 1028 | 10.7 | 1028 | 10.7 | 0.298 | 0.2 | NA | 0.0 | 0.2 | 0.00 | 0.02 | 0.00 | 79.2 |

## 10 Year Horizon @ 2% per annum for GEH through traffic

Traffic growth on Great Eastern Hwy has been relatively stagnant since 2017/18, as shown in Figure 13 below.

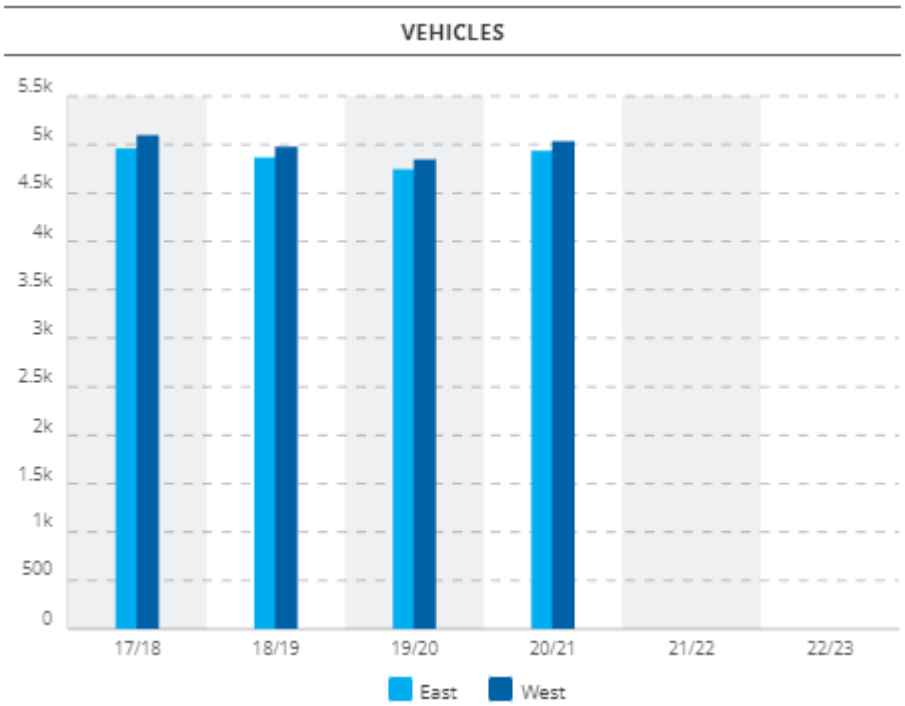



Figure 13 – GEH west of Great Southern Hwy: Monday to Friday Volumes last 4 years

It is recognised that the above is from a 24-hour count site in a rural location east of the Mundaring townsite and that annual growth on GEH is likely to occur over the next 10 years due to development in the Mundaring area. To assess the impact of this, sensitivity modelling has been undertaken based on increasing the existing + development data GEH through volumes by 2% per annum for the next 10 years. This has indicated negligible changes in forecast performance of the network, as shown in Figure 14 and Figure 15 on the following pages.

## DEGREE OF SATURATION

**Ratio of Demand Volume to Capacity, v/c ratio (worst lane for the approach)**

**Network: N101 [Existing+Dev-AM - 10 Year (Network Folder: Network - 10 Year)]**

With Development + 10 Years Growth @ 2%
Network Category: Future Conditions 2
Design Life Analysis (Final Year): Results for 10 years

