OFFICIAL

City of Melville

Attachment 5

Traffic Impact Assessment

Summary Sheet

Traffic Impact Assessment

City of Melville

Why was this study done?

This report was prepared to understand how growth expected as a result of the proposed Local Planning Scheme No. 6 (LPS6) density changes will impact on Melville's road network.

The Traffic Impact Assessment (TIA), prepared by consultants WSP, models road network impacts based on broader network growth expected over time, as well as the cumulative impact of the changes proposed under LPS6.

The TIA evaluates how this additional development will influence traffic demand, congestion, and network performance over time.

The study is not just about predicting traffic, it is about **understanding whether the City's transport system can keep pace with growth and what interventions are needed** to ensure it continues to function effectively and safely.

What scenarios were looked at?

The study looked at three scenarios, which were:

Baseline: This scenario is all the expected growth over the next 25 years, including all the existing and proposed structure plans for our activity centres. It does not include any of the proposed changes from the LPS6 Review.

'Density Approach 1' Core growth areas: LPS6 Review proposed change areas

'Density Approach 2' Additional growth areas: Further intensification along corridors (e.g. Canning Highway)

Volume difference: Example from report showing change in network flows from 2026 to 2051

Existing Transport Network Conditions (2026 Baseline)

Existing congestion

- Several corridors are already approaching or exceeding capacity, particularly:
  - Canning Hwy (east of North Lake Rd)
  - Leach Hwy (east of Riseley St)
  - South St (Murdoch Dr - Kwinana Fwy)

Current Traffic Volumes (Peak Hour)

- Canning Hwy: up to **3,000** vehicles/hour/direction
- Leach Hwy: up to **3,000** vehicles/hour/direction
- South St: up to **3,200** vehicles/hour/direction

Intersection performance

- Many intersections operate at an unsatisfactory Level of Service (LoS)
- This indicates long delays, high sensitivity to disruptions and potential safety risks at side streets.

Forecast Traffic Growth

Baseline Growth

- **Major corridors**: +500–1000 vehicles/hour/direction (Canning Hwy, Leach Hwy)
- **Secondary corridors**: +100–200 vehicles/hour/direction (Marmion St, South St)

Congestion and network capacity:

- **Canning Hwy**: severe congestion by 2041–2051
- **Leach Hwy**: shifts from 'at-capacity' to 'over-capacity'
- **South St**: reaches/exceeds capacity across key sections
- **Most intersections** along Canning Hwy, Leach Hwy, and South St **will be operating at LoS F (failure)** by 2041 and 2051.

Intersection performance is the **critical limiting factor** in the netowrk.

LPS6 Proposed Density Changes

- Traffic increases on key corridors are small (~≤100–250 veh/hr/direction)
- **Minimal additional congestion compared to baseline**
- Network performance remains poor but not significantly worse

Most congestion is driven by background or regional growth, not just LPS6 changes.

Public & Active Transport Accessibility

Public Transport Strengths:

- Mandurah line provides strong coverage with up to 12 trains/hour peak.
- Extensive bus network (39 bus routes)
- Most residents are within 15-30 minutes of an activity centre

Active Transport:

- There is an established cycle network, however there are **significant gaps** and **upgrades needed on major corridors**

Public transport accessibility is strong and represents a **key opportunity to absorb growth** - if mode shift can be achieved.

Why does this matter for the future?

Low density residential development and high private vehicle ownership create an environment with significantly greater household vehicle trip generation.

As density intensifies, vehicle ownership decreases along with vehicle trip generation.

This occurs for a number of reasons: smaller household sizes, greater accessibility to alternative transport and a reduced reliance on motor vehicles.

Interventions to limit congestion

The report makes it clear that traffic will increase in the City under all scenarios. A range of interventions are required to ensure a meaningful reduction in future driving demand, including:

- **Mode shift** - investment in the public and active transport networks are needed from both local and state governments.
- **Reduced car ownership rates** through higher density developments in suitable locations.
- **Targeted and reactive local road upgrades**.
- **Intersection upgrades** through signal timing optimisation, additional lanes, etc.
- Reiterate responsibility of **State government to invest in major road upgrades**.

City of Melville

Local Planning Scheme 6 (LPS6) Review

Transport Impact Assessment

May 2026

Question today
Imagine tomorrow
Create for the future

Local Planning Scheme 6 (LPS6) Review
Transport Impact Assessment

City of Melville

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Rev	Date	Details
A-WIP1	13/05/2026	Draft report (work-in-progress)
A-WIP2	19/05/2026	Draft report (work-in-progress)
A	27/05/2026	Draft report
B	28/05/2026	Updated report
B1	28/05/2026	Correction of Figure 3.1

	Name	Date
Prepared by:	J. Trieu	28/05/2026
Reviewed by:	J. Martin	28/05/2026
Approved by:	J. Martin	28/05/2026

WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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Executive summary

Overview

WSP was commissioned by the City of Melville to complete a transport impact assessment of the proposed Local Planning Scheme 6 changes. This would involve the uplift of density limits around the City of Melville, in addition to overall expected growth in dwellings under iterative changes to the planning framework unrelated to LPS6 and potential developments around the Murdoch and Bull Creek railway stations, and the Booragoon shopping centre.

Scenarios assessed

Three development scenarios were considered for the future year scenarios of 2041 and 2051:

- Base scenario, accounting for the expected change in dwellings under business-as-usual assumptions for most of the City of Melville, plus iterative changes to the planning framework by the City of Melville to account for future targeted growth around the Murdoch and Bull Creek train stations, Petra Street precinct and Bull Creek shopping centre. This would represent an increase of around 8,400 dwellings between 2026 and 2051.
- Scenario 1 (or Density Approach 1) extends the Base scenario by adding the proposed LPS6 changes in addition to the forecast background growth. This would represent an increase of around 12,100 dwellings between 2026 and 2051.
- Scenario 2 (or Density Approach 2) extends on Scenario 1, by including additional demand from other areas in Melville previously considered for density change, which the City of Melville are now recommending be removed from the scope of the LPS6 changes. This considered density increases along Canning Highway and additional increases around the Melville City Centre (Booragoon). This would represent an increase of around 14,300 dwellings between 2026 and 2051.

Modelling overview

Traffic modelling was completed of the City of Melville and considered the impacts of these different scenarios on the key road corridors and intersections within the City of Melville.

This modelling included a network traffic assignment model to understand traffic flows across the road network within the City of Melville, and potential congestion areas based on the Volume-Capacity Ratio. This metric compares the traffic demand to the estimated capacity for that section of road. A ratio of 0.9 typically indicates that the section of road has reached practical capacity and small incidents will lead to significant delays and queues. A ratio exceeding 1.0 indicates that the traffic demand exceeds the estimated capacity of that section of road.

In addition, intersection modelling for key intersections within the City of Melville was completed to understand the Degree of Saturation and Level of Service metrics. The Degree of Saturation metric is similar to the Volume-Capacity Ratio, however considers the different capacities achievable with different levels of green time at traffic lights. Level of Service is an A–F scale based on average vehicle delay, with LoS A–D considered satisfactory and LoS E–F considered unsatisfactory.

Base scenario impacts

Overall, this modelling identified that most of the impact in terms of congestion or deteriorated traffic network performance would be experienced by 2041 with the Base scenario assumptions. By 2041, significant traffic demand growth is expected under the Base scenario on the Canning Highway and Leach Highway corridors (of around 500–1000 vehicles per hour per direction), and modest growth on Marmion Street and South Street (of around 100–200 vehicles per hour per direction). By 2051, there would be a smaller incremental increase in traffic demand on these corridors.

Under the Base scenario, Volume-Capacity Ratio over 1.1 is expected for the Canning Highway east of North Lake Road, highlighting that this section of road would significantly exceed its capacity and there would be extensive queuing and delay during peak periods. In addition, Leach Highway east of Riseley Street would be at or exceeding capacity, and South Street between Murdoch Drive and Kwinana Freeway would be at or exceeding capacity.

Many intersections along Leach Highway and South Street are also performing unsatisfactorily. This highlights that while the VCR results indicate some sections of Leach Highway and South Street have some remaining capacity, the intersection operations are leading to relatively large delays for drivers.

These areas of congestion are summarised in Figure ES.1, indicating the 2051 Volume-Capacity Ratios and intersection performance (of the AM peak hour).

Some of these intersections are priority-controlled intersections, which also indicates that drivers exiting side roads are not able to easily access the major arterial roads. As a result, this may lead to unsafe gap acceptance following impatience while waiting for a safe gap. This situation is likely worsened from the existing 2026 conditions, with increasing conflicting traffic and therefore further reduced frequency of safe gaps.

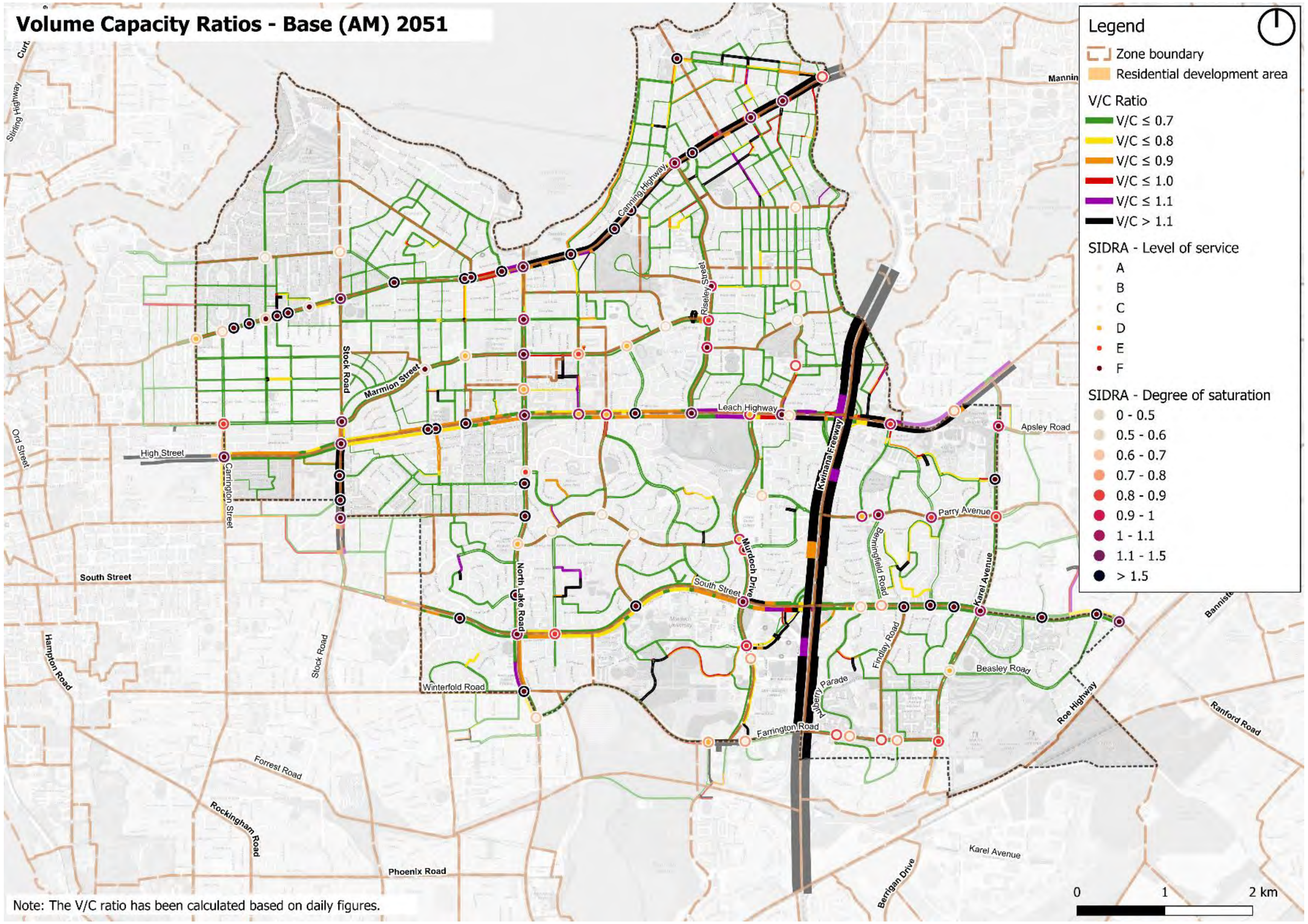


Figure ES.1 Forecast network volume-capacity ratios – 2051 Base AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows

Scenario 1 (Density Approach 1) impacts

Overall, the traffic volume increases on key road corridors would be relatively small compared to the Base scenario. It is expected that an additional 250 vehicles/hour or less in 2051 would utilise the key road corridors compared to the Base scenario. This would represent a modest increase in traffic demand compared to the Base scenario.

However, it is noted that parts of the Canning Highway, Leach Highway and South Street would exceed capacity under the 2041 and 2051 Base scenarios, and this would continue under the dwelling growth assumptions of this scenario. In addition, many intersections perform unsatisfactorily at LoS E/F under the Base scenario, and this would continue under this development scenario.

These areas of congestion are summarised in Figure ES.2, indicating the 2051 Volume-Capacity Ratios and intersection performance (of the AM peak hour).

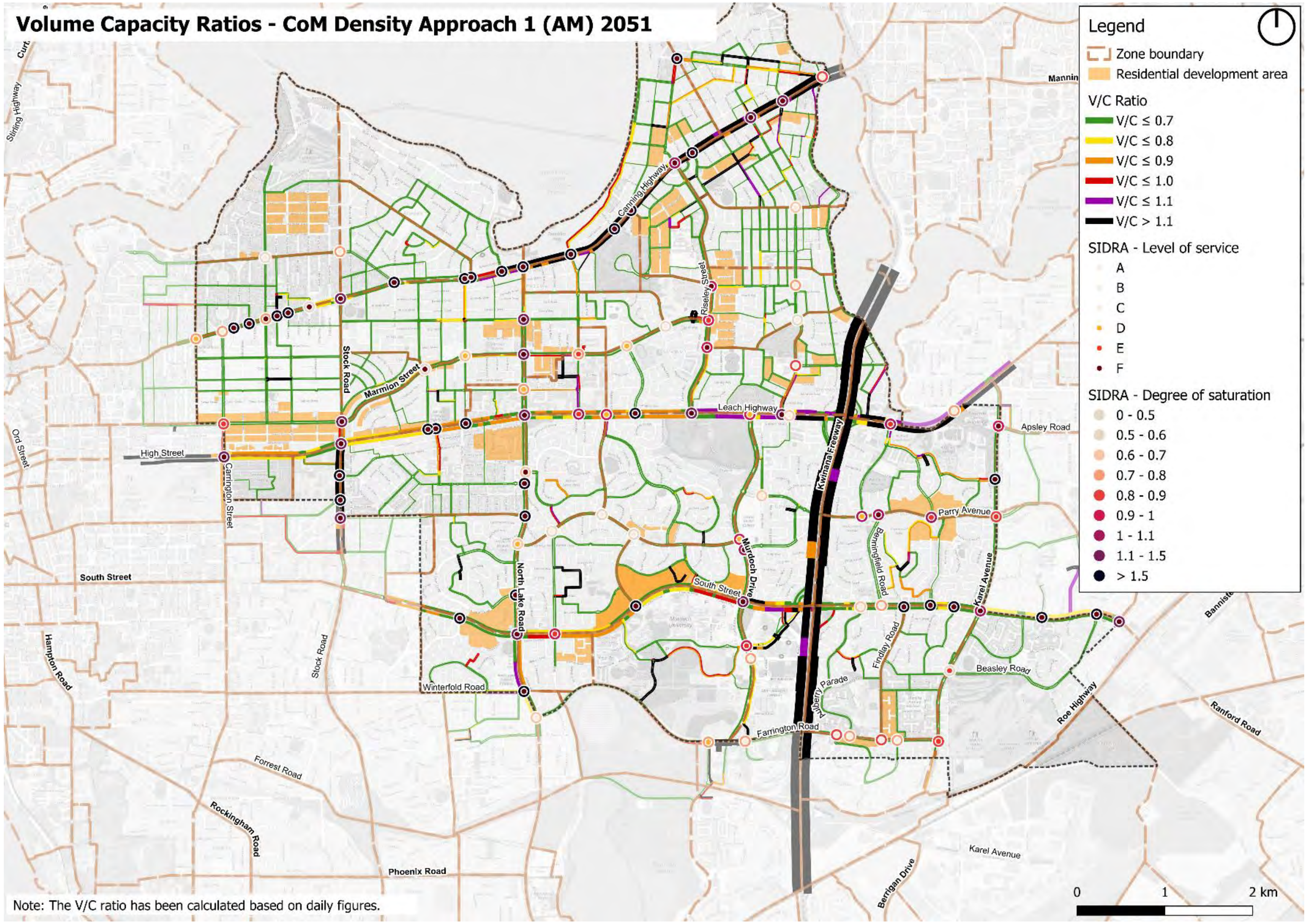


Figure ES.2 Forecast network volume-capacity ratios – 2051 Scenario 1 (Density Approach 1) AM peak

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows

Scenario 2 (Density Approach 2) impacts

Overall, the traffic volume increases on key road corridors would be relatively small compared to the Base scenario. It is expected that an additional 100–300 vehicles/hour or less in 2051 would utilise the key road corridors compared to the Base scenario. This would represent a modest increase in traffic demand compared to Scenario 1 (Density Approach 1).

However, it is noted that parts of the Canning Highway, Leach Highway and South Street would exceed capacity under the 2041 and 2051 Base scenarios and Scenario 1, and this would continue under the dwelling growth assumptions of this scenario. In addition, many intersections perform unsatisfactorily at LoS E/F under the Base scenario, and this would continue under this development scenario.

These areas of congestion are summarised in Figure ES.3, indicating the 2051 Volume-Capacity Ratios and intersection performance (of the AM peak hour).

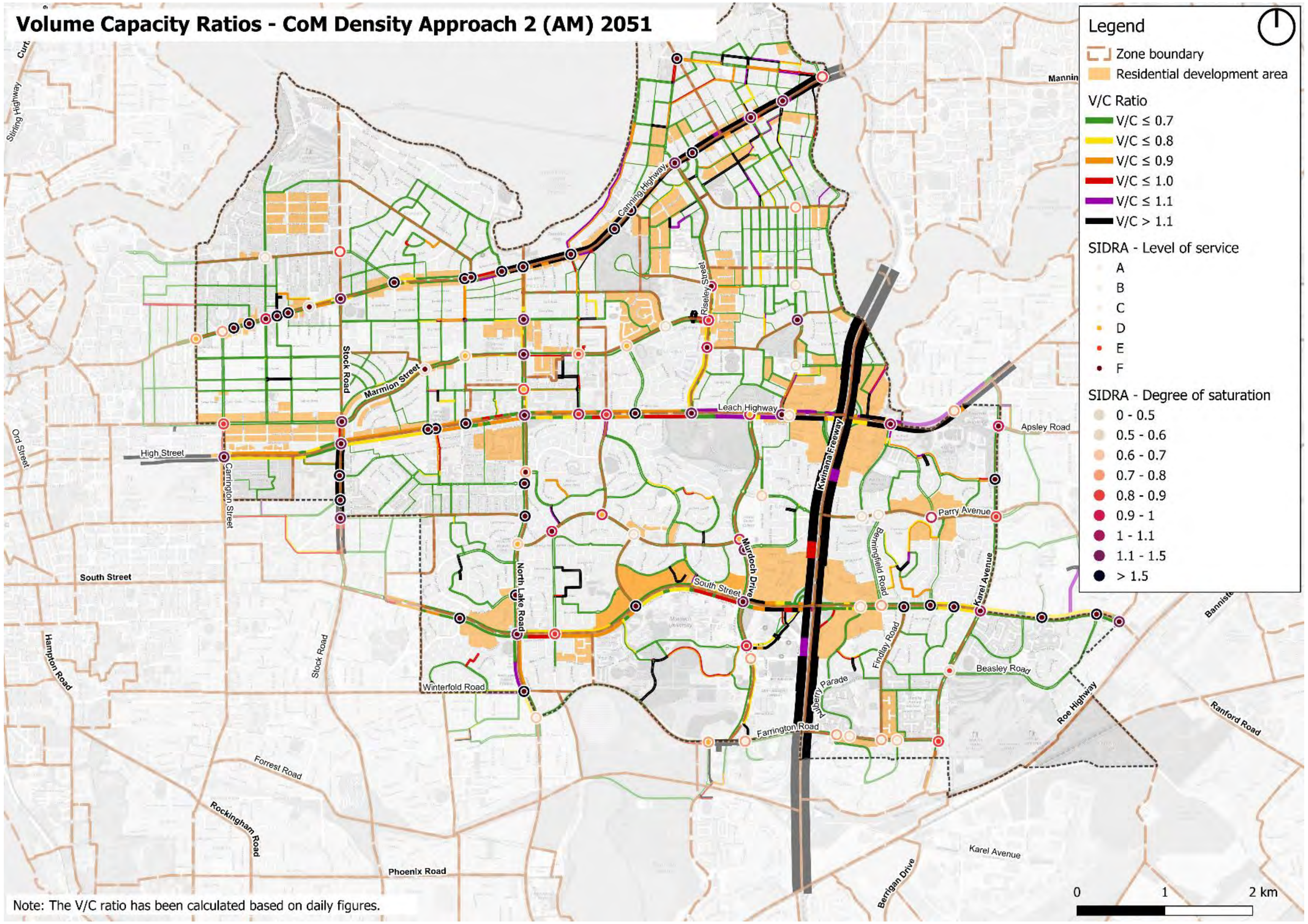


Figure ES.3 Forecast network volume-capacity ratios – 2051 Scenario 2 (Density Approach 2) AM peak

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows

Additional considerations

Intervention methodologies

Forecast network "failure" reflects locations where future demand is expected to exceed practical capacity if current travel behaviour continues unchanged. In this context, the modelling completed and the impacts identified for each scenario identify where intervention may be required, rather than implying that all forecast demand will materialise without adaptation.

The appropriate response will vary depending on the nature of the constraint. For over-capacity corridors, potential responses include improved public transport, more locally accessible land use patterns and, where justified, targeted road capacity upgrades. For intersections, responses may range from operational changes and minor upgrades through to signalisation, additional lanes, grade separation or traffic diversion. Overall, this supports a targeted, multi-modal response that balances network performance, local accessibility and the trade-offs associated with road capacity expansion.

Car ownership rates

Car ownership in the City of Melville remains high overall, however, it varies by dwelling type and household composition. Figure ES.4 highlights that detached dwellings are associated with comparatively higher vehicle ownership and, in a significant proportion of cases, demand that exceeds available on-site parking. By contrast, Figure ES.5 highlights that townhouse and apartment households are less likely to exceed on-site parking provision and, in many instances, may be oversupplied with parking. This indicates an inefficient and potentially inequitable distribution of parking provision, whereby some households effectively subsidise unused parking while others rely on the use of on-street spaces.

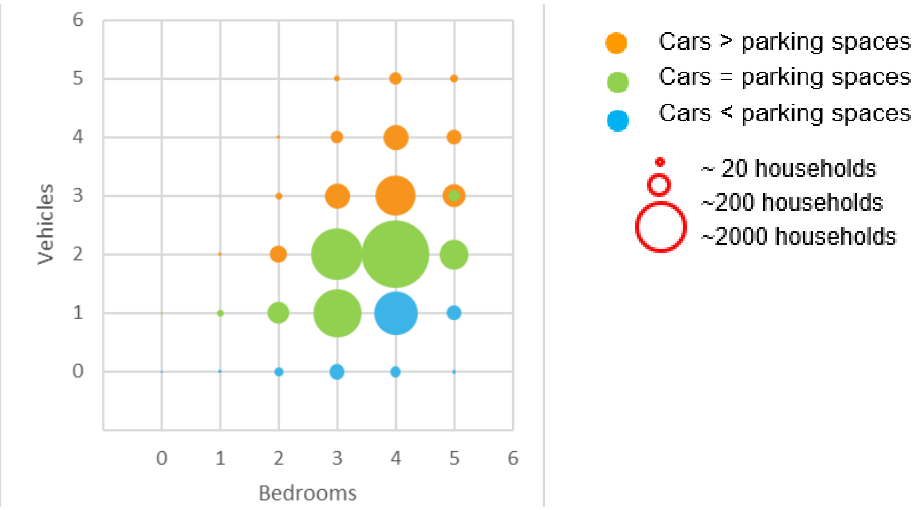


Figure ES.4 Melville LGA Household Characteristics – Detached Dwellings - Bedrooms vs Vehicle Ownership (ABS Census, 2021)

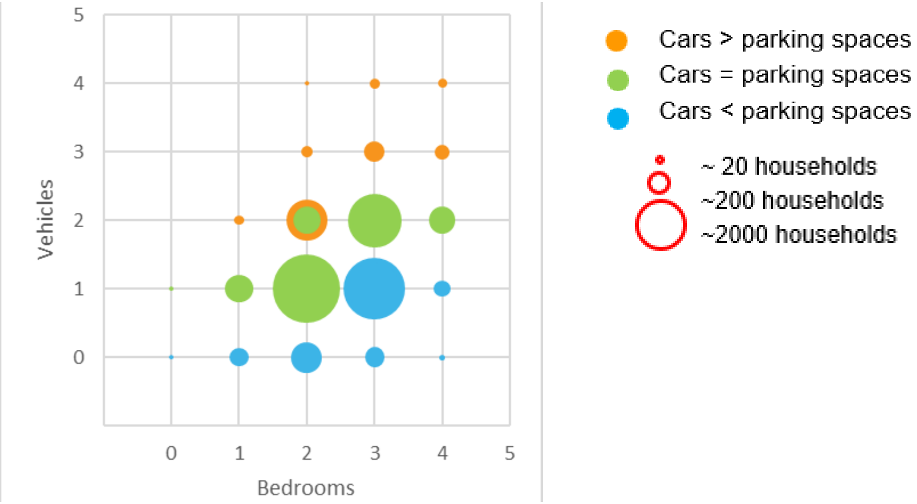


Figure ES.5 Melville LGA Household Characteristics – Apartments and Townhouses - Bedrooms vs Vehicle Ownership (ABS Census, 2021)

There is also a clear relationship between residential density, vehicle ownership, parking supply and household vehicle trip generation. Evidence indicates that lower-density development and higher rates of vehicle ownership are associated with materially greater private vehicle trip-making, whereas higher-density development with lower car ownership supports reduced vehicle trip generation and a greater propensity for alternative travel modes. In this context, a more restrained approach to parking provision, particularly for apartment development in already congested locations, may represent an appropriate policy lever to moderate future peak period traffic impacts and support broader mode shift objectives.

Mode shares within Melville

Journey to work travel in the City of Melville is characterised by a strong reliance on private vehicles for both residents and employees, with public transport having a limited role despite many trips being relatively short. This reflects the current structure and competitiveness of the transport network, particularly where bus-based services operate in congested corridors, and where suburban employment patterns are not well aligned to existing public transport service patterns.

Any meaningful reduction in future driving demand would require a substantial shift toward public transport, supported by significant investment in service frequency, corridor priority measures and broader network integration. While increased walking and cycling can contribute to mode shift for shorter local trips, particularly around activity centres, these modes alone are unlikely to materially offset future growth in vehicle travel. Accordingly, achieving a more sustainable future mode share will depend on major improvements in public and active transport connectivity, quality and capacity.

Electric vehicle uptake

Increased electric vehicle uptake is not expected to materially reduce congestion or improve network performance, as electric vehicles use road space in the same way as conventional cars. While they may deliver environmental benefits, lower operating costs may also encourage additional vehicle travel, meaning electric vehicle adoption should not be relied upon as a congestion mitigation measure.

1 Introduction

1.1 Overview

WSP was commissioned by the City of Melville to complete a Transport Impact Assessment of the proposed changes to Local Planning Scheme 6 (LPS6) to enable the City of Melville to understand the impact of targeted density increases designed to meet the housing targets under the additional dwellings to meet the housing targets under the Western Australian Planning Commission's (WAPC) *Perth and Peel @ 3.5 Million* framework.

The proposed changes to LPS6 involve increases to R-codes in key growth areas and support an increase in the number of dwellings in the City of Melville by 18,480 between 2011 and 2050. These additional dwellings are expected to be focused around activity centres and along transport corridors.

1.2 Project objectives

The key objectives of this project are:

- Understand current traffic conditions, as a baseline, on state-controlled roads and key parts of the City of Melville
- Analyse the potential impacts on the road network from housing growth (under different housing growth scenarios) within key growth precincts, and background growth across the City of Melville
- Assess the impacts of potential changes in:
  - transport mode preferences over time
  - car ownership rates
  - uptake of electric vehicle ownership
- Provide recommendations on infrastructure and non-infrastructure interventions to support future changes in travel demand associated with an increase in dwellings

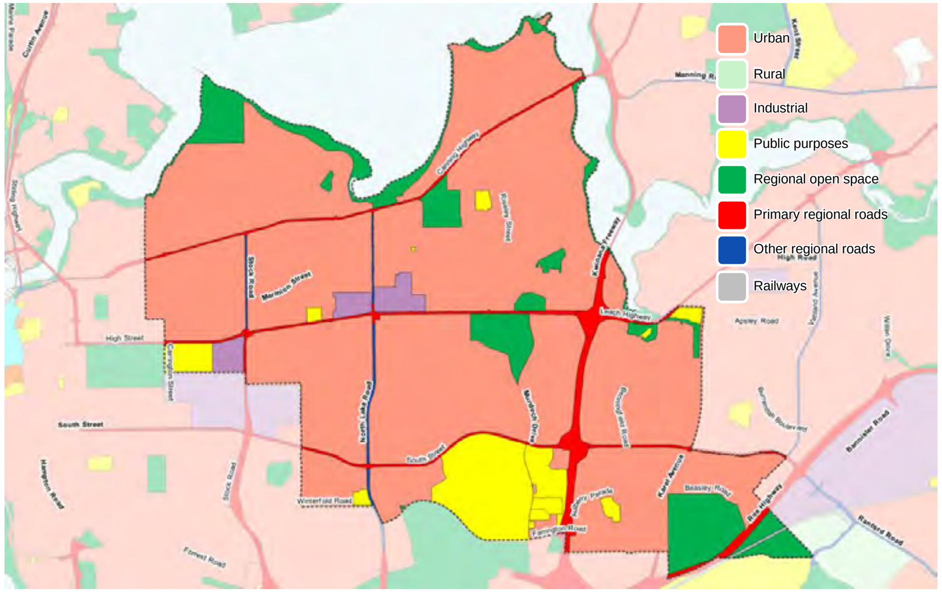
1.3 Purpose of this report

The LPS6 Traffic Impact Assessment project is intended to identify the potential impacts of increased dwellings and to consider the need for infrastructure and non-infrastructure interventions to maintain the transport function and amenity of key road corridors.

2 Existing network

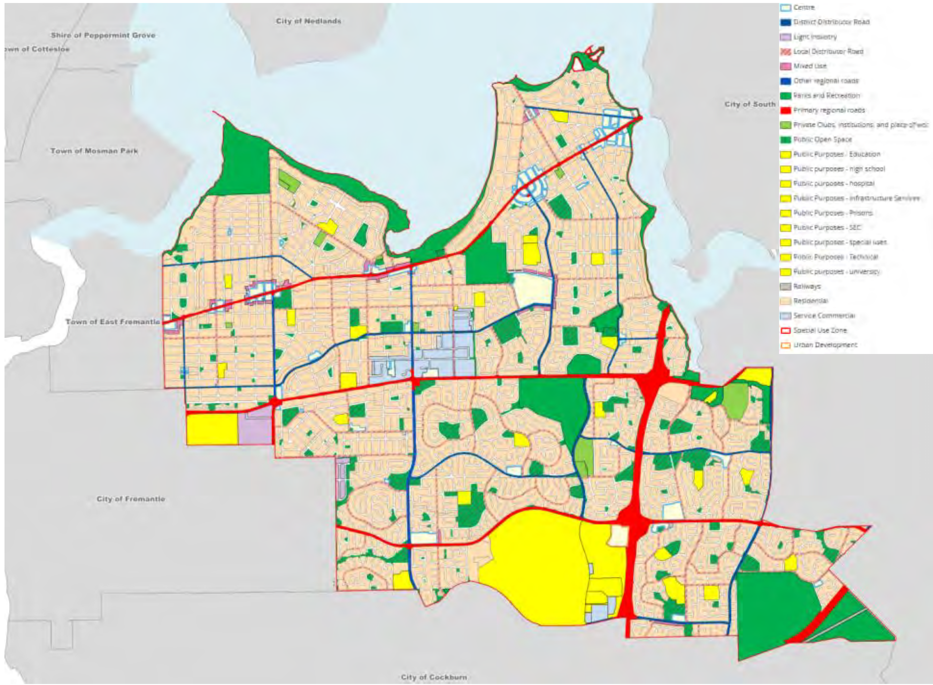
2.1 Land use

Figure 2.1 summarises the land uses within the City of Melville under the Metropolitan Region Scheme land use categories, and Figure 2.2 summarises the land uses by the Local Planning Scheme categories. These maps highlight that the City of Melville predominantly consists of urban / residential land use types, with industrial precincts around the Leach Highway at North Lake Road and Stock Road. In addition, the Murdoch University and Fiona Stanley Hospital precinct is located near Murdoch train station. This precinct will grow further in the future with the planned opening of the New Women's and Babies Hospital (c.2029). There are also public open spaces, mostly concentrated around the Swan River foreshore.



Source: WA Department of Planning, Lands and Heritage (2026)

Figure 2.1 Metropolitan Region Scheme



Source: WA Department of Planning, Lands and Heritage (2026)

Figure 2.2 Local Planning Scheme

Under the State Planning Policy 4.2 (Activity centres for Perth and Peel), within the City of Melville, there are six district centres, one specialised centre, and one secondary centre. These activity centres are summarised in Figure 2.3 and listed below.

- Secondary centres
  - Booragoon
- Specialised centres
  - Murdoch
- District centres
  - Canning Bridge
  - Riseley Street
  - Melville
  - Petra Street
  - Kardinya
  - Bull Creek

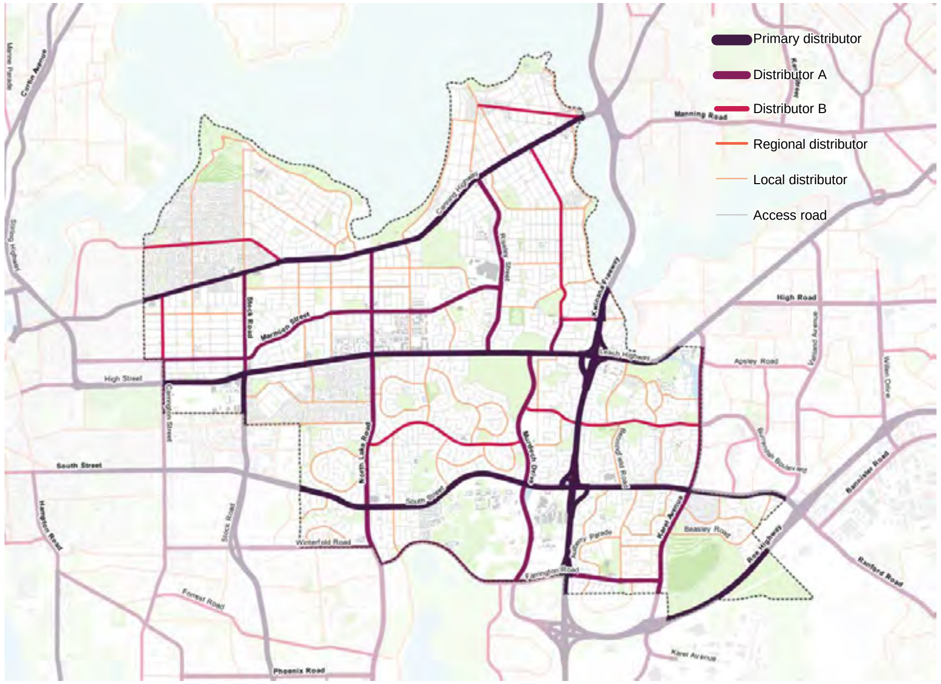
Source: WA Department of Planning, Lands and Heritage (2026)

Figure 2.3 Activity centres (State Planning Policy 4.2)

2.2 Transport network

2.2.1 Key roads

Figure 2.4 summarises the existing road hierarchy within the City of Melville based on the Main Roads WA road hierarchy classification system.



Source: Main Roads WA

Figure 2.4 Existing road hierarchy

Based on this road hierarchy system, the Primary Distributor roads within the City of Melville are Canning Highway, Leach Highway, the Kwinana Freeway, South Street, and a portion of Stock Road. These roads serve to convey large volumes of traffic through the City of Melville, enabling connectivity to the Perth CBD, Fremantle, and towards Rockingham. Canning and Leach Highways have a speed limit of 60–70 km/h and are interspersed with traffic lights, and the Kwinana Freeway has a speed limit of 100 km/h.

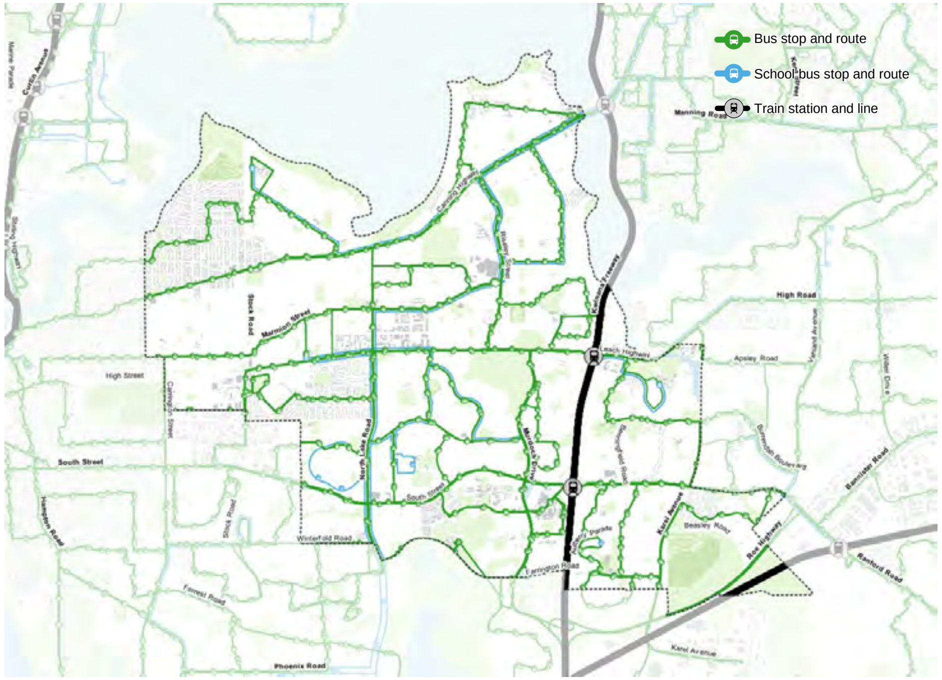
The Distributor A roads connect local areas to the Primary Distributor network of roads. Within the City of Melville, these roads are Stock Road, Marmion Road, North Lake Road, Riseley Street, Murdoch Drive, Karel Avenue, Farrington Road, and a portion of Carrington Road. These are supported by the lower-order Distributor B roads of Carrington Street, Preston Point Road, Somerville Boulevard, Parry Avenue, Reynolds Road, Cranford Avenue, and Kintail Road.

It is noted that Kintail Road is used as a rat run during the AM peak periods by eastbound traffic, allowing them to partially avoid queues and congestion on Canning Highway while connecting to the Kwinana Freeway.

2.2.2 Public transport

Figure 2.5 summarises the public transport service coverage and associated stops within the City of Melville. Overall, the City of Melville is served by:

- 1 train line – Mandurah Line, which operates with up to 12 services per hour during peak periods (including the shortened services between Whitfords and Cockburn Central), and 2–4 services per hour during off-peak periods
- 39 bus routes, including the following high-frequency service routes:
  - 910, connecting Perth Busport and Fremantle via the Canning Highway
  - 915, connecting Fremantle and Bull Creek via Marmion Street and Leach Highway
  - 925, connecting Bull Creek and Cannington via Parry Avenue and Metcalf Road
  - 998 / 999 Circle Route, connecting Fremantle, Murdoch, Curtin University, Bayswater and Stirling
- 7 school bus routes.



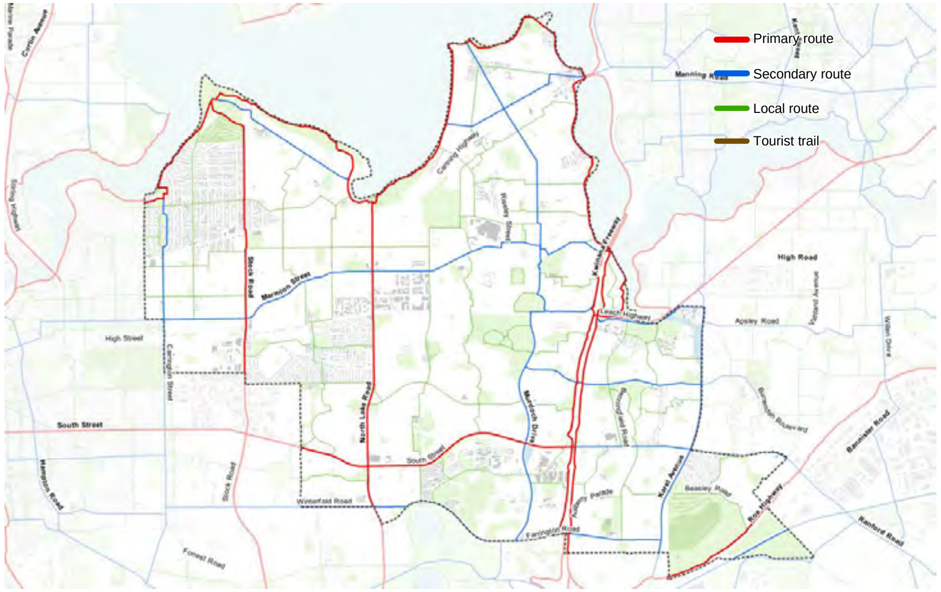
Source: WA Public Transport Authority

Figure 2.5 Existing public transport routes and stops

2.2.3 Active transport

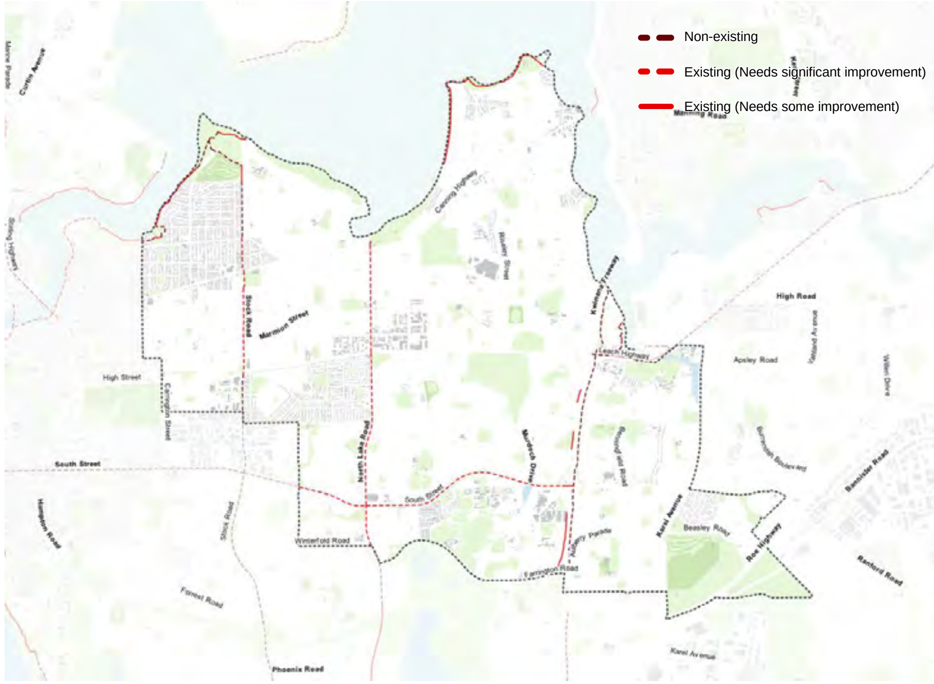
Figure 2.6 summarises with Long Term Cycle Network (LTCN) within the City of Melville. This highlights that the primary LTCN routes within the City of Melville are Stock Road, North Lake Road, South Street, Swan River foreshore, and the Kwinana Freeway Principal Shared Path. This is supported by secondary routes Marmion Street, Carrington Street, Murdoch Drive, Ardross Street, Parry Avenue and Macrae Road.

Figure 2.7 summarises the Gap Scores for the LTCN. These Gap Scores highlight that the key areas where the LTCN routes are not presently available or in need of significant improvement are Stock Road, North Lake Road, South Street, and the Kwinana Freeway Principal Shared Path.



Source: *WA Department of Transport and Major Infrastructure*

Figure 2.6 Long term cycle network



Source: *WA Department of Transport and Major Infrastructure*

Figure 2.7 Long term cycle network (gap scores)

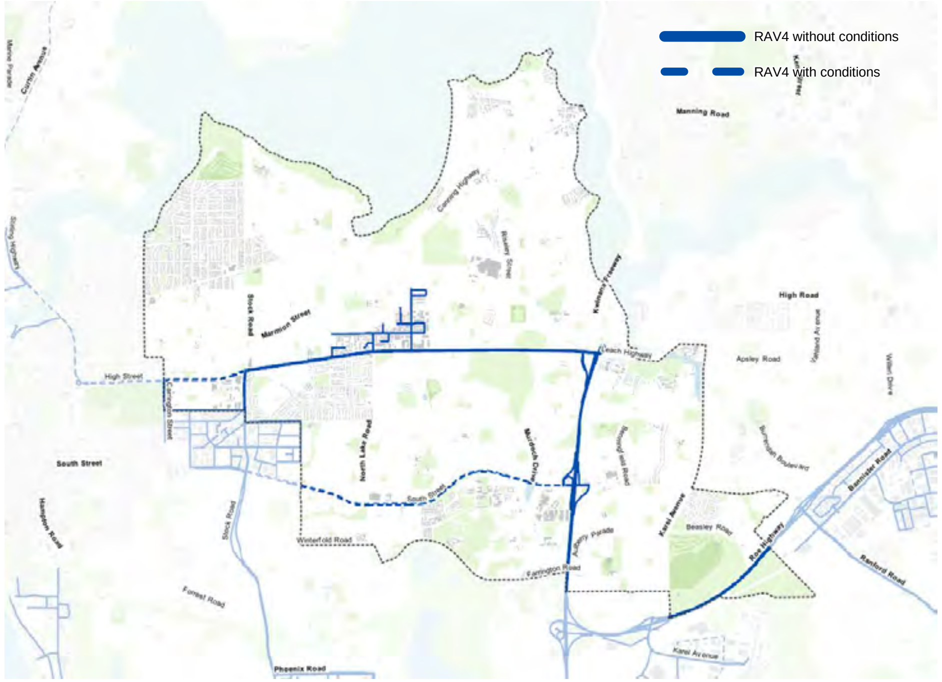
2.2.4 Restricted access vehicles

Figure 2.8 summarises the tandem drive RAV4 network, indicating the roads the trucks up to a 2.7 metre A-Double truck may use.

This shows that RAV4 trucks may unconditionally use Leach Highway (east of Stock Road), Stock Road (south of Leach Highway), and the Kwinana Freeway (south of Leach Highway). They are also permitted within the industrial precinct adjacent to Leach Highway / North Lake Road.

RAV4 trucks may also use High Street (west of Stock Road) and South Street (west of Kwinana Freeway), subject to the following conditions:

- High Street: not be loaded with more than 3 loaded Twenty-foot Equivalent Units (TEU) containers
- South Street: no freight containers except for delivery or collection from an address on South Street between Perth-Bunbury Hwy and Kwinana Fwy or within the O'Connor industrial area.