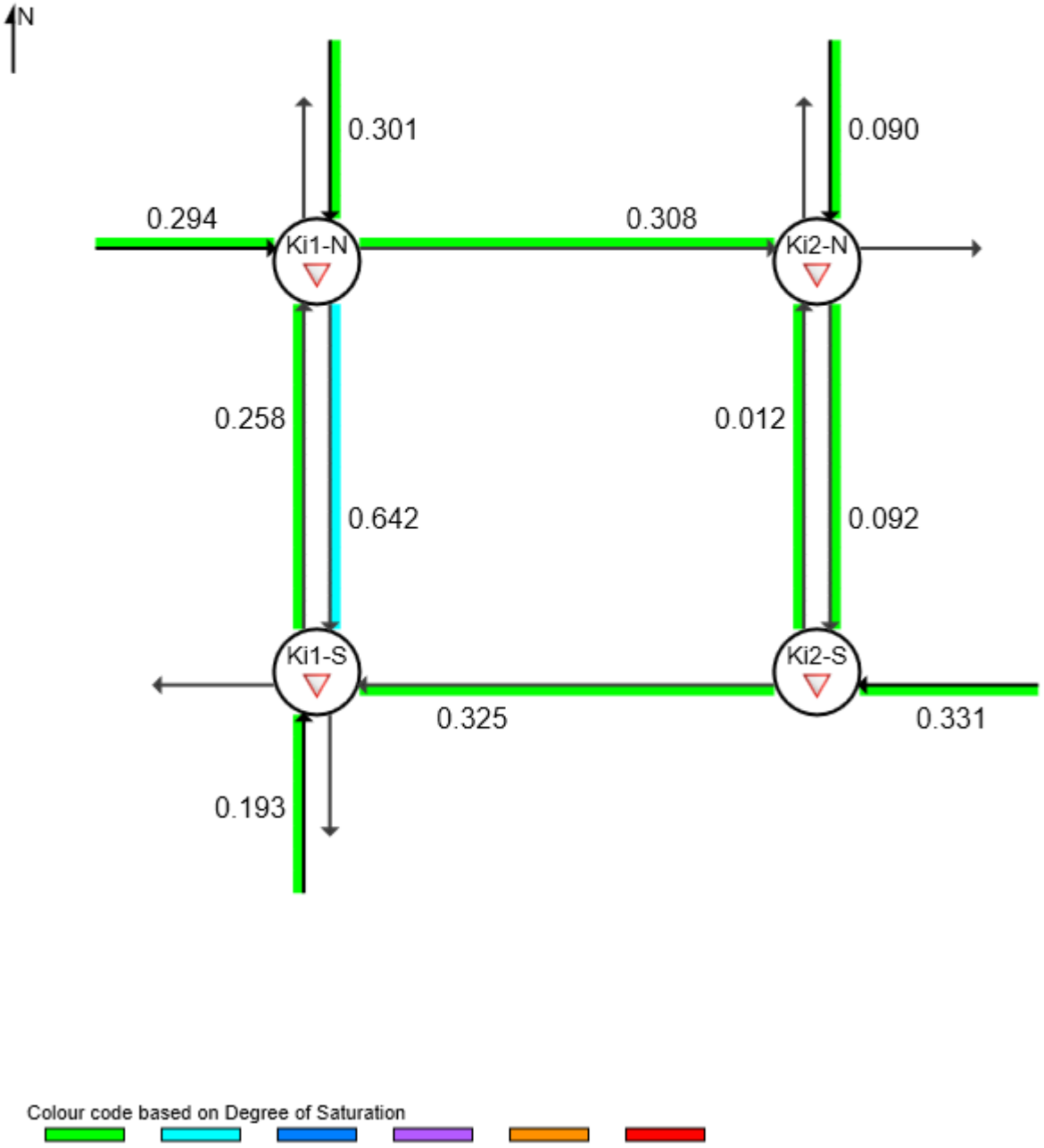



Figure 14 – Forecast AM Peak Hour Degree of Saturation with Development and 2% Growth in 10 Years

## DEGREE OF SATURATION

**Ratio of Demand Volume to Capacity, v/c ratio (worst lane for the approach)**

**Network: N101 [Existing+Dev-PM - 10 Year (Network Folder: Network - 10 Year)]**

With Development + 10 Years Growth @ 2%
Network Category: Future Conditions 2
Design Life Analysis (Final Year): Results for 10 years