Source: Main Roads WA

Figure 2.8 Tandem Drive RAV4 (up to 27.5 metre A-Double truck) network

2.3 Input data sources

As part of this project, WSP has collated the following data sources as part of modelling and analysing the existing and forecast network conditions:

- MRWA TrafficMap SCATS detector count and phasing data
- MRWA ROM24 strategic model outputs ("committed and funded" network) for 2026, 2041 and 2051
- WA DPLH Dwellings and Employment Distribution System (DaEDS) population and employment forecasts for 2026–2051
- Intersection count traffic survey data commissioned for this project at 45 intersections for the weekday AM and PM peak hours.
- City of Melville Land Economics Assessment (Urbis, March 2026, Document ID: *P0061237 V3*)

The locations of the intersections where traffic count data have been sourced are summarised in Figure 2.9.

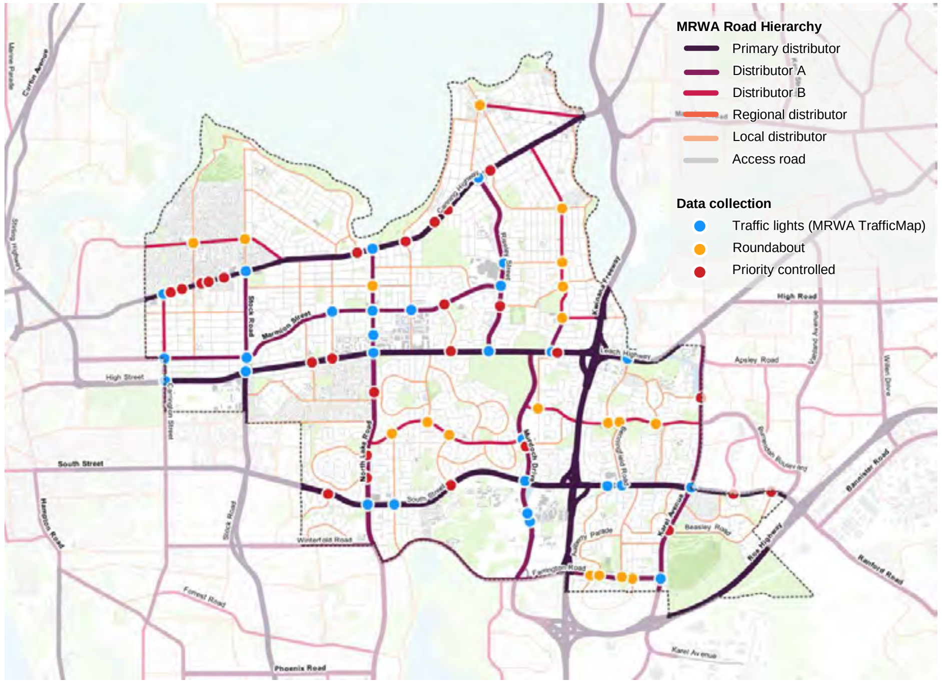


Figure 2.9 Traffic data collection

3 Proposed land use changes

3.1 Overview

The land use changes within the City of Melville are divided into two categories:

1. LPS6 change areas (the focus of this study), including amended R-Codes for these areas to enable increased dwelling density.
   - These change areas were identified as part of the Land Economics Assessment (Urbis, 2026).
   - In addition to the identified change areas, dwelling growth in the Petra Street precinct, Murdoch railway station precinct and Bull Creek railway station precinct has also been incorporated. For the railway station precincts, this reflects additional growth that is expected within these precincts based on future station precinct plans
2. Background growth unrelated to the LPS6 change areas in existing areas through increased build-out of dwellings under existing planning controls, including key growth areas such as Canning Bridge, Riseley Centre and Booragoon.

The effects of the two categories on trip making within the City of Melville are accounted for together within the assessment to understand the cumulative impact on the transport network.

3.2 Land use scenarios

WSP has assessed two scenarios for the change areas:

- “Base” is partly based on the DPLH DaEDS population and employment forecasts, as implemented in the MRWA ROM24 strategic model. It has been adapted to account for the expected change in dwellings under business-as-usual assumptions for most of the City of Melville, plus iterative changes to the planning framework by the City of Melville to account for future targeted growth around the Murdoch and Bull Creek train stations, Petra Street precinct and Bull Creek shopping centre.
- Scenario 1 extends the Base scenario by adding the proposed LPS6 changes in addition to the forecast background growth.
- Scenario 2 extends on Scenario 1, by including additional demand from other areas in Melville previously considered for density change, which the City of Melville are now recommending be removed from the scope of the LPS6 changes. This considered density increases along Canning Highway and around the Melville City Centre (Booragoon).
  Scenario 2 is intended to capture areas that, while among the more viable residential development areas within the City of Melville, have existing community concerns around traffic volumes on adjacent road corridors.

The proposed LPS6 change areas are indicated in Figure 3.1. These areas are proposed to have their R-code land zonings increased to support increased dwelling density limits. Table 3.1 summarises the additional dwellings forecast for each scenario.

Table 3.1 Forecast dwelling changes

Forecast horizon	Base	Scenario 1	Scenario 2
2026	43,600		
2041	47,500	49,500	50,600
2051	52,000	55,700	57,900
Change 2026–2041	*+ 3,900*	*+ 5,900*	*+ 7,000*
Change 2026–2051	*+ 8,400*	*+ 12,100*	*+ 14,300*

Notes Values are rounded

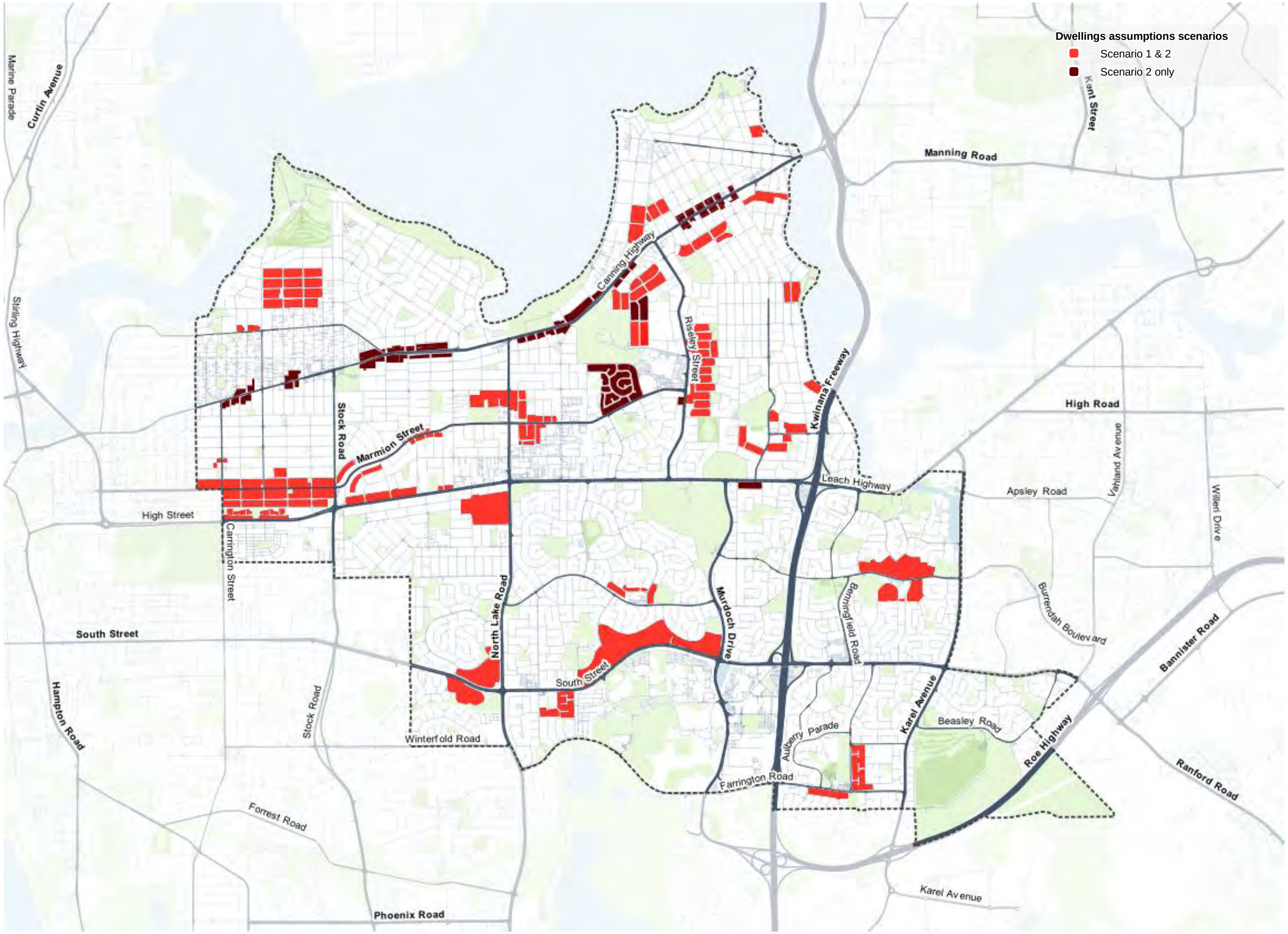


Figure 3.1 Proposed LPS6 change areas

4 Impact assessment

4.1 Assessment methodology

4.1.1 Overview

WSP's approach to assessing the transport network impacts of the existing network conditions and the forecast year conditions is summarised in Figure 4.1. This provides a high-level summary of the approach taken, which includes:

- Reviewing the MRWA ROM24 model outputs
- Reviewing the DPLH DaEDS population and employment forecasts
- Building a strategic sketch model using Aequilibrae to assign adjusted traffic demands, based on the input data provided by the City of Melville.
  This includes extracting forecast link demand flows and link volume-capacity ratios (VCR)
- Building SIDRA models of key intersections to understand localised intersection performance. This includes Degree of Saturation (DoS) and intersection Level of Service (LoS) metrics.
- Adjusting future year traffic demands to align with the scenario assumptions agreed with the City of Melville for the LPS6 dwelling projections and background growth
- Understanding the impact on link demand, link VCRs, intersection DoS and intersection LoS under different land use scenarios.

A more detailed explanation of the process is provided in section 4.1.2.

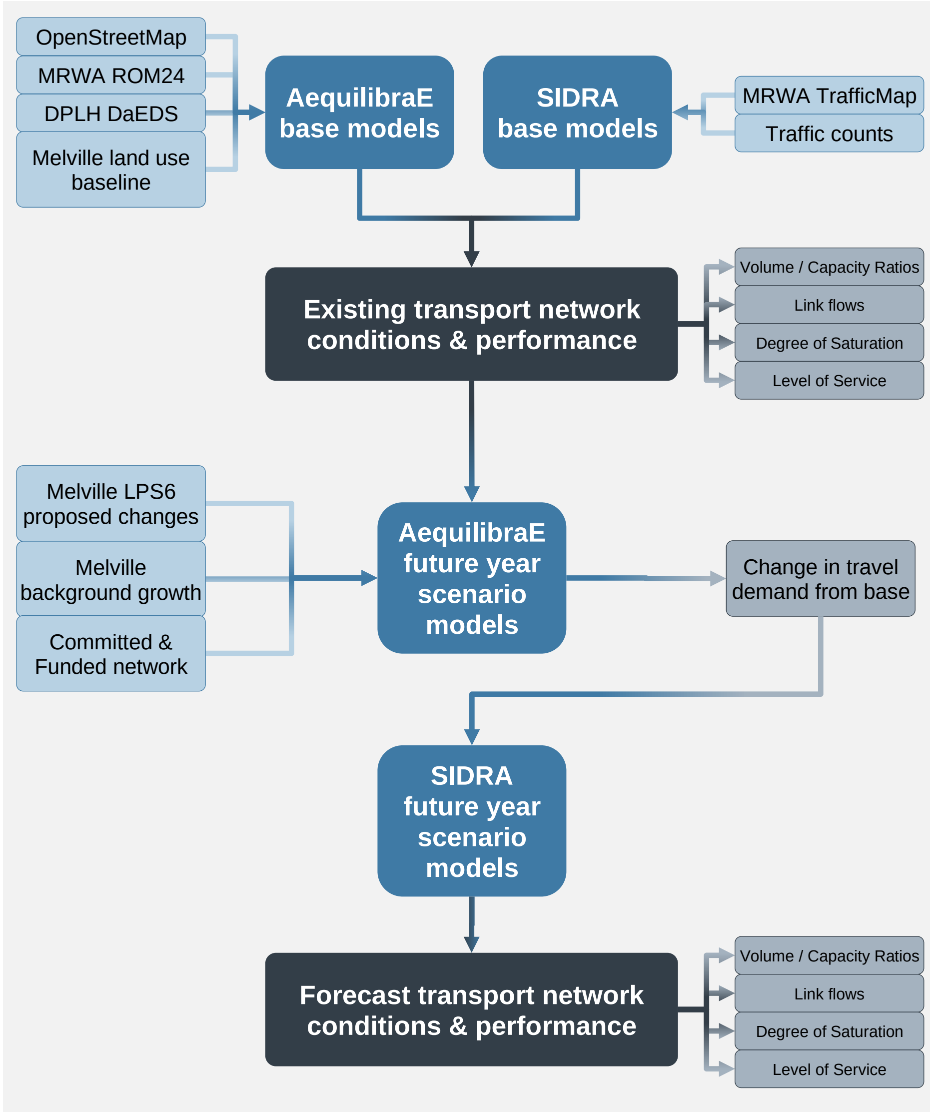


Figure 4.1 High-level transport network assessment methodology

4.1.2 Detailed breakdown

This section provides a detailed breakdown of the process applied to assess the impacts of the proposed LPS6 changes on the transport network within the City of Melville. The process followed by WSP involved the following steps:

Scoping transport network analysis data collection

1. Reviewing the MRWA road hierarchy and available data from MRWA TrafficMap to prepare a long list of intersections for modelling and analysis. This was based on intersections between the following combination of roads under the MRWA road hierarchy:
   - Primary distributor
   - Distributor A
   - Distributor B
   - Regional distributor
2. Prepare a shortlist of intersections for modelling and analysis in consultation with the City of Melville
3. Identifying traffic data gaps
4. Commissioning classified intersection counts for intersections where a traffic data gap existed

Preliminary review of forecasting data

5. Obtaining and reviewing the MRWA ROM24 strategic model outputs (link volume plots, and City of Melville LGA subarea matrices) for 2026, 2041, 2051
6. Obtaining and reviewing the DPLH DaEDS population, dwellings and employment forecasts for 2026, 2041 and 2051
7. Obtaining and reviewing the dwelling forecasts for the City of Melville under background growth and the proposed LPS6 changes. This included modifying the DaEDS forecasts and MRWA ROM24 subarea matrices to reflect revised background growth assumptions

Strategic sketch model development

8. Build an AequilibraE strategic sketch model for traffic assignment based on ROM24 and OpenStreetMap data for the 2026 network
9. Comparing the DPLH DaEDS dwellings projections for each travel zone to the City of Melville dwelling forecasts for 2026, 2041 and 2051
10. Adjusting the forecast year subarea trip matrices proportionally to the difference between the DPLH 2026 DaEDS dwelling count and the known 2026 count of dwellings from the City of Melville
11. Assign the base year subarea trip matrices and confirm appropriate traffic assignment on the model road network
    (*nb. this sketch model is used as a traffic assignment tool only; it is not a fully calibrated model*)
12. Extract outputs from the AequilibraE strategic sketch model (link volume flows, volume-capacity ratios)

(*continued on next page*)

SIDRA intersection model development

13 For each of the shortlisted intersections from Step 2, build a SIDRA base model. This includes the intersection geometry, turning volumes, (and for signalised intersections only) phasing structure

14 Extract outputs from each SIDRA model (degree of saturation, level of service)

Scenario impact modelling and assessment

15 Adjusting the forecast year subarea trip matrices proportionally to the dwelling growth forecasts from the City of Melville for each scenario

16 Amend the AequilibraE strategic sketch model network to include committed and funded road network upgrades for each forecast horizon year

17 Assign the forecast year subarea trip matrices for each scenario in the AequilibraE strategic sketch model and confirm appropriate traffic assignment on the model road network

18 Extract outputs from the AequilibraE strategic sketch model for each scenario (link volume flows, volume-capacity ratios)

19 Calculate the percentage growth between the base year and each scenario on key corridors.

20 For each of the shortlisted intersections from Step 13, apply the percentage growth from Step 18 to the input volumes and re-run the SIDRA models for each scenario

21 Extract outputs from each SIDRA model (degree of saturation, level of service)

4.2 Assumptions

The following assumptions have been made as part of this transport impact assessment:

- Dwelling growth is based on the combination of the following:
  - Change areas: outcomes of the Land Economics Assessment (Urbis, 2026)
    - Scenario 1: excluding areas along Canning Hwy and parts of Booragoon (also known as Density Approach 1")
    - Scenario 2: including areas along Canning Hwy and parts of Booragoon (also known as "Density Approach 2")
  - Background growth: DPLH DaEDS change in population, employment and dwellings; adjusted based on the future growth expected across the City of Melville (i.e. excluding the LPS6 changes)
- Trip matrices for the future dwellings are based on proportionally extrapolating the MRWA ROM24 model subarea matrices (*note: existing travel patterns are projected forward with no change in mode choice*)
- The future year networks are based on committed and funded infrastructure changes only (i.e. the Canning Highway "duck and dive" is not assumed)
  nb. MRWA assumed the "duck and dive" in the ROM24 model, and this may lead to increased demand assumptions along the Canning Highway corridor. However, this infrastructure was removed in WSP's model networks
- Link capacities are based on daily rates, in alignment with ROM24, although capacities are time-based (typically hourly).
  - The estimated V/C ratios are similarly based on these daily rates.
  - The V/C ratios should be interpreted as being the estimated maximum daily value, rather than representing a specific peak period.
- Peak hour flows are based on 10% of the daily flow, in accordance with typical ratios of peak hour to daily flow rates based on MRWA TrafficMap counter data.

4.3 Scenarios assessed

Table 4.1 summarises the LPS6 changes scenarios that have been assessed as part of preparing this report.

For the future year horizons, "Base", "Scenario 1" and "Scenario 2" are summarised in section 3.2.

Table 4.1 Summary of scenarios assessed

Forecast year	Base	Scenario 1	Scenario 2
2026	AM | PM	n/a	n/a
2041	AM | PM	AM | PM	AM | PM
2051	AM | PM	AM | PM	AM | PM

4.4 Key outputs and interpretations

4.4.1 Overview

This section summarises the outputs that are presented as part of the Transport Impact Assessment and how they should be interpreted, including:

- Network flow diagram
- Volume-capacity ratio plots
- Intersection performance metrics
  - Degree of saturation
  - Level of service
- Flow difference plots
  - Not shared (with underlying flows)
  - Shared (with underlying flows).

All maps have been generated for the following areas:

0 Wide area map, covering the entire City of Melville

1 Zoomed map, centred in Canning Bridge

2 Zoomed map, centred on Leach Highway and South Street

3 Zoomed map, centred on Stock Road

4 Zoomed map, centred on Farrington Road.

The zoomed map coverage areas are summarised in Figure 4.2.

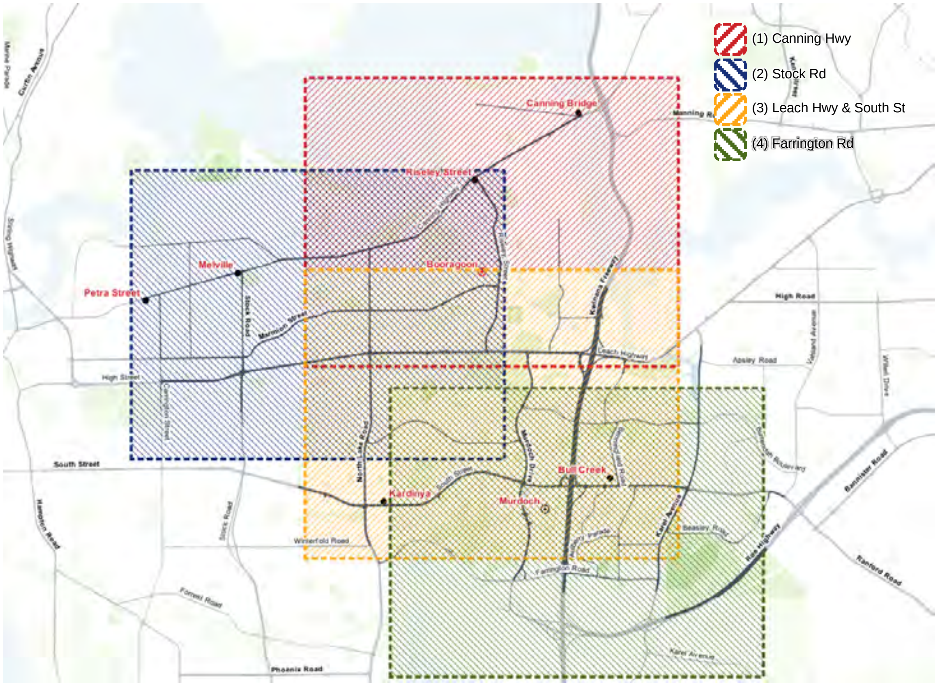


Figure 4.2 Zoomed map coverage areas

4.4.2 Network flow diagram

The Network Flow Diagram highlights the estimated peak hour flows on the road network. These flows are factored from a daily demand based on the MRWA ROM24 traffic demand model (where ‘demand’ refers to the people / drivers who would like to drive the corridor).

A road corridor with higher demand will be represented as having a thicker line on the map. Selected roads are annotated with a label in vehicles per hour. The indicated flows can be interpreted as for the busiest of the peak hour flows (AM or PM).

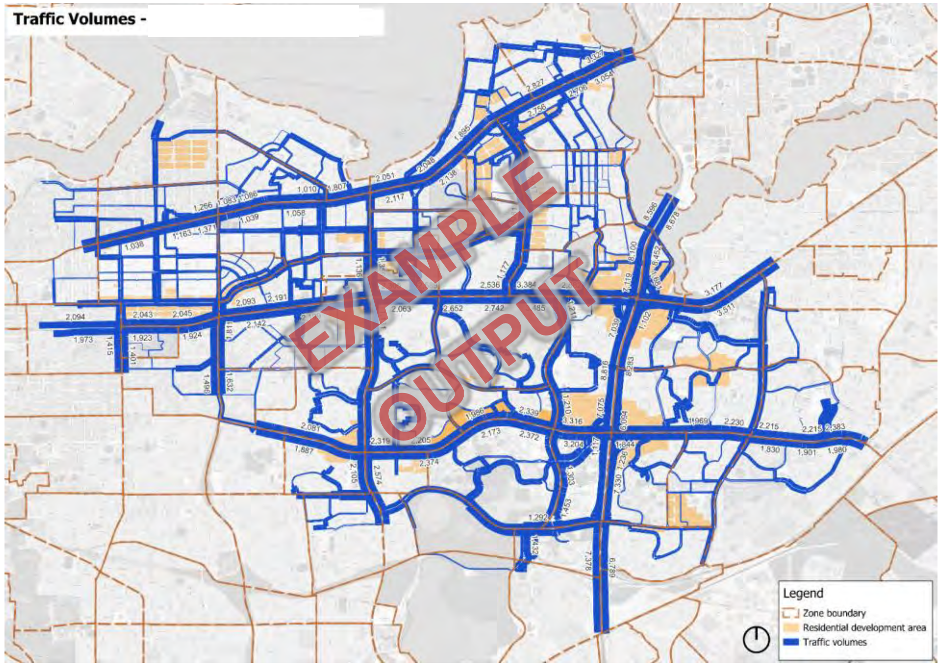


Figure 4.3 Example network flow diagram

4.4.3 Volume-capacity ratio plots

Volume-capacity ratio (VCR) indicates the level of congestion for roads within the City of Melville. VCRs are the ratio of the forecast peak hour volume versus the estimated road capacity (based on the number of lanes and road type) and can be interpreted as follows:

- VCR > 0.8 indicates roads nearing capacity and congestion increasing
- VCR > 1.0 indicates demand exceeds the capacity
- VCR > 1.1 indicates demand exceeds any capacity that SCATS can typically provide from dynamically adjusting traffic light timings

These plots also overlay the intersection performance (see section 4.4.5).

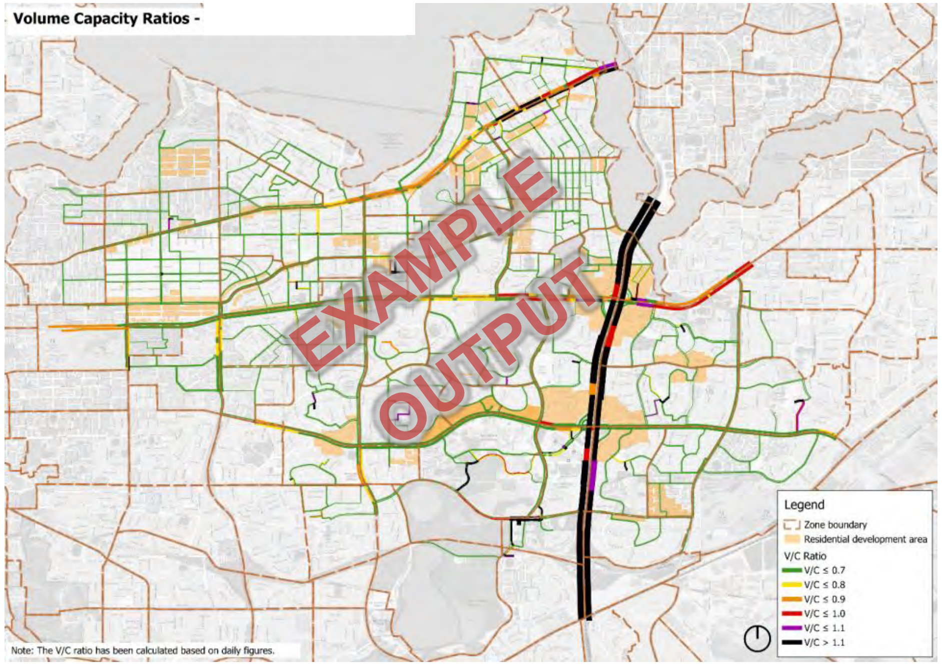


Figure 4.4 Example volume-capacity ratio diagram

4.4.4 Flow difference plots

Flow difference plots are used to highlight how network traffic flows change between scenarios. They indicate the roads that new traffic is using in each scenario (and its additional volume), and also traffic re-routing (e.g. to avoid congested areas).

There are two types of flow difference plots:

- "not shared" – this only presents the difference in traffic flows between two scenarios, without any context of relative difference to the baseline scenario.
- "shared" – this overlays the change in traffic flows (from the "not shared" plot) in the context of the the baseline scenario flow. This provides context for the relative difference to the baseline scenario. For example, the additional traffic may be 100 vehicles (and would be represented in purple), however, the underlying baseline flow may be 2000 vehicles (and would be represented in grey).

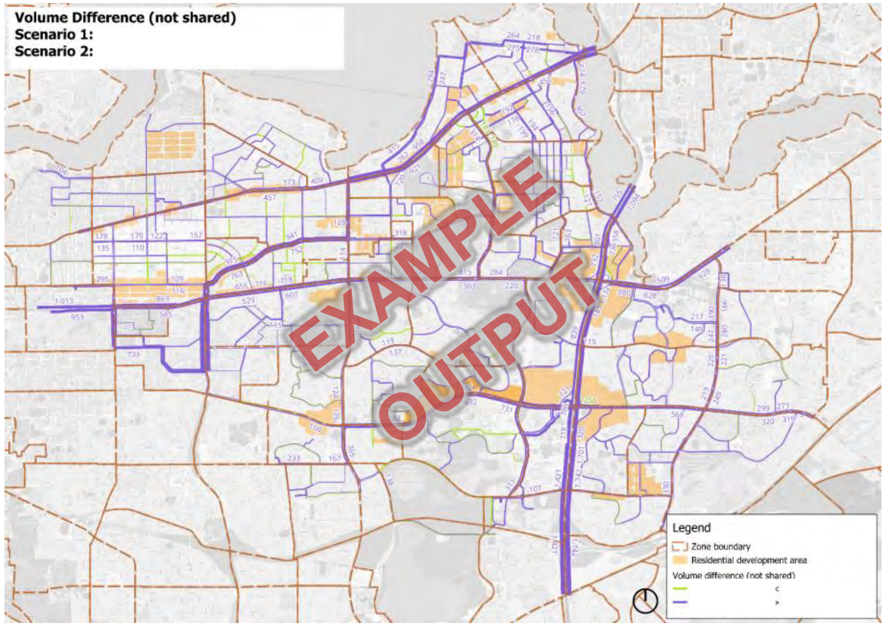


Figure 4.5 Example flow difference (not shared) plot

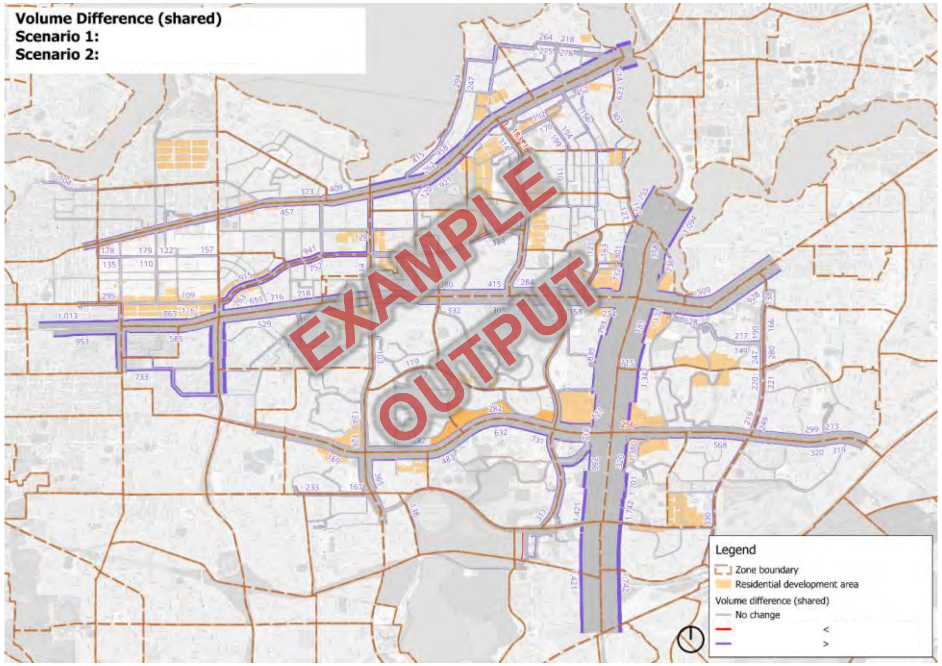


Figure 4.6 Example flow difference (shared) plot

4.4.5 Intersection performance metrics

4.4.5.1 Degree of saturation

Degree of saturation (DoS) is similar to volume-capacity ratio, but refers to intersections and considers the dynamic element of gap acceptance at intersections and green time at traffic lights.

Overall, intersections are considered to be at practical capacity when:

- DoS exceeds 0.80 for priority-controlled (give-way and stop-controlled) intersections
- DoS exceeds 0.85 for roundabouts
- DoS exceeds 0.90 for traffic lights.

Above these thresholds, intersection performance is sensitive to small disturbances such as breakdowns and crashes.

When DoS exceeds 1.0, demand is considered to exceed the capacity of the intersection.

For traffic lights, the maximum DoS can sometimes be around 1.05–1.10, based on the potential benefits from traffic lights dynamically adjusting green time to maximise intersection throughput.

4.4.5.2 Level of service

Intersection performance is commonly characterised in terms of its Level of Service (LoS) and is reported in accordance with the Highway Capacity Manual. LoS results are typically determined on the basis of the Average Vehicle Delay of the worst movement for priority controlled (give way and stop) and roundabouts, and the weighted average for traffic lights, and the LoS criteria is summarised in Table 4.2.

Intersections are considered to perform satisfactorily when assessed as LoS A–D. This indicates that the intersection performs with acceptable levels of delay for drivers.

At LoS E/F, the intersection is considered to perform with unsatisfactory levels of delay, with the intersection being sensitive to incidents (small issues will escalate into long queues and delays). For priority-controlled intersections, it also raises the risk of unsafe driving behaviour, with the potential for unsafe gap acceptance and crashes as drivers become impatient with waiting for a safe gap.

Table 4.2 Intersection performance levels of service criteria

LoS	Description	Average delay thresholds (seconds)		
		Traffic light	Roundabout	Priority controlled (give way and stop)
A	Good operation	0–10	0–10	0–10
B	Good operation, with acceptable delays and spare capacity	10–20	10–20	10–15
C	Satisfactory operation	20–35	20–35	15–25
D	Satisfactory operation, however, operating near capacity Crash study recommended for priority-controlled intersections	35–55	35–50	25–35
E	Unsatisfactory operation and operating at capacity and requires alternative control mode. Incidents will cause excessive delays	55–80	50–70	35–50
F	Unsatisfactory performance with excessive queuing and delays	> 80	> 70	> 50

(1) For traffic lights, LoS is determined based on the weighted average delay (by vehicles) for the intersection

(2) For roundabouts and priority-controlled intersections, the LoS is determined by the critical (i.e. worst) performing movement

4.5 2026 existing conditions

4.5.1 Overview

This section summarises the existing performance of the transport network within the City of Melville. This analysis indicates the current network capacity constraints, and where spare capacity may exist to absorb future travel demand growth.

4.5.2 Network flows

Figure 4.7 summarises the 2026 traffic flows within the City of Melville. These flows are represented for the estimated peak hour flows, factored from a daily demand based on the MRWA ROM24 traffic demand model (where Demand refers to the people / drivers who would like to drive the corridor). This network flow diagram highlights the key road corridors that traffic travels along within the City of Melville, including:

- Canning Highway: around 1000 vehicles/hour/direction west of North Lake Road, around 2000 vehicles/hour/direction between North Lake Road and Riseley Street, and around 3000 vehicles/hour/direction near Canning Bridge
- Leach Highway: around 2000 vehicles/hour/direction west of North Lake Road, around 2500 vehicles/hour/direction between North Lane Road and Riseley Street, and around 3000 vehicles/hour/direction near Murdoch Drive
- South Street: around 2200 vehicles/hour/direction west of Murdoch Drive, around 3200 vehicles/hour/direction between Murdoch Drive and the Kwinana Freeway
- North Lake Road: around 1200 vehicles/hour/direction
- Marmion Street: around 1000 vehicles/hour/direction
- Murdoch Drive: around 1250 vehicles/hour/direction
- Stock Road: around 1500 vehicles/hour/direction south of Leach Highway

Additional maps, including zoomed-in extracts are provided in Appendix A1.

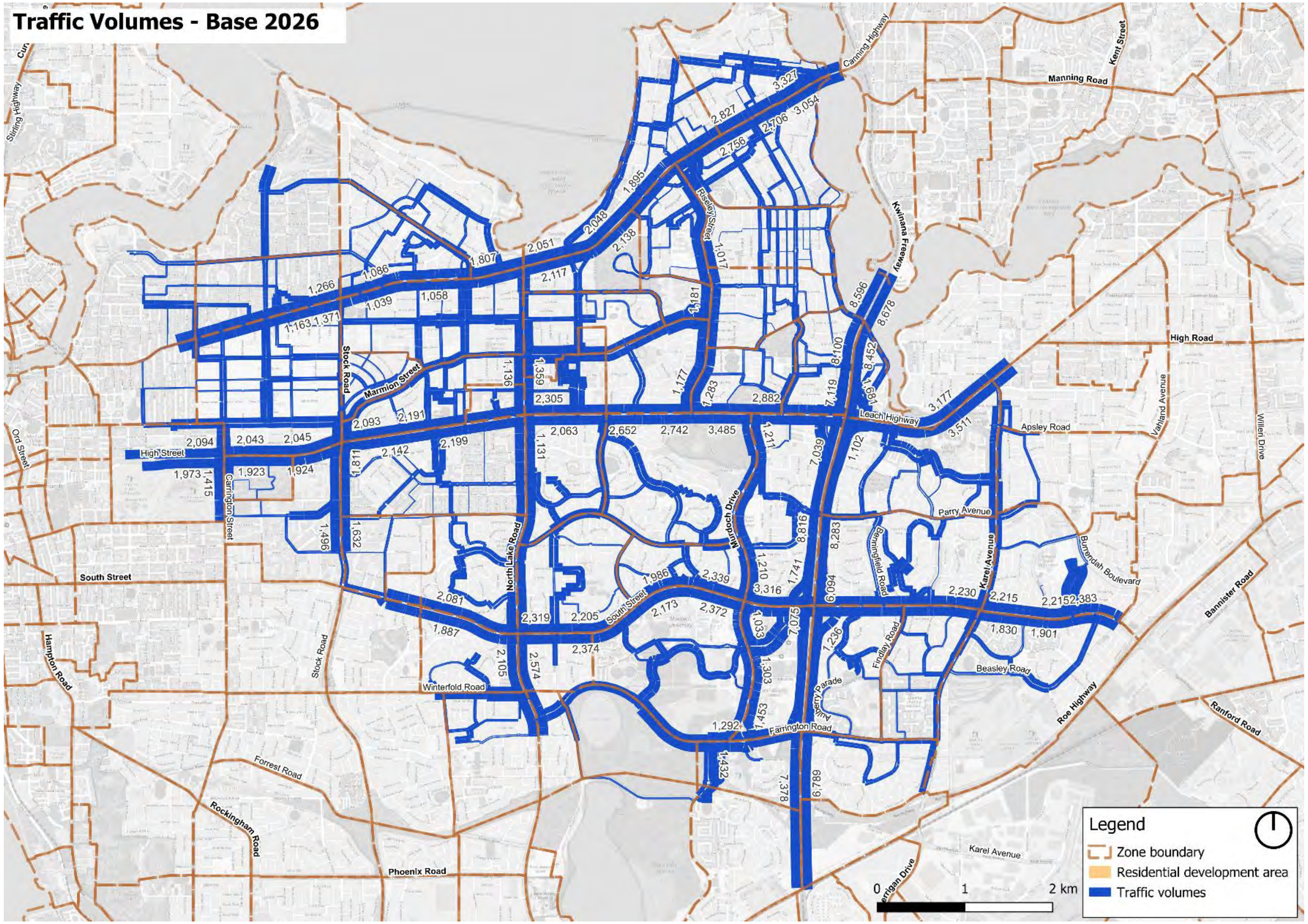


Figure 4.7 Existing network flows – 2026 Base

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

4.5.3 Network congestion and intersection performance

Figure 4.8 and Figure 4.9 summarises the volume-capacity ratio (VCR) and SIDRA intersection degree of saturation (DoS) and level of service (LoS), which indicates the level of congestion for roads and intersections within the City of Melville.

VCRs are the ratio of the forecast peak hour volume versus the estimated road capacity (based on the number lanes and road type) and can be interpreted as follows:

- VCR > 0.8 indicates roads nearing capacity and congestion increasing
- VCR > 1.0 indicates demand exceeds the capacity
- VCR > 1.1 indicates demand exceeds any capacity that the traffic light system can typically provide through dynamically adjusting green time to maximise throughput

The VCR diagrams highlight the key road corridors that are nearing or at capacity within the City of Melville, including:

- Canning Highway east of North Lake Road, at or exceeding capacity
- Leach Highway east of Riseley Street, at capacity
- South Street between Murdoch Drive and Kwinana Freeway, at capacity

Note: These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

Additional maps, including zoomed-in extracts are provided in Appendix C1.

The SIDRA intersection results indicate that most intersections along the Canning Highway are performing unsatisfactorily at LoS E/F during the AM and PM peak periods. In addition, many intersections along Leach Highway and South Street are also performing unsatisfactorily. This highlights that while the VCR results indicate some sections of Leach Highway and South Street have some remaining capacity, the intersection operations are leading to relatively large delays for drivers.

Some of these intersections are priority-controlled intersections, which also indicates that drivers exiting side roads are not able to easily access the major arterial roads. As a result, this may lead to unsafe gap acceptance following impatience while waiting for a safe gap.

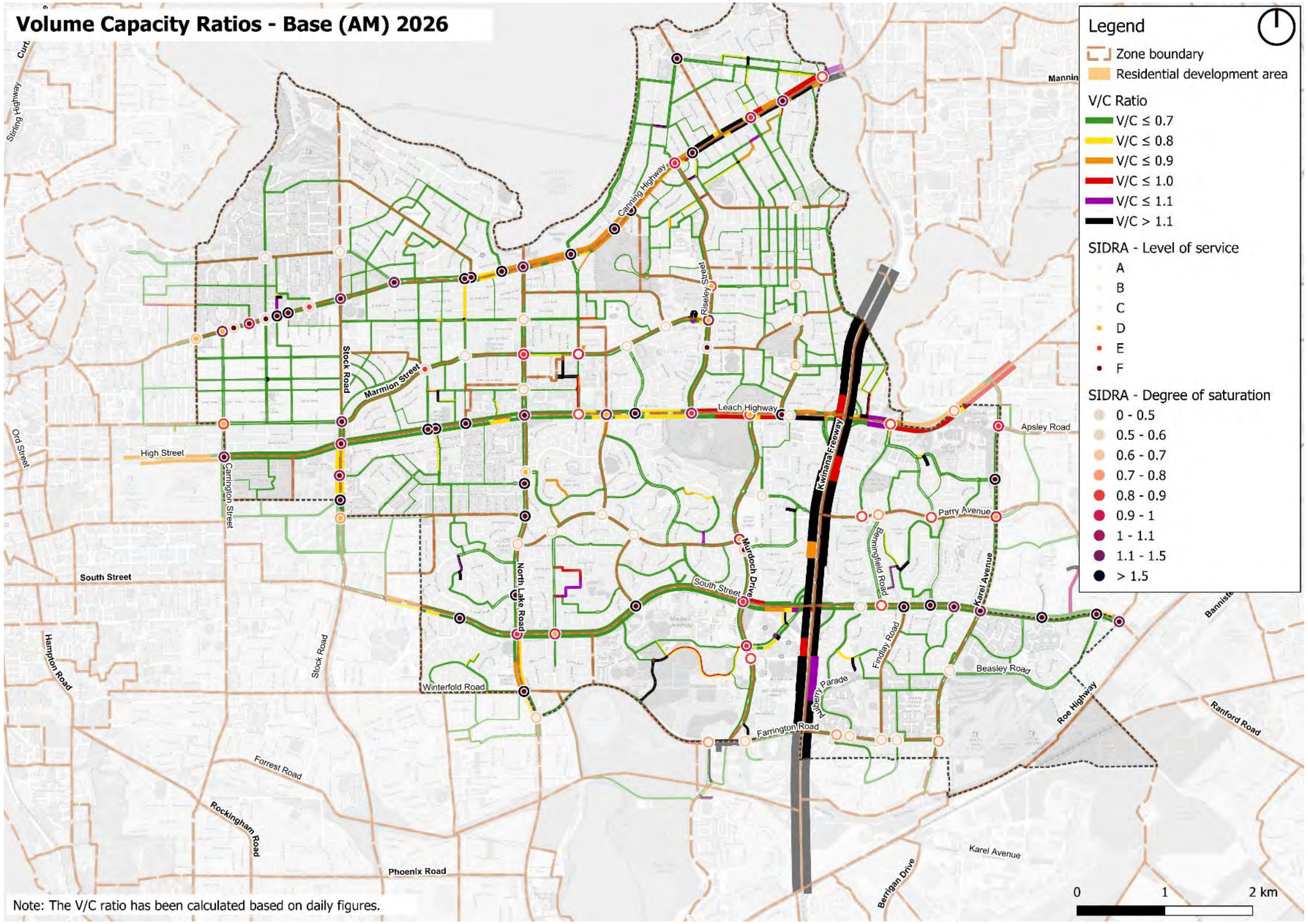


Figure 4.8 Existing network volume-capacity ratios – 2026 Base AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

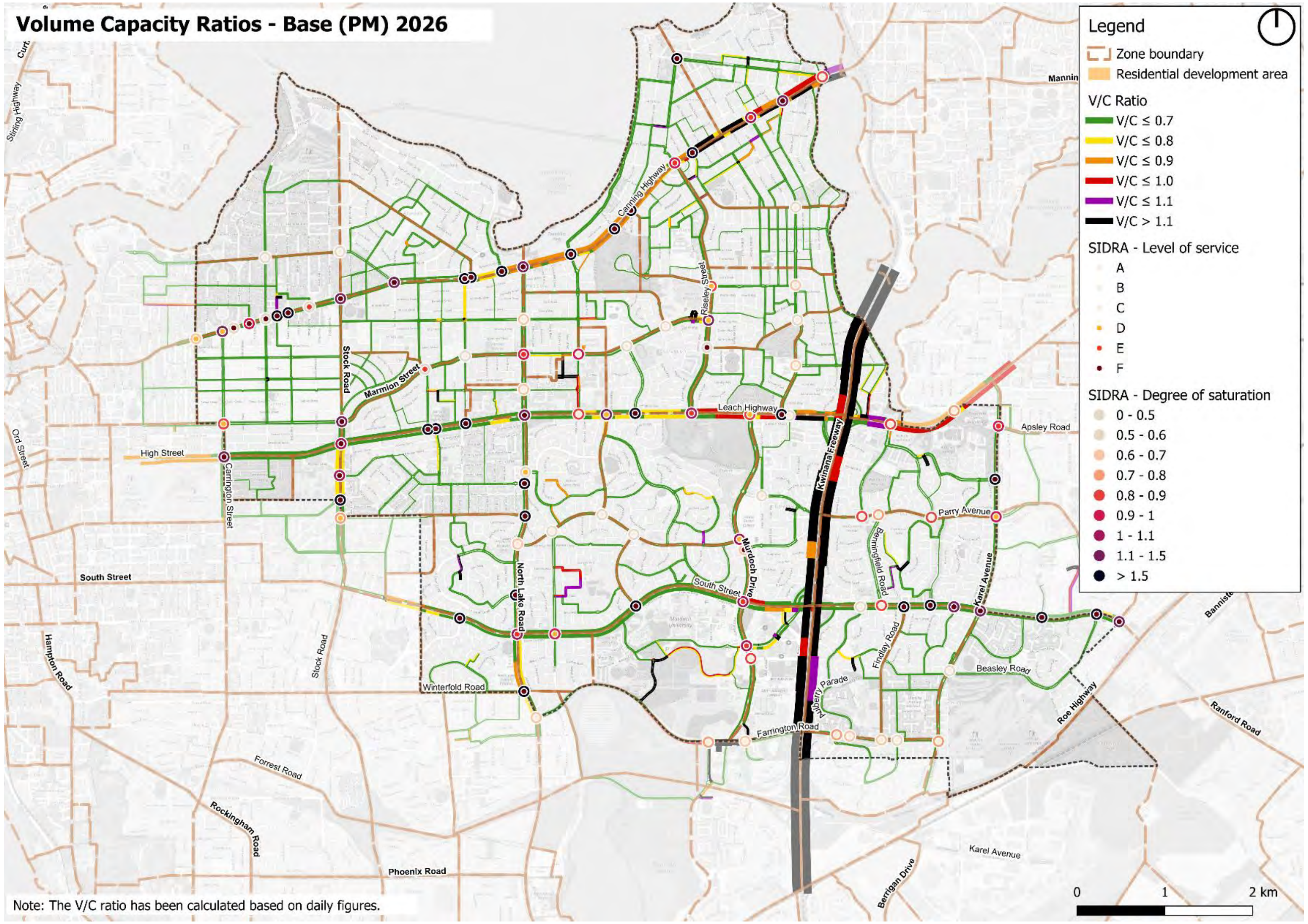


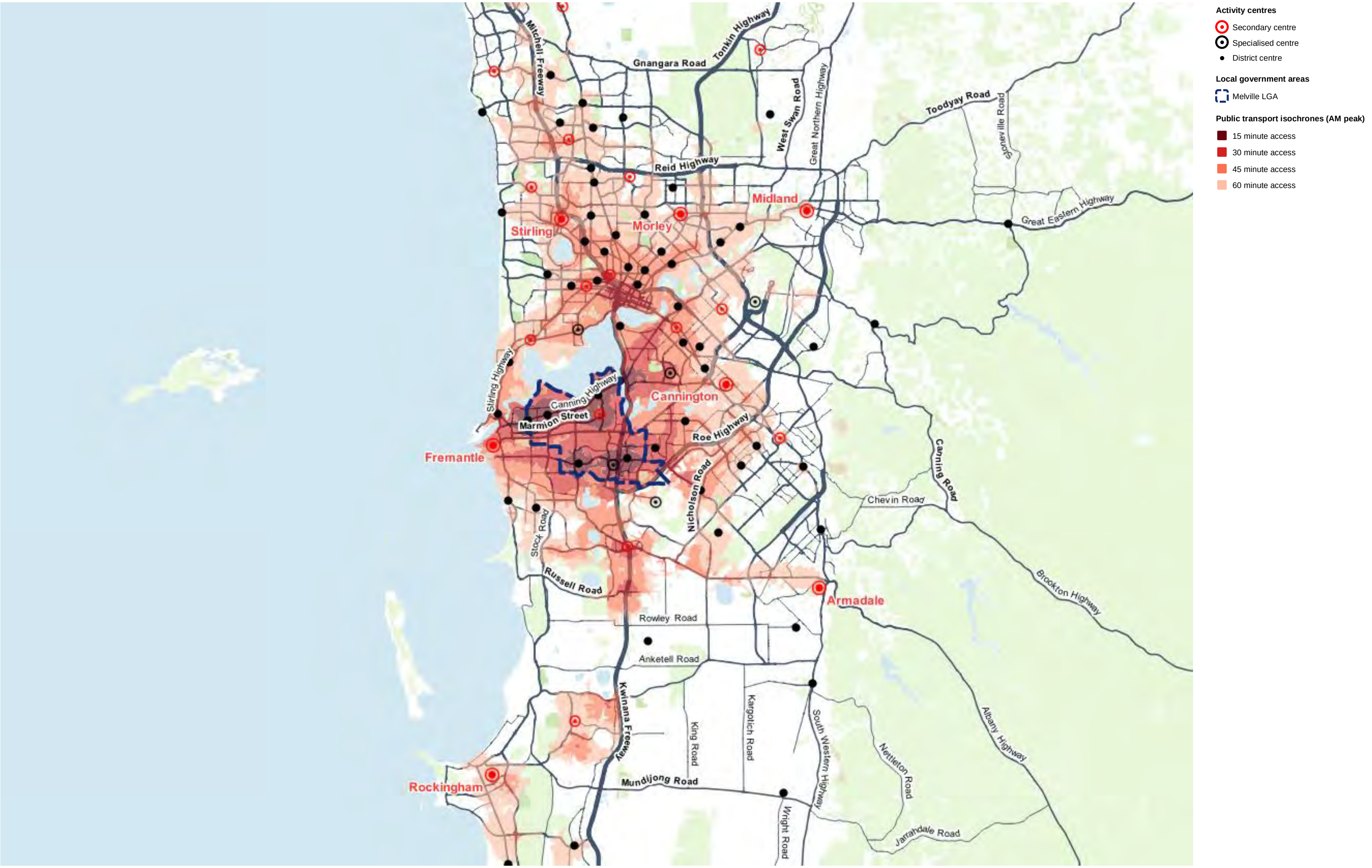
Figure 4.9 Existing network volume-capacity ratios – 2026 Base PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

4.5.4 Public transport access

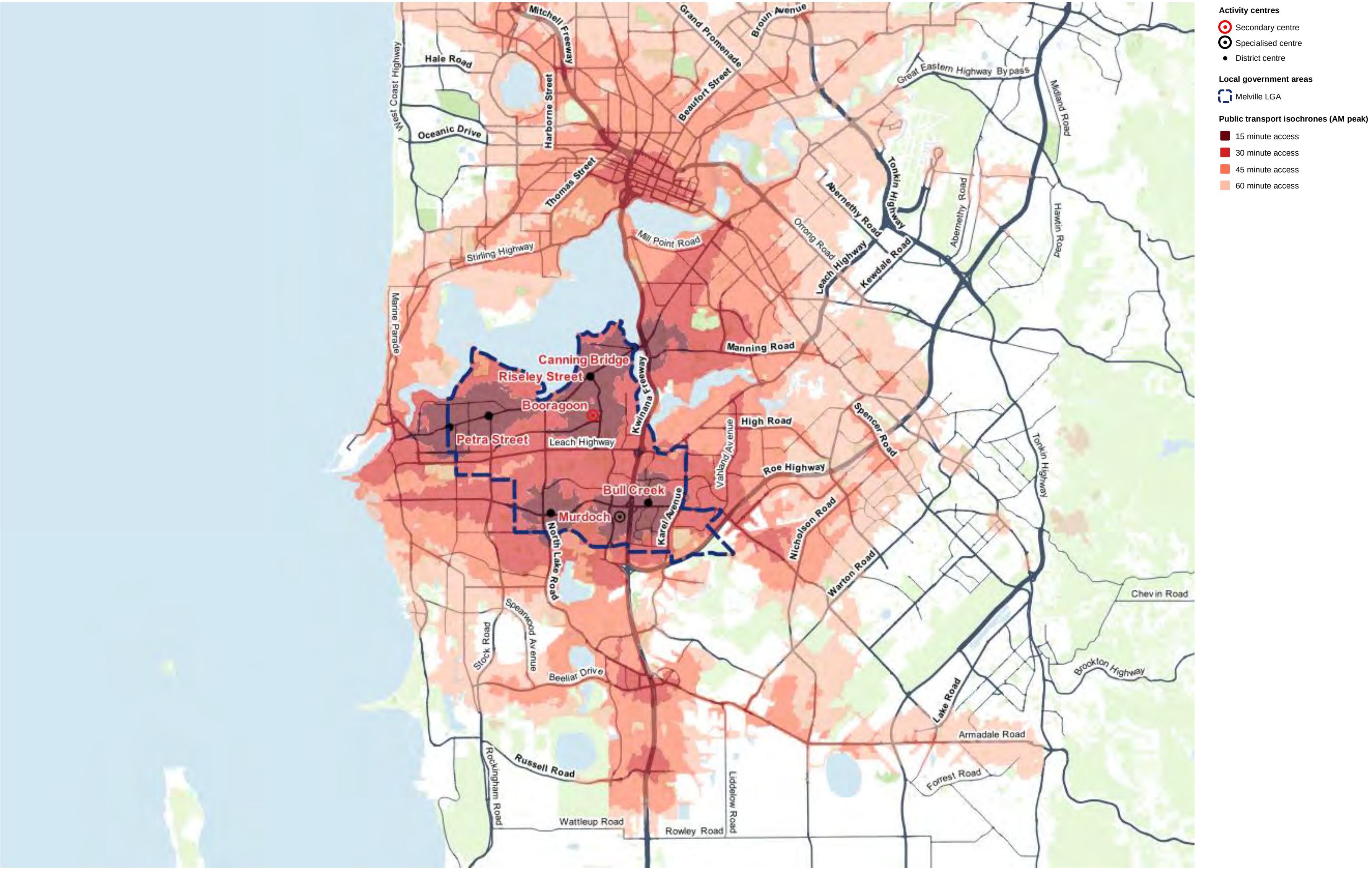
Figure 4.10 summarises the public transport access from the activity centres within the City of Melville to the wider Perth area, and Figure 4.11 focuses on the local government area. These maps highlight the parts of Perth that are accessible within 15, 30, 45 and 60 minutes by public transport during a typical weekday AM peak period.

Overall, these maps indicate that a significant proportion of the City of Melville is within 15 minutes of any activity centre, and almost all of the City of Melville is within 30 minutes of any activity centre. In addition, from all of the activity centres, it is possible to use public transport to access the Perth CBD within 60 minutes, and the activity centres of Bull Creek, Canning Bridge, Murdoch and Riseley Street are able to reach the Perth CBD within 30 minutes. However, this 30 minute access to the Perth CBD is primarily related to proximity and access to the Mandurah Railway Line and associated railway stations and bus interchanges. This access to transport interchanges is also a key component to enabling public transport access to wide parts of the City of Melville.



Source: *WA Department of Planning, Lands and Heritage (2026)*

Figure 4.10 Access to activity centres (city wide)



Source: WA Department of Planning, Lands and Heritage (2026)

Figure 4.11 Access to activity centres (local government area)

4.6 2041 baseline

4.6.1 Forecast network flows

Figure 4.12 summarises the change in traffic flows on key corridors between the 2026 and 2041 baseline scenarios. This highlights that significant traffic demand growth is expected on the Canning Highway and Leach Highway corridors (of around 500–1000 vehicles per hour per direction), and modest growth on Marmion Street and South Street (of around 100–200 vehicles per hour per direction).

Figure 4.13 summarises the 2041 traffic flows within the City of Melville. These flows are represented for the estimated peak hour flows, factored from a daily demand (where Demand refers to the people / drivers who would like to drive the corridor). This network flow diagram highlights that traffic volumes continue to grow on the arterial road corridors of Canning Highway, Leach Highway, South Street, North Lake Road, Marmion Street, Murdoch Drive and Stock Road. This is supported by Figure 4.14 which summarise the forecast change in traffic flows across the City of Melville between the 2026 and 2041 baseline scenarios. This highlights that:

- the largest relative demand growth (compared to the 2026 baseline link demand) is observed on Stock Road south of Leach Highway, Marmion Street east of Stock Road, and Leach Highway west of Carrington Street (Figure 4.15). This is related to increases in external demand to Stock Road and Leach Highway (entering and leaving the City of Melville) and dwelling growth in the area
- there is localised reduction in traffic on Riseley Street southbound, however, this is due to traffic re-routing through other local roads to avoid traffic congestion (e.g. via Reynolds Road).

Additional maps, including zoomed-in extracts are provided in Appendix A2 and B1.

Figure 4.12 Forecast flows on key corridors – 2026 vs 2041

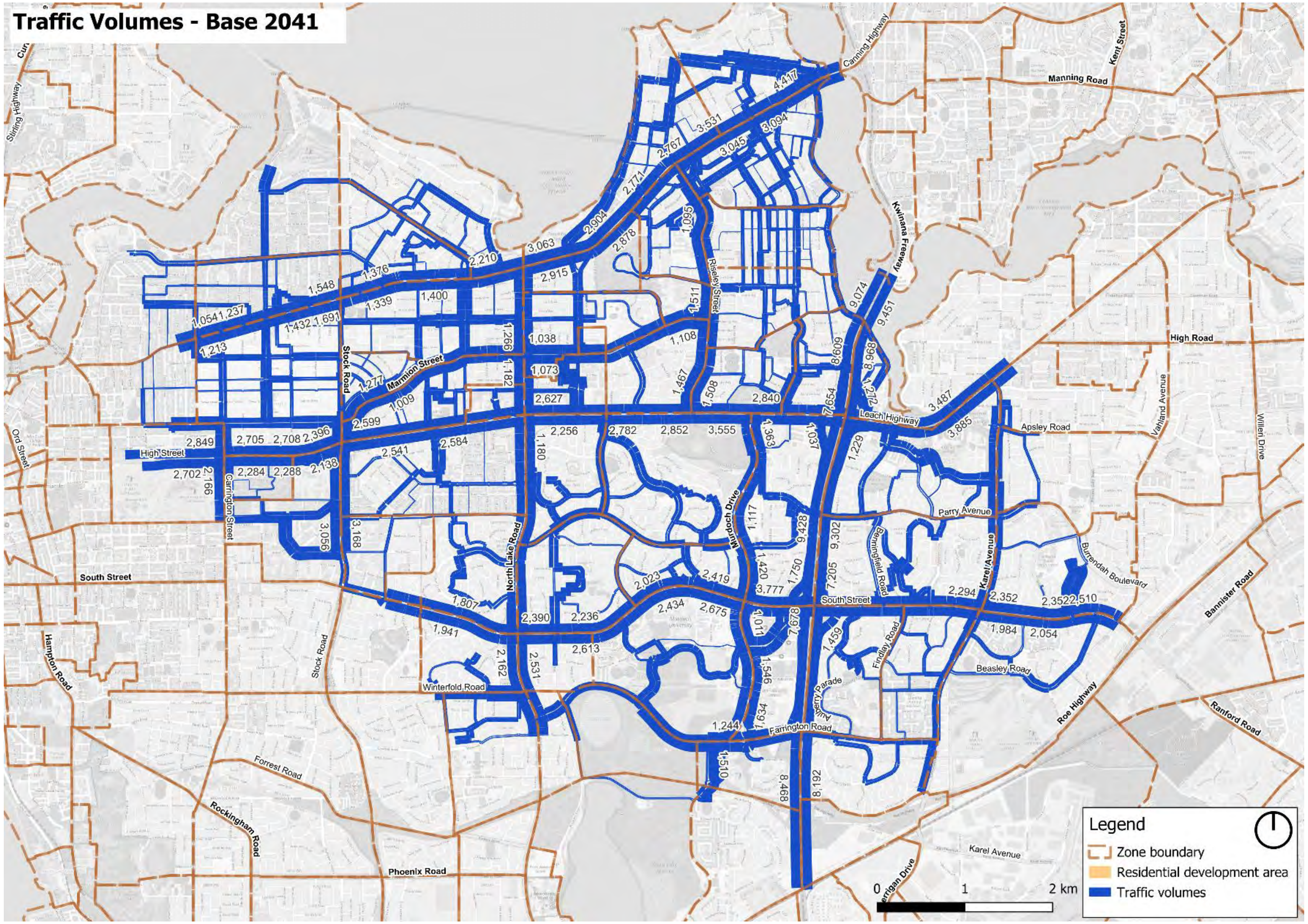


Figure 4.13 Forecast network flows – 2041 Base

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

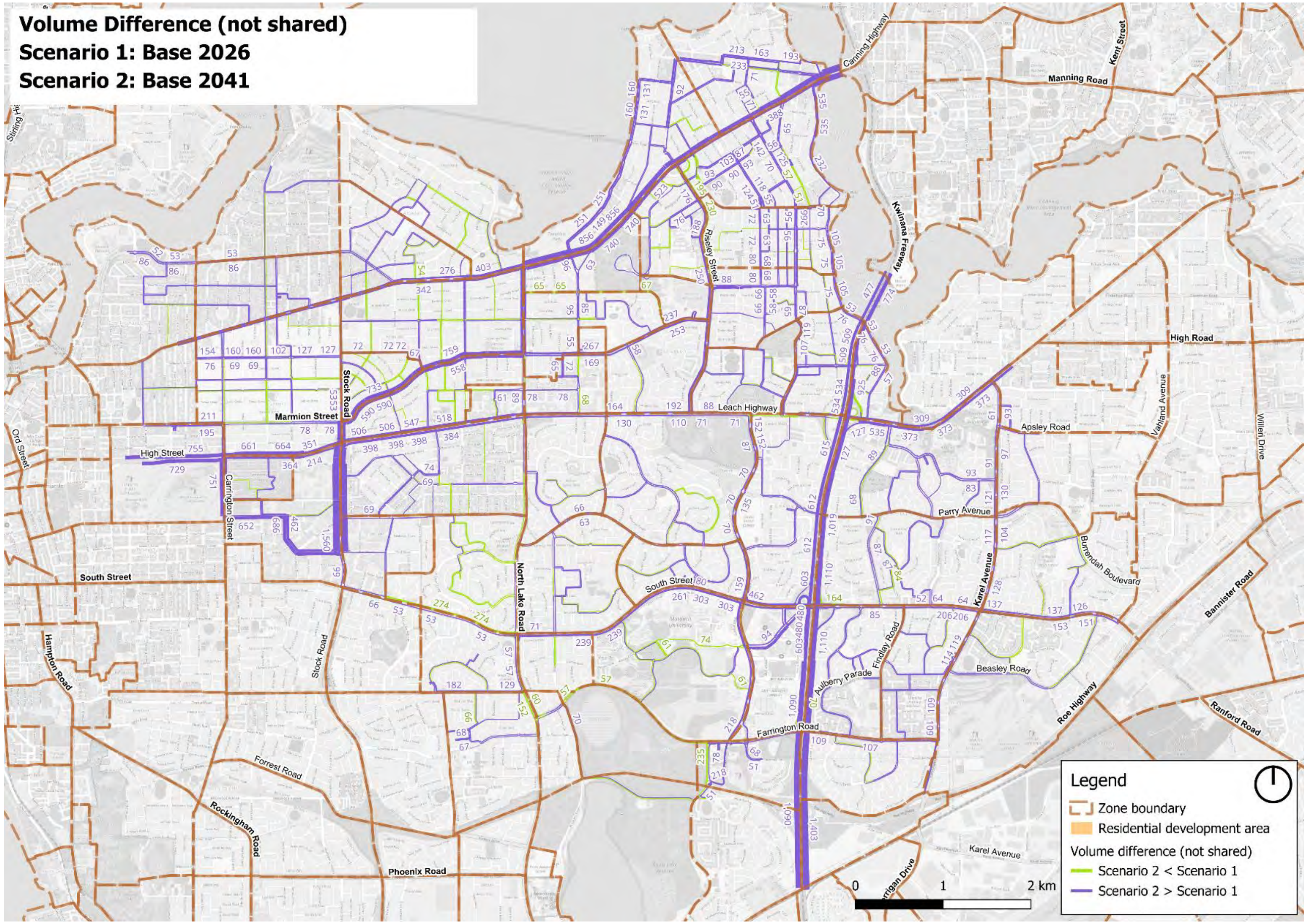


Figure 4.14 Change in network flows – 2041 Base vs 2026 Existing (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

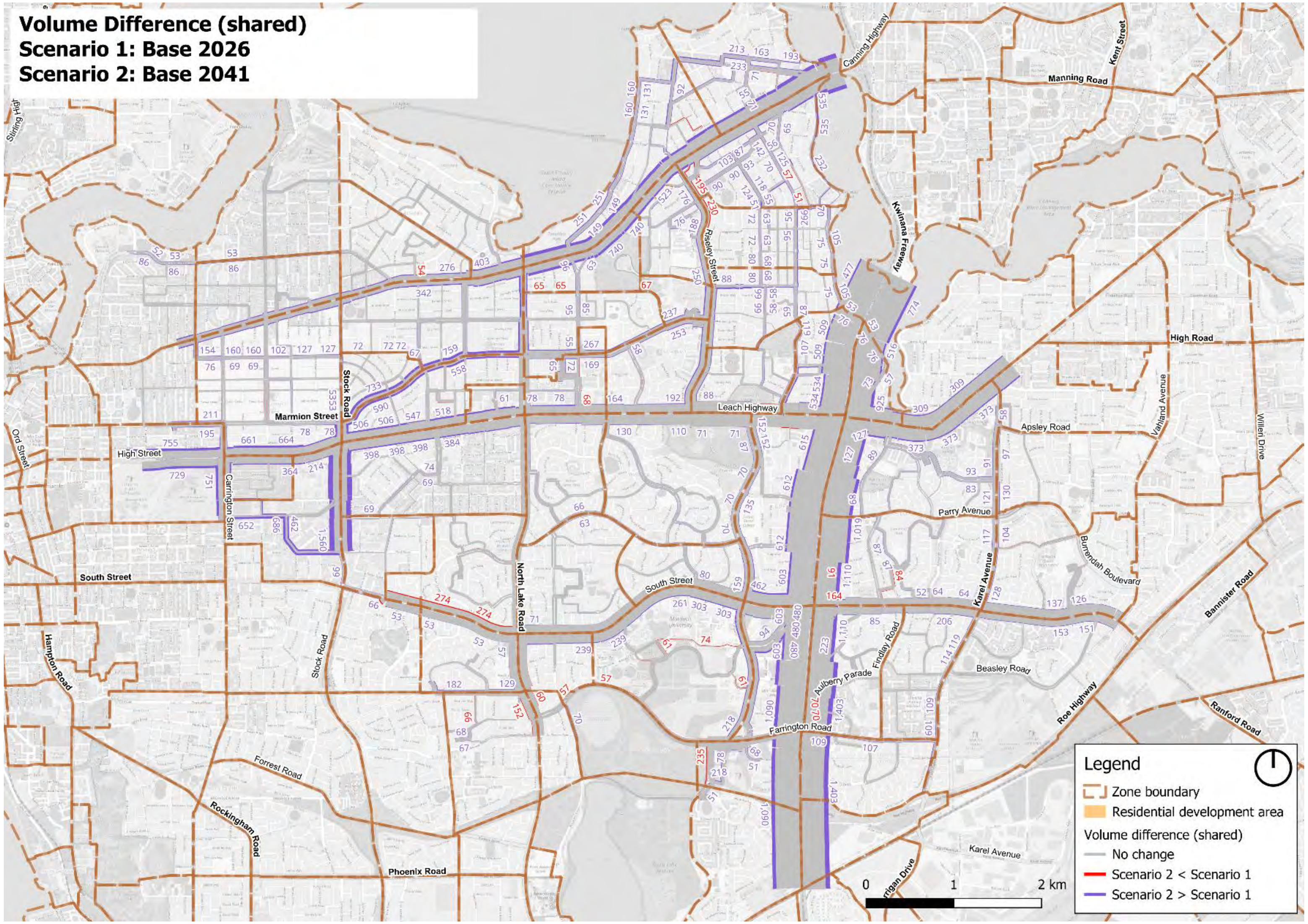


Figure 4.15 Change in network flows – 2041 Base vs 2026 Existing (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

4.6.2 Forecast network congestion and intersection performance

The VCR diagrams in Figure 4.16–Figure 4.17 highlight the key road corridors that are nearing or at capacity within the City of Melville, including:

- Canning Highway east of North Lake Road, exceeding capacity, with the parts of the corridor with V/C > 1.1 increasing significantly in the 2041 baseline and extending to North Lake Road
- Leach Highway east of Riseley Street, at or exceeding capacity
- South Street between Murdoch Drive and Kwinana Freeway, at or exceeding capacity

Note: These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

The SIDRA intersection results in Figure 4.16–Figure 4.17 indicate that most intersections along the Canning Highway are performing unsatisfactorily at LoS F during the AM and PM peak periods. This is a deterioration from the 2026 baseline, where more intersections are LoS F than LoS E. In addition, many intersections along Leach Highway and South Street are also performing unsatisfactorily. This highlights that while the VCR results indicate some sections of Leach Highway and South Street have some remaining capacity, the intersection operations are leading to relatively large delays for drivers.

Some of these intersections are priority-controlled intersections, which also indicates that drivers exiting side roads are not able to easily access the major arterial roads. As a result, this may lead to unsafe gap acceptance following impatience while waiting for a safe gap. This situation is likely worsened from the 2026 baseline, with increasing conflicting traffic and therefore further reduced frequency of safe gaps.

Additional maps, including zoomed-in extracts are provided in Appendix C2.

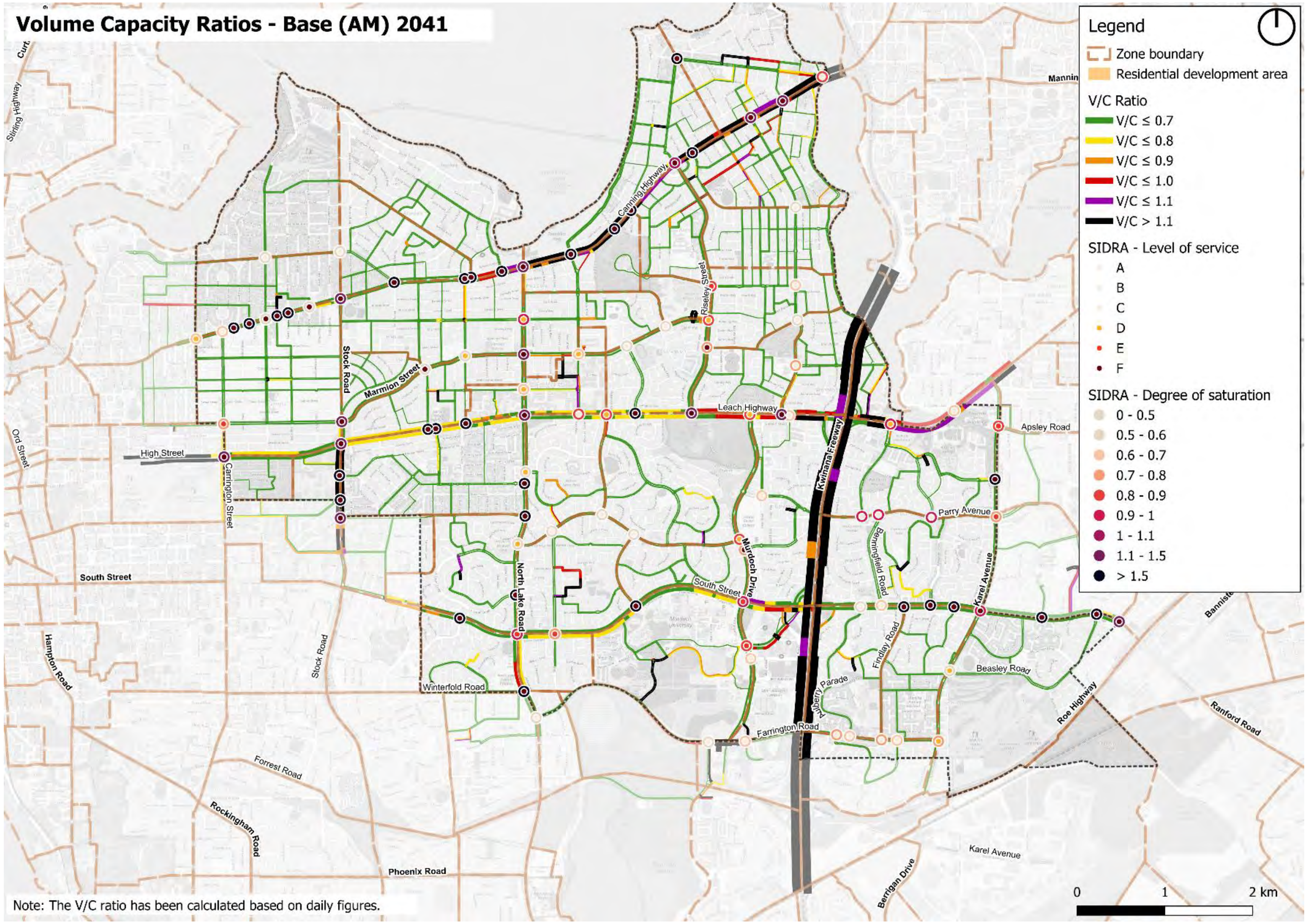


Figure 4.16 Forecast network volume-capacity ratios – 2041 Base AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

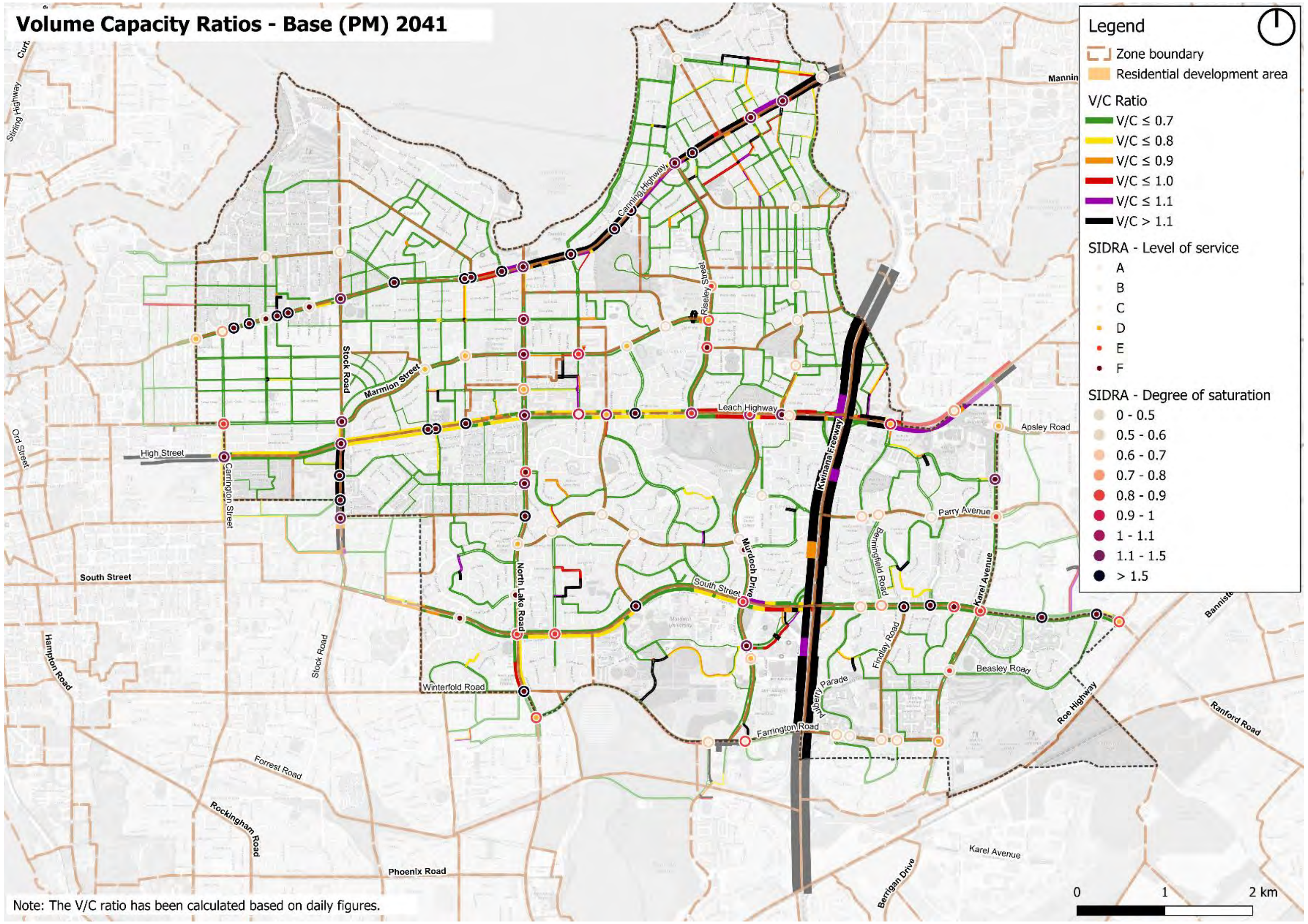


Figure 4.17 Forecast network volume-capacity ratios – 2041 Base PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

4.7 2041 scenario 1 ("CoM Density Approach 1")

4.7.1 Forecast network flows

Figure 4.18 summarises the change in traffic flows on key corridors between the 2026 and 2041 scenario 1. This highlights that the LPS6 changes would not lead to significantly different traffic flows compared to the 2041 baseline scenario on the key corridors of Canning Highway, Leach Highway, South Street and Marmion Street.

Figure 4.19 summarises the 2041 scenario 1 traffic flows within the City of Melville. These flows are represented for the estimated peak hour flows, factored from a daily demand (where Demand refers to the people / drivers who would like to drive the corridor). This network flow diagram for 2041 scenario 1 are similar to the 2041 baseline results. This is further supported by Figure 4.20–Figure 4.21 which summarise the forecast change in traffic flows across the City of Melville between the 2041 baseline scenario and 2041 scenario 1. These flow difference plots highlight the relatively small change in traffic volumes on the key road corridors within the City of Melville which are in the order of 100 vehicles/hour/direction or less.

Additional maps, including zoomed-in extracts are provided in Appendix A3 and B2.

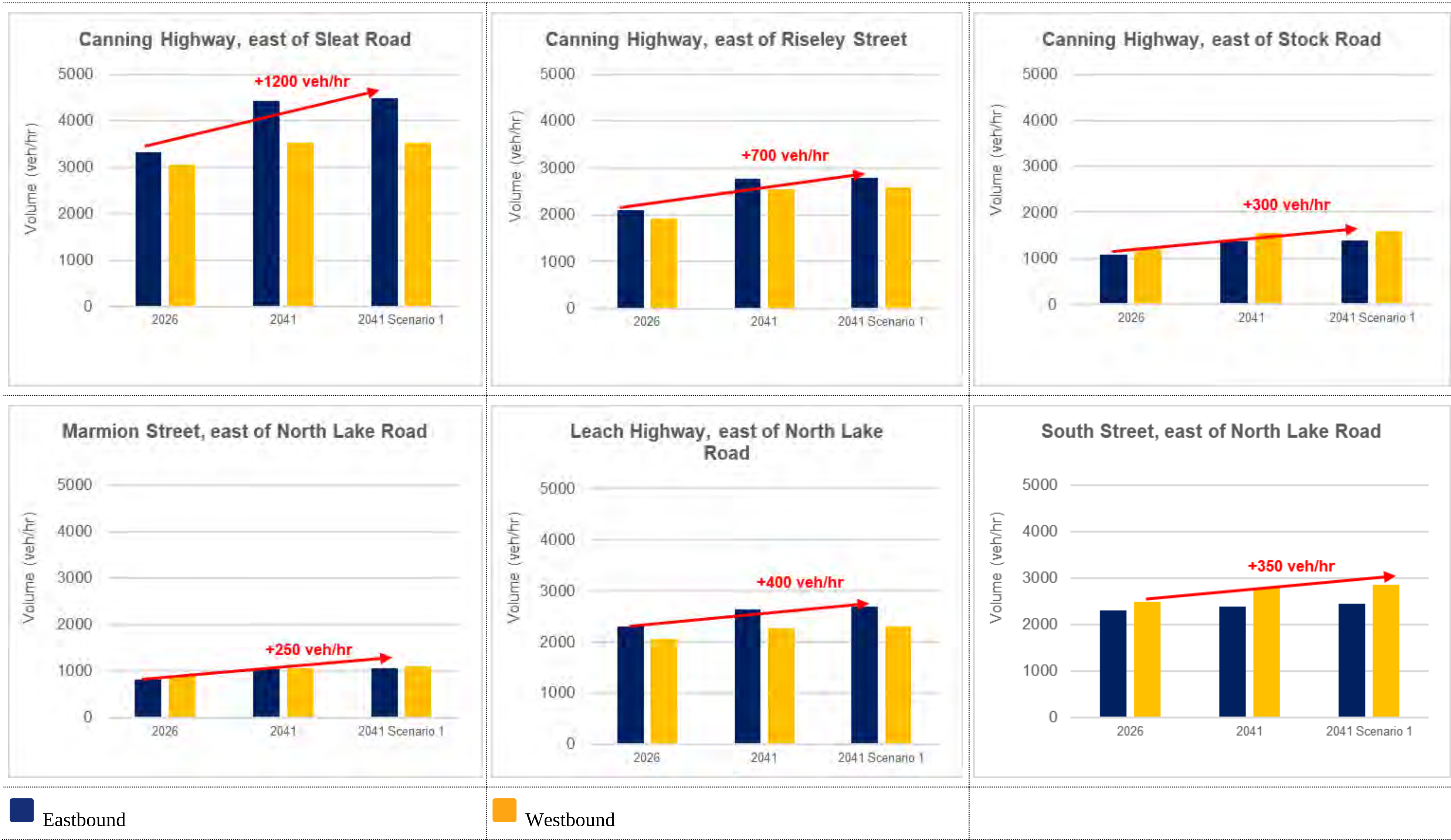


Figure 4.18 Forecast flows on key corridors – 2026 vs 2041 Scenario 1

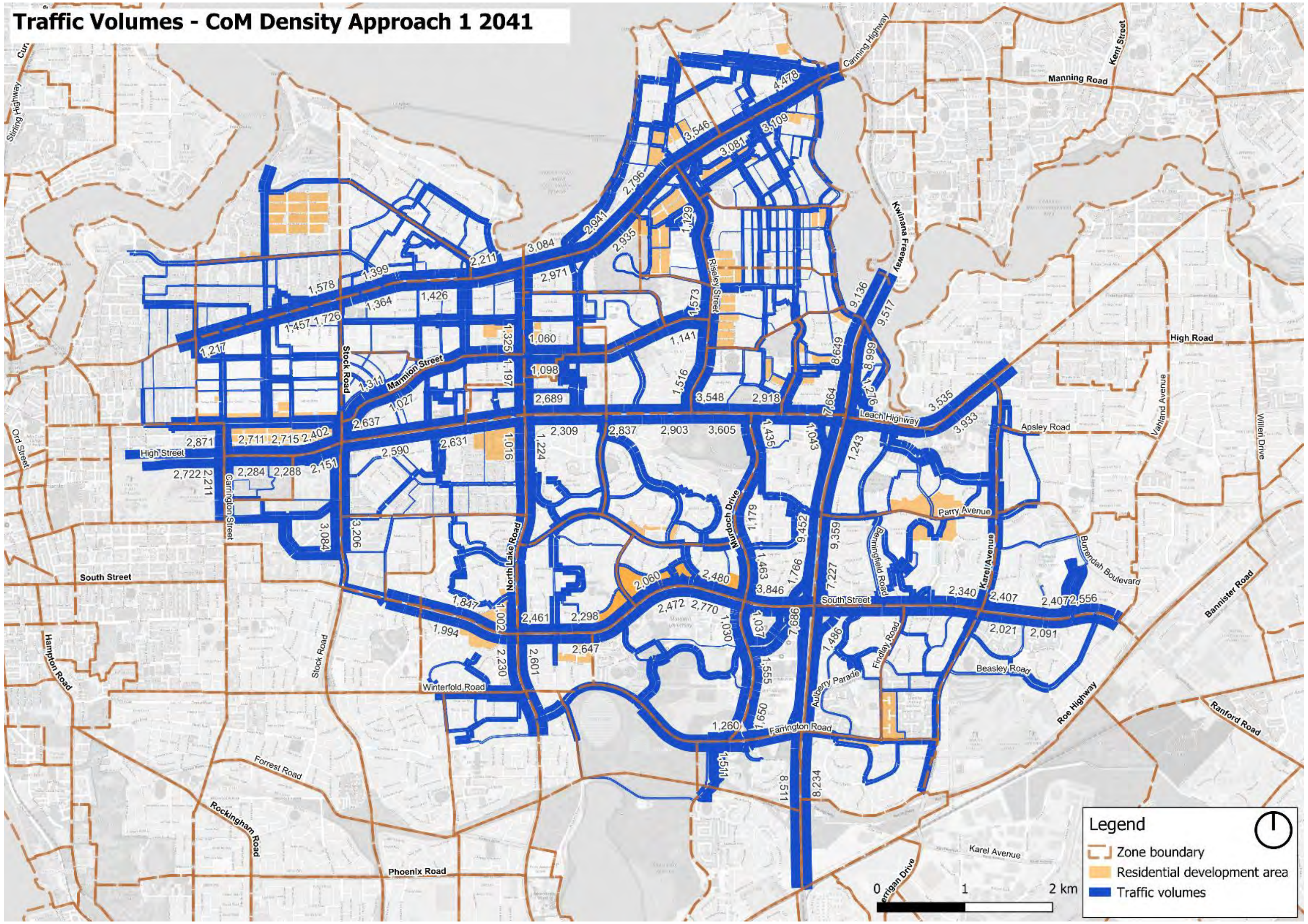


Figure 4.19 Forecast network flows – 2041 Scenario 1

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

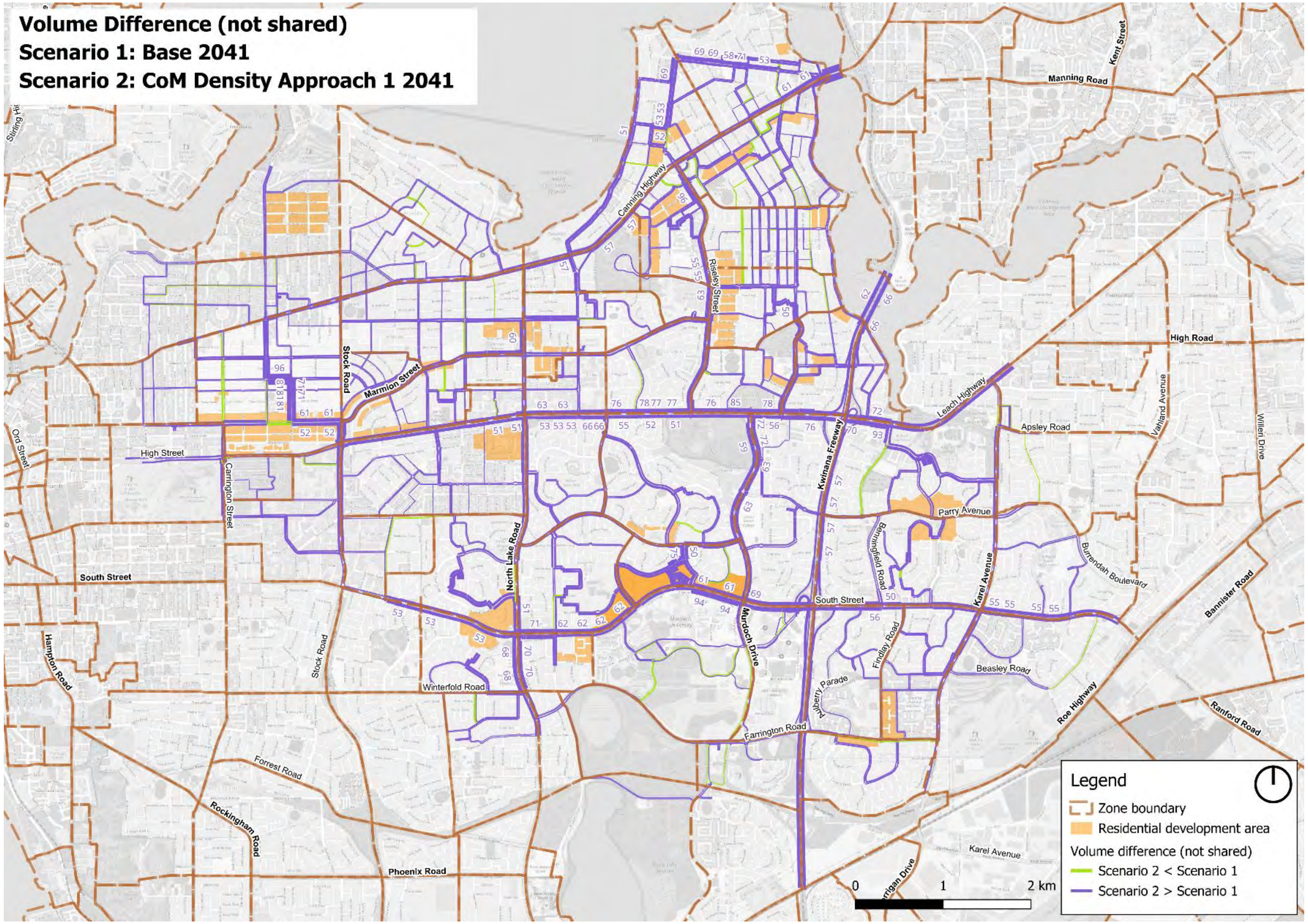


Figure 4.20 Change in network flows – 2041 Scenario 1 vs 2041 Base (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

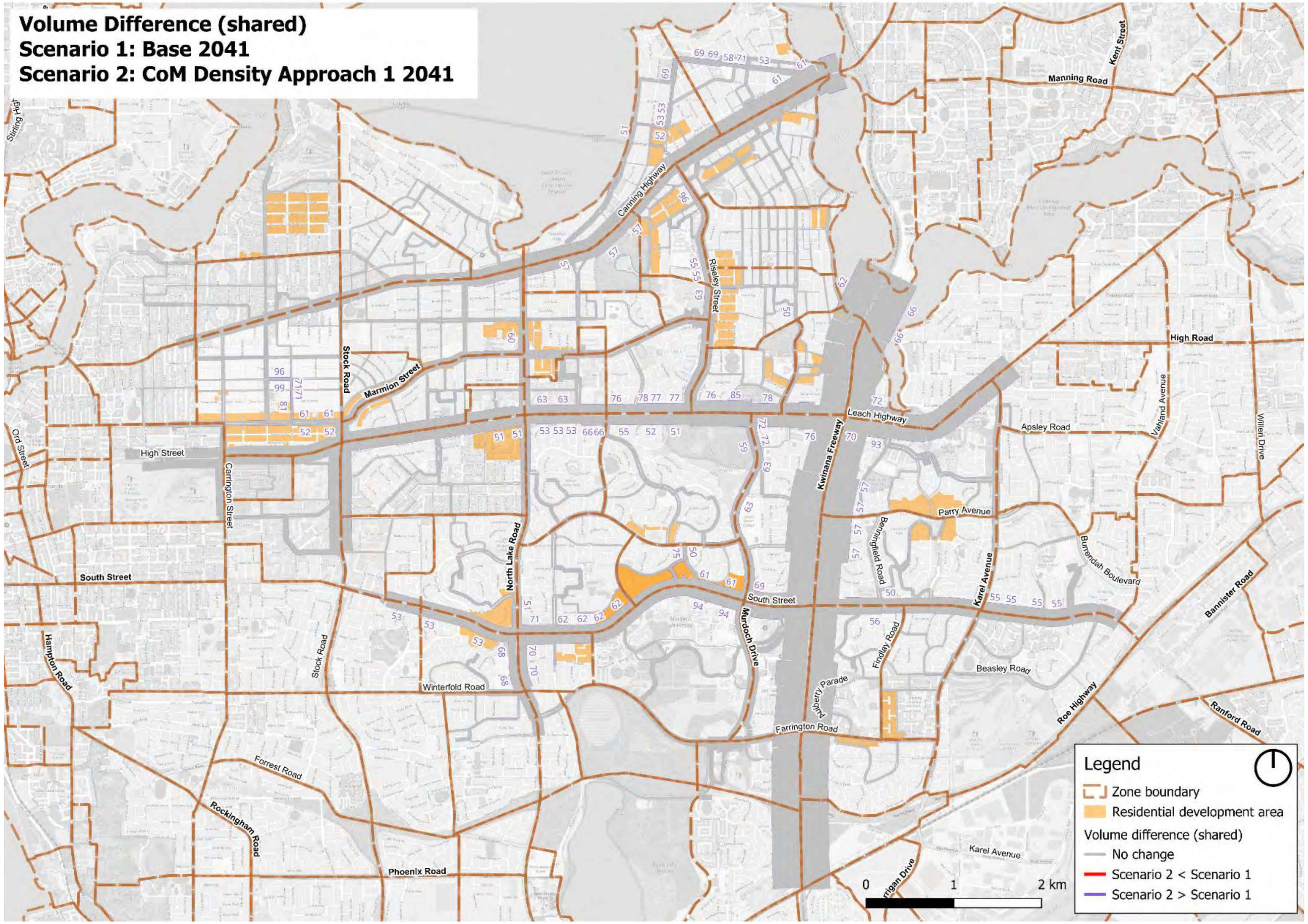


Figure 4.21 Change in network flows – 2041 Scenario 1 vs 2041 Base (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

4.7.2 Forecast network congestion and intersection performance

The VCR diagrams in Figure 4.22–Figure 4.23 highlight the key road corridors that are nearing or at capacity within the City of Melville, including:

- Canning Highway east of North Lake Road, exceeding capacity, with the parts of the corridor with V/C > 1.1 extending to North Lake Road. This is similar to the 2041 baseline scenario.
- Leach Highway east of Riseley Street, at or exceeding capacity. This is similar to the 2041 baseline scenario.
- South Street between Murdoch Drive and Kwinana Freeway, at or exceeding capacity. This is similar to the 2041 baseline scenario.

Note: These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

The SIDRA intersection results in Figure 4.22–Figure 4.23 indicate that most intersections along the Canning Highway are performing unsatisfactorily at LoS F during the AM and PM peak periods. This is a deterioration from the 2026 baseline, where more intersections are LoS F than LoS E. However, it is overall similar to the 2041 baseline scenario. In addition, many intersections along Leach Highway and South Street are also performing unsatisfactorily and overall similar to the 2041 baseline scenario. This highlights that while the VCR results indicate some sections of Leach Highway and South Street have some remaining capacity, the intersection operations are leading to relatively large delays for drivers.