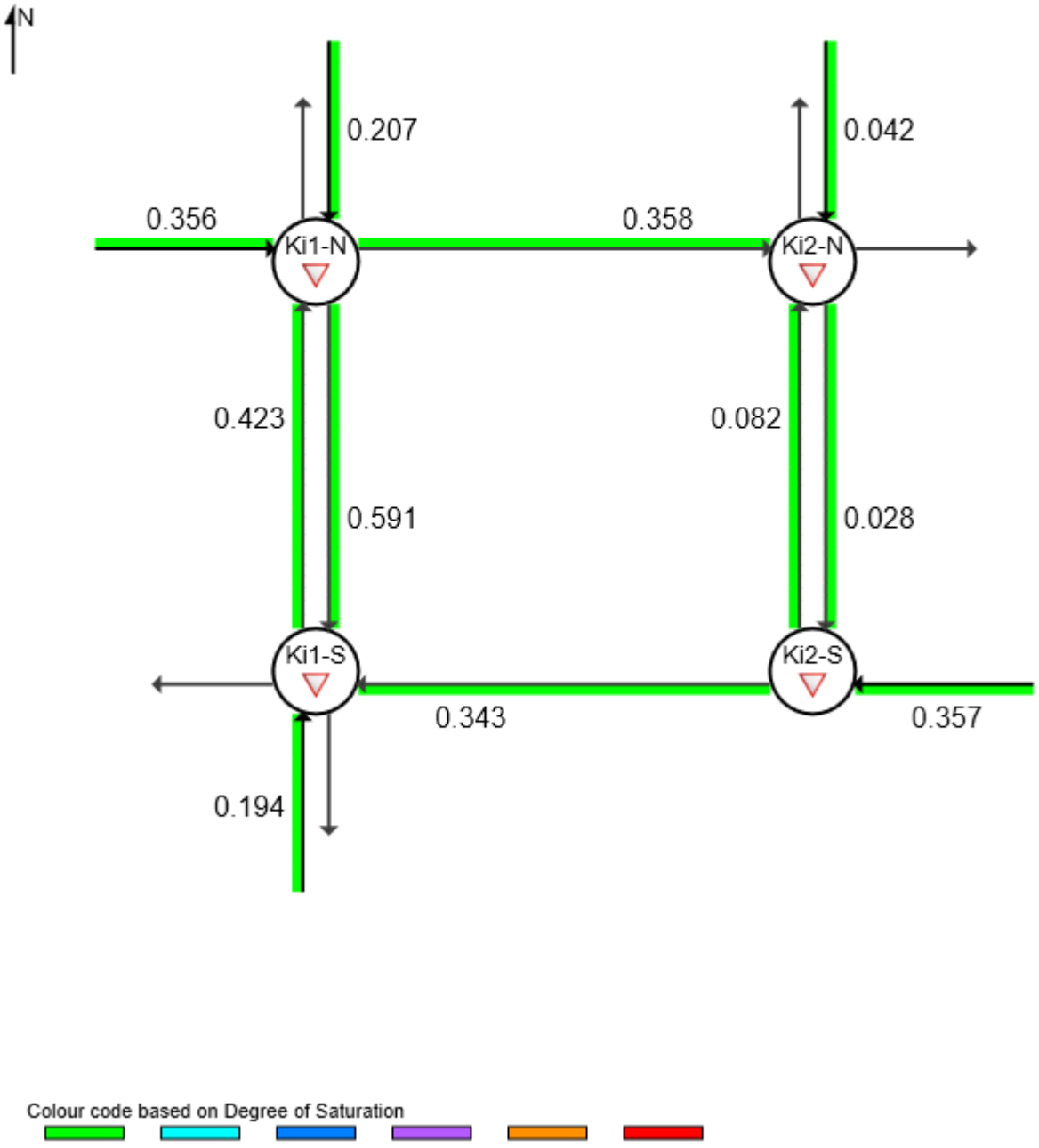



Figure 15 – Forecast AM Peak Hour Degree of Saturation with Development and 2% Growth in 10 Years

## APPENDIX C WAPC TRANSPORT IMPACT ASSESSMENT CHECKLIST

Checklist for a transport impact assessment of a planning scheme, structure plan or activity centre plan

- Tick the 'provided' column for items for which information is provided.
- Enter N/A in the 'provided' column if the item is not appropriate and enter the reason in the comments column.
- Provide brief comments on any relevant issues.
- Provide brief description of any proposed transport improvements, for example, new bus routes or new traffic signals or extending existing footpath to the site.