Some of these intersections are priority-controlled intersections, which also indicates that drivers exiting side roads are not able to easily access the major arterial roads. As a result, this may lead to unsafe gap acceptance following impatience while waiting for a safe gap. This situation is likely worsened from the 2026 baseline, with increasing conflicting traffic and therefore further reduced frequency of safe gaps. However, the impact of this is similar to the 2041 baseline scenario.

Additional maps, including zoomed-in extracts are provided in Appendix C3.

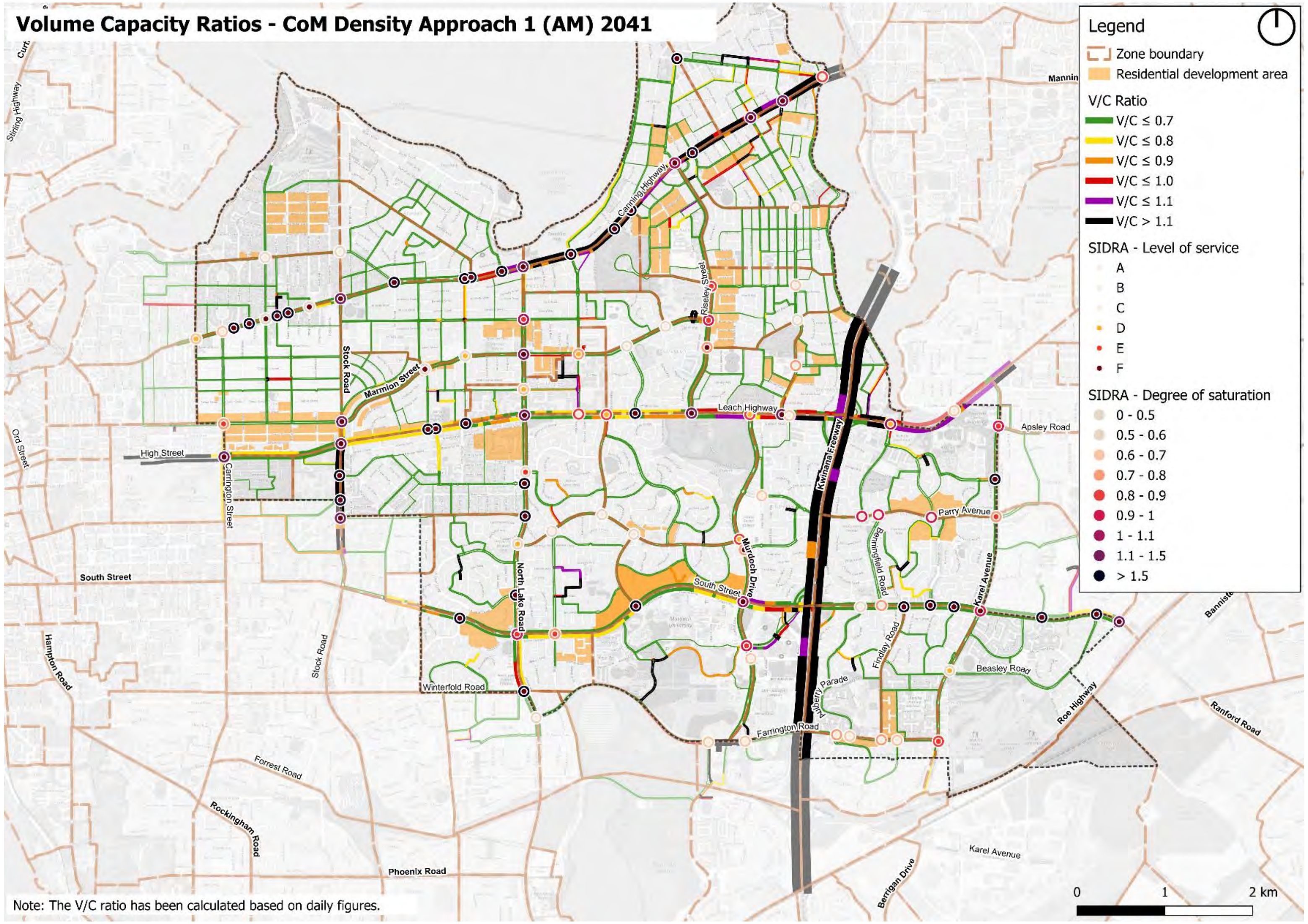


Figure 4.22 Forecast network volume-capacity ratios – 2041 Scenario 1 AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

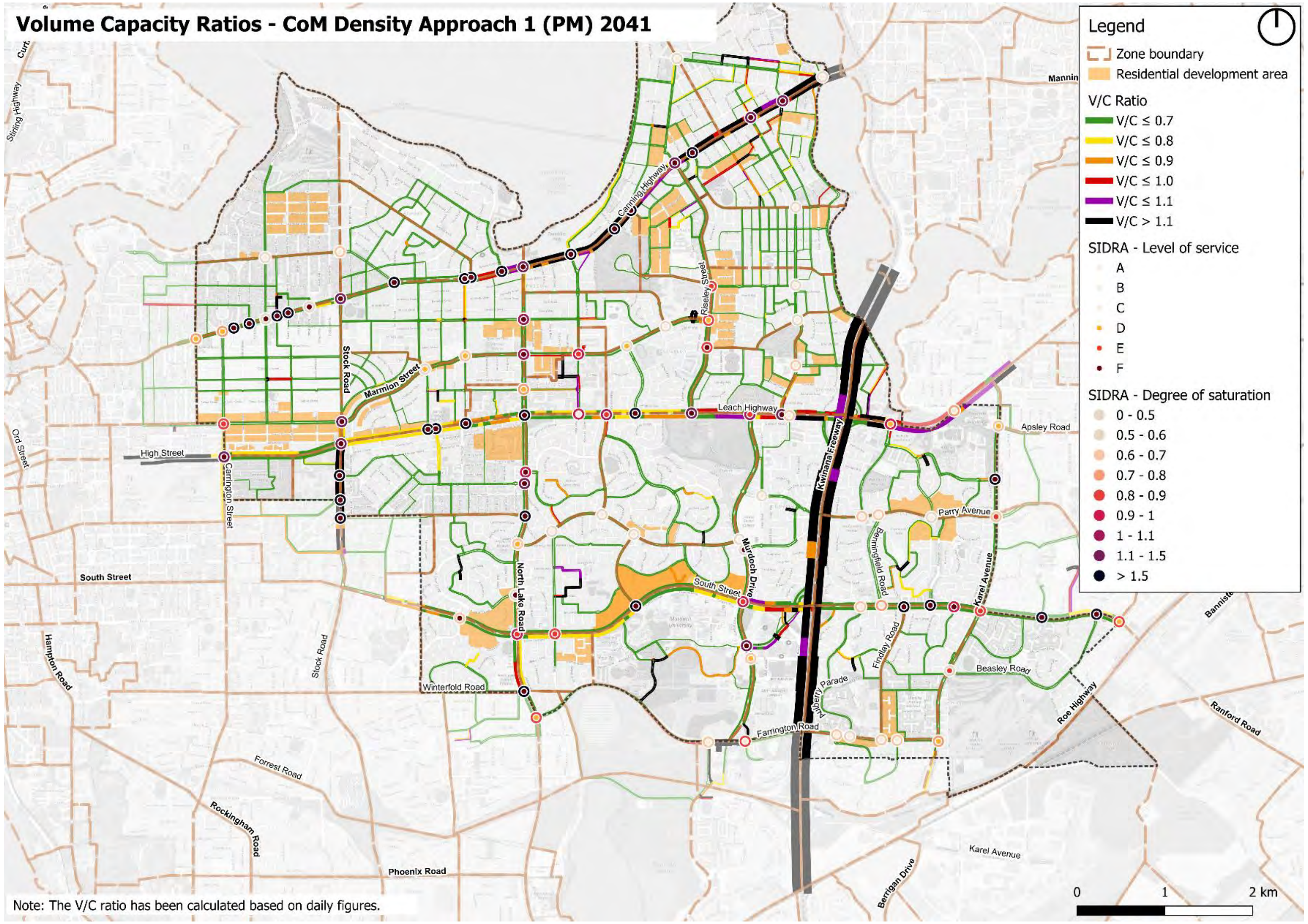


Figure 4.23 Forecast network volume-capacity ratios – 2041 Scenario 1 PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

4.8 2041 scenario 2 (“CoM Density Approach 2”)

4.8.1 Forecast network flows

Figure 4.24 summarises the change in traffic flows on key corridors between the 2026 and 2041 scenario 2. This highlights that additional changes to the proposed LPS6 would not lead to significantly different traffic flows compared to the 2041 scenario 1 on the key corridors of Canning Highway, Leach Highway, South Street and Marmion Street.

Figure 4.25 summarises the 2041 scenario 2 traffic flows within the City of Melville. These flows are represented for the estimated peak hour flows, factored from a daily demand (where Demand refers to the people / drivers who would like to drive the corridor). This network flow diagram for 2041 scenario 2 are similar to the 2041 baseline results and 2041 scenario 1 results. This is further supported by Figure 4.26–Figure 4.27 which summarise the forecast change in traffic flows across the City of Melville between the 2041 baseline scenario and 2041 scenario 2. These flow difference plots highlight the relatively small change in traffic volumes on the key road corridors within the City of Melville which are in the order of 100–200 vehicles/hour/direction or less.

Additional maps, including zoomed-in extracts are provided in Appendix A4 and B3.

Figure 4.24 Forecast flows on key corridors – 2026 vs 2041 Scenario 2

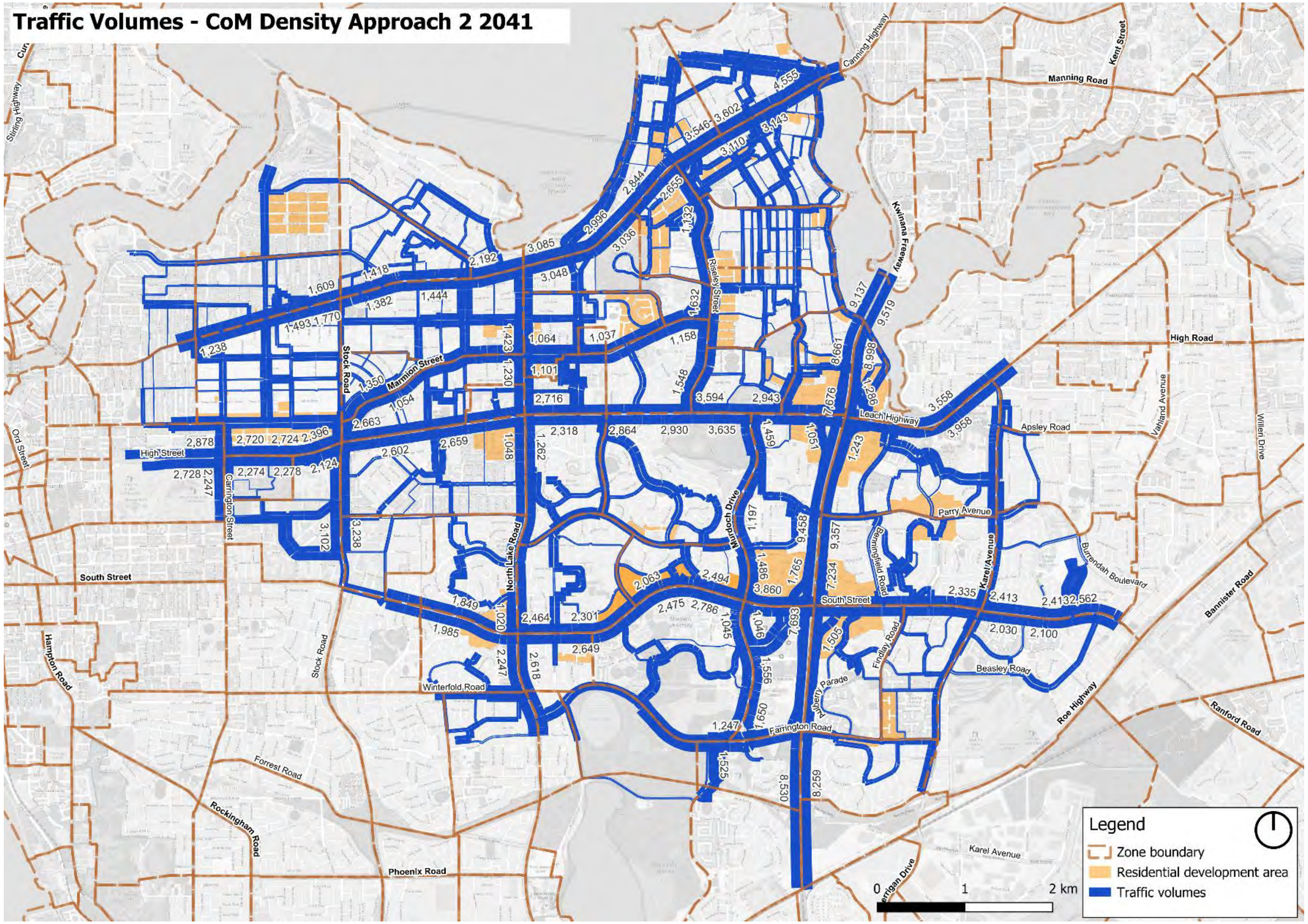


Figure 4.25 Forecast network flows – 2041 Scenario 2

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

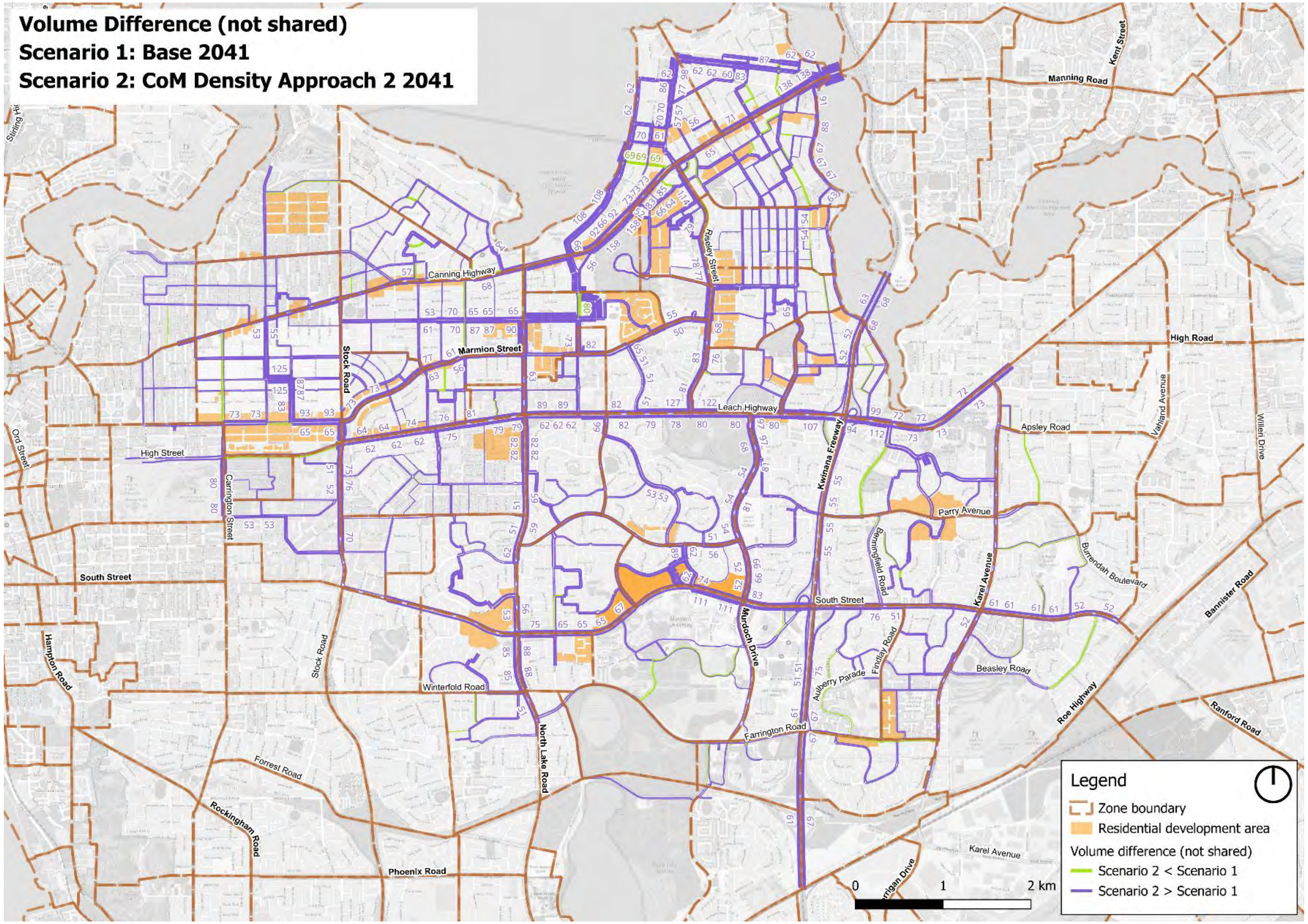


Figure 4.26 Change in network flows – 2041 Scenario 2 vs 2041 Base (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

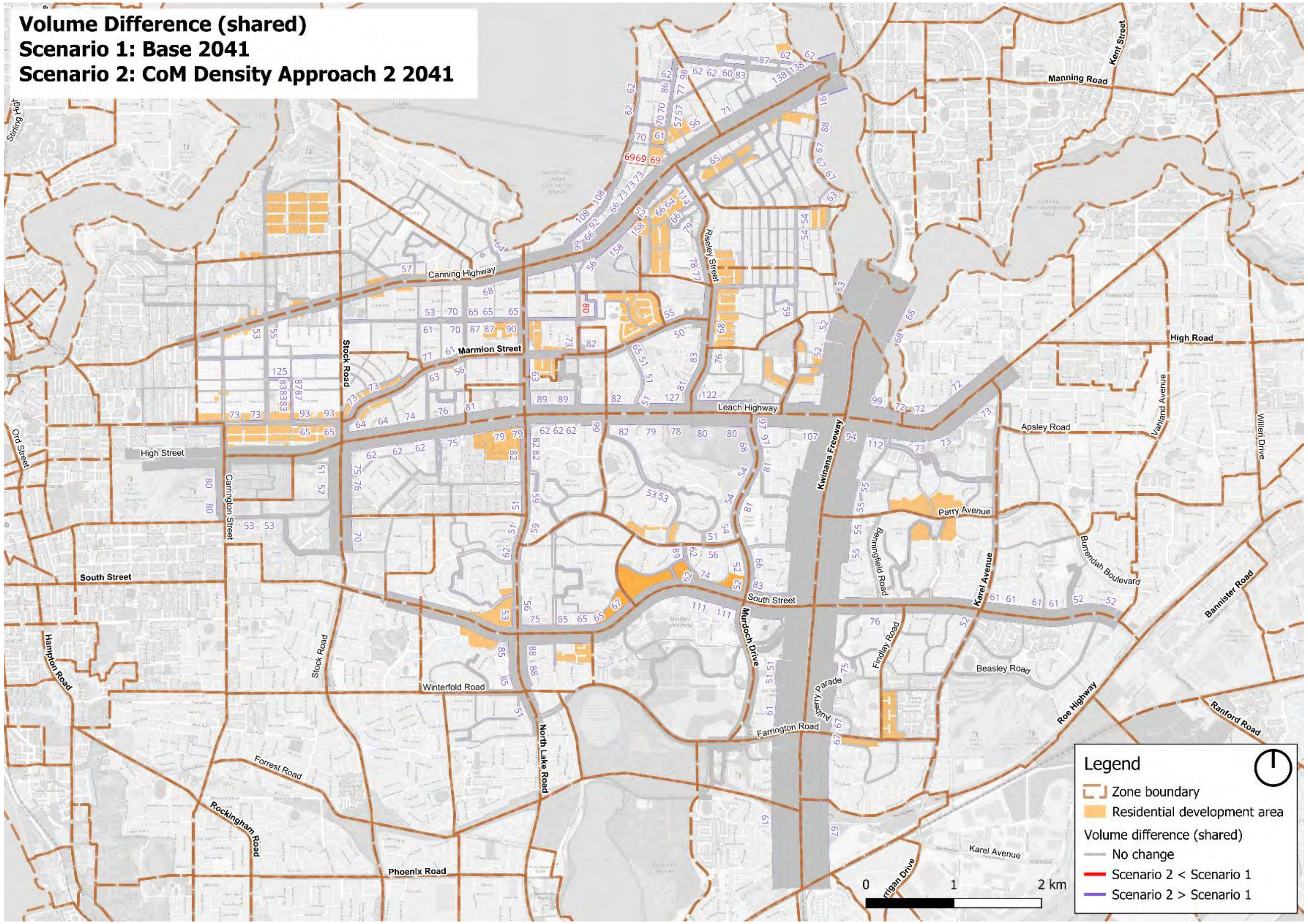


Figure 4.27 Change in network flows – 2041 Scenario 2 vs 2041 Base (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

4.8.2 Forecast network congestion and intersection performance

The VCR diagrams in Figure 4.28–Figure 4.29 highlight the key road corridors that are nearing or at capacity within the City of Melville, including:

- Canning Highway east of North Lake Road, exceeding capacity, with the parts of the corridor with V/C > 1.1 extending to North Lake Road. This is similar to the 2041 baseline scenario and 2041 scenario 1.
- Leach Highway east of Riseley Street, at or exceeding capacity. This is similar to the 2041 baseline scenario and 2041 scenario 1.
- South Street between Murdoch Drive and Kwinana Freeway, at or exceeding capacity. This is similar to the 2041 baseline scenario and 2041 scenario 1.

Note: These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

The SIDRA intersection results in Figure 4.28–Figure 4.29 indicate that most intersections along the Canning Highway are performing unsatisfactorily at LoS F during the AM and PM peak periods. This is a deterioration from the 2026 baseline, where more intersections are LoS F than LoS E. However, it is overall similar to the 2041 baseline scenario and 2041 scenario 1. In addition, many intersections along Leach Highway and South Street are also performing unsatisfactorily and overall similar to the 2041 baseline scenario and 2041 scenario 1. This highlights that while the VCR results indicate some sections of Leach Highway and South Street have some remaining capacity, the intersection operations are leading to relatively large delays for drivers.

Some of these intersections are priority-controlled intersections, which also indicates that drivers exiting side roads are not able to easily access the major arterial roads. As a result, this may lead to unsafe gap acceptance following impatience while waiting for a safe gap. This situation is likely worsened from the 2026 baseline, with increasing conflicting traffic and therefore further reduced frequency of safe gaps. However, the impact of this is similar to the 2041 baseline scenario and 2041 scenario 1.

Additional maps, including zoomed-in extracts are provided in Appendix C4.

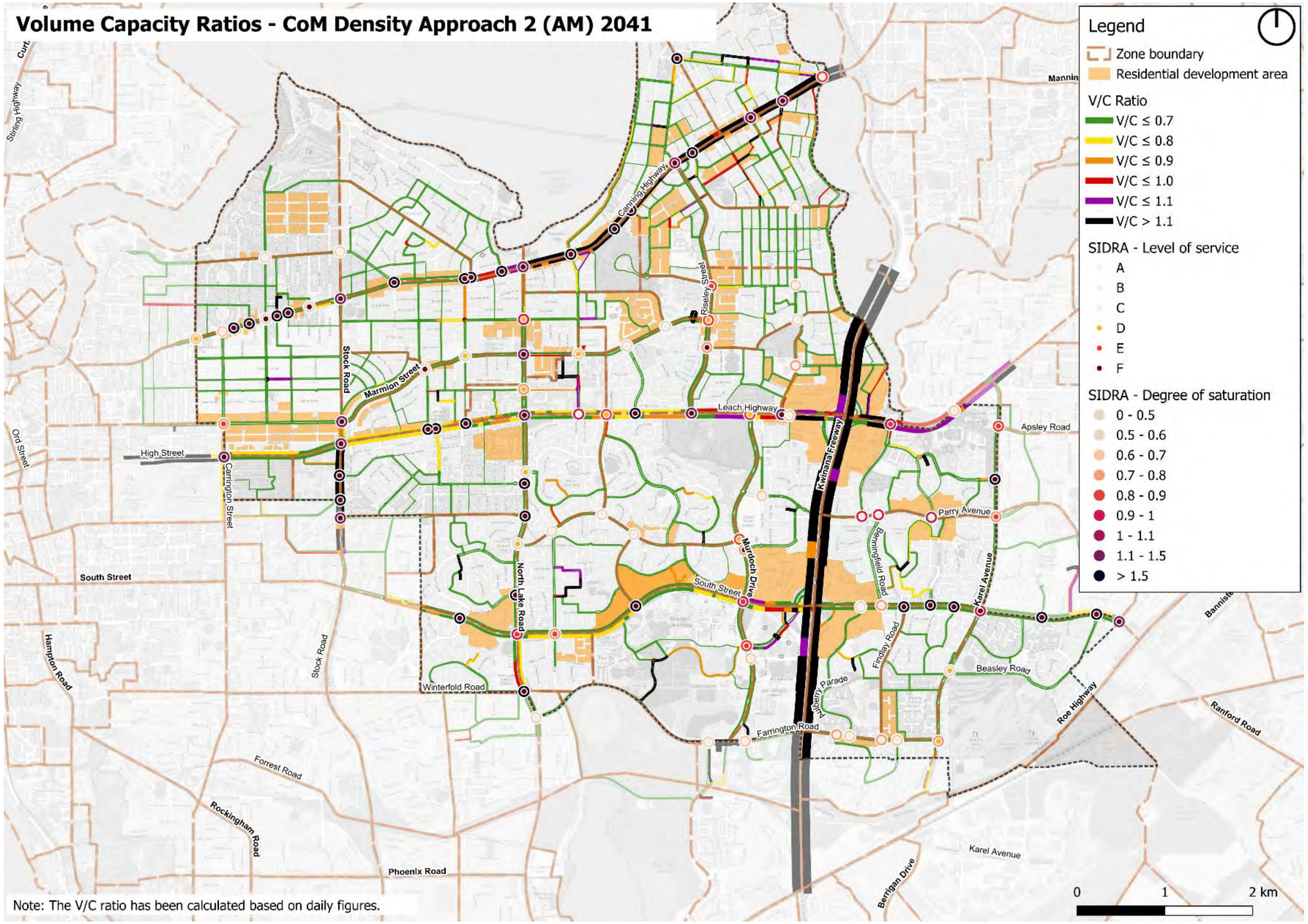


Figure 4.28 Forecast network volume-capacity ratios – 2041 Scenario 2 AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

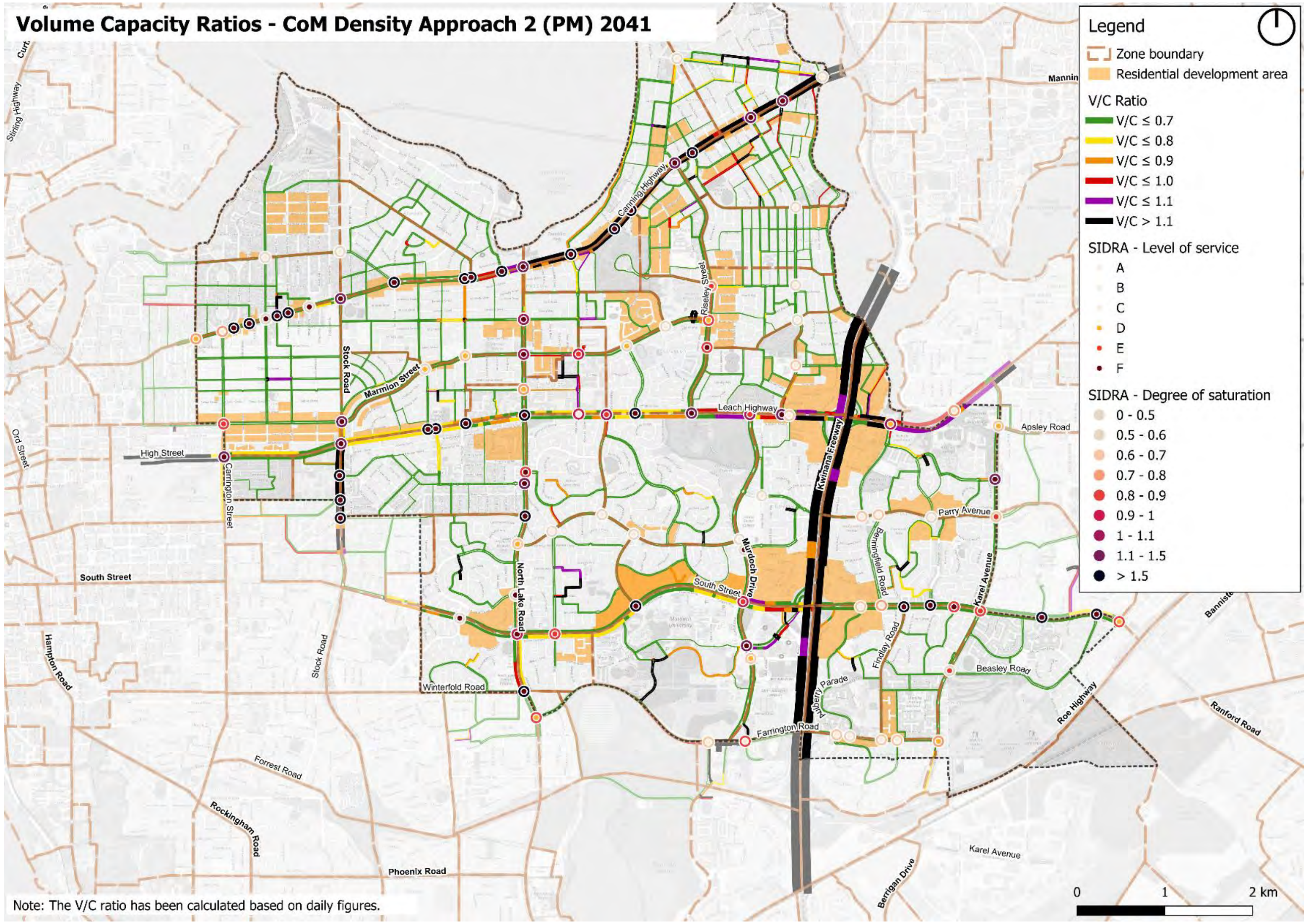


Figure 4.29 Forecast network volume-capacity ratios – 2041 Scenario 2 PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

4.9 2051 baseline

4.9.1 Forecast network flows

Figure 4.30 summarises the change in traffic flows on key corridors between the 2026 and 2051 baseline scenarios. This highlights that traffic demand growth slows in the period 2041–2051 on the Canning Highway, Leach Highway, South Street and Marmion Street corridors.

Figure 4.31 summarises the 2051 traffic flows within the City of Melville. These flows are represented for the estimated peak hour flows, factored from a daily demand (where Demand refers to the people / drivers who would like to drive the corridor). This network flow diagram highlights that traffic volumes continue to grow on the arterial road corridors of Canning Highway, Leach Highway, South Street, North Lake Road, Marmion Street, Murdoch Drive and Stock Road. This is supported by Figure 4.32–Figure 4.33 which summarise the forecast change in traffic flows across the City of Melville between the 2026 and 2051 baseline scenarios. This highlights that:

- the largest relative demand growth (compared to the 2026 baseline link demand) is observed on Stock Road south of Leach Highway, Marmion Street east of Stock Road, and Leach Highway west of Carrington Street (Figure 4.33). This is related to increases in external demand to Stock Road and Leach Highway (entering and leaving the City of Melville) and dwelling growth in the area
- while Canning Highway experiences traffic demand growth, it is relatively small compared to the 2026 baseline demand
- there is localised reduction in traffic on Riseley Street southbound, however, this is due to traffic re-routing through other local roads to avoid traffic congestion (e.g. via Reynolds Road).

Additional maps, including zoomed-in extracts are provided in Appendix A5 and B4.

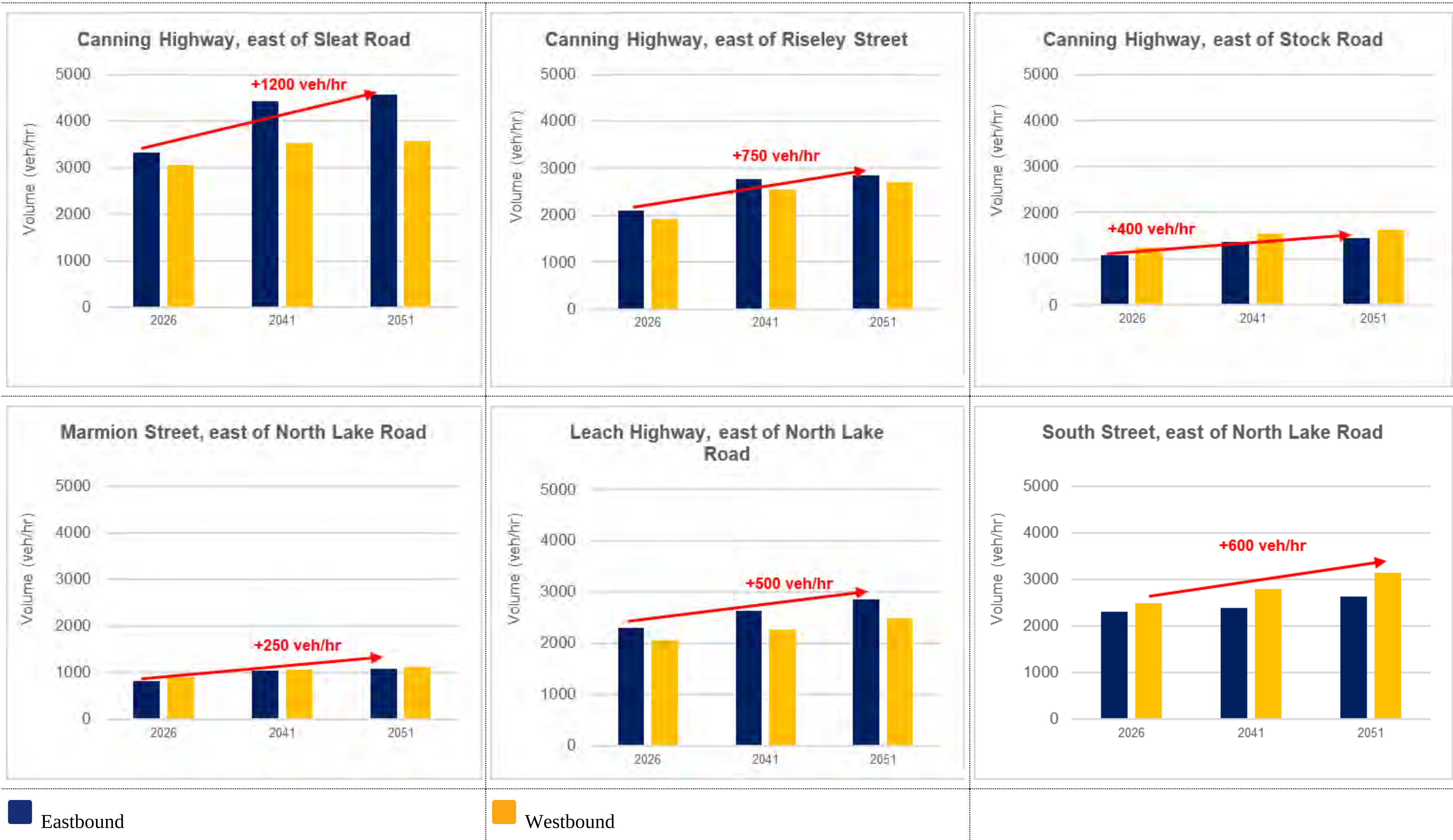


Figure 4.30 Forecast flows on key corridors – 2026 vs 2051

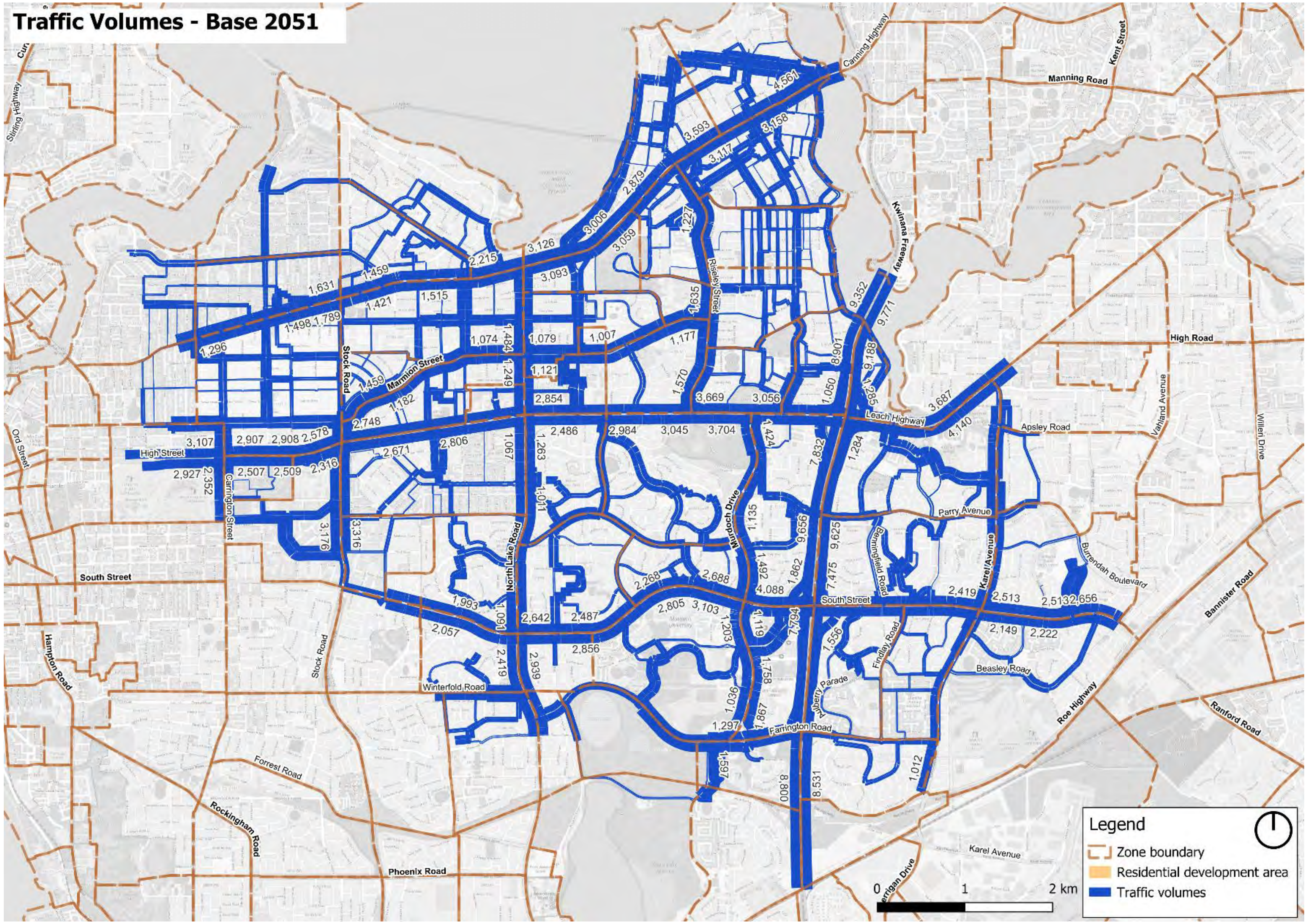


Figure 4.31 Forecast network flows – 2051 Base

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

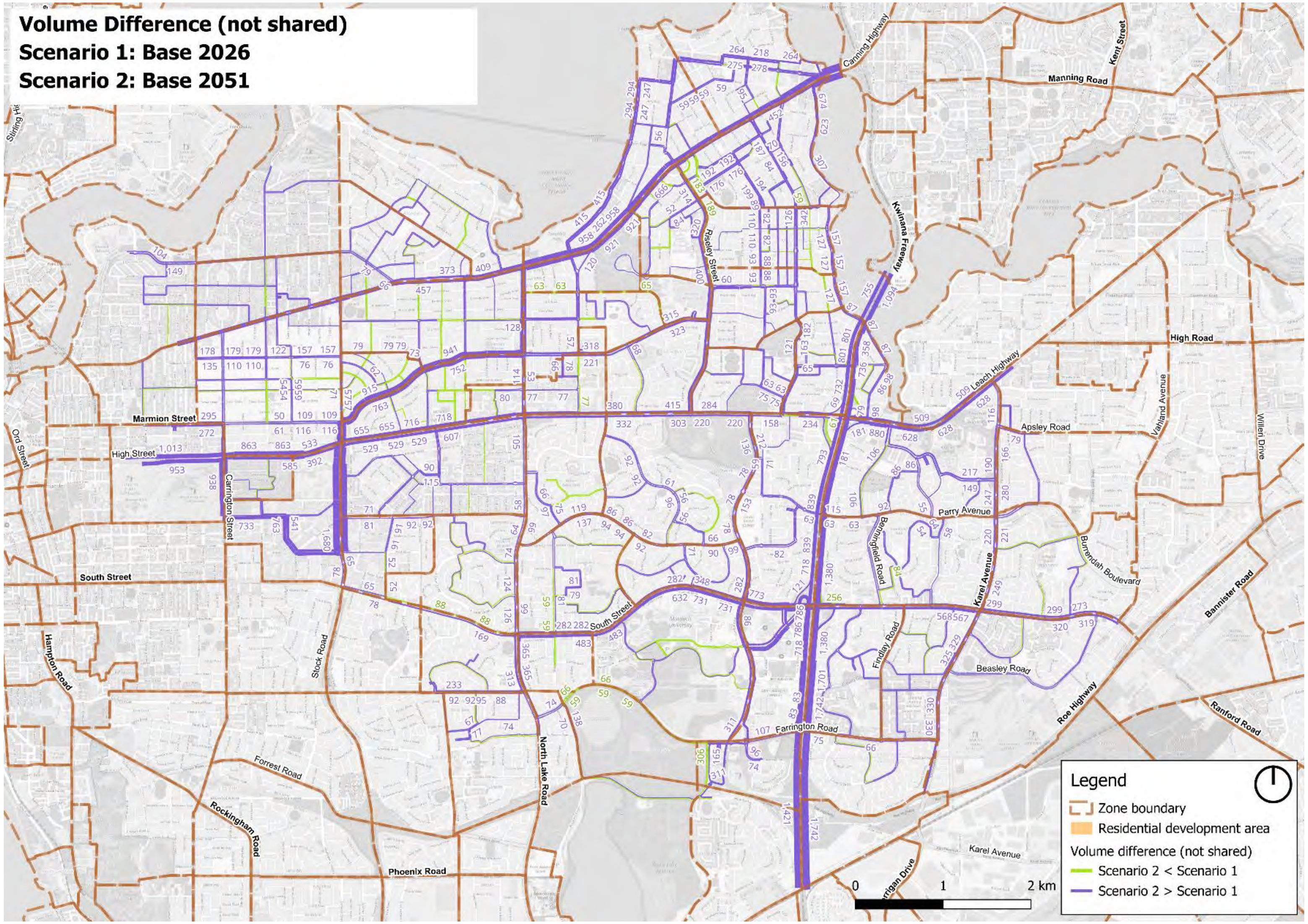


Figure 4.32 Change in network flows – 2051 Base vs 2026 Existing (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

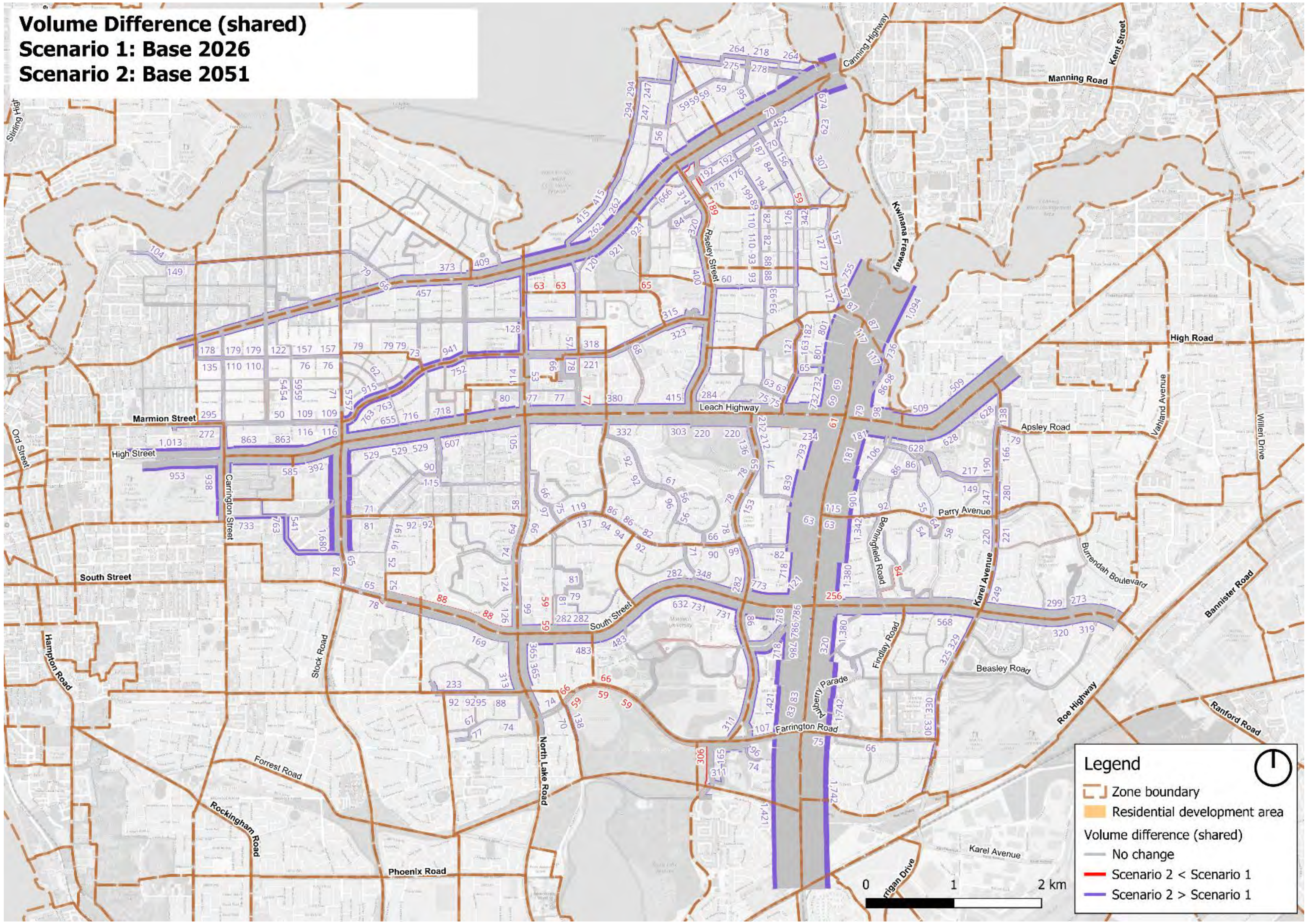


Figure 4.33 Change in network flows – 2051 Base vs 2026 Existing (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

4.9.2 *Forecast network congestion and intersection performance*

The VCR diagrams in Figure 4.34–Figure 4.35 highlight the key road corridors that are nearing or at capacity within the City of Melville, including:

- Canning Highway east of North Lake Road, exceeding capacity, with the parts of the corridor with V/C > 1.1 increasing significantly in the 2051 baseline and extending west of North Lake Road
- Leach Highway east of Riseley Street, exceeding capacity, which is a deterioration from the 2051 baseline, where it was at capacity
- South Street between Murdoch Drive and Kwinana Freeway, exceeding capacity, which is a deterioration from the 2051 baseline, where it was at capacity

Note: These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

The SIDRA intersection results in Figure 4.34–Figure 4.35 indicate that most intersections along the Canning Highway are performing unsatisfactorily at LoS F during the AM and PM peak periods. In addition, many intersections along Leach Highway and South Street are also performing unsatisfactorily. This highlights that while the VCR results indicate some sections of Leach Highway and South Street have some remaining capacity, the intersection operations are leading to relatively large delays for drivers.

Some of these intersections are priority-controlled intersections, which also indicates that drivers exiting side roads are not able to easily access the major arterial roads. As a result, this may lead to unsafe gap acceptance following impatience while waiting for a safe gap. This situation is likely worsened from the 2026 and 2041 baseline scenarios, with increasing conflicting traffic and therefore further reduced frequency of safe gaps.

Additional maps, including zoomed-in extracts are provided in Appendix C5.

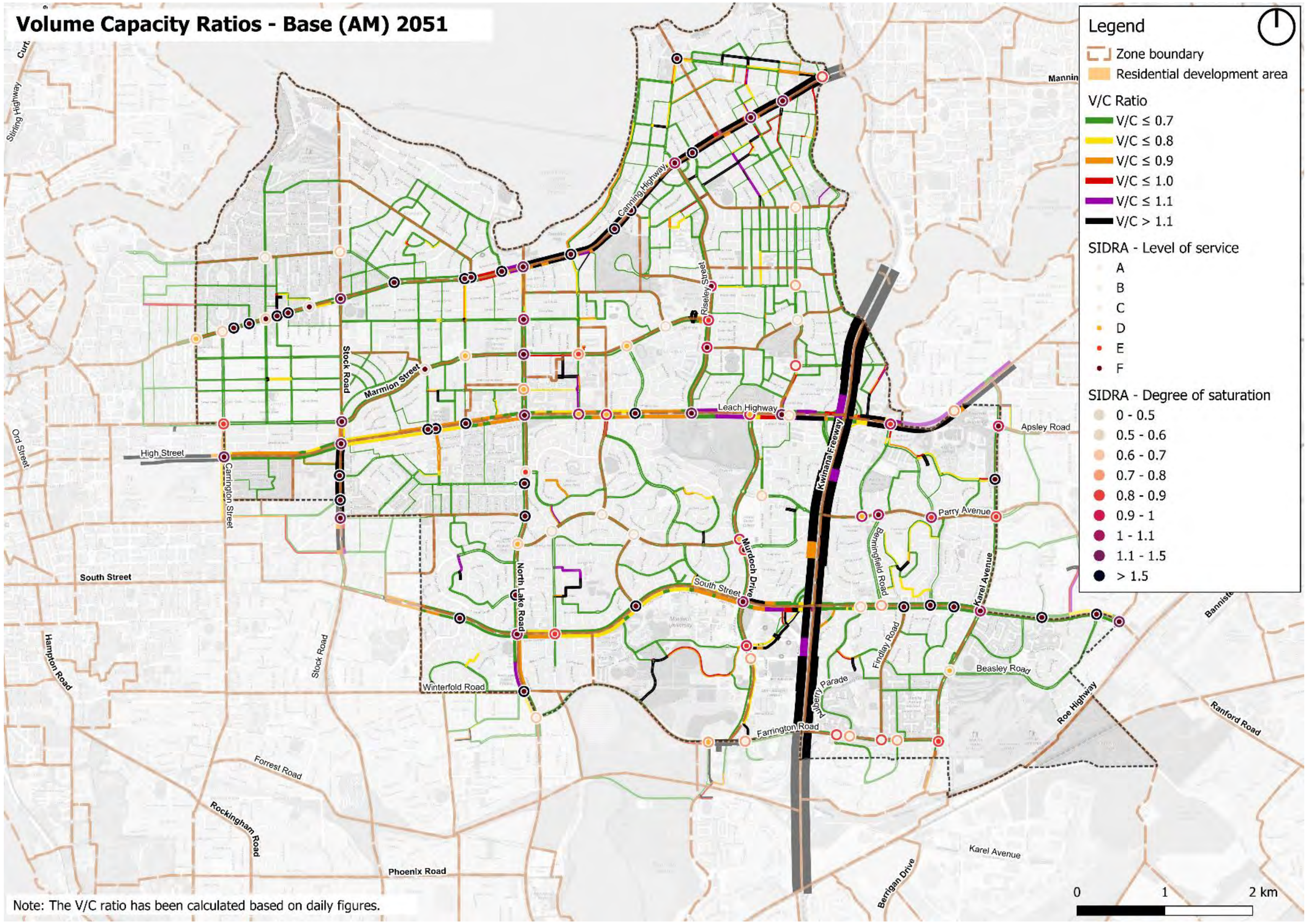


Figure 4.34 Forecast network volume-capacity ratios – 2051 Base AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

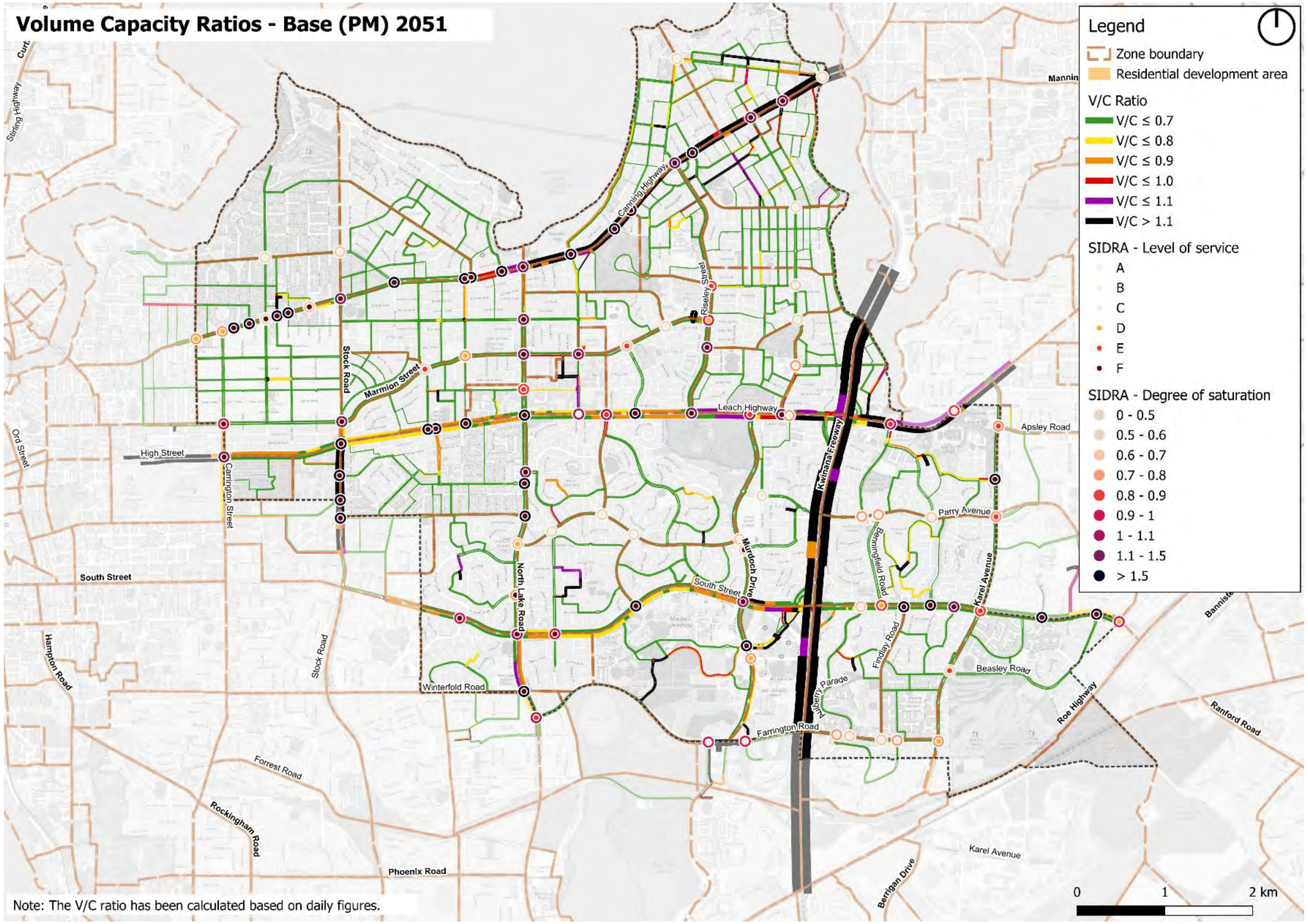


Figure 4.35 Forecast network volume-capacity ratios – 2051 Base PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

4.10 2051 scenario 1 (“CoM Density Approach 1”)

4.10.1 Forecast network flows

Figure 4.36 summarises the change in traffic flows on key corridors between 2026 and 2051 scenario 1. This highlights that the LPS6 changes would not lead to significantly different traffic flows compared to the 2051 baseline scenario on the key corridors of Canning Highway, Leach Highway, South Street and Marmion Street.

Figure 4.37 summarises the 2051 scenario 1 traffic flows within the City of Melville. These flows are represented for the estimated peak hour flows, factored from a daily demand (where Demand refers to the people / drivers who would like to drive the corridor). The network flow diagram for 2051 scenario 1 are similar to the 2051 baseline results. This is further supported by Figure 4.38 which summarise the forecast change in traffic flows across the City of Melville between the 2051 baseline scenario and 2051 scenario 1. These flow difference plots highlight the relatively small difference in traffic volumes on the key road corridors within the City of Melville and are in the order of 250 vehicles/hour/direction or less.

Additional maps, including zoomed-in extracts are provided in Appendix A6 and B5.

Figure 4.36 Forecast flows on key corridors – 2026 vs 2051 Scenario 1

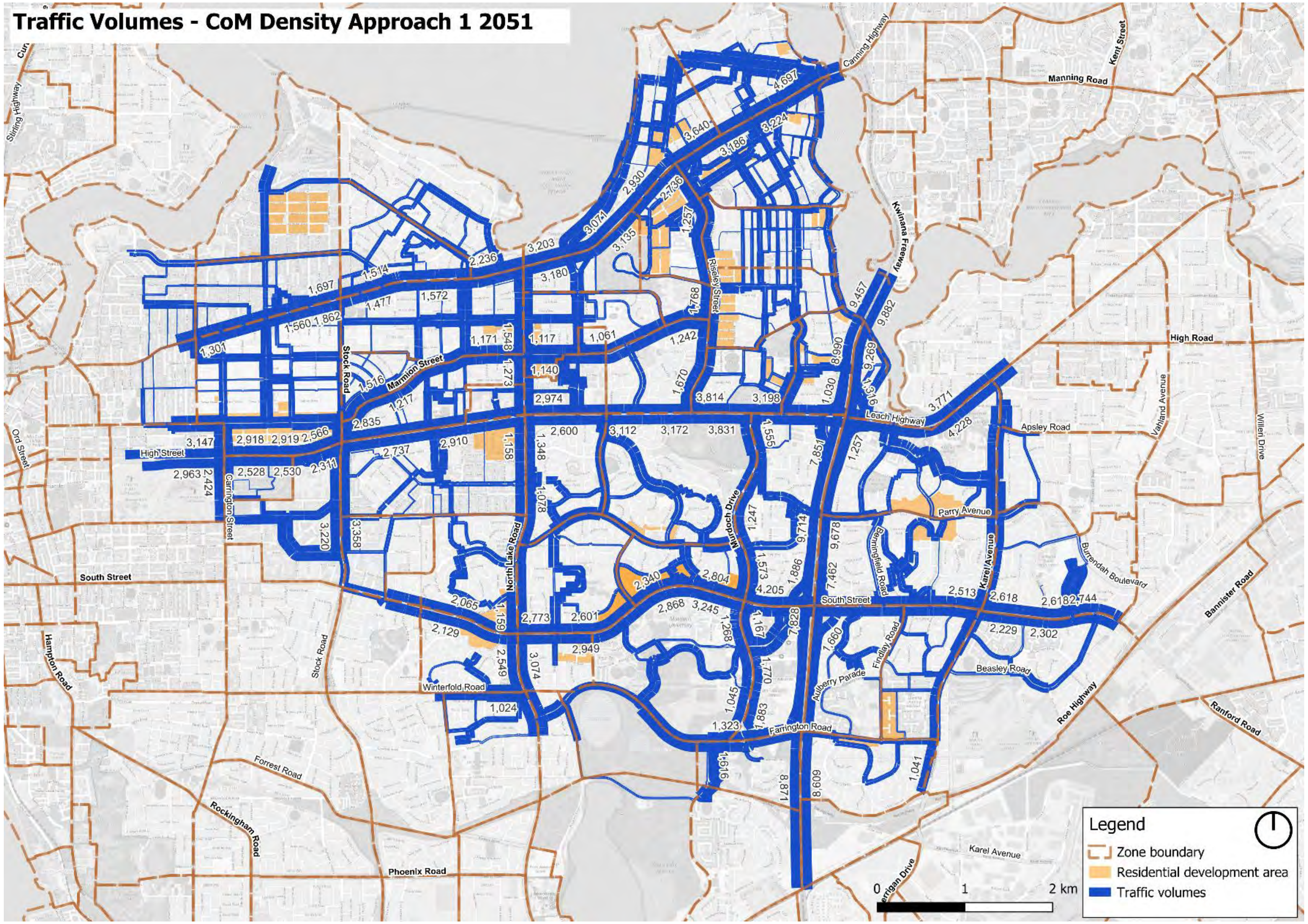


Figure 4.37 Forecast network flows – 2051 Scenario 1

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

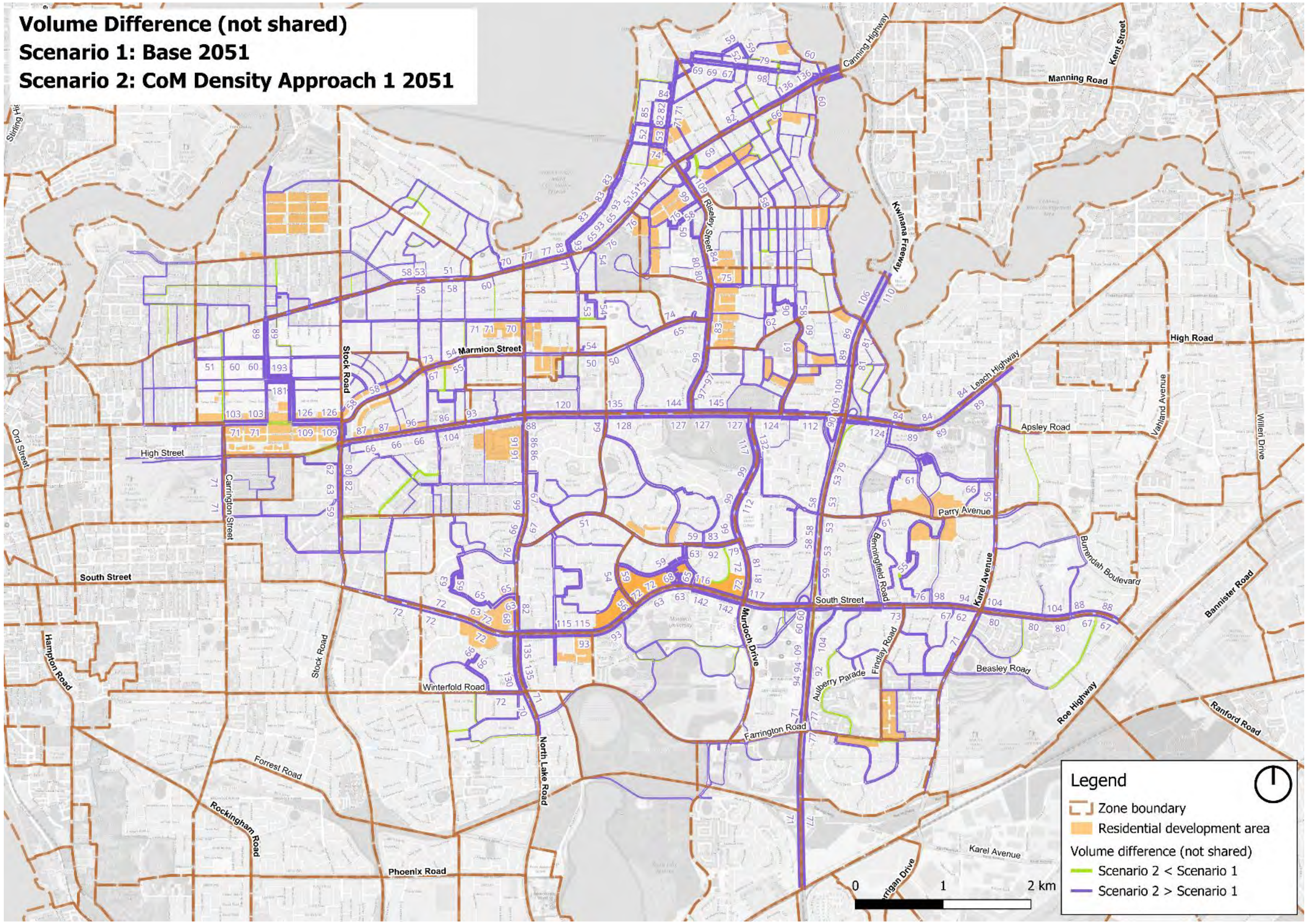


Figure 4.38 Change in network flows – 2051 Scenario 1 vs 2051 Base (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

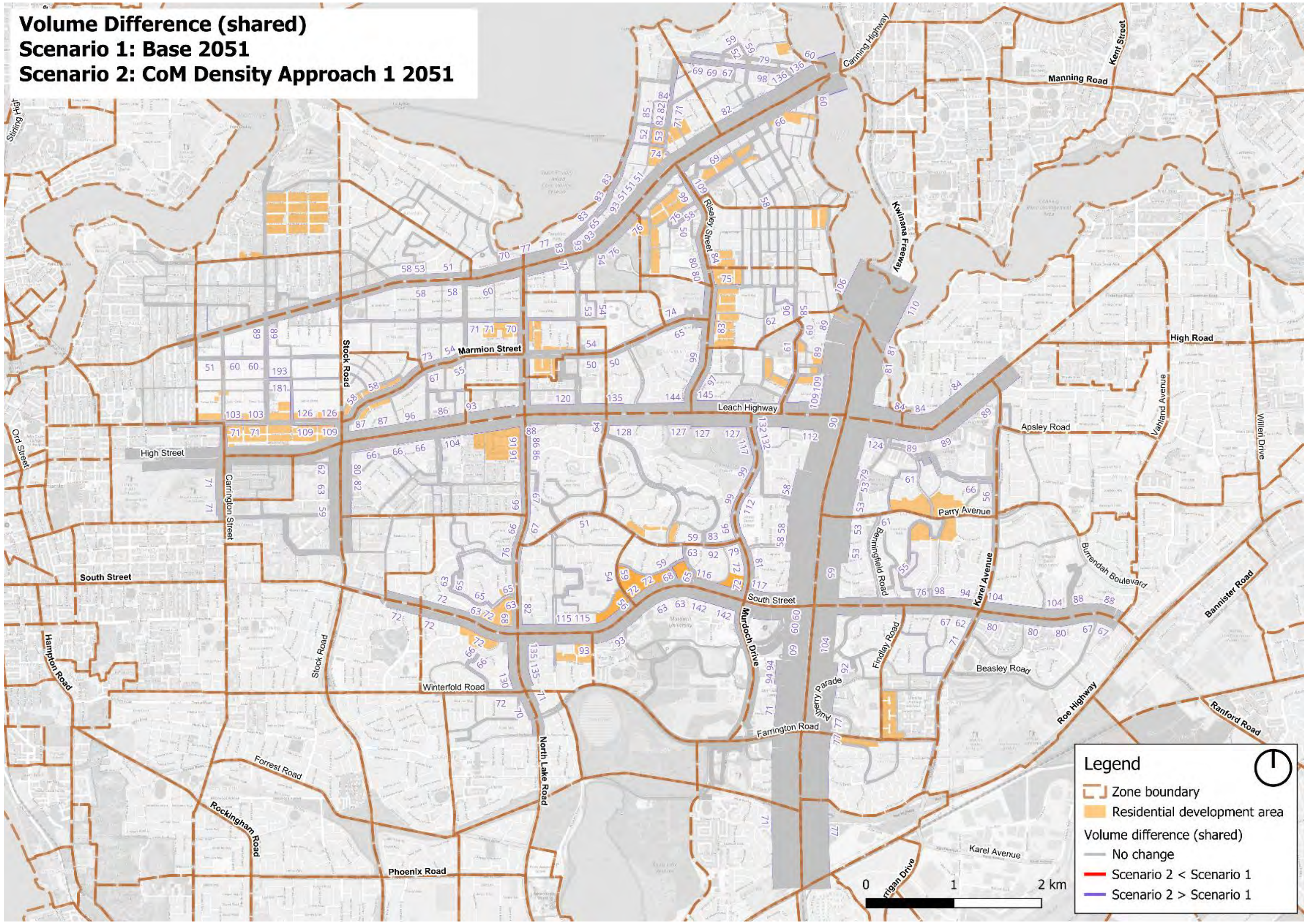


Figure 4.39 Change in network flows – 2051 Scenario 1 vs 2051 Base (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

4.10.2 Forecast network congestion and intersection performance

The VCR diagrams in Figure 4.40–Figure 4.41 highlight the key road corridors that are nearing or at capacity within the City of Melville, including:

- Canning Highway east of North Lake Road, exceeding capacity, with the parts of the corridor with V/C > 1.1 extending west of North Lake Road. This is similar to the 2051 baseline scenario.
- Leach Highway east of Riseley Street, exceeding capacity. This is similar to the 2051 baseline scenario.
- South Street between Murdoch Drive and Kwinana Freeway, exceeding capacity. This is similar to the 2051 baseline scenario.

Note: These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

The SIDRA intersection results in Figure 4.40–Figure 4.41 indicate that most intersections along the Canning Highway are performing unsatisfactorily at LoS F during the AM and PM peak periods. However, it is overall similar to the 2051 baseline scenario. In addition, many intersections along Leach Highway and South Street are also performing unsatisfactorily and overall similar to the 2051 baseline scenario. This highlights that while the VCR results indicate some sections of Leach Highway and South Street have some remaining capacity, the intersection operations are leading to relatively large delays for drivers.

Some of these intersections are priority-controlled intersections, which also indicates that drivers exiting side roads are not able to easily access the major arterial roads. As a result, this may lead to unsafe gap acceptance following impatience while waiting for a safe gap. This situation is likely worsened from the 2026 and 2041 baseline scenarios, with increasing conflicting traffic and therefore further reduced frequency of safe gaps. However, the impact of this is similar to the 2051 baseline scenario.

Additional maps, including zoomed-in extracts are provided in Appendix C6.

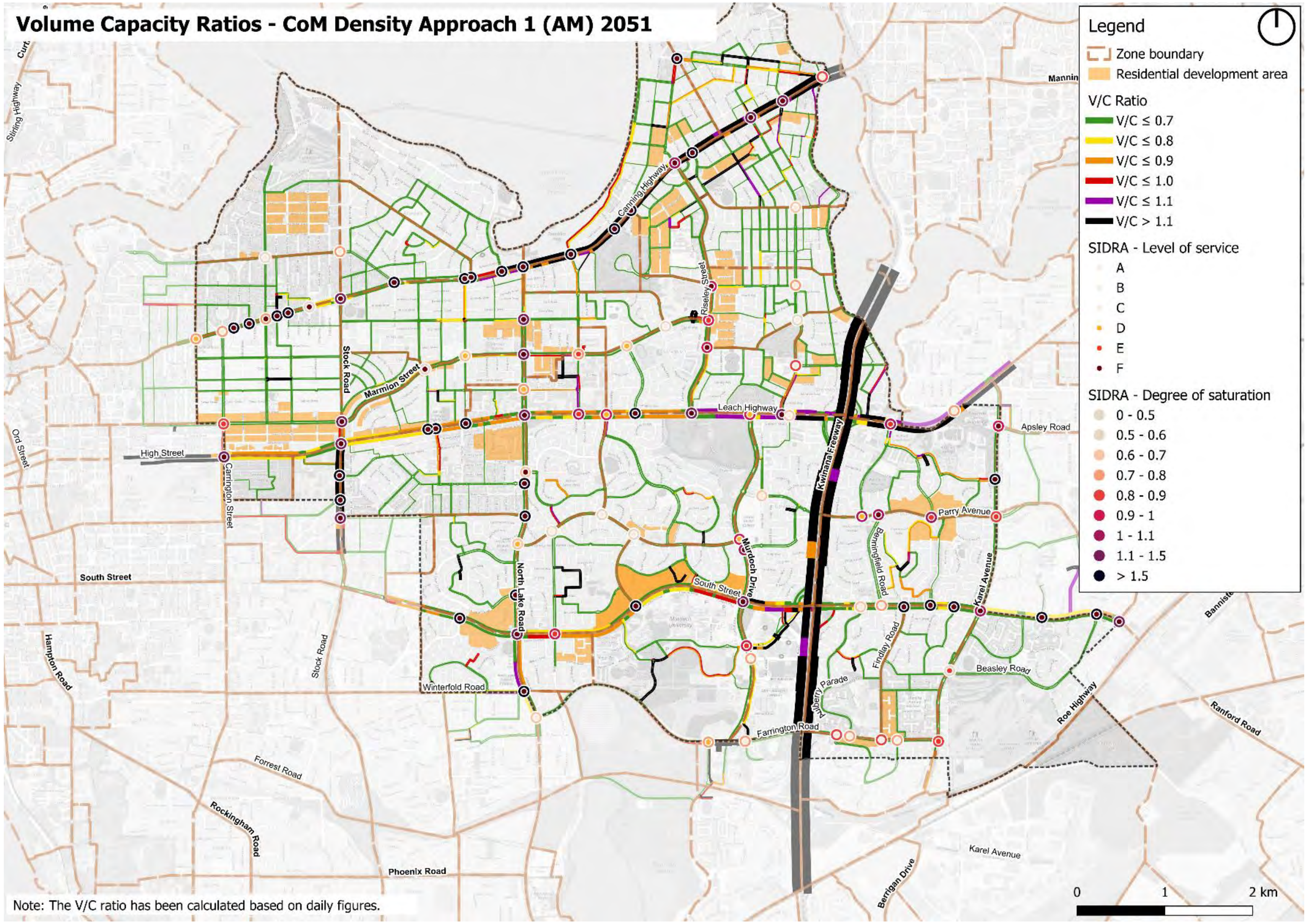


Figure 4.40 Forecast network volume-capacity ratios – 2051 Scenario 1 AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

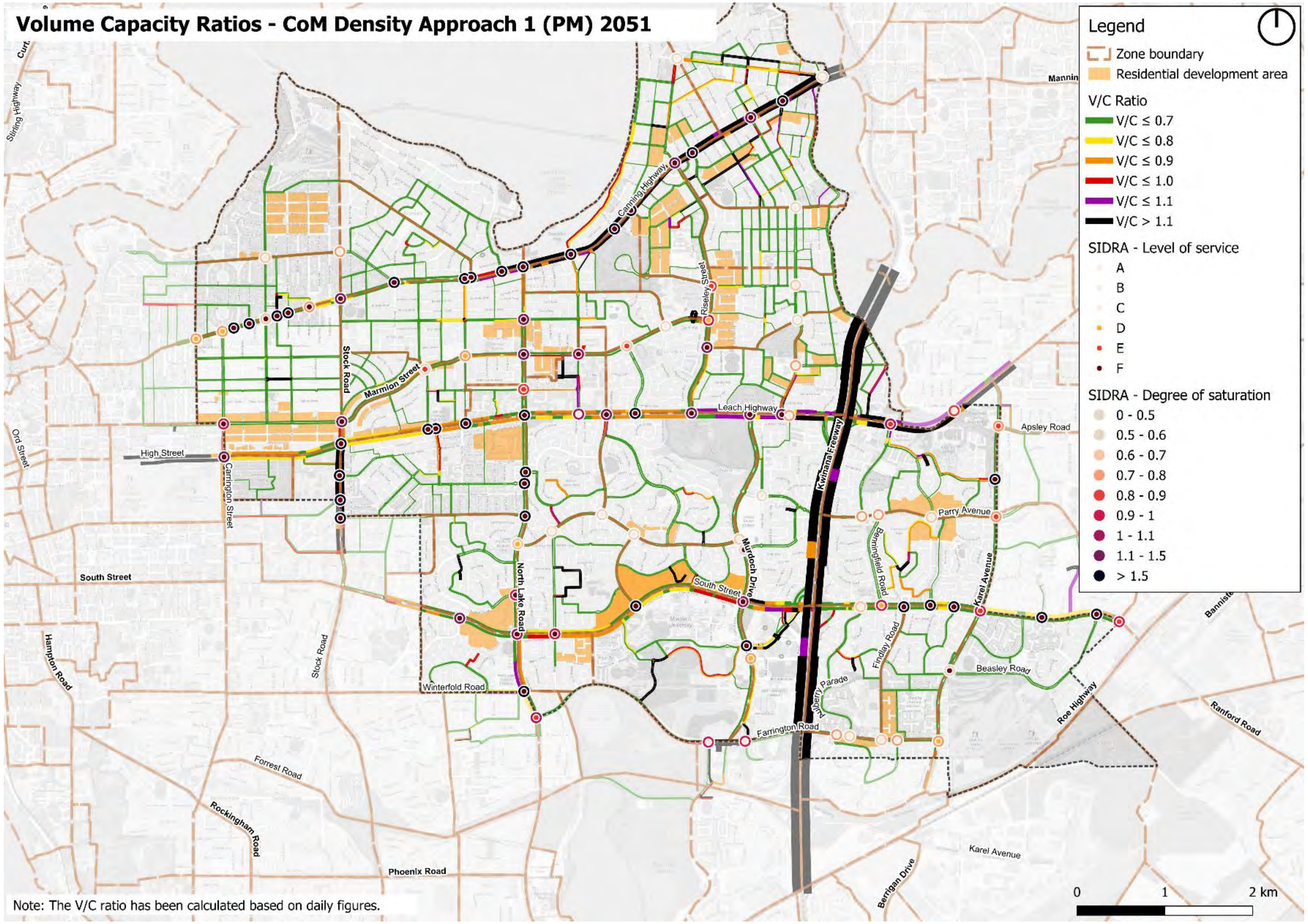


Figure 4.41 Forecast network volume-capacity ratios – 2051 Scenario 1 PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

4.11 2051 scenario 2 (“CoM Density Approach 2”)

4.11.1 Forecast network flows

Figure 4.42 summarises the change in traffic flows on key corridors between the 2026 and 2051 scenario 2. This highlights that additional changes to the proposed LPS6 would not lead to significantly different traffic flows compared to the 2051 scenario 1 on the key corridors of Canning Highway, Leach Highway, South Street and Marmion Street.

Figure 4.43 summarises the 2051 scenario 2 traffic flows within the City of Melville. These flows are represented for the estimated peak hour flows, factored from a daily demand (where Demand refers to the people / drivers who would like to drive the corridor). This network flow diagram for 2051 scenario 2 are similar to the 2051 baseline results and 2051 scenario 1 results. This is further supported by Figure 4.44–Figure 4.45 which summarise the forecast change in traffic flows across the City of Melville between the 2051 baseline scenario and 2051 scenario 2. These flow difference plots highlight the relatively small change in traffic volumes on the key road corridors within the City of Melville which are in the order of 100–300 vehicles/hour/direction or less.

Additional maps, including zoomed-in extracts are provided in Appendix A4 and B6.

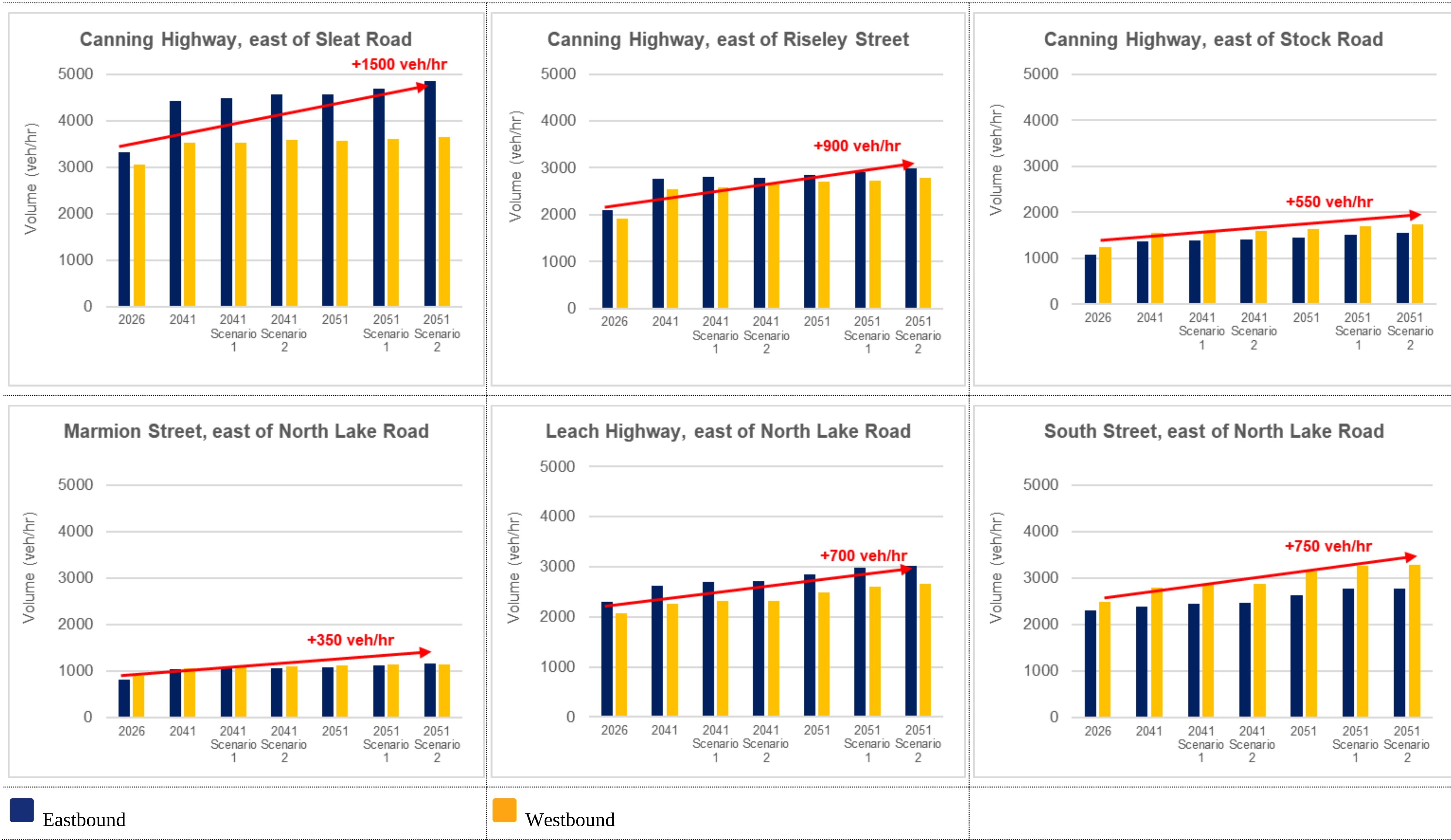


Figure 4.42 Forecast flows on key corridors – 2026 vs 2051 Scenario 2

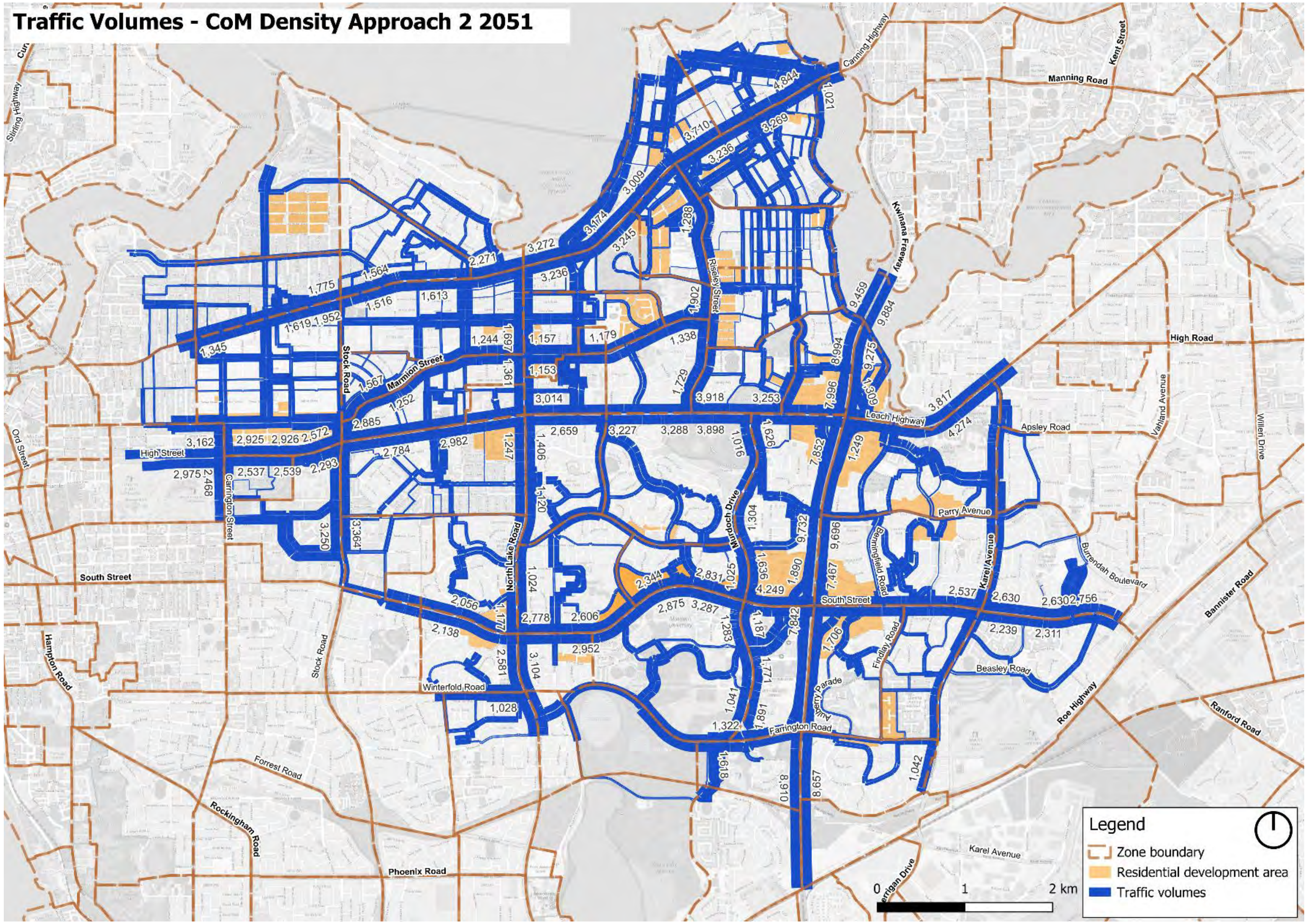


Figure 4.43 Forecast network flows – 2051 Scenario 2

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

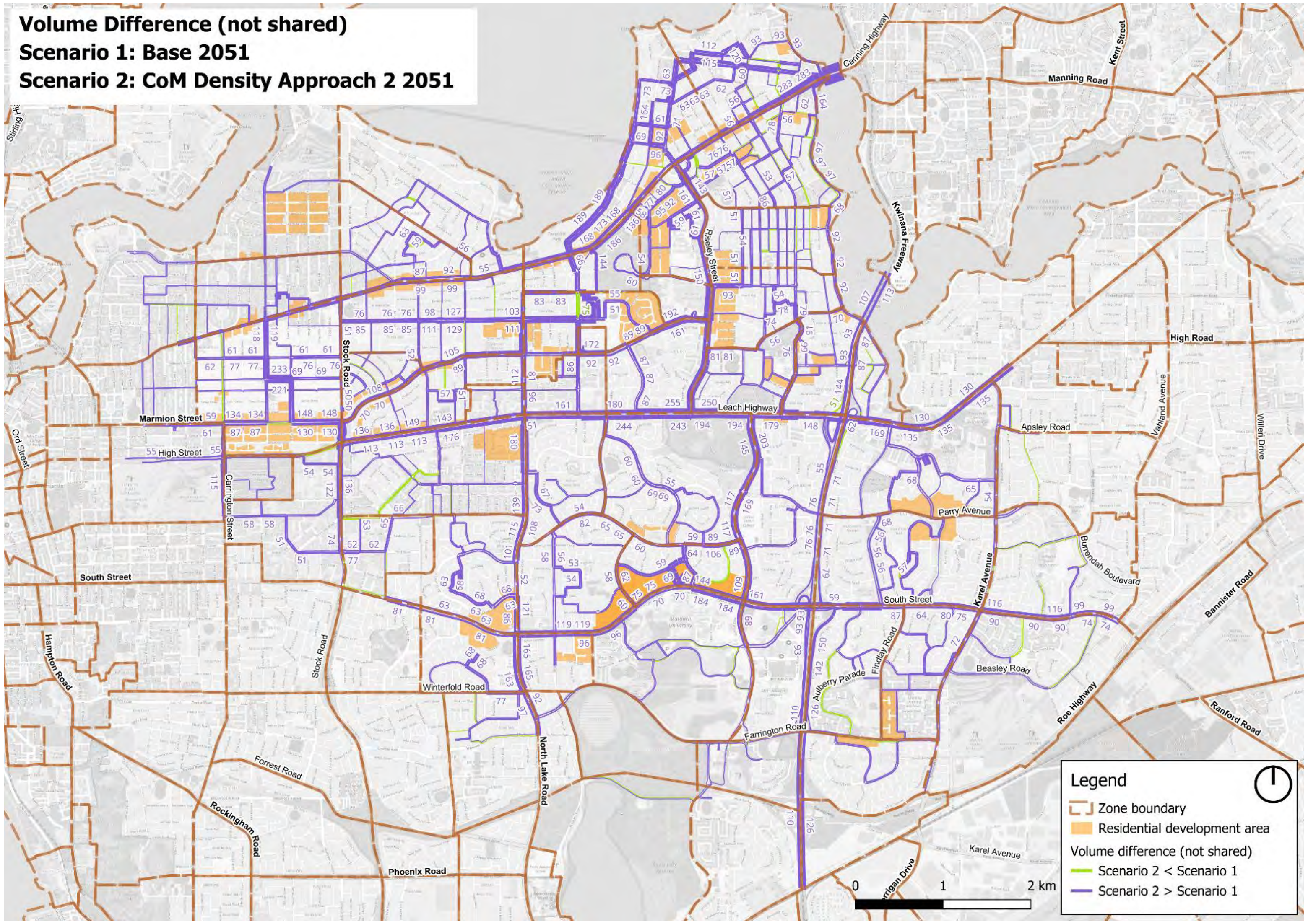


Figure 4.44 Change in network flows – 2051 Scenario 2 vs 2051 Base (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

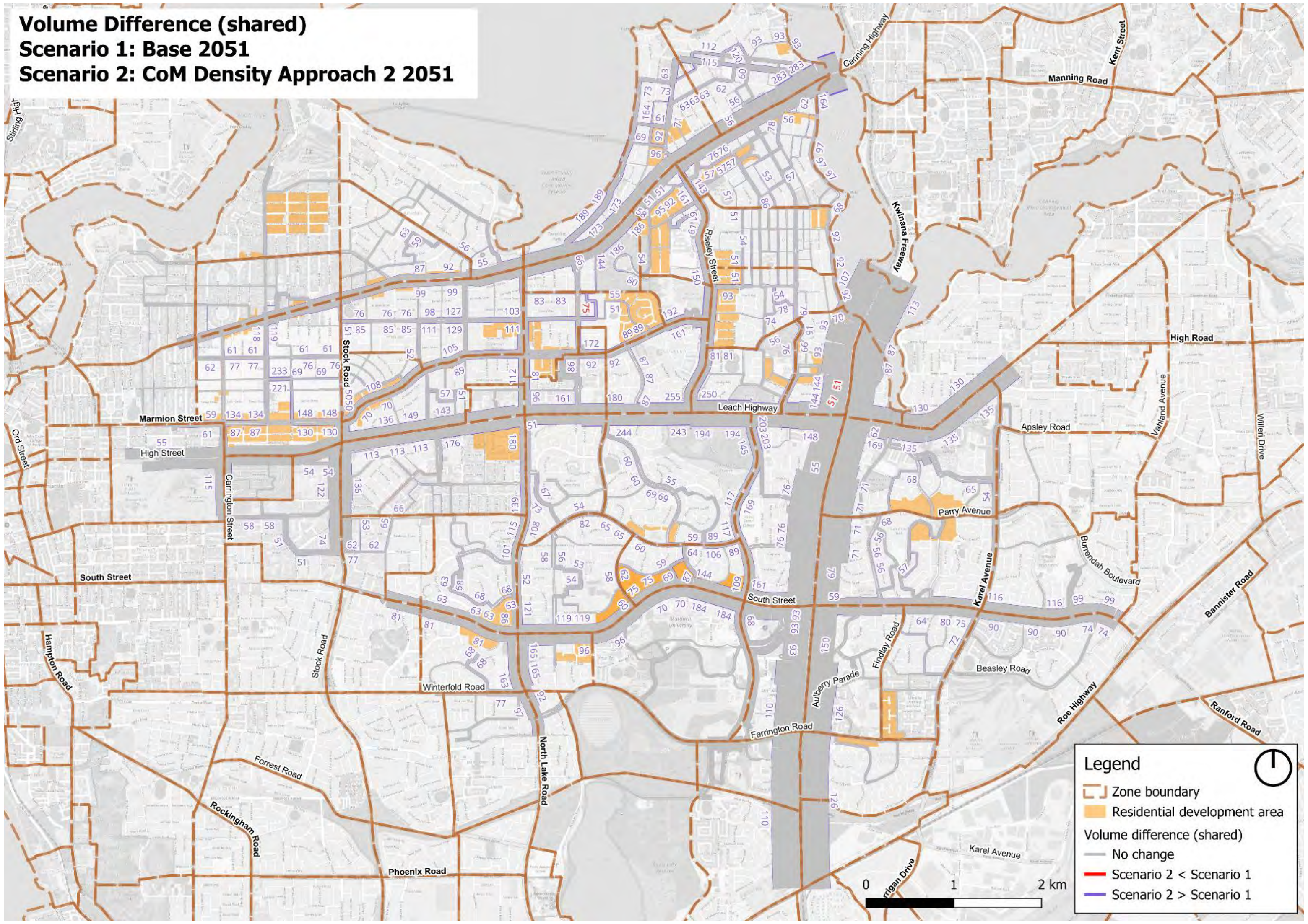


Figure 4.45 Change in network flows – 2051 Scenario 2 vs 2051 Base (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

4.11.2 Forecast network congestion and intersection performance

The VCR diagrams in Figure 4.46–Figure 4.47 highlight the key road corridors that are nearing or at capacity within the City of Melville, including:

- Canning Highway east of North Lake Road, exceeding capacity, with the parts of the corridor with V/C > 1.1 extending west of North Lake Road. This is similar to the 2051 baseline scenario and 2051 scenario 1.
- Leach Highway east of Riseley Street, exceeding capacity. This is similar to the 2051 baseline scenario and 2051 scenario 1.
- South Street between Murdoch Drive and Kwinana Freeway, exceeding capacity. This is similar to the 2051 baseline scenario and 2051 scenario 1.

Note: These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

The SIDRA intersection results in Figure 4.46–Figure 4.47 indicate that most intersections along the Canning Highway are performing unsatisfactorily at LoS F during the AM and PM peak periods. However, it is overall similar to the 2051 baseline scenario and 2051 scenario 1. In addition, many intersections along Leach Highway and South Street are also performing unsatisfactorily and overall similar to the 2051 baseline scenario and 2051 scenario 1. This highlights that while the VCR results indicate some sections of Leach Highway and South Street have some remaining capacity, the intersection operations are leading to relatively large delays for drivers.

Some of these intersections are priority-controlled intersections, which also indicates that drivers exiting side roads are not able to easily access the major arterial roads. As a result, this may lead to unsafe gap acceptance following impatience while waiting for a safe gap. This situation is likely worsened from the 2026 and 2041 baseline scenarios, with increasing conflicting traffic and therefore further reduced frequency of safe gaps. However, the impact of this is similar to the 2051 baseline scenario and 2051 scenario 1.