| ITEM | PROVIDED | COMMENTS |
|---|---|---|
| **Summary** | ✓ | |
| **Introduction/Background** | ✓ | |
| **Structure plan proposal** | ✓ | |
| regional context | ✓ | |
| proposed land uses | ✓ | |
| table of land uses and quantities | NA | 51 residential lots and POS shown on plan. |
| major attractors/generators | ✓ | |
| specific issues | ✓ | GEH Intersections. |
| **Existing situation** | ✓ | |
| existing land uses within structure plan | | Large rural lots with some residences. |
| existing land uses within 800 metres of structure plan area | ✓ | |
| existing road network within structure plan area | ✓ | |
| existing pedestrian/cycle networks within structure plan area | ✓ | |
| existing public transport services within structure plan area | ✓ | |
| existing road network within 2 (or 5) km of structure plan area | ✓ | |
| traffic flows on roads within structure plan area (PM and/or AM peak hours) | | Daily flows only due to very low volumes. |
| traffic flows on roads within 2 (or 5) km of structure plan area (AM and/ or PM peak hours) | ✓ | |
| existing pedestrian/cycle networks within 800m of structure plan area | ✓ | |
| existing public transport services within 800m of structure plan area | ✓ | |

| ITEM | PROVIDED | COMMENTS |
|---|---|---|
| **Proposed internal transport networks** | NA | |
| changes/additions to existing road network or proposed new road network | ✓ | Appendix A. |
| road reservation widths | ✓ | Appendix A. |
| road cross-sections & speed limits | ✗ | To be provided at sub-division stage. |
| intersection controls | ✗ | To be provided at sub-division stage. |
| pedestrian/cycle networks and crossing facilities | ✗ | To be provided at sub-division stage. |
| public transport routes | NA | Residents will use services on GEH. |
| **Changes to external transport networks** | NA | No changes proposed or warranted. |
| road network | NA | |
| intersection controls | NA | |
| pedestrian/cycle networks and crossing facilities | NA | |
| public transport services | NA | |
| **Integration with surrounding area** | ✓ | |
| trip attractors/generators within 800 metres | ✓ | |
| proposed changes to land uses within 800 metres | NA | None identified. |
| travel desire lines from structure plan to these attractors/generators | ✓ | Section 9.1 Trip Distribution Diagram. |
| adequacy of external transport networks | ✓ | |
| deficiencies in external transport networks | NA | None identified. |
| remedial measures to address deficiencies | NA | None identified. |
| **Analysis of internal transport networks** | ✓ | |
| assessment year(s) and time period(s) | ✓ | 10 Years – refer Appendix B. |
| structure plan generated traffic | ✓ | Section 9.1 Trip Distribution Diagram. |
| extraneous (through) traffic | NA | Not attractive for through use. |
| design traffic flows (that is, total traffic) | ✓ | Section 9.1 Trip Distribution Diagram. |
| road cross-sections | ✗ | To be provided at sub-division stage. |
| intersection controls | ✗ | To be provided at sub-division stage. |
| access strategy | NA | |

| ITEM | PROVIDED | COMMENTS |
|---|---|---|
| **Analysis of internal transport networks (cont.)** | ✓ | |
| pedestrian/cycle networks | × | To be provided at sub-division stage. |
| safe routes to schools | NA | No school within Structure Plan. |
| pedestrian permeability & efficiency | × | To be provided at sub-division stage. |
| access to public transport | × | To be provided at sub-division stage. |
| **Analysis of external transport networks** | ✓ | |
| extent of analysis | ✓ | Structure Plan, Coppin Rd/ GEH, GEH/ Grancey Ave & Coppin RD/ Thomas Rd intersections. |
| base flows for assessment year(s) | ✓ | |
| total traffic flows | ✓ | Within SIDRA Model and reports. |
| road cross-sections | NA | Recent aerial photos of existing intersection layouts provided. |
| intersection layouts & controls | ✓ | Recent aerial photos of existing intersection layouts provided. |
| pedestrian/cycle networks | ✓ | |
| **Conclusions** | ✓ | Included in Section 2: Summary. |

**Proponent's name**

**Company** Statewest Planning **Date**

**Transport assessor's name** David Wilkins

**Company** i3 consultants WA **Date** 2 December 2022

## TRANSPORT IMPACT ASSESSMENT REVISION CHECKLIST

Please include this checklist when providing revisions to transport impact assessments (TIAs) to the Department of Planning, to identify changes made.

**Name of planning application:** .....

**Date/revision no. of previous TIA:** .....

**Date/revision no. of revised TIA:** .....

| ITEM No. | INFORMATION/CHANGE REQUESTED | COMPLETE ✓ | PAGE No. |
|---|---|---|---|
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If information/changes not provided, please attach explanatory notes, using item no. to identify information/change request.