Additional maps, including zoomed-in extracts are provided in Appendix C7.

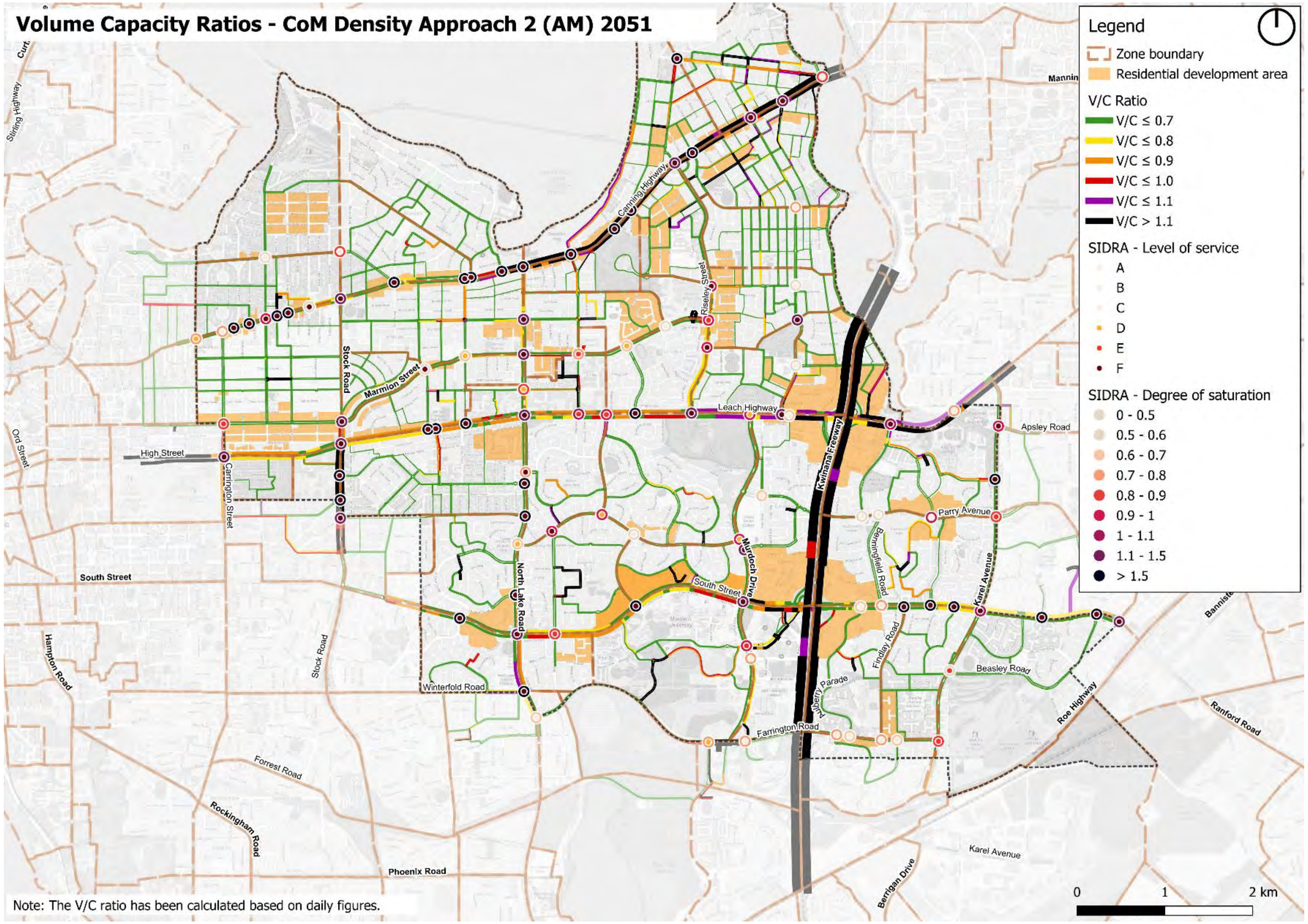


Figure 4.46 Forecast network volume-capacity ratios – 2051 Scenario 2 AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

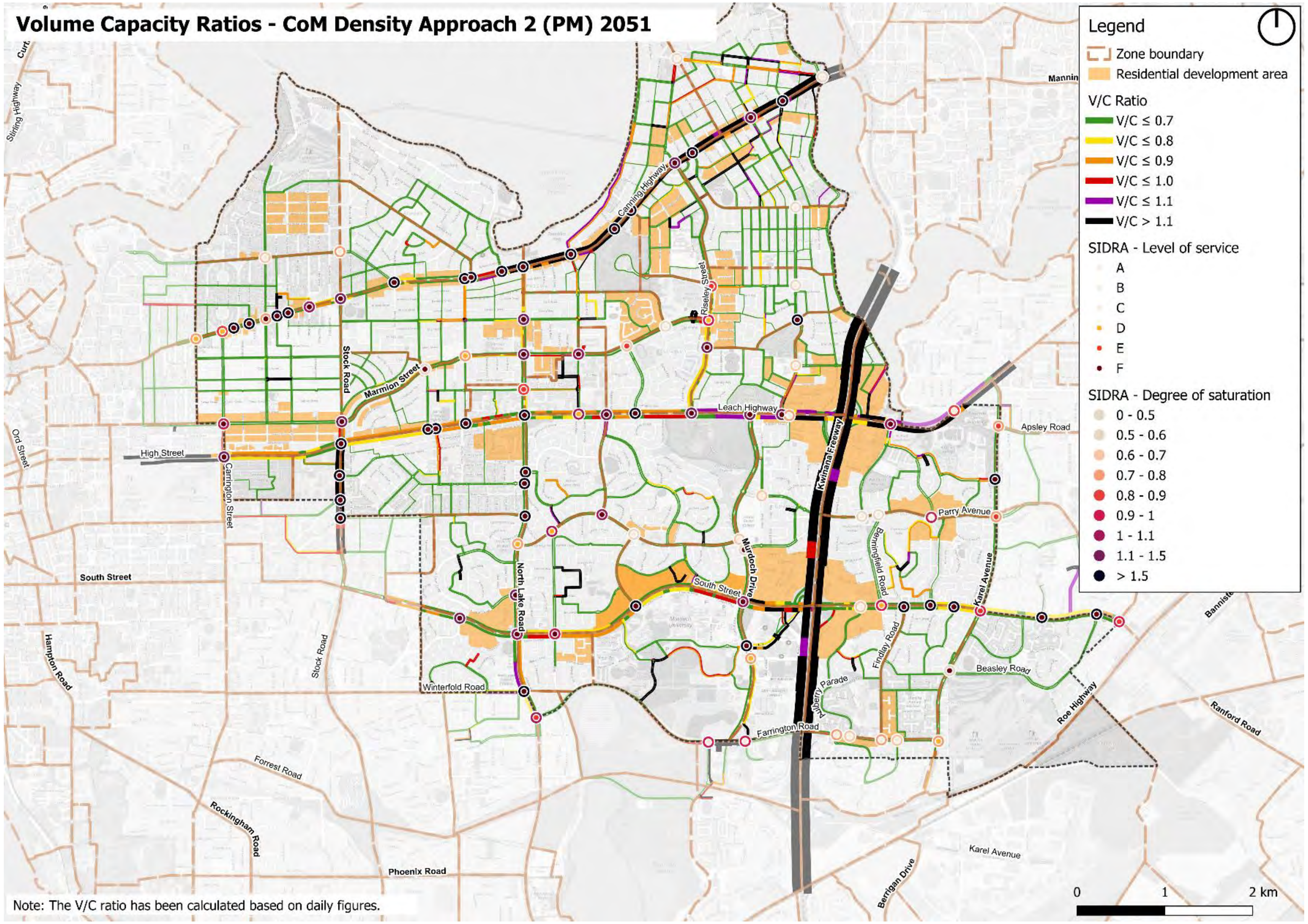


Figure 4.47 Forecast network volume-capacity ratios – 2051 Scenario 2 PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

4.12 Additional considerations

4.12.1 Intervention methodologies

The methodology employed for this Study builds upon the Main Roads WA strategic modelling of vehicular demand. Demand rates in this model are determined at their source in the form of a Volume-capacity ratio (VCR), which indicates the level of congestion for roads within the City of Melville. VCRs are the ratio of the forecast peak hour volume versus the estimated road capacity (based on the number of lanes and road type) and can be interpreted as follows:

The methodology employed for this Study builds upon the Main Roads WA strategic modelling of vehicular demand. The generation rates in this model are determined at their source and related entirely to existing and projected development yields. This form of modelling allows traffic to be assigned to the network based on the capacity of particular routes as an estimate of the fastest path, but traffic is not strictly limited to that capacity.

The ratio of modelled traffic volumes to available capacity is expressed as the volume-capacity ratio (VCR). This value provides an indication of the potential congestion along sections of the road network and at intersections within the City of Melville *if those trips were to occur*.

For the purpose of this assessment, WSP has modelled the impacts of future growth under baseline and LSP6 scenarios to identify corridors and intersections that would 'fail' under these conditions.

Link 'failure'

Where VCR along a link exceeds 1.0, this reflects a peak traffic demand that is greater than the practical capacity of the road. This results in broad congestion effects along the corridor (slow speeds, lengthy intersection delays, etc). This behaviour is consistent with the existing function of Canning Highway, east of Riseley Street, during the busiest 30 minutes in the AM peak.

To some extent, over-capacity corridors are self-regulating. Drivers experiencing heavy peak hour congestion react by changing their route, by travelling at a different time of day ('peak spreading', or by changing modes. These mitigating effects work only where there are viable alternatives for drivers. Measures that can be used to maintain a reasonable level of service include:

- High-quality public transport: This may involve switching to bus services along the same route, or rerouting via rail. Mode shift is supported where public transport is given some form of priority (bus lanes, queue jumps, etc.). Drivers travelling longer distances in congested environments extract more value from public transport alternatives. This means that drivers travelling through the LGA (with no local origin or destination) are more likely to use public transport alternatives to avoid congestion.
- Local activation: Many trips are taken because there is not a viable or attractive destination nearby. Intensifying and diversifying the types of land uses within the local Activity Centre gives people an alternative to driving long-distance in peak periods. People who live close to dense Activity Centres are much more likely to walk and cycle to those destinations than drive.
- Road capacity (duplication): Congestion occurs when demand exceeds supply. While the above measures affect demand for driving, adding traffic lanes increases the supply of road space during peak periods. This measure should be treated with caution – congestion itself acts to dampen demand. Adding additional lanes, even without development growth, can be expected to induce additional peak hour traffic, potentially back to the same level as before the lane was added. In addition, the extra traffic 'unlocked' by the road upgrade fills the surrounding streets, resulting in more congestion throughout the City.

Intersection 'failure'

Where VCR is greater than 1.0 an intersection can be considered to have 'failed'. The mechanism of failure and potential mitigation measures depend on the form of the intersection.

- **Signalised Intersections:** Due to the flexibility of signalised intersections to adjust to traffic flows, a well-designed traffic light generally 'fails' only when total volumes reach a certain level. Increasing traffic along the major road results in the primary through movement getting more green time, resulting in long delays for minor approaches.
  - Minor modification of a signalised intersection may be enough to address delays for individual turning movements, but if V/C ratios for the intersection as a whole approach 1.0, then only additional lanes will provide relief. This type of measure is valuable only when an individual intersection 'fails' along a corridor that otherwise operates within capacity.
  - Where two major roads intersect, high volumes of traffic may require grade separation to provide sufficient capacity. This intervention has a wide range of flow-on impacts that should be considered – on walking, riding, public transport, servicing and local access.
- **Roundabouts:** Roundabouts have a very high capacity, and are excellent at managing traffic flows where traffic is somewhat evenly distributed. However, if traffic gets too high on a single approach or turning movement, then the roundabout can 'fail'; effectively 'turning off' access by conflicting traffic. The result is excessive queues and delays on a single approach.
  - An example of this can be seen at the Murdoch Drive / Jennalup Rd roundabout, where u-turning vehicles on Murdoch Drive in the PM peak create poor outcomes for vehicles leaving the Murdoch Activity Centre.
  - Potential mitigation measures for this failure mode include:
  - Signals or signalised roundabout: Controlling traffic movements during peak periods to restore access to all approaches.
  - Trip diversion: Creating or improving alternative routes to reduce the demand for the critical movement.
- **Priority intersections:** The majority of priority intersections assessed for this study are constructed with a 'seagull' geometry. This allows vehicles to stop in the median, allowing drivers to cross to the centre and then turn right in two stages. While this form of priority intersection provides more capacity for right-turning movements, they are limited to one or two cars at a time. As congestion increases, there are fewer available gaps in traffic, and opportunities for turning vehicles decrease. This leads to unsafe driving behaviours and increasing crash incidents, particularly for high-risk right-angle crashes.

4.12.2 Changes in car ownership rates

Resident Parking

While the majority of Melville residents (~95%) have access to a private vehicle, household vehicle ownership varies substantially. Data from the ABS Census 2021 has been used to show the relationship between dwelling size and vehicle ownership

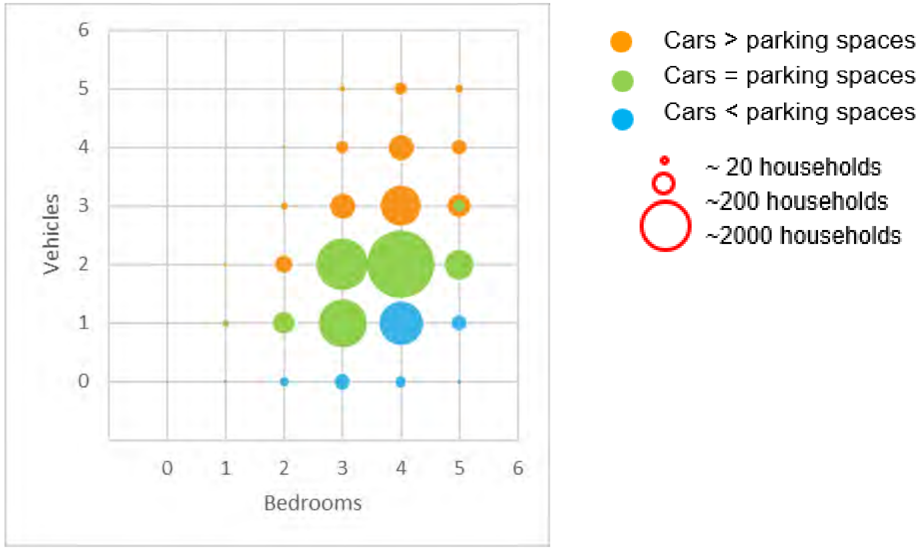


Figure 4.48 Melville LGA Household Characteristics – Detached Dwellings - Bedrooms vs Vehicle Ownership (ABS Census, 2021)

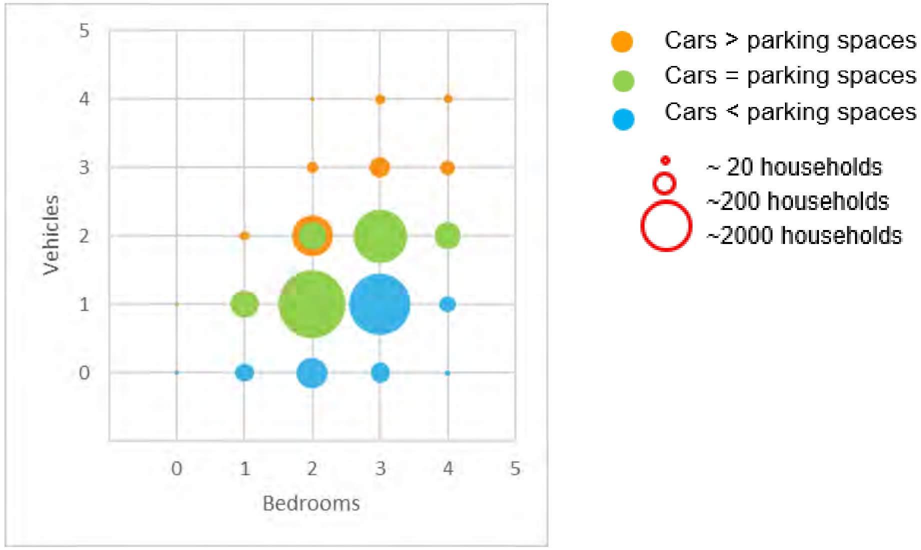


Figure 4.49 Melville LGA Household Characteristics – Apartments and Townhouses - Bedrooms vs Vehicle Ownership (ABS Census, 2021)

The results indicate that while the majority of single unit dwelling residents have 1 or 2 cars, a substantial number (22%) likely own more cars than they have parking for. Analysis of townhouse/terrace and apartment residents tells a different story, with only 6% of residents owning more cars than spaces, while 33% are likely to be paying for more parking spaces than they have cars.

This indicates a level of inequity across the ownership spectrum; some residents are paying for parking infrastructure they don’t use, while other residents (who store their surplus vehicles on-street) are receiving benefits they don’t pay for.

There is a strong relationship between residential density, car parking and trip generation, which largely determines the potential traffic impacts of development.

The dense dataset provided by the *Victorian Integrated Survey of Travel and Activity (VISTA)* indicates that low density residential development and high private vehicle ownership create an environment with significantly greater household vehicle trip generation.

Average Household Vehicle Trip Generation Rates (VISTA)

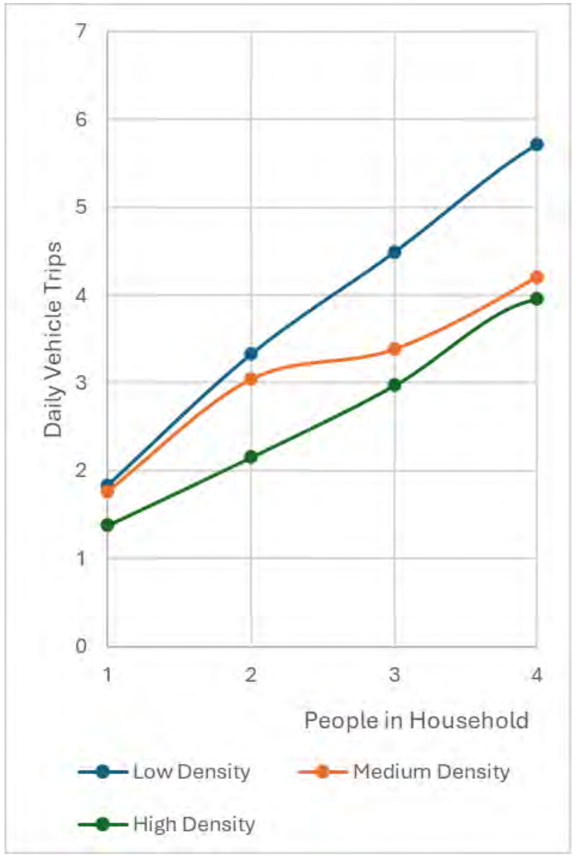


Figure 4.50 Average Household Vehicle Trip Generation Rates (VISTA)

As density intensifies, and particularly when residential vehicle ownership declines, vehicle trip generation drops and alternative transport mode shares increase. This occurs due to a number of reasons: smaller household sizes, greater accessibility to alternative transport, proximal activity and a reduced reliance on private motor vehicles. While multiple-unit apartment and townhouse development is expected to primarily occur along corridors and within Centres, the same effects in residential areas also promote sustainable transport outcomes locally.

These trends in behaviour present opportunities for Local Government to restrain parking for apartment developments in congested areas, as a measure to limit the impact of residential growth on peak hour trip generation.

4.12.3 Existing mode shares

4.12.3.1 Existing journey to work mode share – Melville residents

A detailed assessment of existing Journey to Work (JtW) behaviour, as recorded in the ABS Census of 2021, has been undertaken for the City of Melville, investigating the choices by residents of the City and people employed within the City. The analysis used considers both the selected modes and the distance travelled, with results illustrated in Figure 4.51.

Melville residents generally rely on private vehicle transport for the majority of journeys to work (86%). Despite most trips being under 15km, public transport provides relatively little for the overall mobility task.

This may be a result of the form of public transport provided, relying primarily on buses operating within congested corridors or along coverage routes, with few advantages over driving. Similarly, the relatively short distance to the Perth CBD means that driving is still competitive with train travel, particularly when combined with the need for bus interchange.

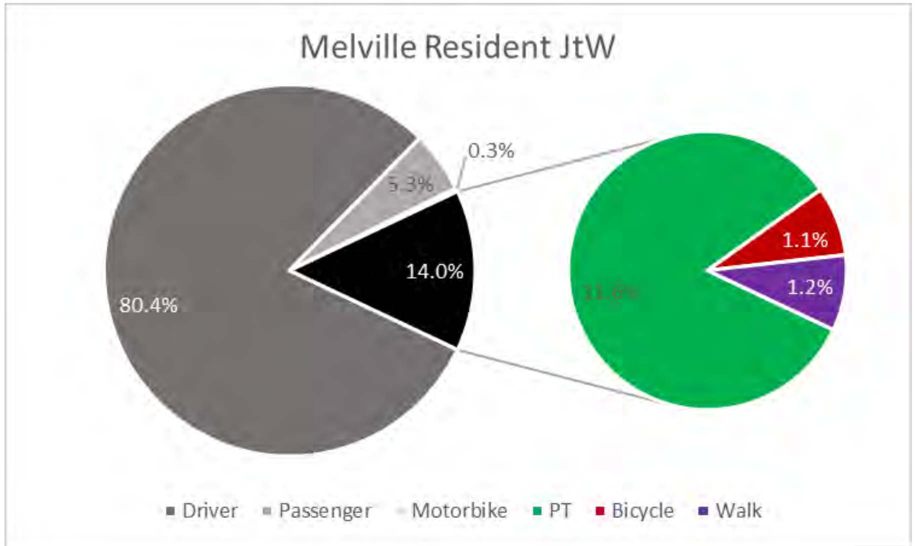


Figure 4.51 Existing journey-to-work mode shares for Melville residents (ABS Census, 2021)

Existing journey to work mode share – Melville workers

The travel patterns for Melville employees show an even greater reliance on private vehicles. This is typical of suburban employment zones in Perth – public transport options tend to be oriented toward the Perth CBD in the morning and away in the afternoon. Combined with the reduced impacts of congestion (since drivers are heading in the opposite direction to traffic), this would make driving more attractive.

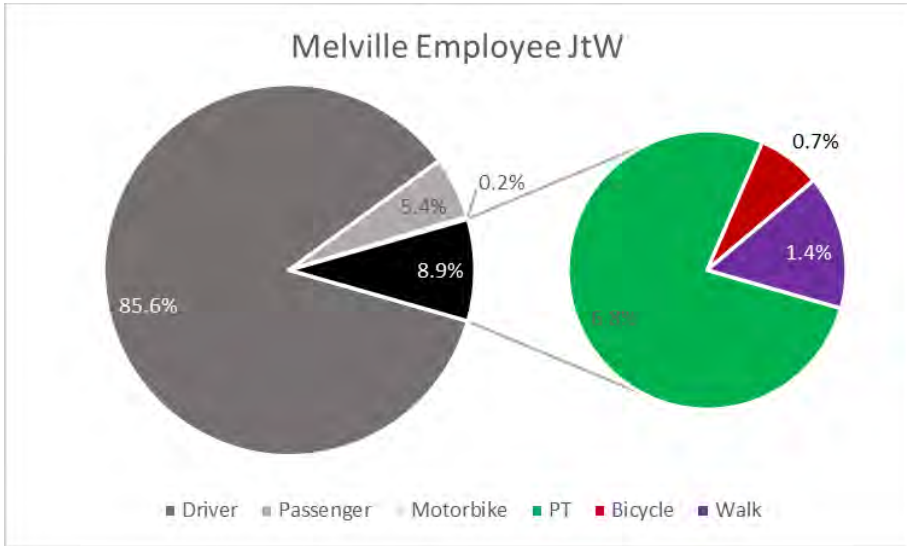


Figure 4.52 Existing journey-to-work mode shares for Melville employees (ABS Census, 2021)

4.12.3.2 Potential modified journey to work mode share

The potential for mode shift by Melville residents and employees has also been investigated to determine whether a more sustainable transport environment can be achieved. To test this, a 20% reduction in overall 'car-as-driver' mode share has been modelled based on an extension of current mode choice parameters. This value represents a 'no net change' in journey to work driving trips through to the 2051 horizon (for Scenario 2).

4.12.3.3 Modified journey to work mode share - Melville residents

One potential outcome of this mode shift is shown below, illustrating the change in mode share for journeys of different lengths.

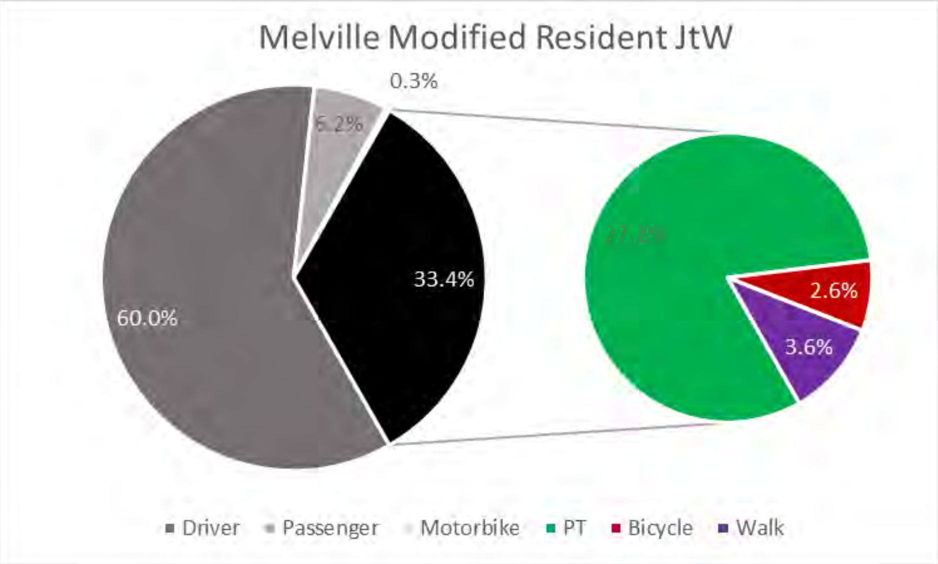


Figure 4.53 Modified journey-to-work mode shares for Melville residents

The modified resident journey to work mode shares generally rely on public transport to carry the majority of the change. At the highest development yield projections assessed, this would mean about 3 times as many residents taking bus and train to access their work locations by 2051, from about 8,700 trips per day to 27,000 trips per day. The resulting public transport mode share proportion is consistent with highly-connected suburban areas.

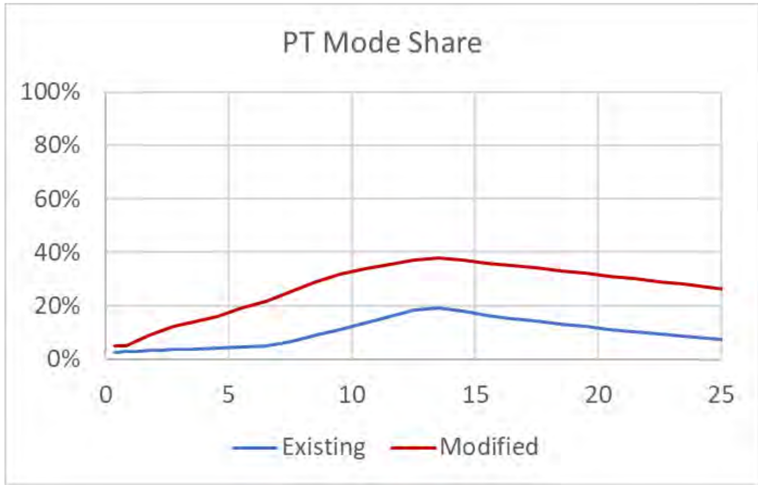


Figure 4.54 Public transport mode share by kilometre distance - Melville residents

To achieve this level of growth would require improvements to bus infrastructure, including a substantial increase in service frequency and upgrades to key corridors (e.g. bus lanes on Canning Highway, South Street) to provide space for higher-capacity public transport.

Increases in active transport are likely to come from activity centre development, putting more Melville residents close to work. These modes are only likely to be valid for short distance trips, and therefore have a limited impact on overall mode shift.

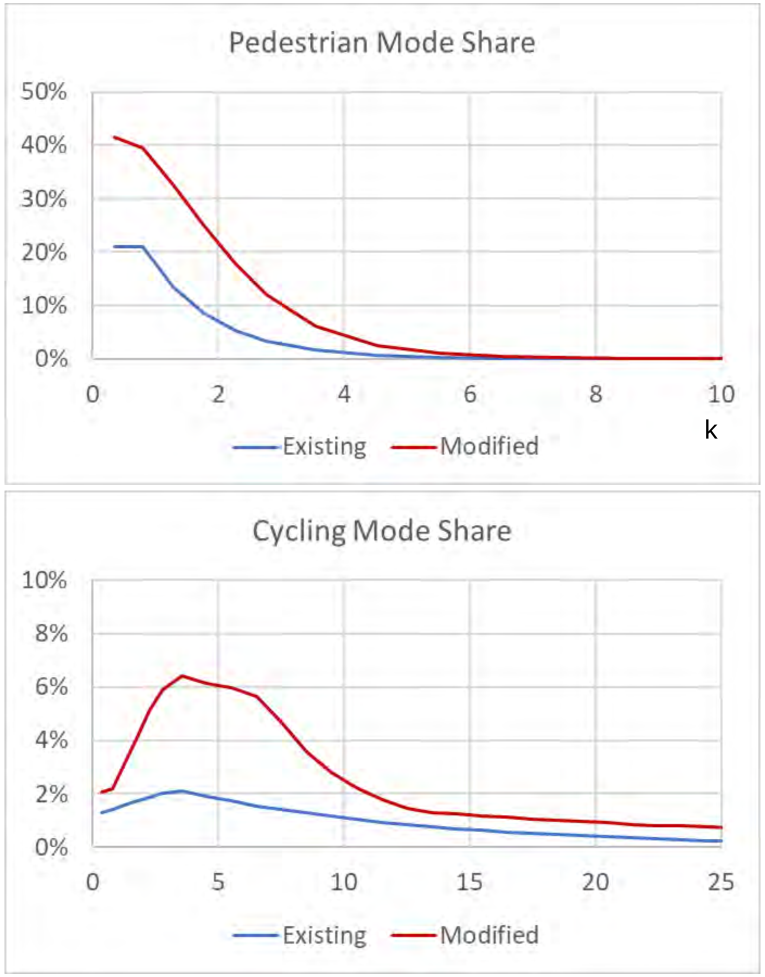


Figure 4.55 Active transport mode shares by kilometre distance - Melville residents

Active transport and public transport modes all rely on high quality, safe and connected paths. A comprehensive program of path upgrades and amenity improvements would support residents in switching modes to more sustainable options.

While the above changes are significant, the majority of journeys to work would still use private vehicles, as shown below.

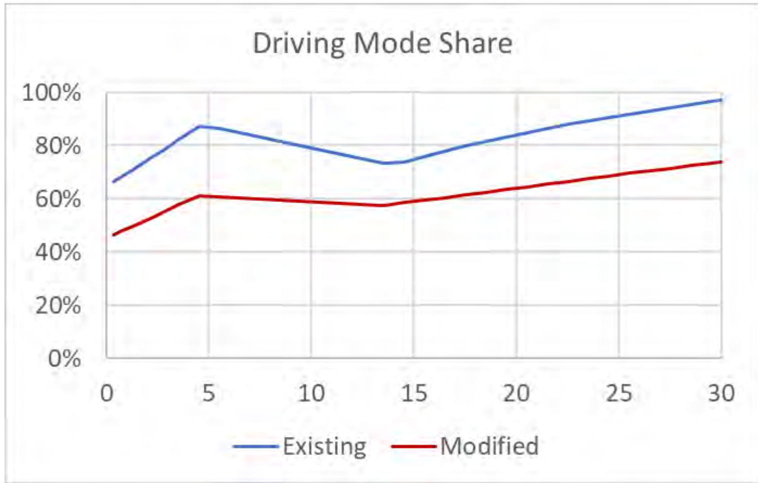


Figure 4.56 Driving mode share by kilometre distance - Melville residents

4.12.3.4 Modified journey to work mode share - Melville employees

A similar exercise has been undertaken for employees in the City of Melville, using a 65% target mode share for driving.

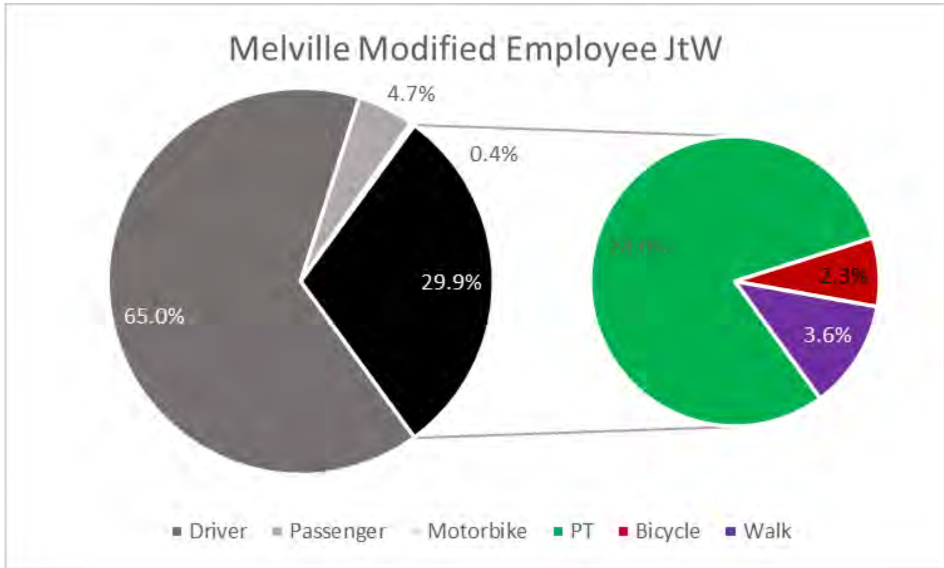


Figure 4.57 Modified journey-to-work mode shares for Melville employees

While outcomes for walking and riding movements are predictably similar (the majority of these workers both live and work in Melville), there is a very different public transport profile. Employees come to Melville from home origins across the Perth Metropolitan Area, which increases their exposure to congestion beyond the City. This makes it more likely that they will shift to public transport modes as an alternative to driving, where infrastructure (connecting bus services, park and ride and high-quality transit) is available.

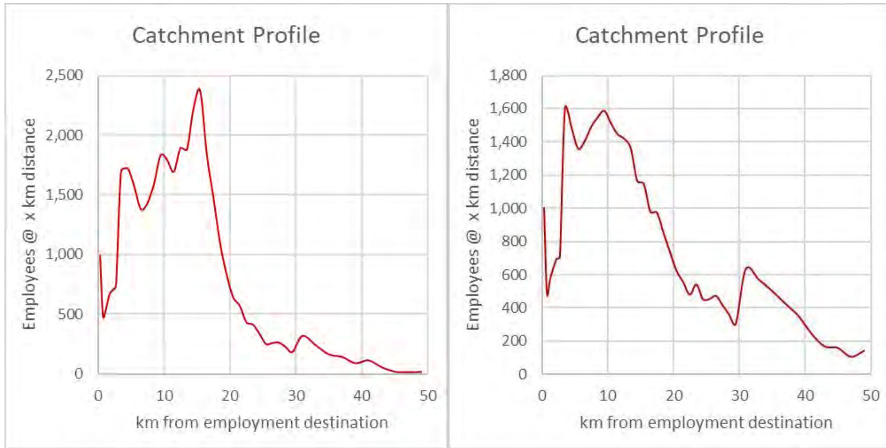


Figure 4.58 Existing catchment profiles for Melville residents (left) and employees (right)

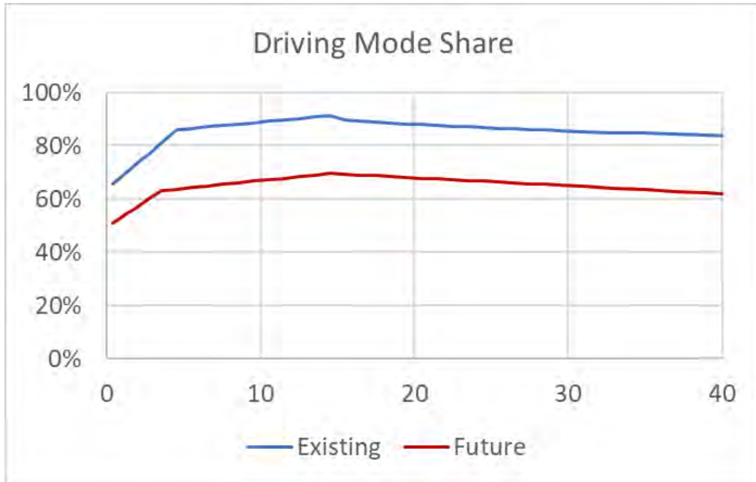


Figure 4.59 Driving mode share by distance - Melville employees

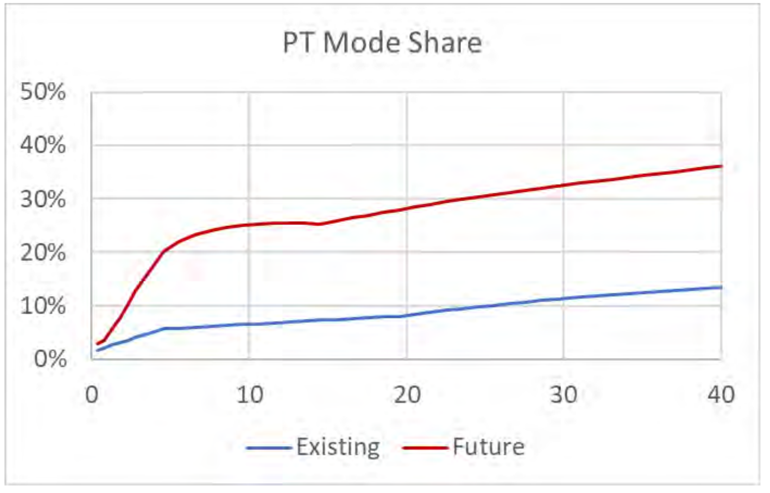


Figure 4.60 Public transport mode share by distance - Melville employees

4.12.4 Increased electric vehicle uptake

Electric vehicles operate generally as a direct replacement for standard passenger vehicles. This means that from a transport and congestion perspective, the uptake in EVs is very unlikely to have a positive effect on road network operation.

The high capital cost, combined with lower ongoing costs and a perceived reduction in negative impacts (air pollution, fossil fuel use, etc.), has the potential to *increase* the vehicle kilometres travelled (vkt) by EV owners.

4.13 Case studies

4.13.1 *Stirling Highway at Nedlands*

Figure 4.61 compares the Canning Highway corridor at Applecross and North Lake Road to the Stirling Highway at Nedlands. There are many parallels between the two corridors, with both having 2–3 lanes in each direction, similar traffic volumes, and providing access to/from adjacent suburbs and activity centres. Both are also constrained by the available road reserve for any works to increase capacity / throughput.

It also highlights the difference in the streetscape between these two corridors, particularly in terms of the impact of greenery (trees and grassed verges) on how the corridor can be perceived. The Stirling Highway corridor, with minimal greenery, appears more akin to an urban arterial road. The Canning Highway corridor, with grassed verges and some trees and shrubs, appears more akin to an urban corridor.

The Stirling Highway also has fewer opportunities for pedestrians to cross. A painted median is provided, allowing pedestrians to stage their crossing. However, they provide less protection compared to a raised median or refuge islands.

The Canning Highway has a wide raised median, which provides the ability for pedestrians to stage their crossing. However, the raised medians would be challenging for people requiring level access (e.g. vulnerable users, wheelchairs).

Source: Google Maps StreetView (Images), Main Roads WA Traffic Map (data)

Figure 4.61 Case study – Stirling Highway at Nedlands

4.13.2 Albany Highway at Cannington

Figure 4.62 compares the Canning Highway corridor at Applecross and North Lake Road to the Albany Highway at Cannington. There are many parallels between the two corridors, with both having 2–3 lanes in each direction, similar traffic volumes, and providing access to/from adjacent suburbs and activity centres. Both are also constrained by the available road reserve for any works to increase capacity / throughput.

It also highlights the difference in the streetscape between these two corridors, particularly in terms of the impact of greenery (trees and grassed verges) on how the corridor can be perceived. The Albany Highway corridor, with minimal greenery, appears more akin to an urban arterial road. The Canning Highway corridor, with grassed verges and some trees and shrubs, appears more akin to an urban corridor.

Both corridors provide raised medians to allow pedestrians to stage their crossing. However, the raised medians would be challenging for people requiring level access (e.g. vulnerable users, wheelchairs).

Source: Google Maps StreetView (Images), Main Roads WA Traffic Map (data)

Figure 4.62 Case study – Albany Highway at Cannington

4.13.3 Parramatta Road (Sydney) at Burwood

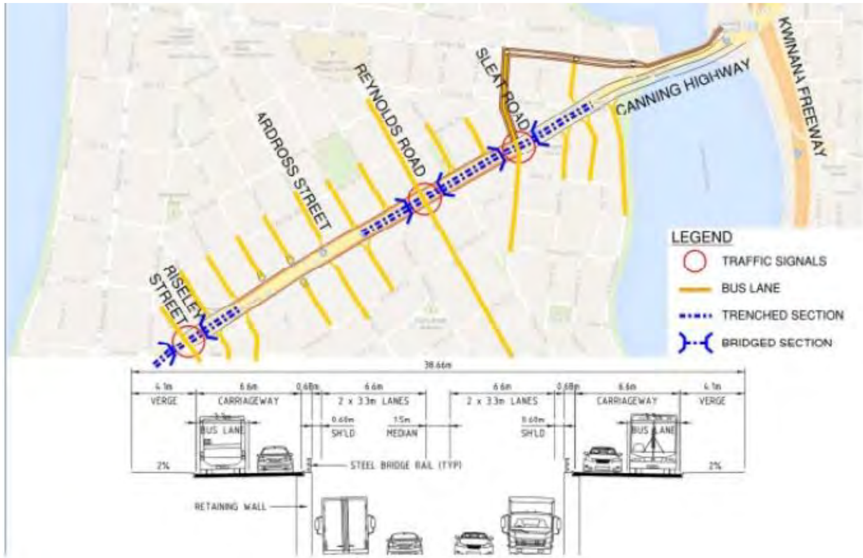
Figure 4.63 compares the Canning Highway corridor at Applecross to Parramatta Road in Sydney at Summer Hill and Leichhardt. Parramatta Road highlights the potential streetscape outcomes for the Canning Highway corridor, given that both corridors have similar traffic volumes. There are many parallels between the two corridors, with both having 2–3 lanes in each direction, similar traffic volumes, and providing access to/from adjacent suburbs and activity centres. Both are also constrained by the available road reserve for any works to increase capacity / throughput.

Figure 4.64 shows the MRWA proposed 'duck and dive' for the Canning Highway at Applecross. Figure 4.66 shows a similar (now defunct) scheme that was proposed for Parramatta Road in c.2016. This also highlights that similar solutions have been considered for both corridors, with this treatment no longer being considered for Parramatta Road.

Alternative streetscapes are presented in Figure 4.65 (from c.2013) and Figure 4.67 (from c.2022). These highlighted the potential to improve public transport solutions to support improved capacity and throughput along the corridor. The 2013 scheme proposed centre-running light rail and kerb-side bicycle lanes, while the 2022 scheme proposed kerbside bus lanes. The 2022 scheme has parallels with the proposed eastbound bus lanes on the Canning Highway that are currently being designed and subject to further consideration and approval. These schemes highlight that many different outcomes are possible to improving capacity and throughput of the Canning Highway corridor. However, this requires trade-offs between capital cost, construction impacts and local amenity. They also highlight the importance of urban streetscape improvements to support the road corridor works and support them as a place for people.

Source: Google Maps StreetView (Images), Transport for NSW Traffic Volume Viewer (data)

Figure 4.63 Case study – Parramatta Road (Sydney)

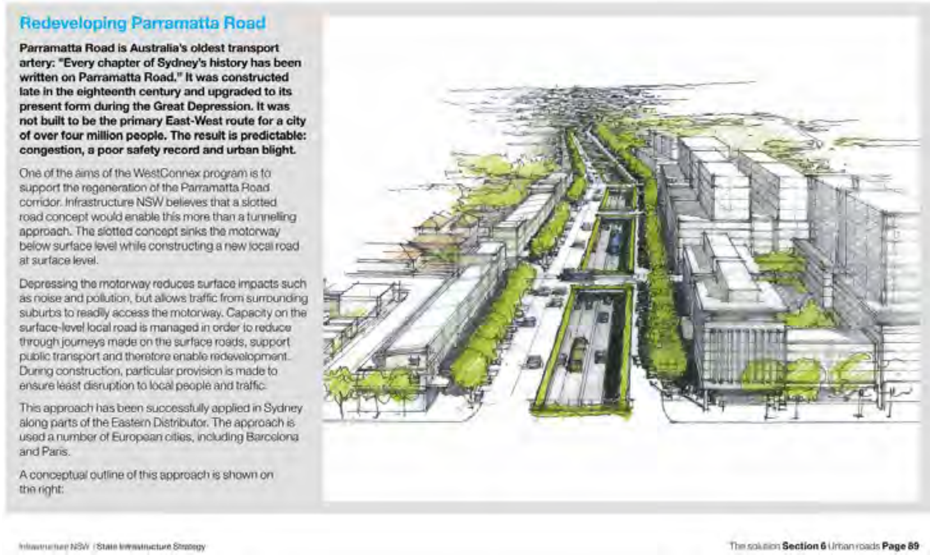


Source: Main Roads WA via City of Melville

Figure 4.64 Canning Highway "duck and dive" proposal

Source: Parramatta Road urban design competition (McGregor Coxall, c. 2013)

Figure 4.65 Parramatta Road urban design competition (c. 2013)



Redeveloping Parramatta Road

Parramatta Road is Australia's oldest transport artery: "Every chapter of Sydney's history has been written on Parramatta Road." It was constructed late in the eighteenth century and upgraded to its present form during the Great Depression. It was not built to be the primary East-West route for a city of over four million people. The result is predictable: congestion, a poor safety record and urban blight.

One of the aims of the WestConnex program is to support the regeneration of the Parramatta Road corridor. Infrastructure NSW believes that a slotted road concept would enable this more than a tunnelling approach. The slotted concept sinks the motorway below surface level while constructing a new local road at surface level.

Depressing the motorway reduces surface impacts such as noise and pollution, but allows traffic from surrounding suburbs to readily access the motorway. Capacity on the surface-level local road is managed in order to reduce through journeys made on the surface roads, support public transport and therefore enable redevelopment. During construction, particular provision is made to ensure least disruption to local people and traffic.

This approach has been successfully applied in Sydney along parts of the Eastern Distributor. The approach is used a number of European cities, including Barcelona and Paris.

A conceptual outline of this approach is shown on the right:

Infrastructure NSW | State Infrastructure Strategy

The solution **Section 6** Urban roads **Page 89**

Source: NSW State Infrastructure Strategy (c. 2016 – now superseded), Infrastructure NSW

Figure 4.66 Parramatta Road urban transformation plan (c. 2016)

Source: Inner West Council (c.2022)

Figure 4.67 Parramatta Road urban transformation plan (c. 2022)

5 Conclusions

5.1 Overview

WSP was commissioned by the City of Melville to complete a transport impact assessment of the proposed Local Planning Scheme 6 changes. This would involve the uplift of density limits around the City of Melville, in addition to overall expected growth in dwellings under iterative changes to the planning framework unrelated to LPS6 and potential developments around the Murdoch and Bull Creek railway stations, and the Booragoon shopping centre.

5.2 Scenarios assessed

Three development scenarios were considered for the future year scenarios of 2041 and 2051:

- Base scenario, accounting for the expected change in dwellings under business-as-usual assumptions for most of the City of Melville, plus iterative changes to the planning framework by the City of Melville to account for future targeted growth around the Murdoch and Bull Creek train stations, Petra Street precinct and Bull Creek shopping centre. This would represent an increase of around 8,400 dwellings between 2026 and 2051.
- Scenario 1 (or Density Approach 1) extends the Base scenario by adding the proposed LPS6 changes in addition to the forecast background growth. This would represent an increase of around 12,100 dwellings between 2026 and 2051.
- Scenario 2 (or Density Approach 2) extends on Scenario 1, by including additional demand from other areas in Melville previously considered for density change, which the City of Melville are now recommending be removed from the scope of the LPS6 changes. This considered density increases along Canning Highway and additional increases around the Melville City Centre (Booragoon). This would represent an increase of around 14,300 dwellings between 2026 and 2051.

5.3 Modelling overview

Traffic modelling was completed for the City of Melville and considered the impacts of these different scenarios on the key road corridors and intersections within the City of Melville.

This modelling included a network traffic assignment model to understand traffic flows across the road network within the City of Melville, and potential congestion areas based on the Volume-Capacity Ratio. In addition, intersection modelling for key intersections within the City of Melville was completed to understand the Degree of Saturation and Level of Service metrics.

5.4 Base scenario impacts

Overall, this modelling identified that most of the impact in terms of congestion or deteriorated traffic network performance would be experienced by 2041 with the Base scenario assumptions. By 2041, significant traffic demand growth is expected under the Base scenario on the Canning Highway and Leach Highway corridors (of around 500–1000 vehicles per hour per direction), and modest growth on Marmion Street and South Street (of around 100–200 vehicles per hour per direction). By 2051, there would be a smaller incremental increase in traffic demand on these corridors.

Under the Base scenario, Volume-Capacity Ratio over 1.1 is expected for the Canning Highway east of North Lake Road, highlighting that this section of road would significantly exceed its capacity and there would be extensive queuing and delay during peak periods. In addition, Leach Highway east of Riseley Street would be at or exceeding capacity, and South Street between Murdoch Drive and Kwinana Freeway would be at or exceeding capacity.

Many intersections along Leach Highway and South Street are also performing unsatisfactorily. This highlights that while the VCR results indicate some sections of Leach Highway and South Street have some remaining capacity, the intersection operations are leading to relatively large delays for drivers.

Some of these intersections are priority-controlled intersections, which also indicates that drivers exiting side roads are not able to easily access the major arterial roads. As a result, this may lead to unsafe gap acceptance following impatience while waiting for a safe gap. This situation is likely worsened from the existing 2026 conditions, with increasing conflicting traffic and therefore further reduced frequency of safe gaps.

5.5 Scenario 1 (Density Approach 1) impacts

Overall, the traffic volume increases on key road corridors would be relatively small compared to the Base scenario. It is expected that an additional 250 vehicles/hour or less in 2051 would utilise the key road corridors compared to the Base scenario. This would represent a modest increase in traffic demand compared to the Base scenario.

However, it is noted that parts of the Canning Highway, Leach Highway and South Street would exceed capacity under the 2041 and 2051 Base scenarios, and this would continue under the dwelling growth assumptions of this scenario. In addition, many intersections perform unsatisfactorily at LoS E/F under the Base scenario, and this would continue under this development scenario.

5.6 Scenario 2 (Density Approach 2) impacts

Overall, the traffic volume increases on key road corridors would be relatively small compared to Scenario 1 (Density Approach 1). It is expected that an additional 100–200 vehicles/hour or less in 2051 would utilise the key road corridors compared to Scenario 1 (Density Approach 1). This would represent a modest increase in traffic demand compared to Scenario 1 (Density Approach 1).

However, it is noted that parts of the Canning Highway, Leach Highway and South Street would exceed capacity under the 2041 and 2051 Base scenarios, and this would continue under the dwelling growth assumptions of this scenario. In addition, many intersections perform unsatisfactorily at LoS E/F under the Base scenario, and this would continue under this development scenario.

5.7 Additional considerations

5.7.1 Intervention methodologies

Forecast network “failure” reflects locations where future demand is expected to exceed practical capacity if current travel behaviour continues unchanged. In this context, the modelling completed and the impacts identified for each scenario identify where intervention may be required, rather than implying that all forecast demand will materialise without adaptation.

The appropriate response will vary depending on the nature of the constraint. For over-capacity corridors, potential responses include improved public transport, more locally accessible land use patterns and, where justified, targeted road capacity upgrades. For intersections, responses may range from operational changes and minor upgrades through to signalisation, additional lanes, grade separation or traffic diversion. Overall, this supports a targeted, multi-modal response that balances network performance, local accessibility and the trade-offs associated with road capacity expansion.

5.7.2 Car ownership rates

Car ownership in the City of Melville remains high overall, however, it varies by dwelling type and household composition. Detached dwellings are associated with comparatively higher vehicle ownership and, in a significant proportion of cases, demand that exceeds available on-site parking. By contrast, townhouse and apartment households are less likely to exceed on-site parking provision and, in many instances, may be oversupplied with parking. This indicates an inefficient and potentially inequitable distribution of parking provision, whereby some households effectively subsidise unused parking while others rely on the use of on-street spaces.

There is also a clear relationship between residential density, vehicle ownership, parking supply and household vehicle trip generation. Evidence indicates that lower-density development and higher rates of vehicle ownership are associated with materially greater private vehicle trip-making, whereas higher-density development with lower car ownership supports reduced vehicle trip generation and a greater propensity for alternative travel modes. In this context, a more restrained approach to parking provision, particularly for apartment development in already congested locations, may represent an appropriate policy lever to moderate future peak period traffic impacts and support broader mode shift objectives.

5.7.3 Mode shares in Melville

Journey to work travel in the City of Melville is characterised by a strong reliance on private vehicles for both residents and employees, with public transport having a limited role despite many trips being relatively short. This reflects the current structure and competitiveness of the transport network, particularly where bus-based services operate in congested corridors, and where suburban employment patterns are not well aligned to existing public transport service patterns.

Any meaningful reduction in future driving demand would require a substantial shift toward public transport, supported by significant investment in service frequency, corridor priority measures and broader network integration. While increased walking and cycling can contribute to mode shift for shorter local trips, particularly around activity centres, these modes alone are unlikely to materially offset future growth in vehicle travel. Accordingly, achieving a more sustainable future mode share will depend on major improvements in public and active transport connectivity, quality and capacity.

5.7.4 Electric vehicle uptake

Increased uptake of electric vehicles is not expected to materially impact road network performance or traffic congestion within the City of Melville. Electric vehicles function largely as a direct substitute for conventional passenger vehicles and therefore continue to consume road space in the same way as internal combustion engine vehicles.

While electric vehicles may deliver environmental benefits, their lower operating costs and reduced perceived negative impacts may encourage additional vehicle use and increase vehicle kilometres travelled.

As a result, greater electric vehicle adoption should not be regarded as a congestion mitigation measure, and it does not reduce the need for broader transport interventions aimed at moderating private vehicle demand and supporting more sustainable travel behaviour.

Appendix A

Forecast network flows

A0 Overview

This section summarises the peak hour network flows from the traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

The results are summarised in:
(note: *section numbers and names are clickable links*)

Section A1: 2026 existing conditions

Section A2: 2041 baseline

Section A3: 2041 scenario 1 (“core growth areas”)

Section A4: 2041 scenario 2 (“additional growth”)

Section A5: 2051 baseline

Section A6: 2051 scenario 1 (“core growth areas”)

Section A7: 2051 scenario 2 (“additional growth”).

A1 2026 existing conditions

This section summarises the peak hour network flows from the 2026 existing conditions traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

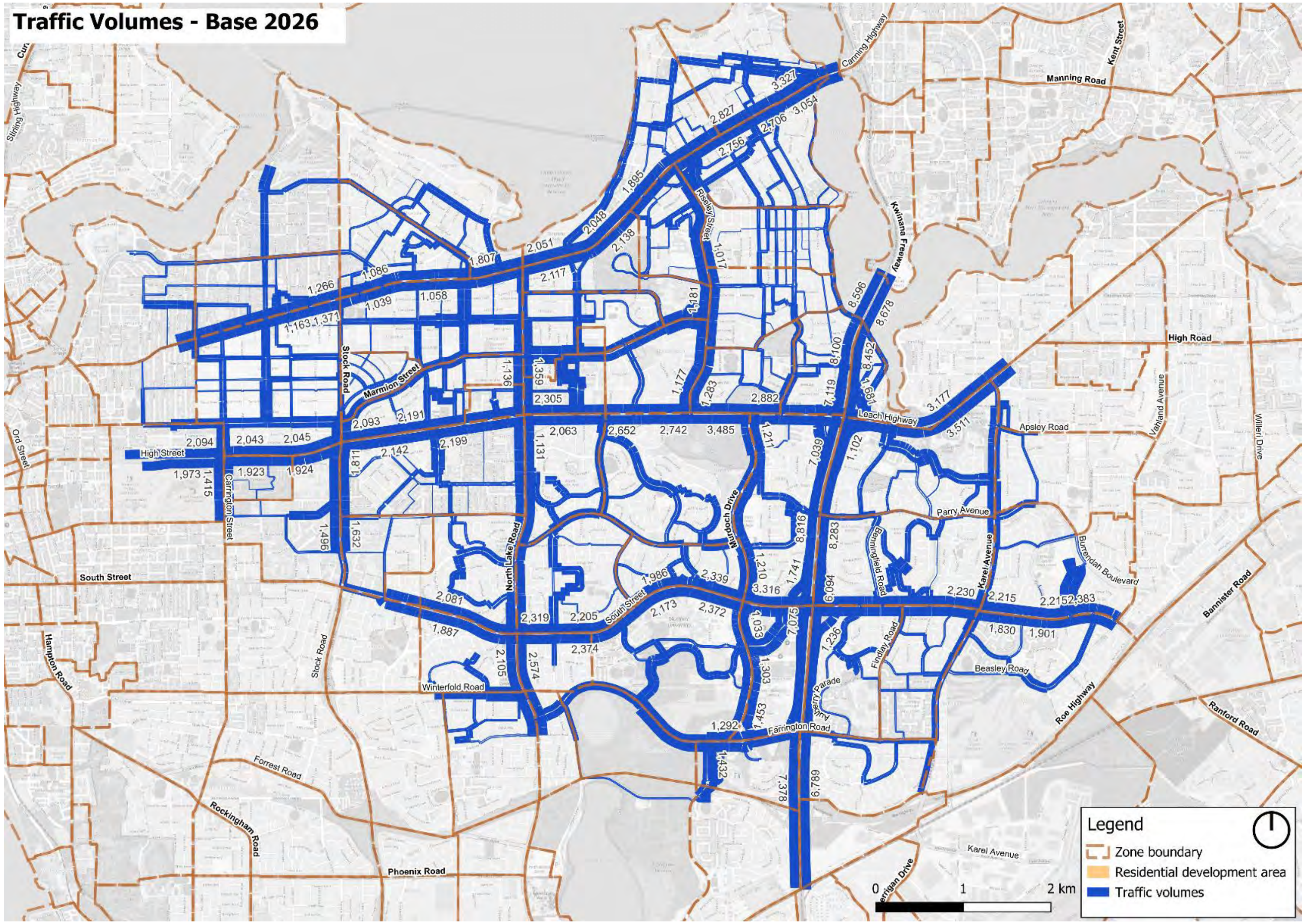


Figure A.1 Existing network flows – 2026 Base

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

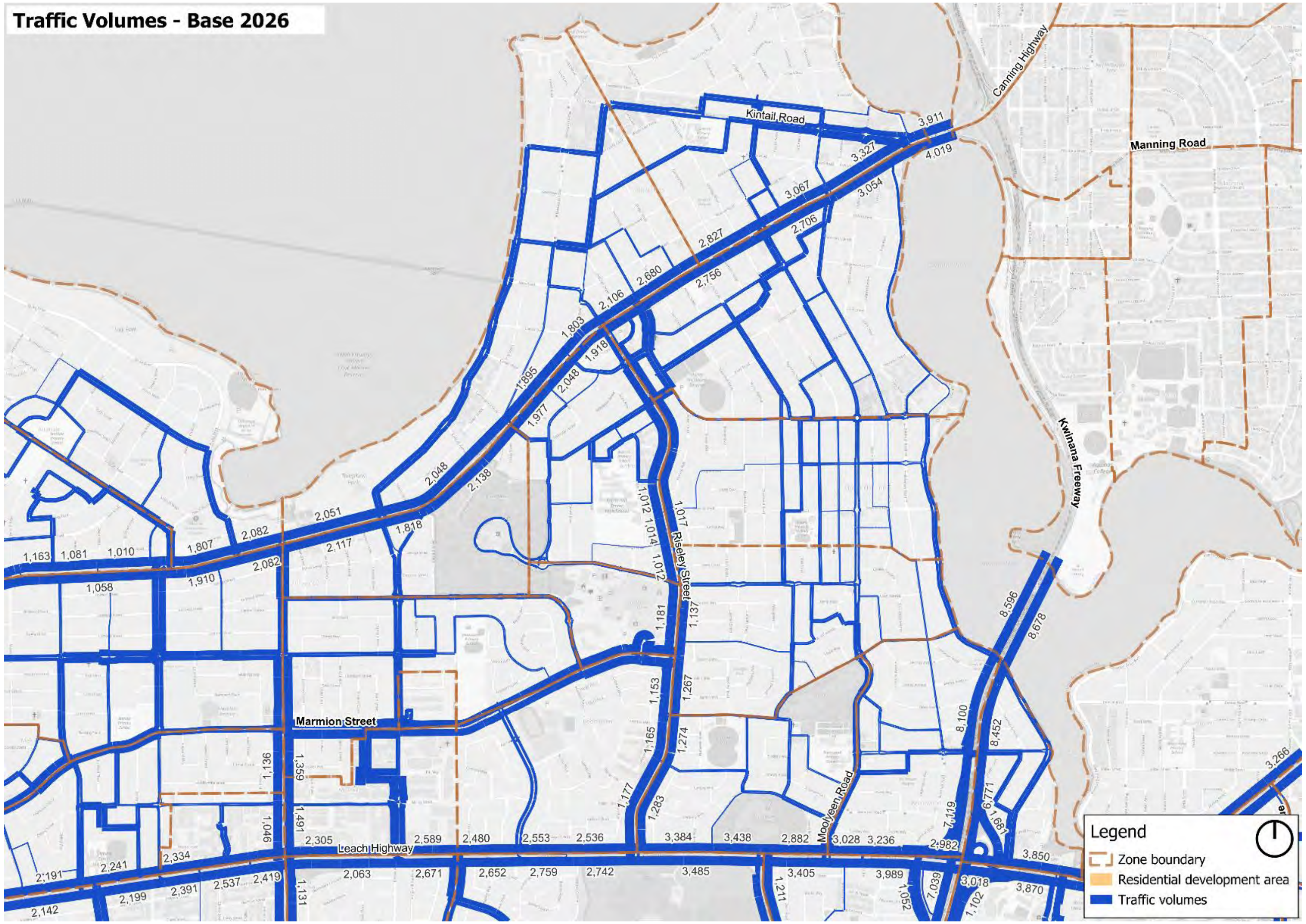


Figure A.2 Existing network flows – 2026 Base (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

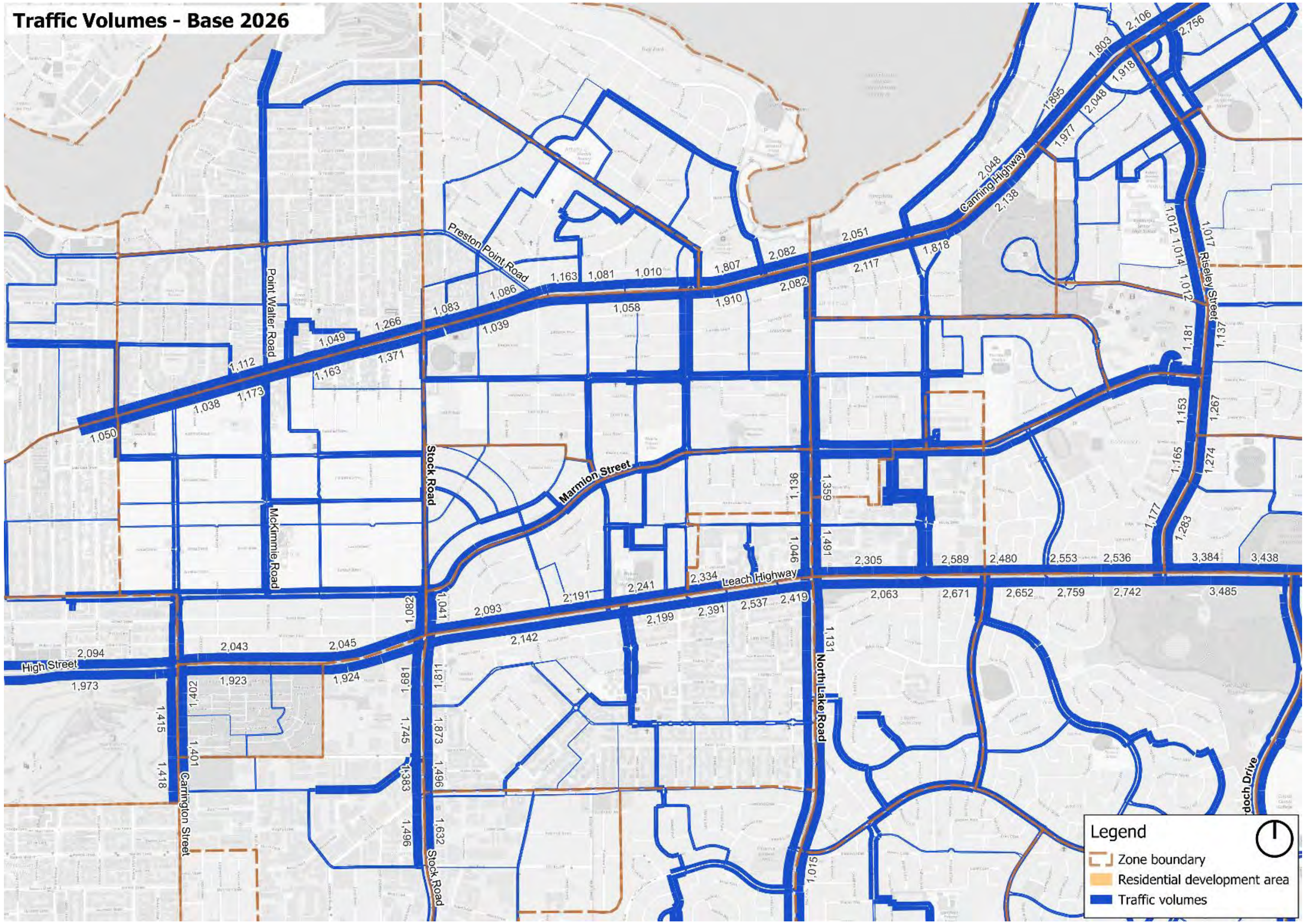


Figure A.3 Existing network flows – 2026 Base (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

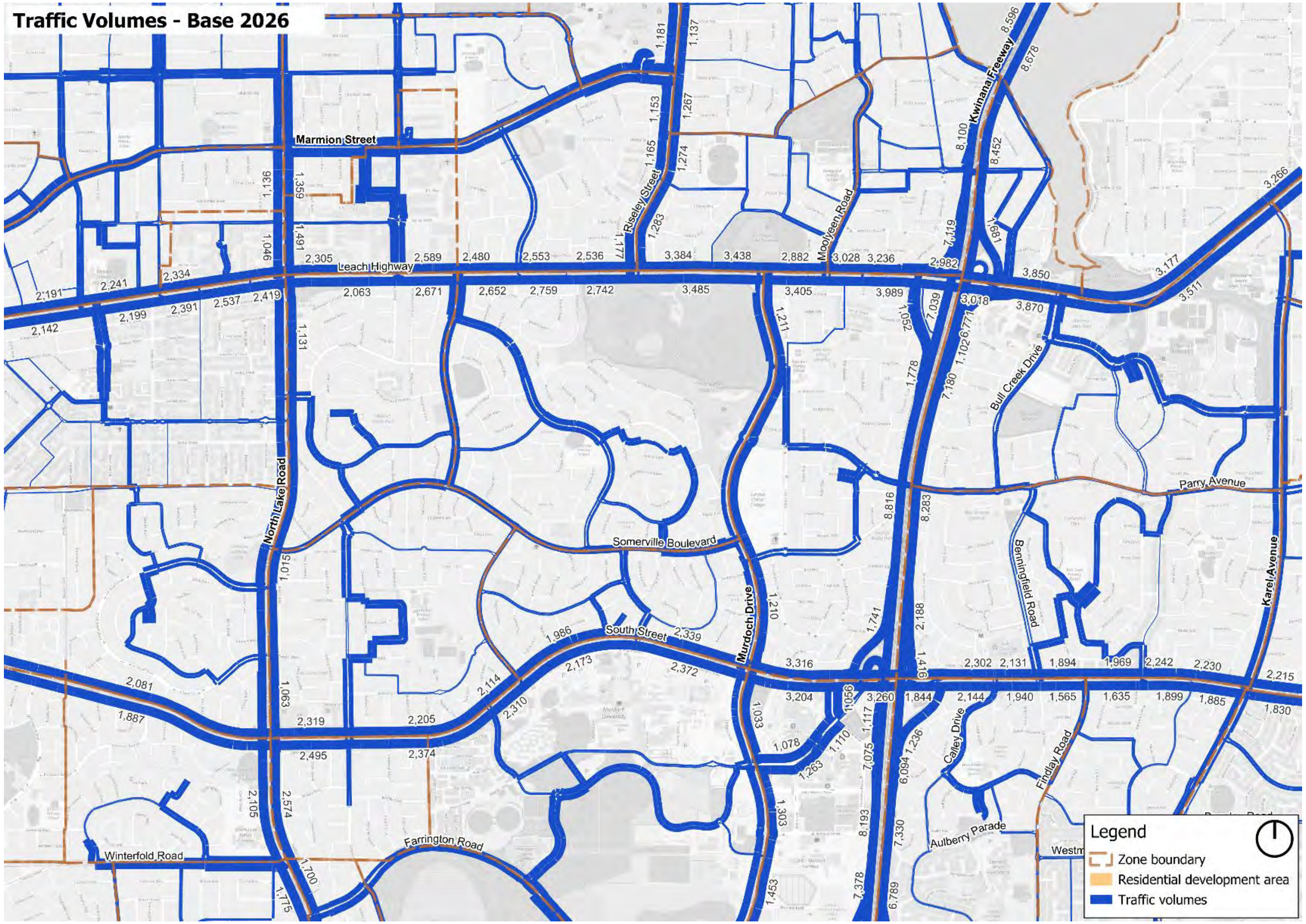


Figure A.4 Existing network flows – 2026 Base (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

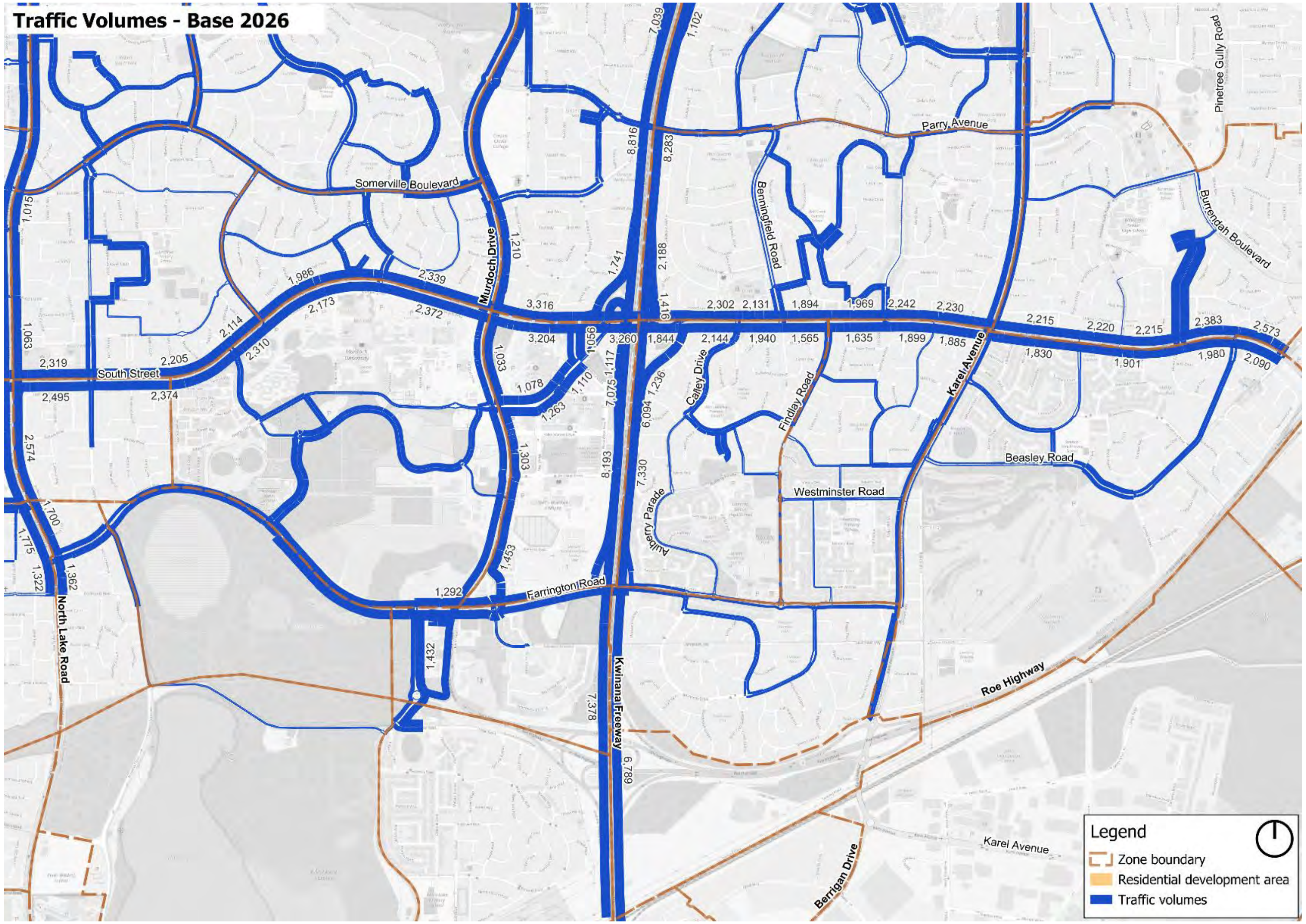


Figure A.5 Existing network flows – 2026 Base (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

A2 2041 baseline

This section summarises the peak hour network flows from the 2041 baseline traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

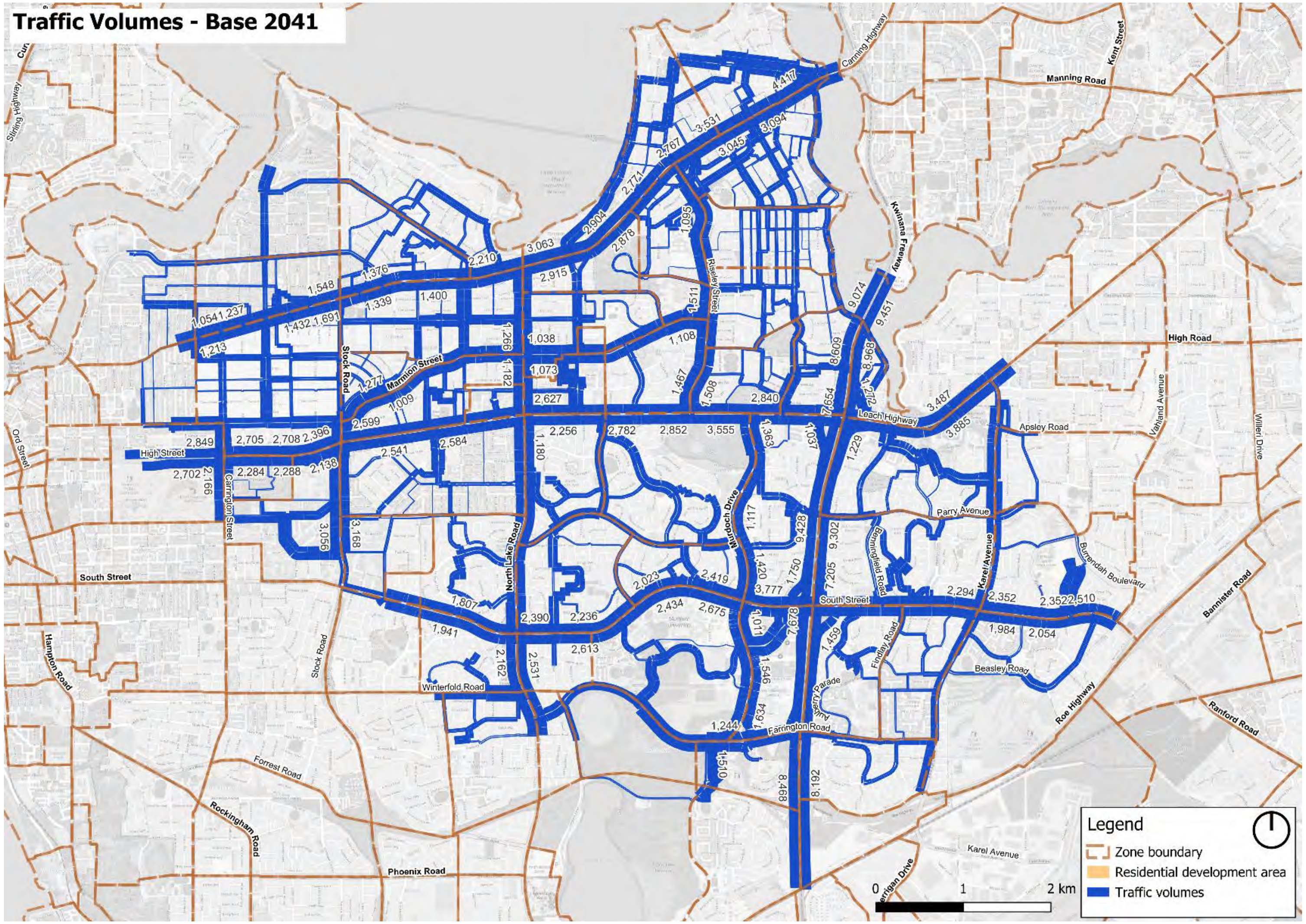


Figure A.6 Existing network flows – 2041 Base

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

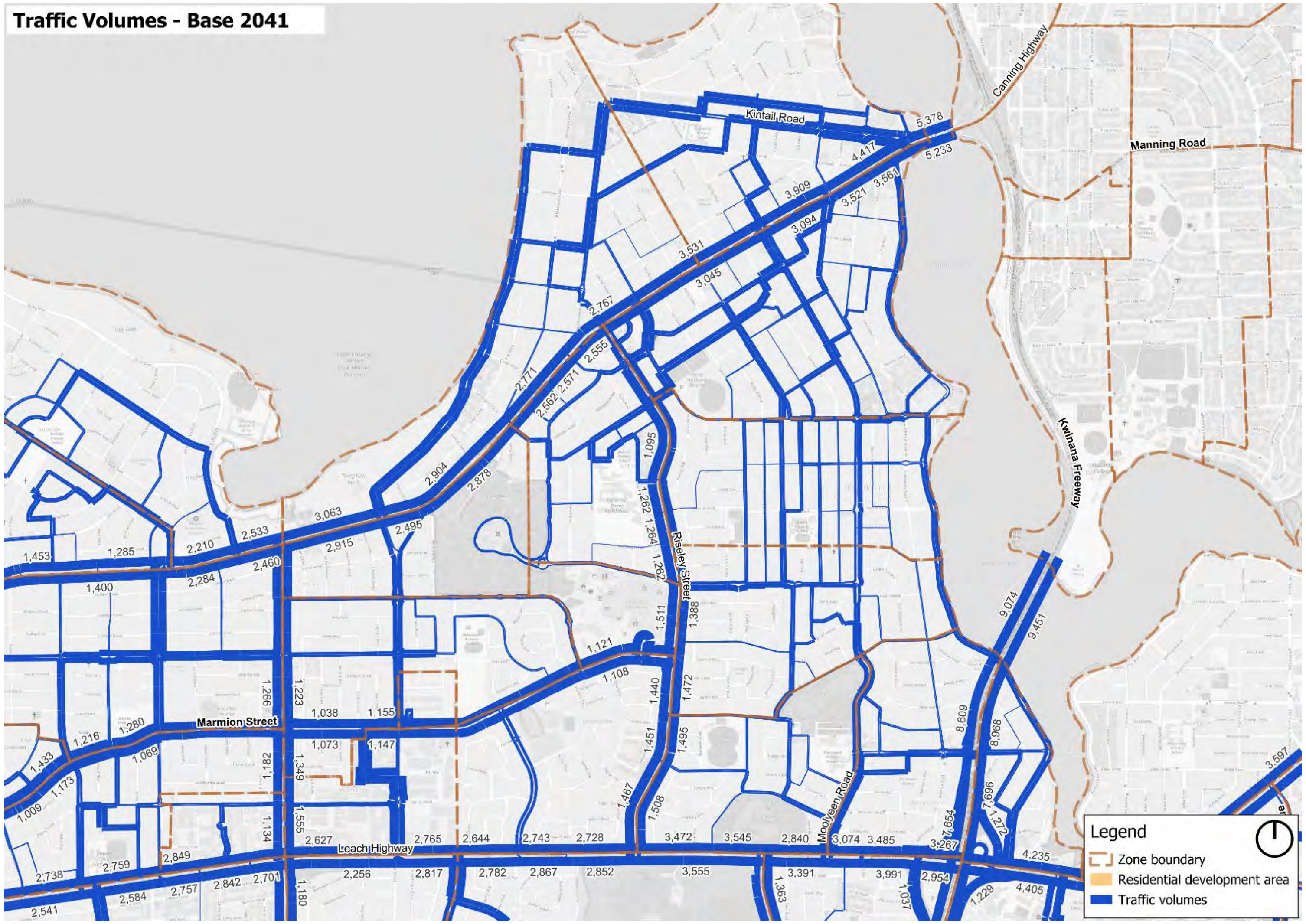


Figure A.7 Existing network flows – 2041 Base (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

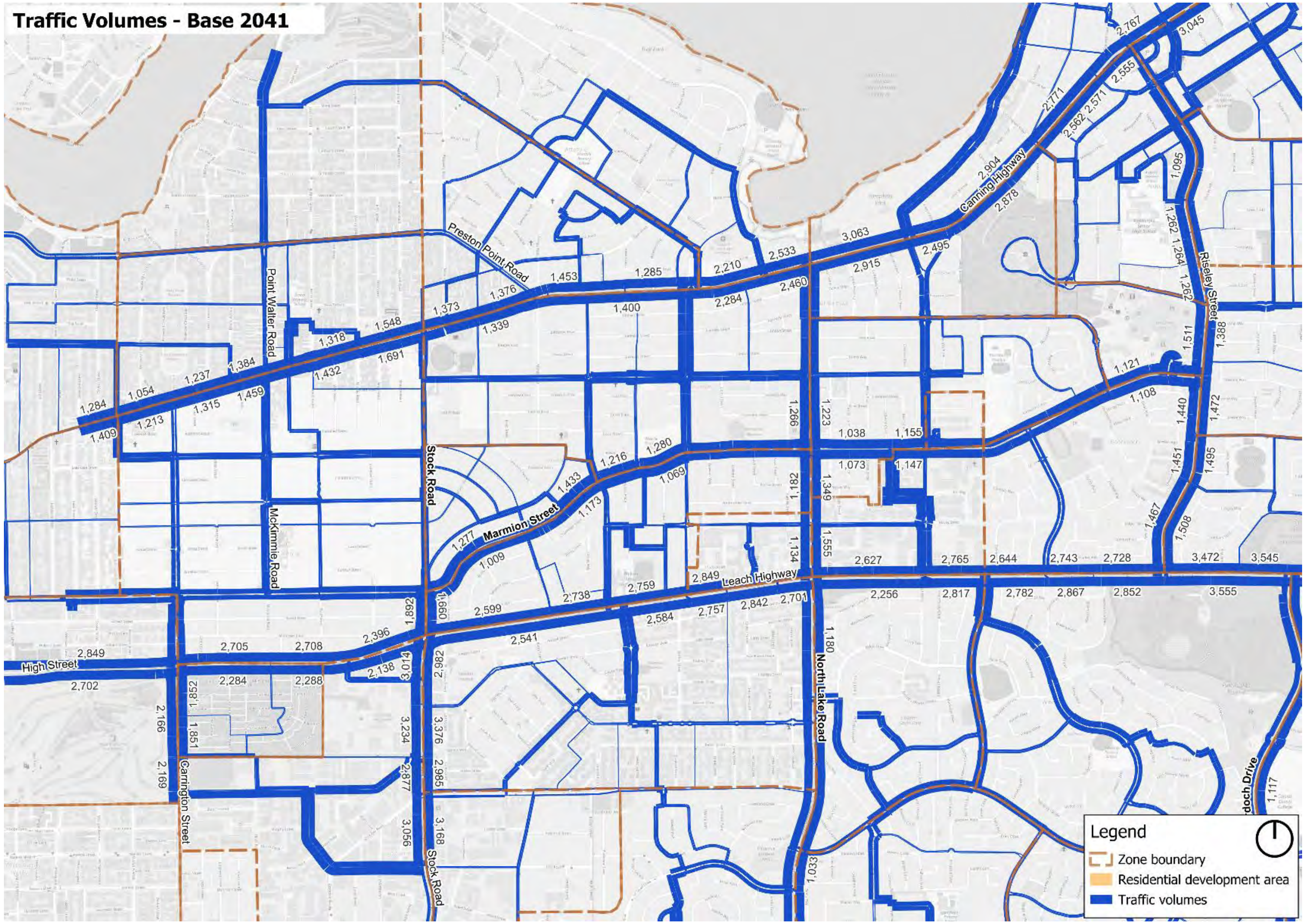


Figure A.8 Existing network flows – 2041 Base (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

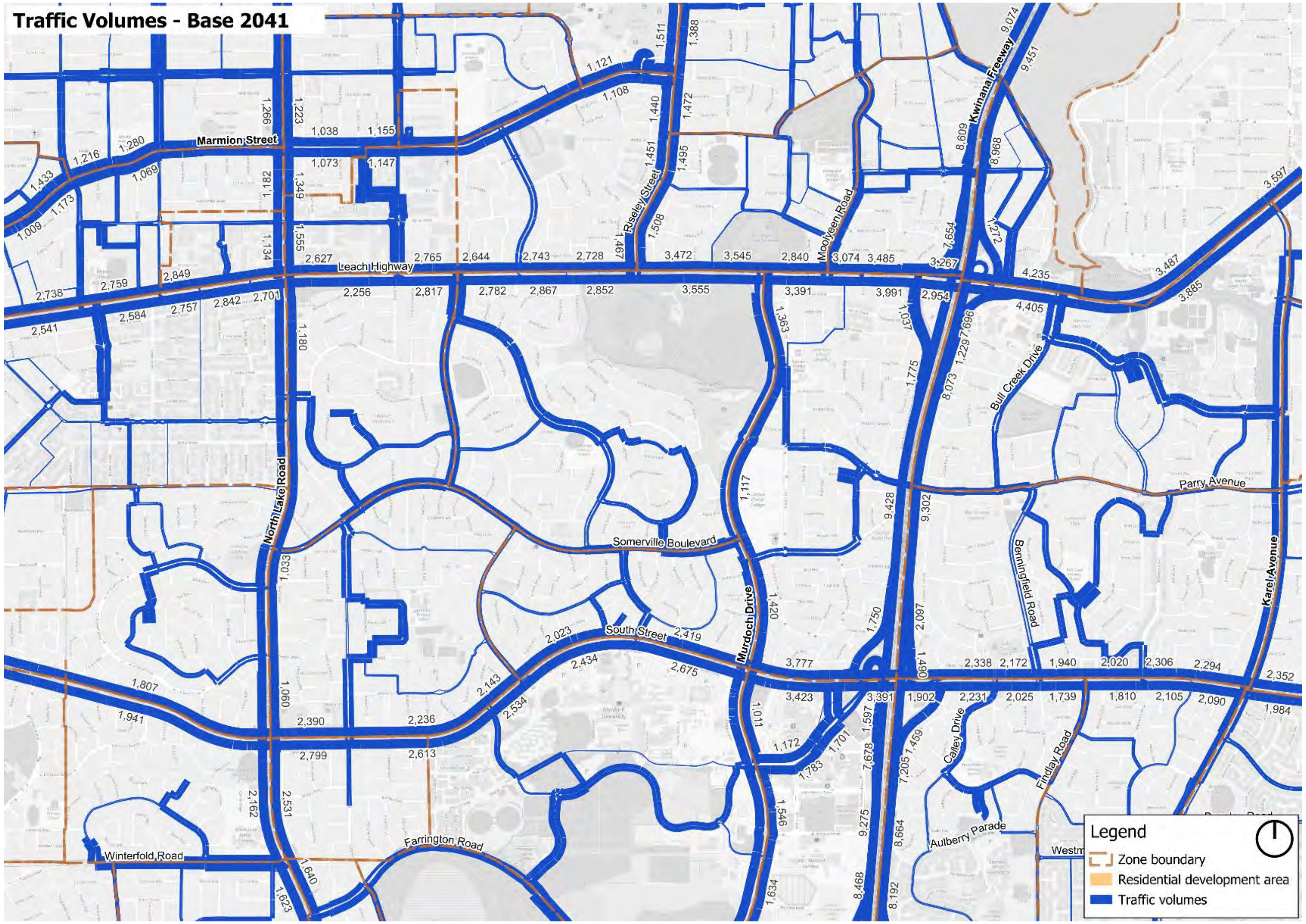


Figure A.9 Existing network flows – 2041 Base (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

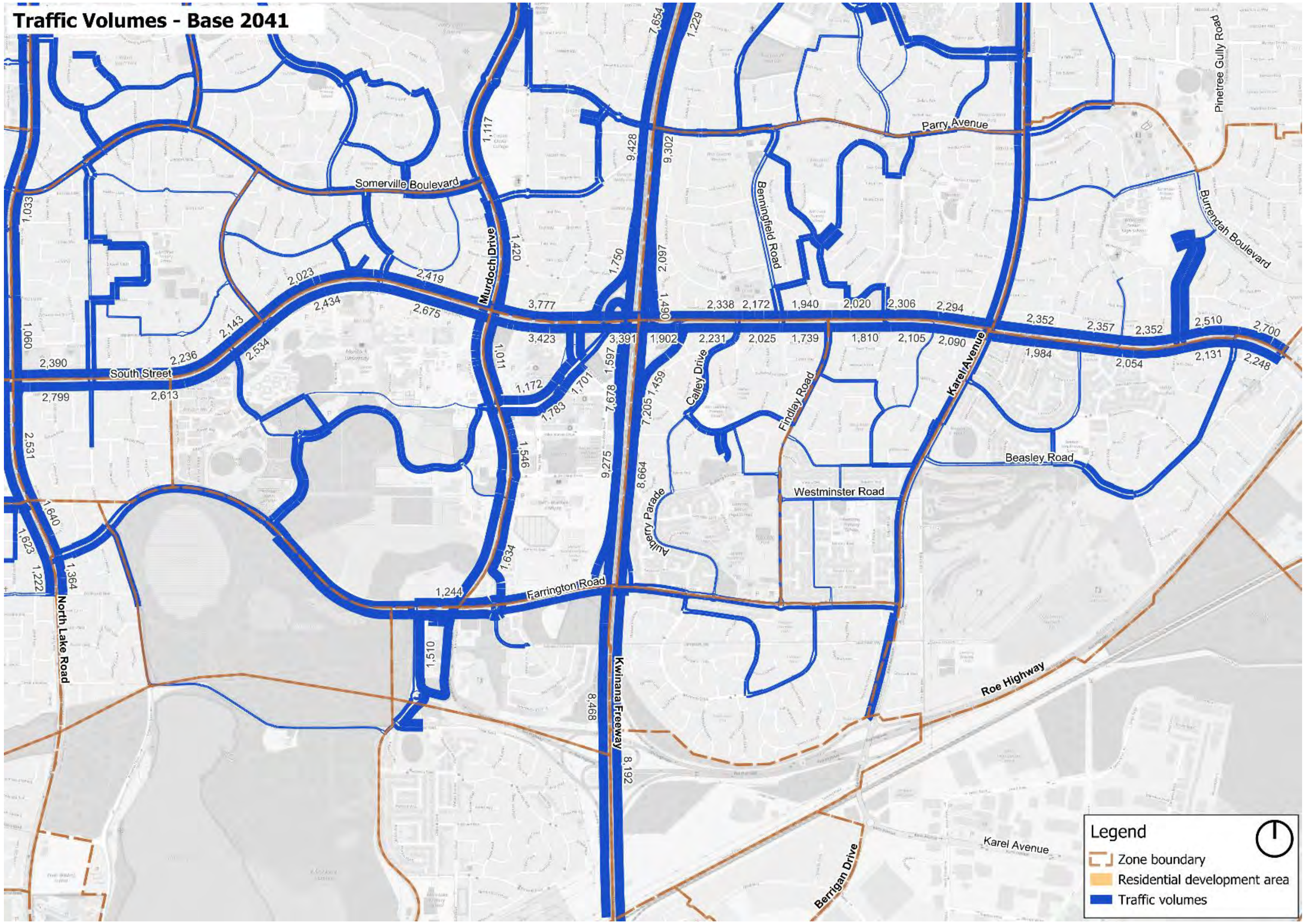


Figure A.10 Existing network flows – 2041 Base (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

A3 2041 scenario 1 (“core growth areas”)

This section summarises the peak hour network flows from the 2041 scenario 1 (“core growth areas”) traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

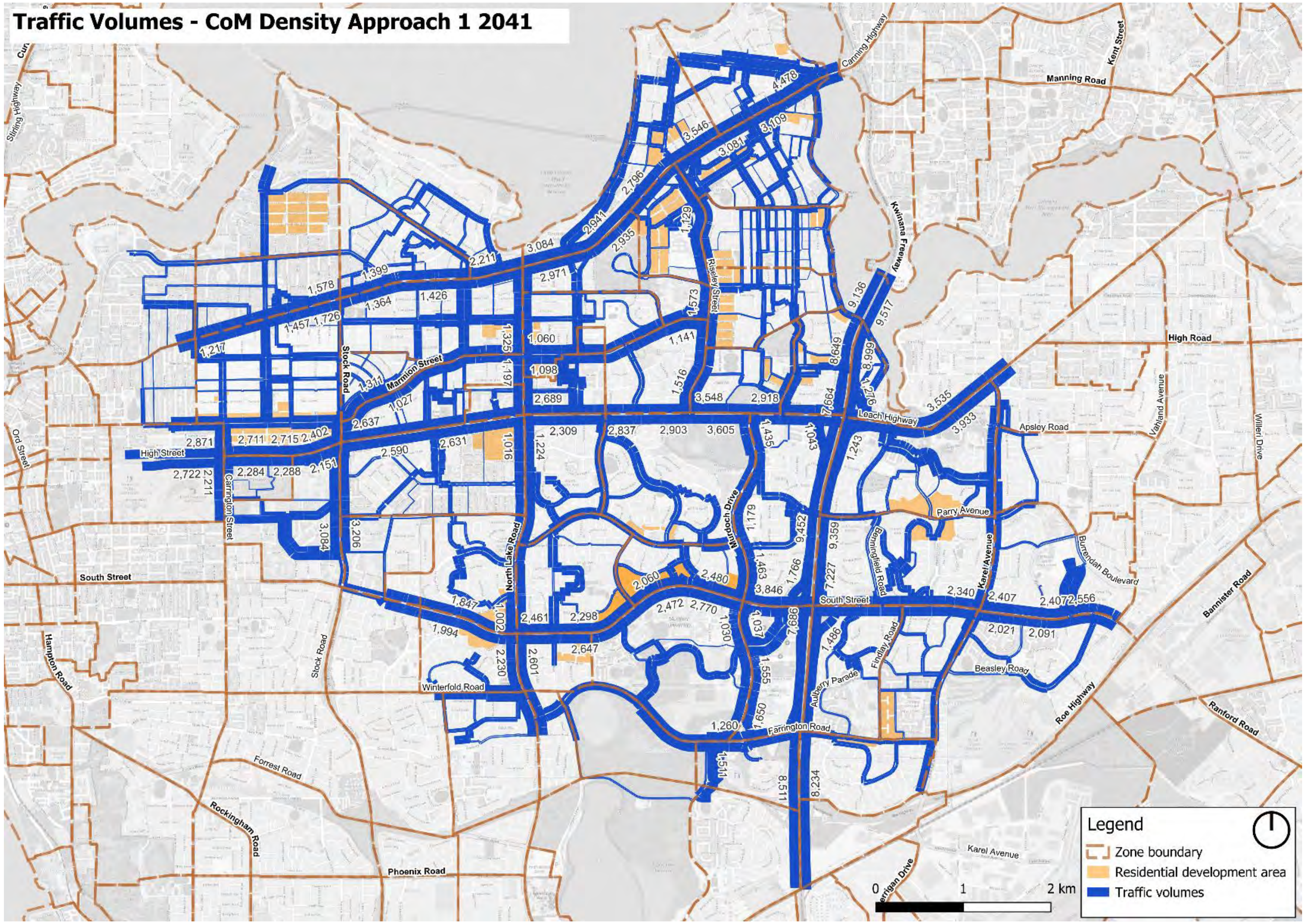


Figure A.11 Existing network flows – 2041 scenario 1 ("core growth areas")

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

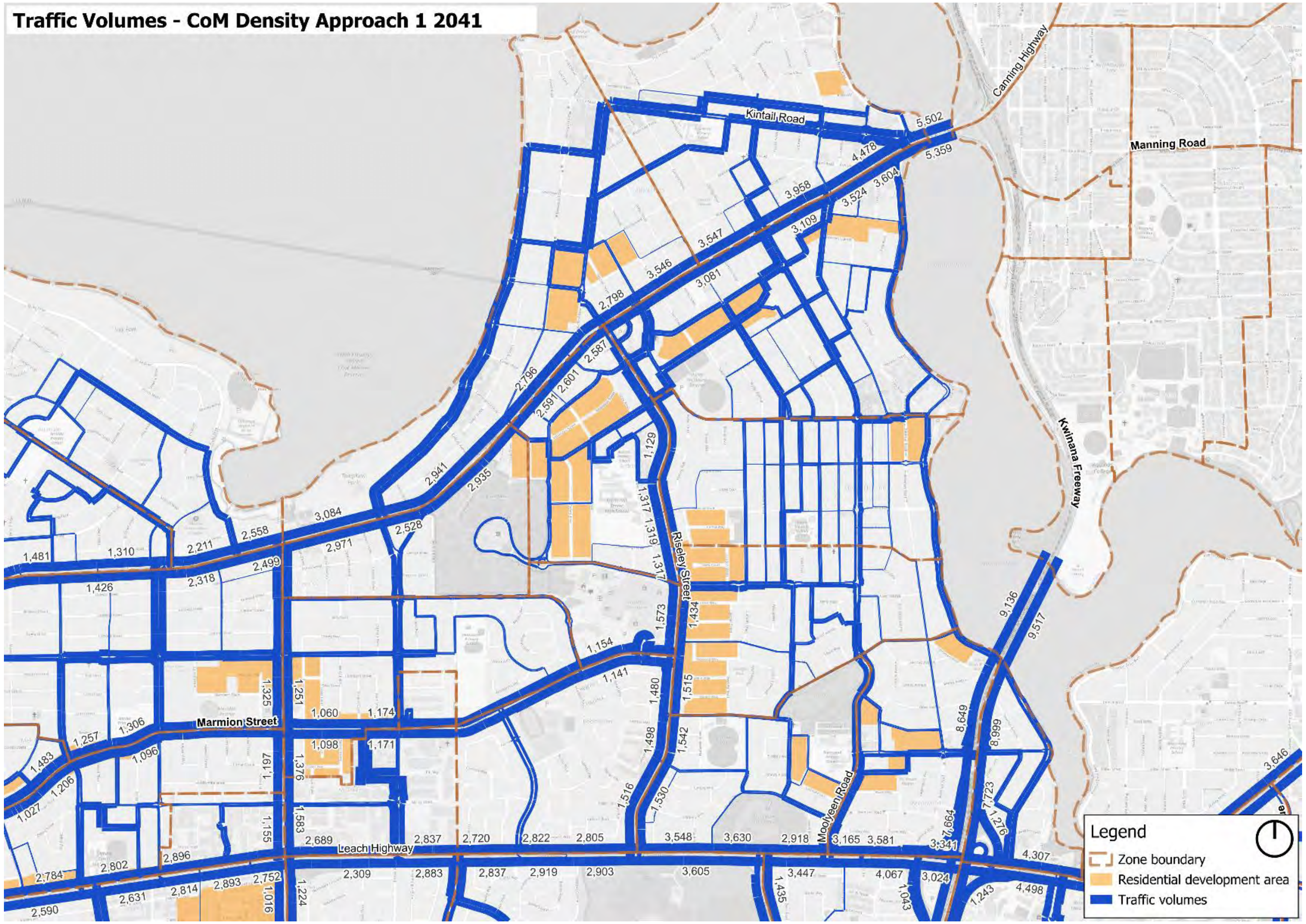


Figure A.12 Existing network flows – 2041 scenario 1 ("core growth areas") (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

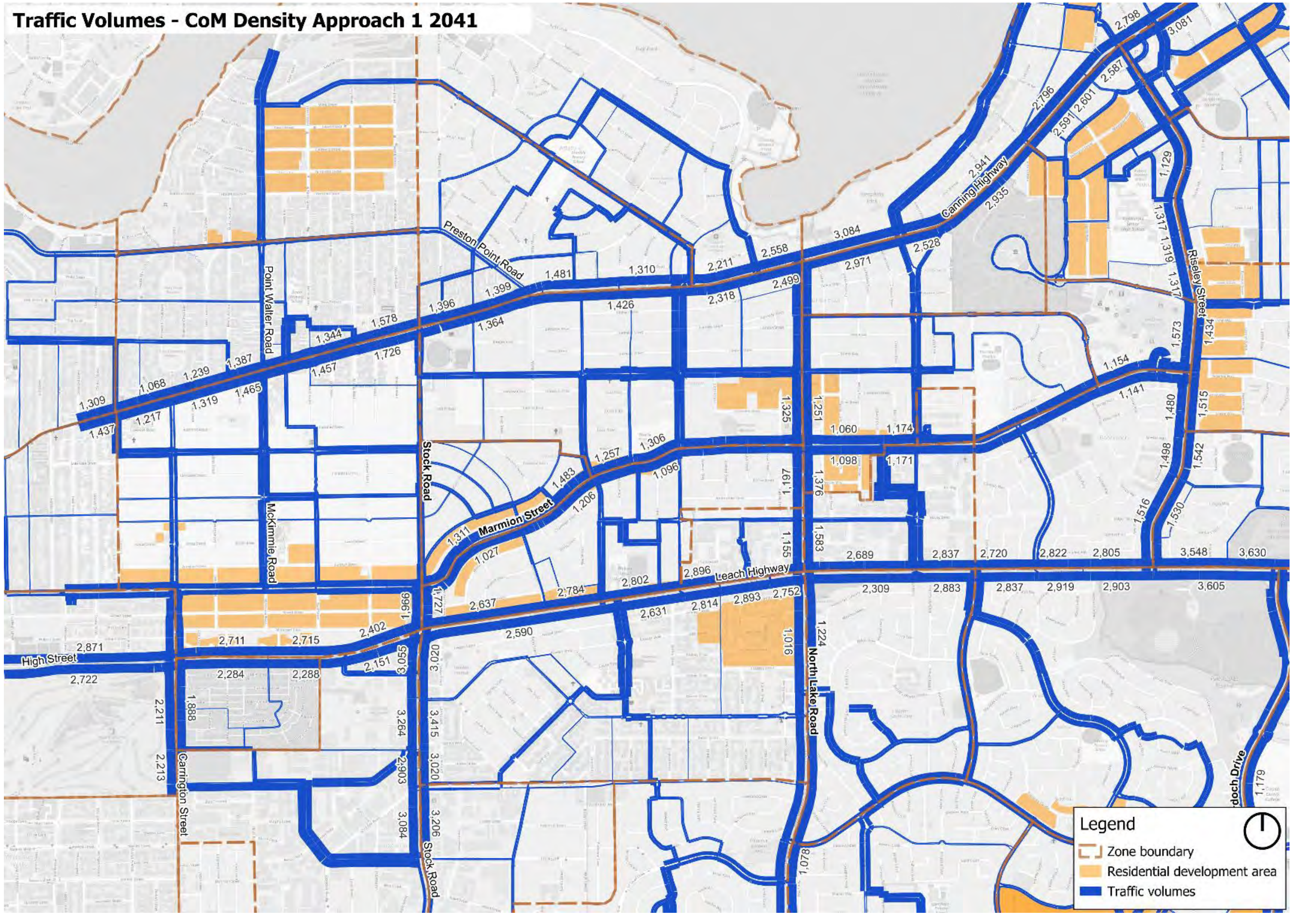


Figure A.13 Existing network flows – 2041 scenario 1 (“core growth areas”) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

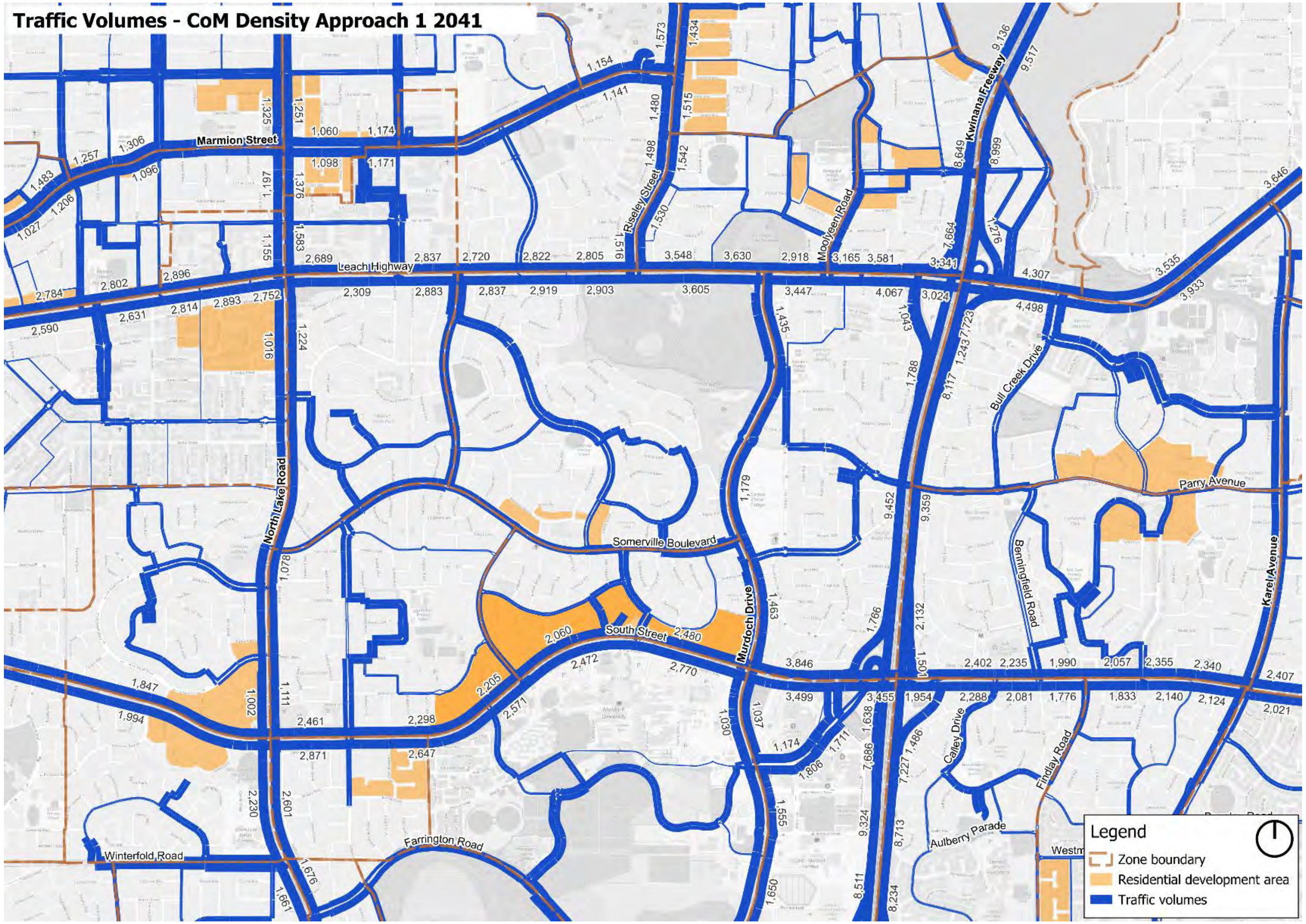


Figure A.14 Existing network flows – 2041 scenario 1 (“core growth areas”) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

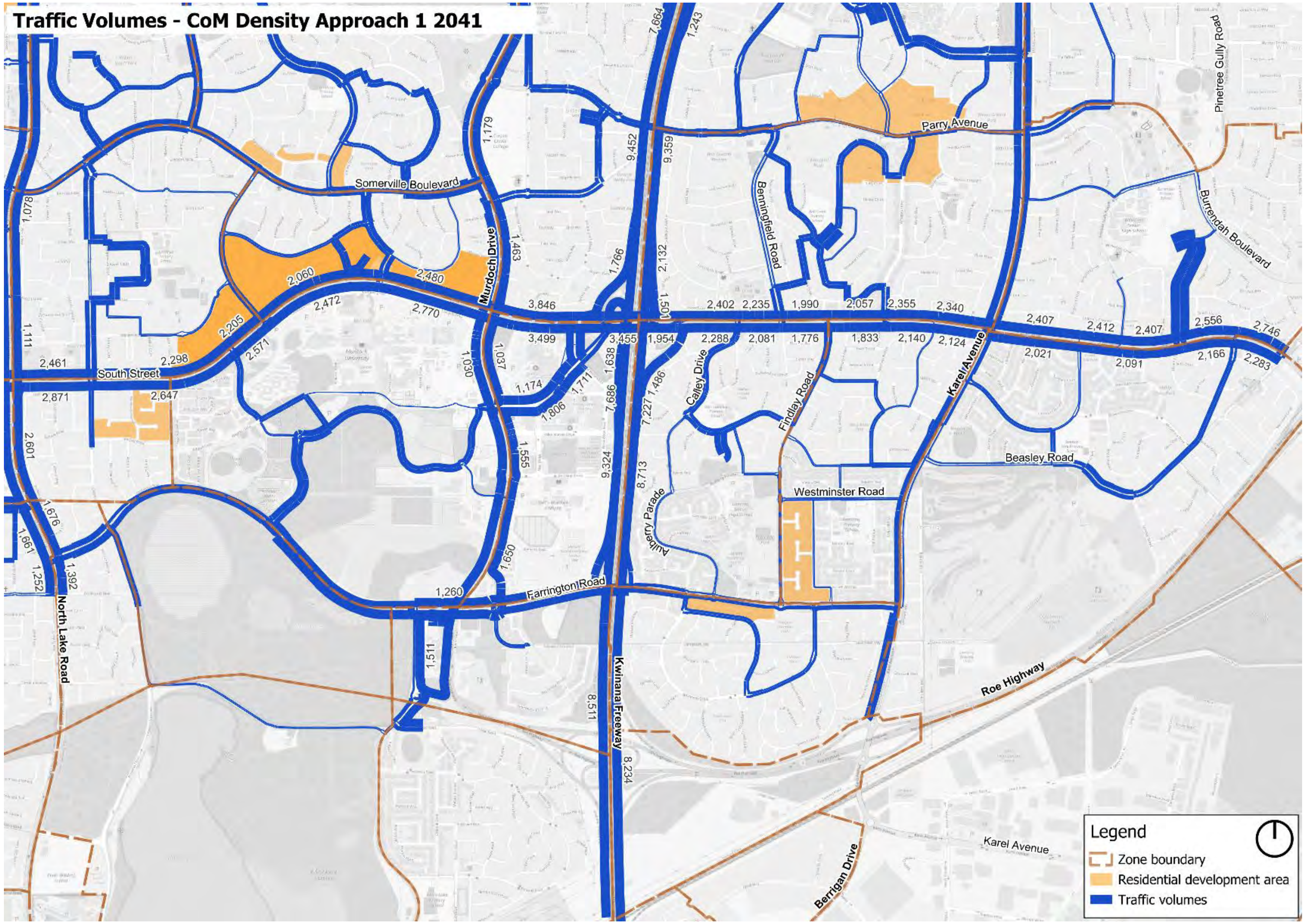


Figure A.15 Existing network flows – 2041 scenario 1 (“core growth areas”) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

A4 2041 scenario 2 (“additional growth”)

This section summarises the peak hour network flows from the 2041 scenario 2 (“additional growth”) traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

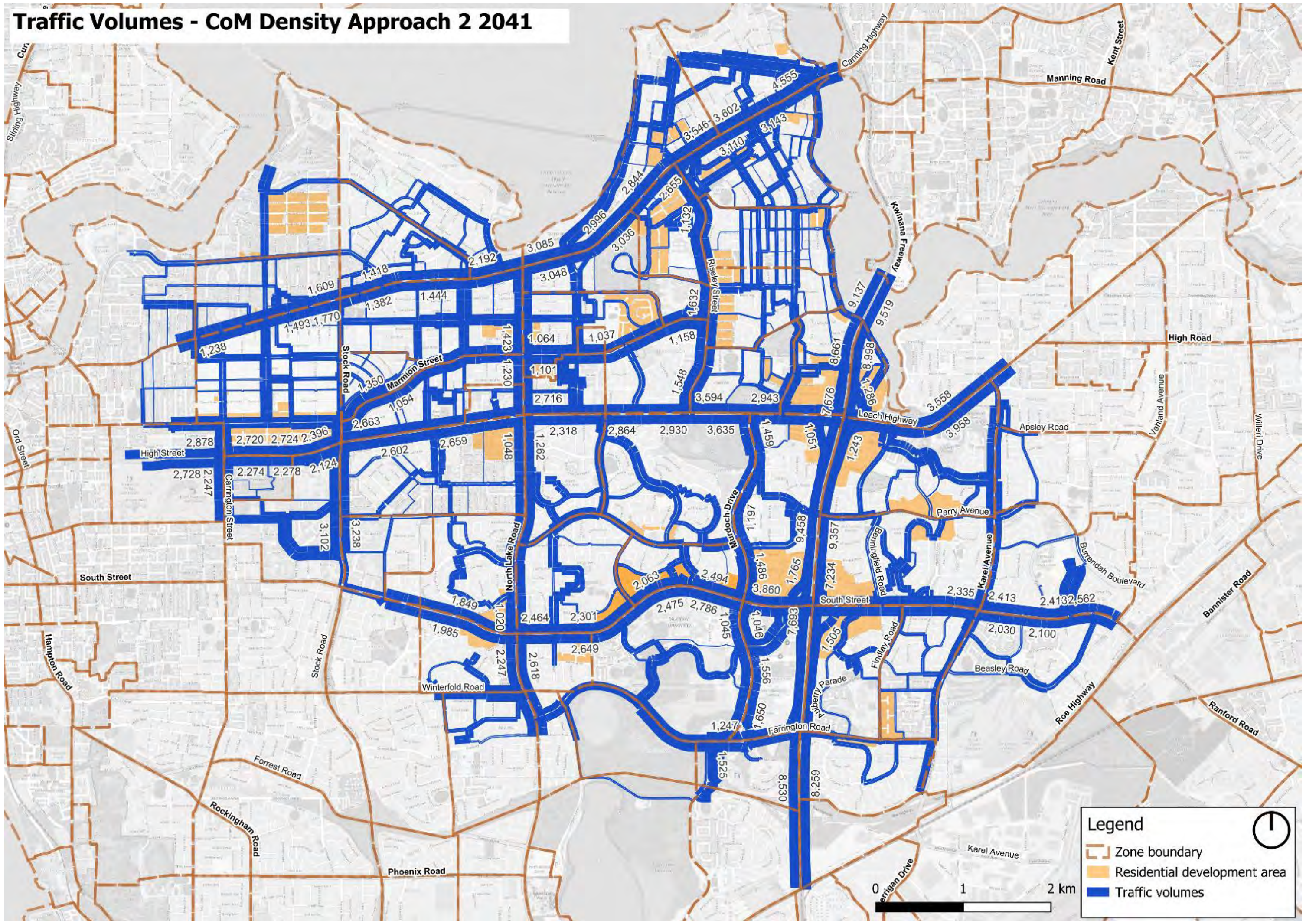


Figure A.16 Existing network flows – 2041 scenario 2 ("additional growth")

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

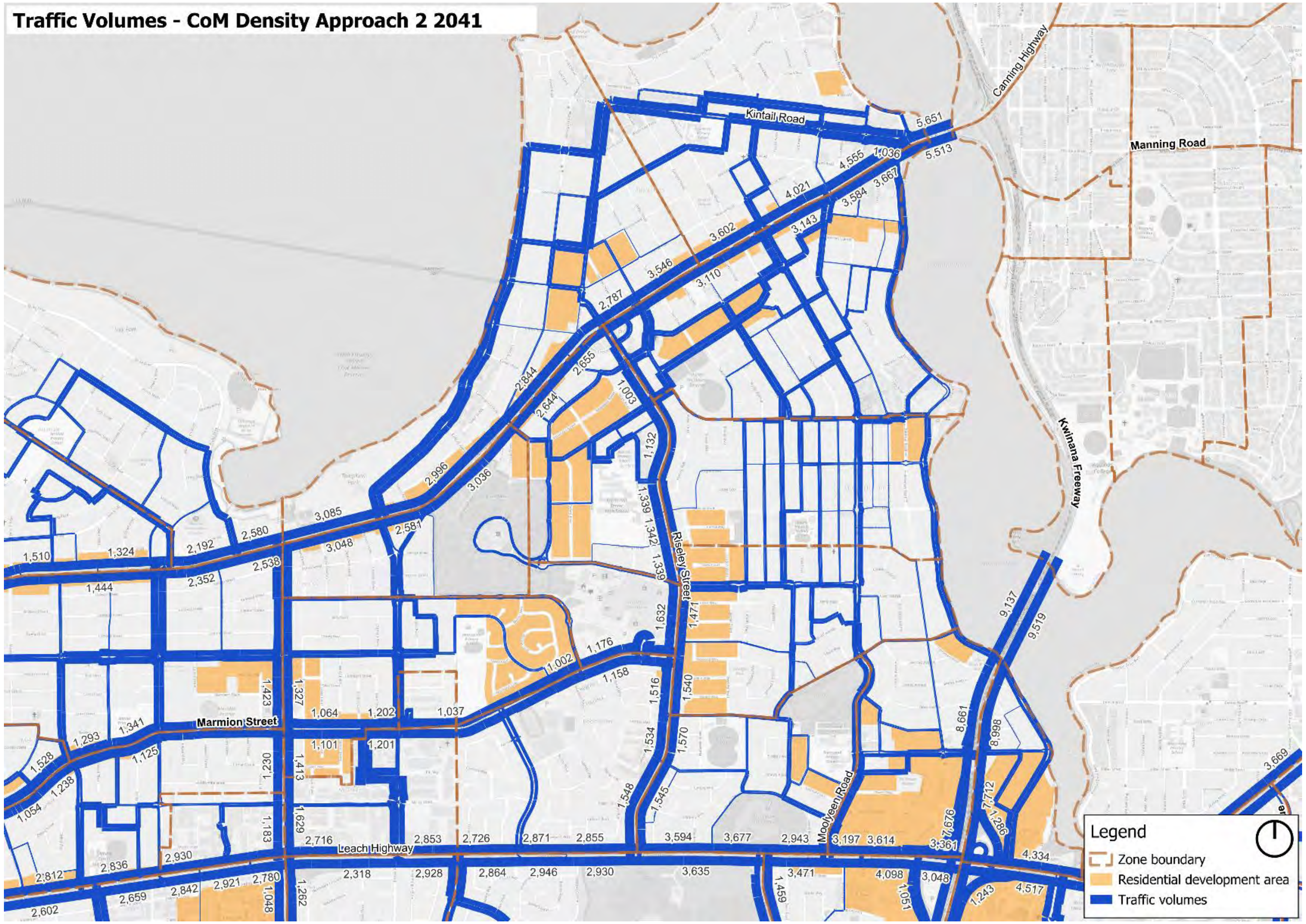


Figure A.17 Existing network flows – 2041 scenario 2 (“additional growth”) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

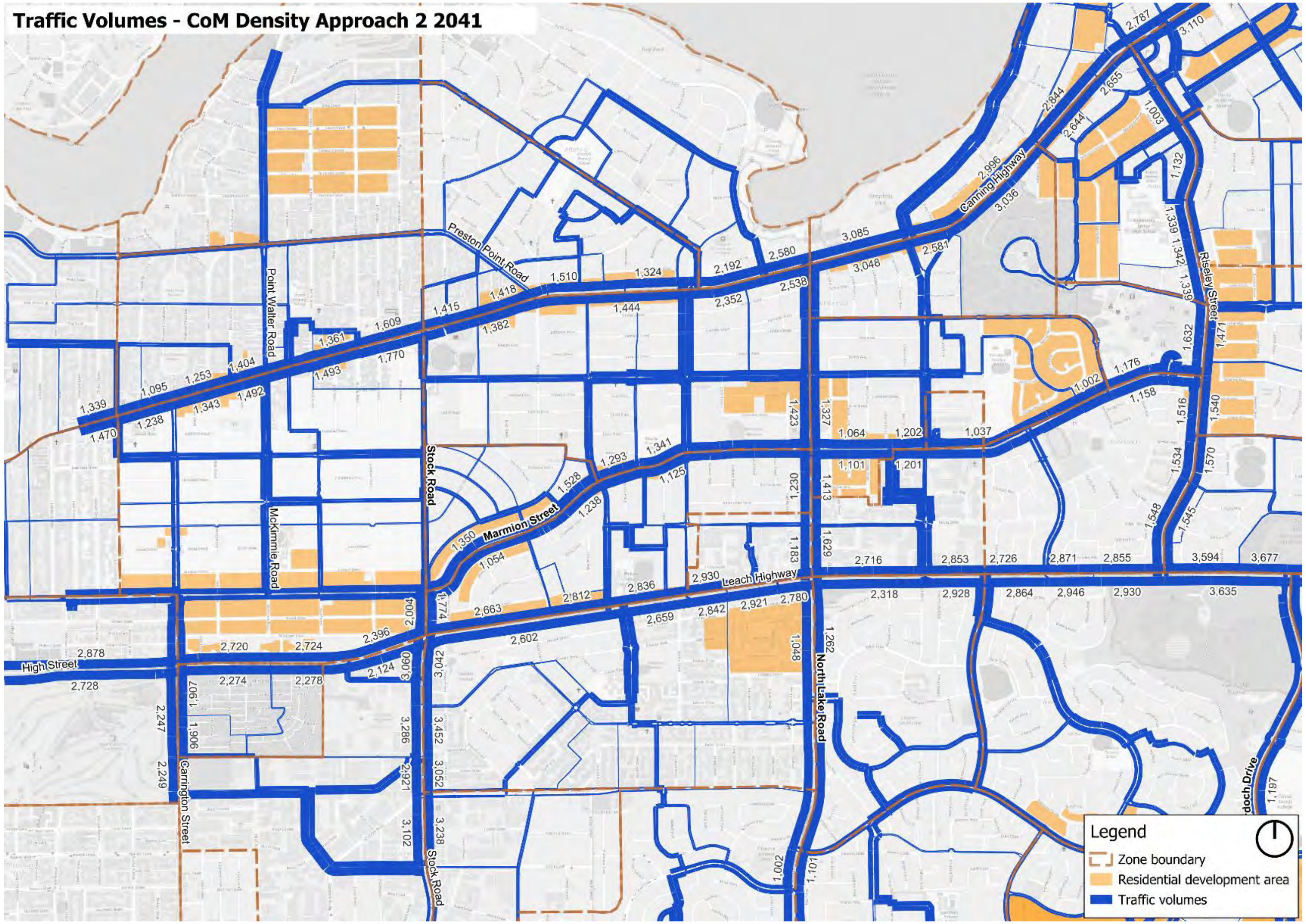


Figure A.18 Existing network flows – 2041 scenario 2 (“additional growth”) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

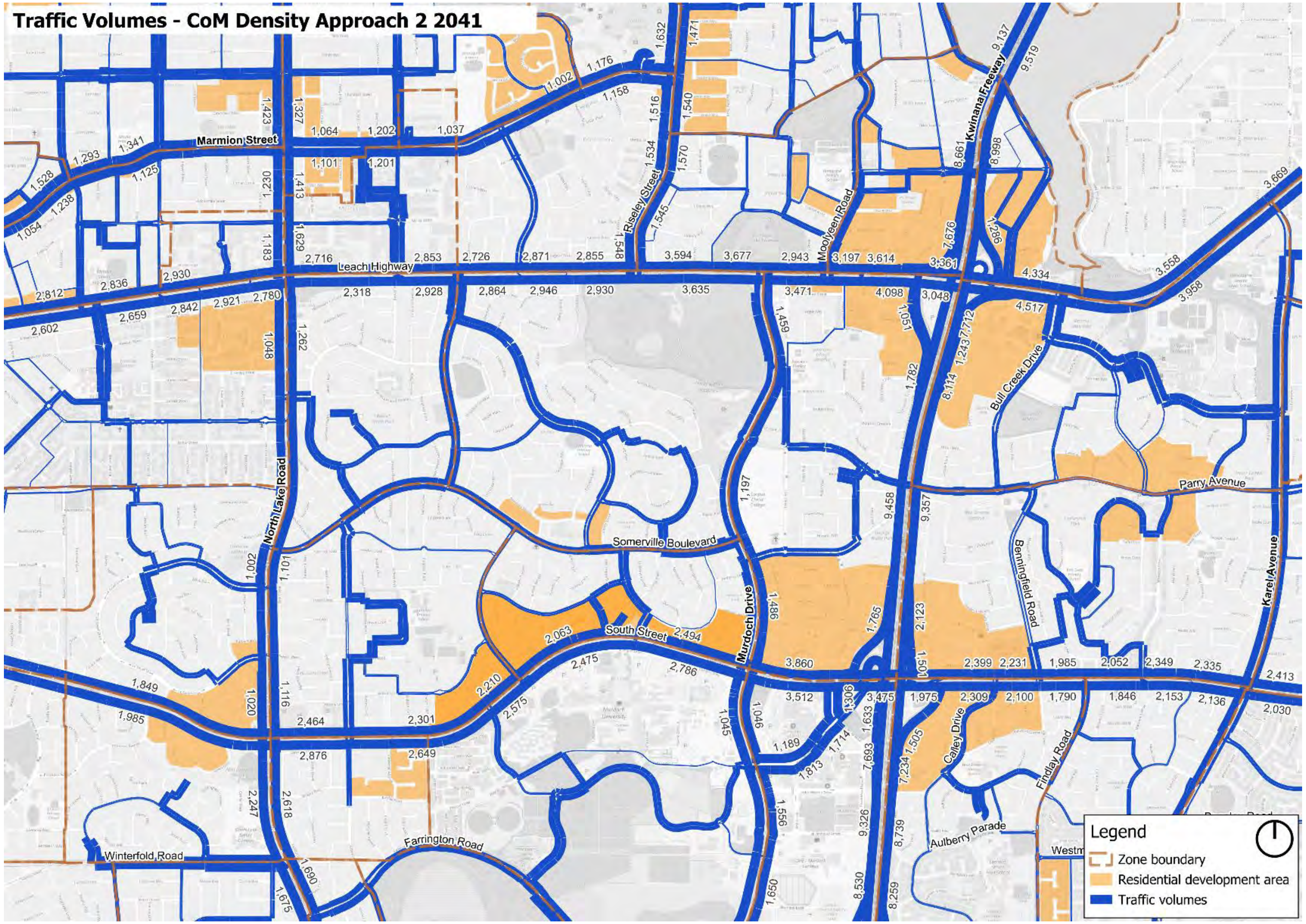


Figure A.19 Existing network flows – 2041 scenario 2 ("additional growth") (zomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

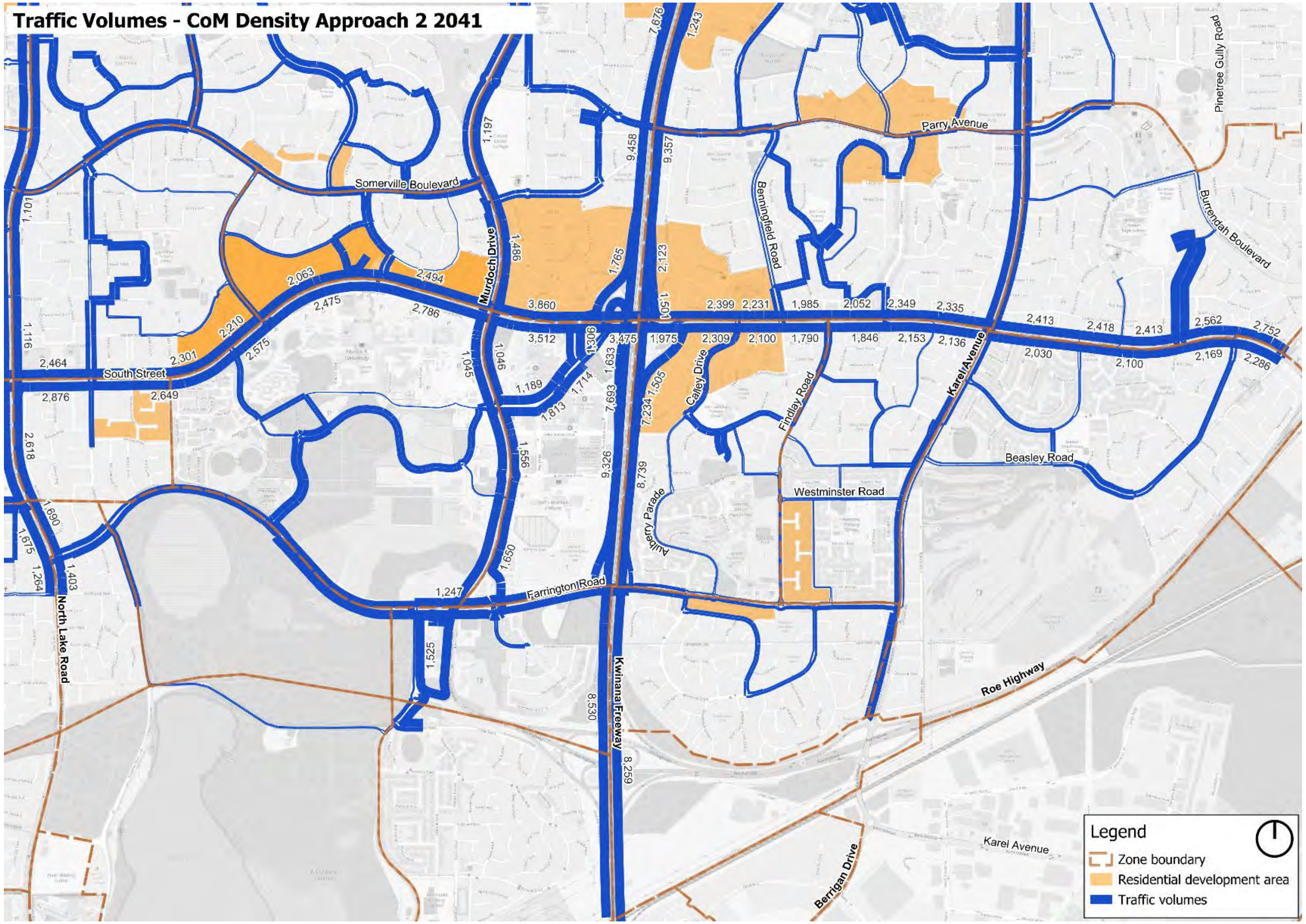


Figure A.20 Existing network flows – 2041 scenario 2 (“additional growth”) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

A5 2051 baseline

This section summarises the peak hour network flows from the 2051 baseline traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

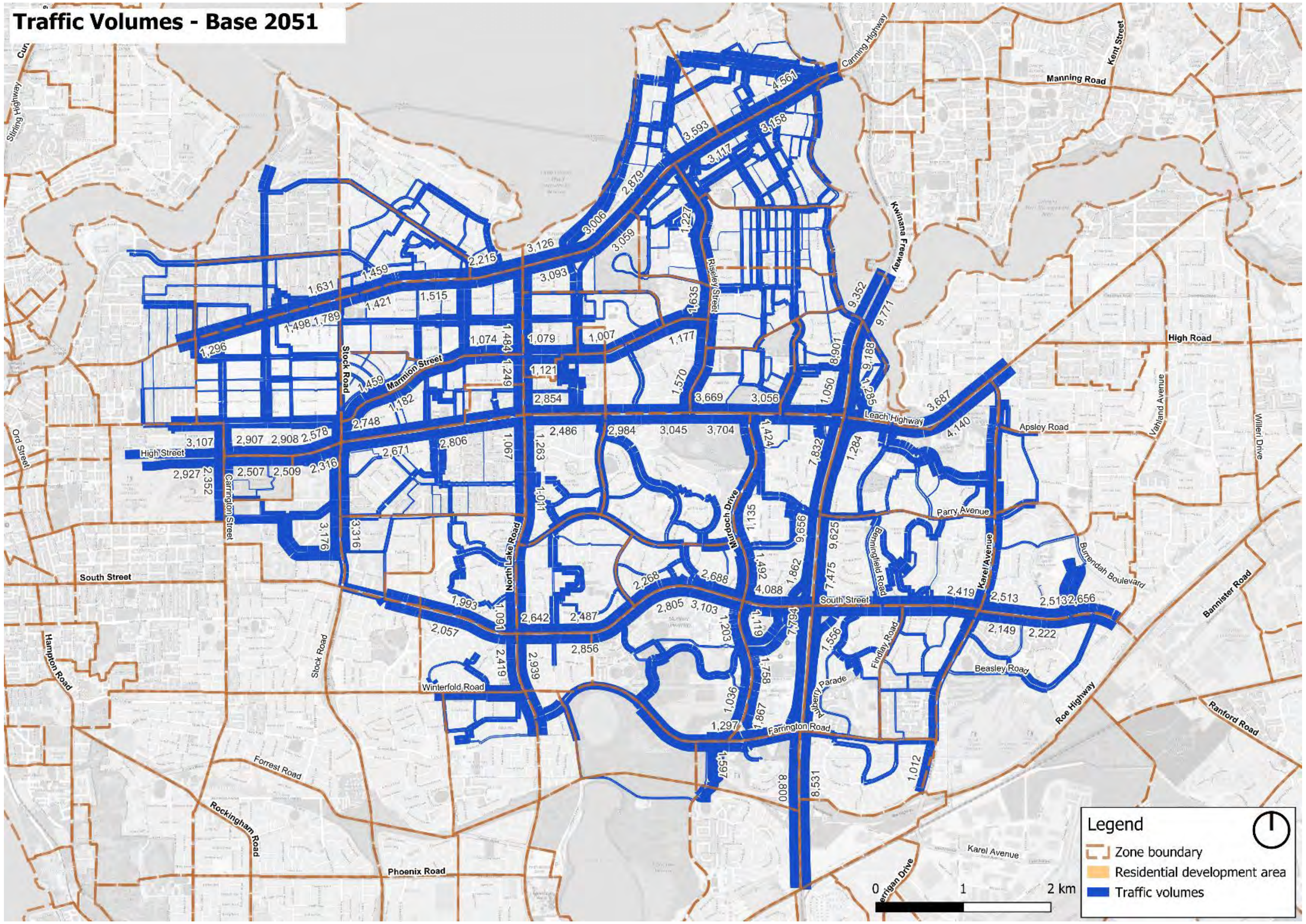


Figure A.21 Existing network flows – 2051 Base

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

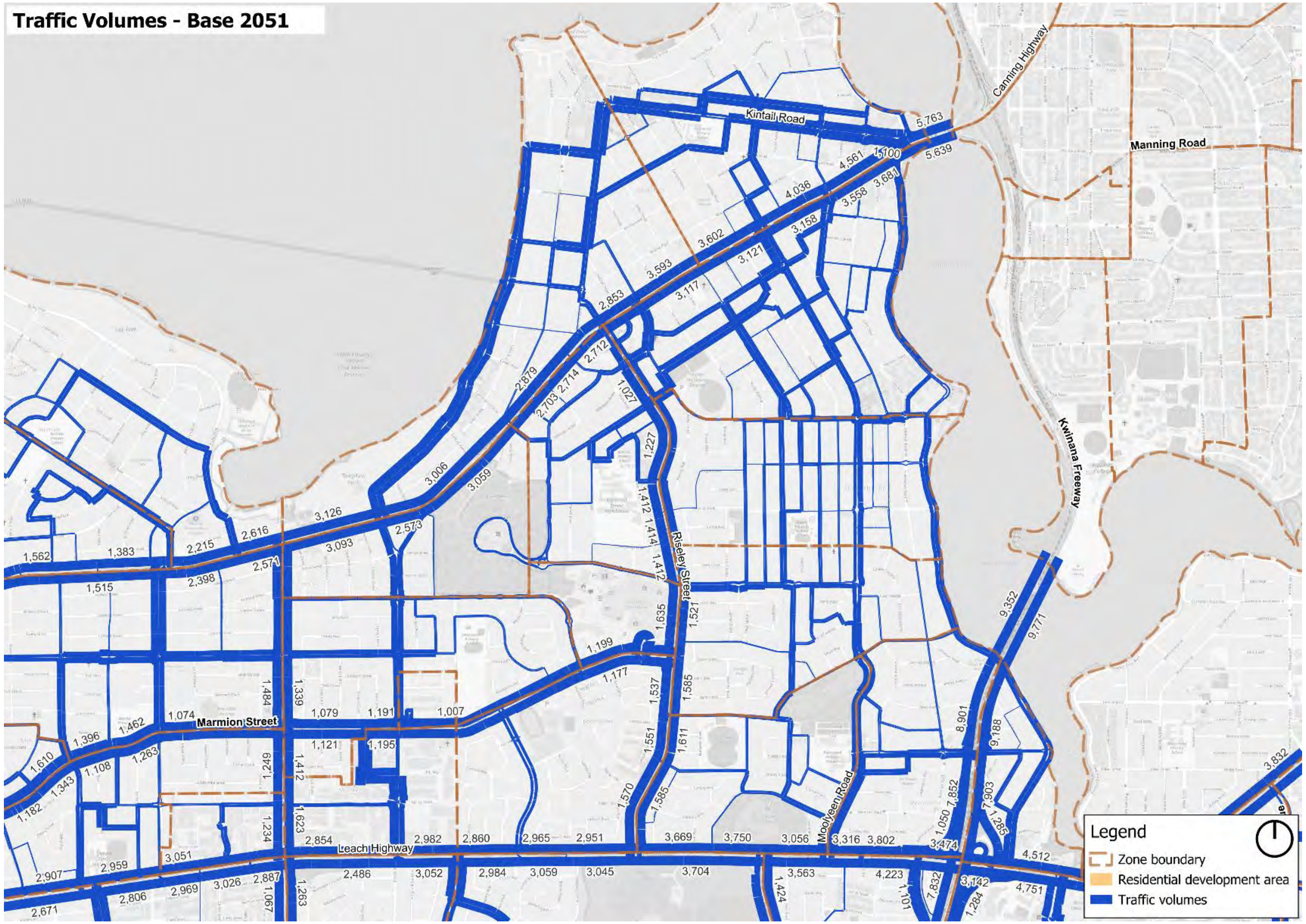


Figure A.22 Existing network flows – 2051 Base (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

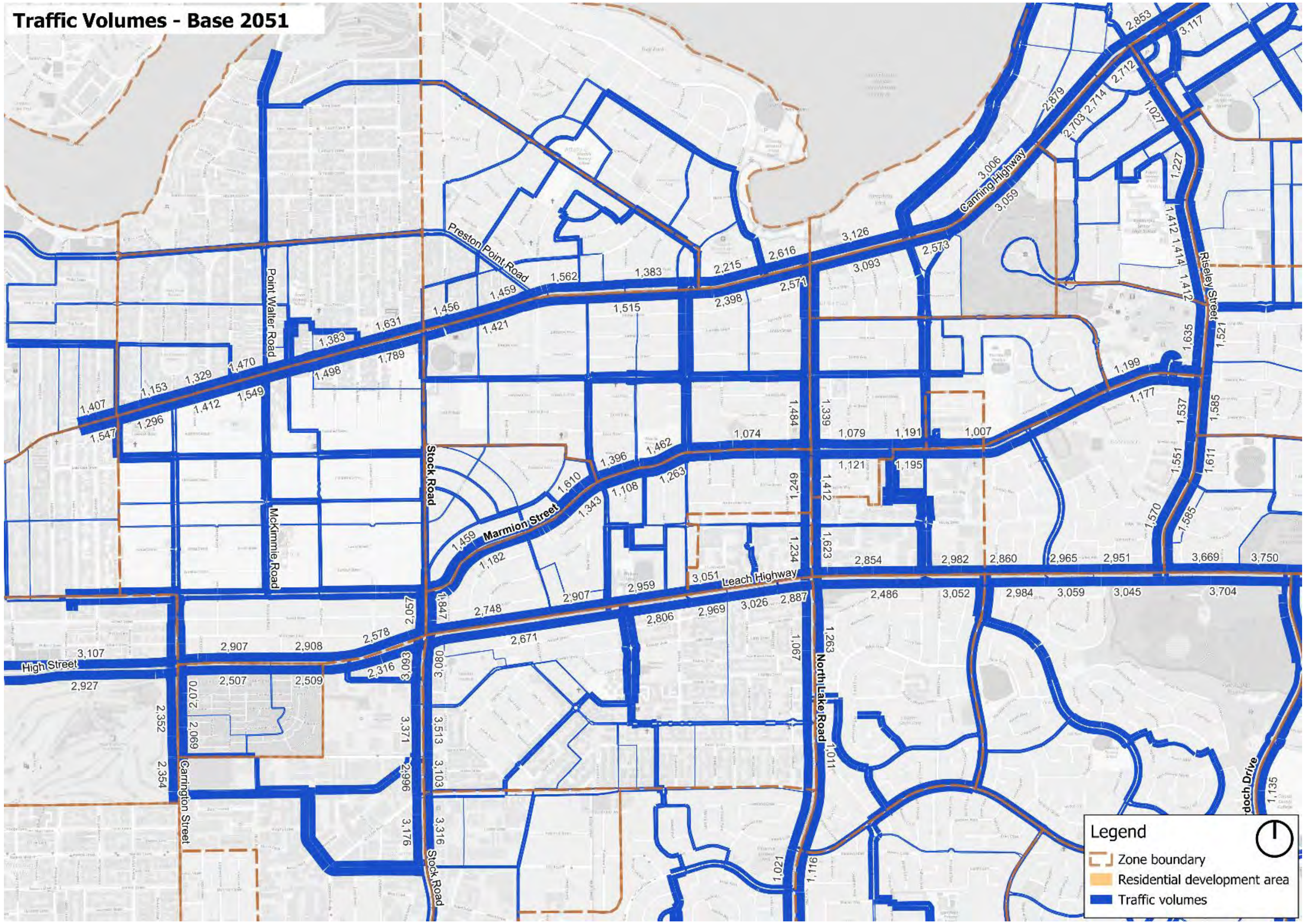


Figure A.23 Existing network flows – 2051 Base (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

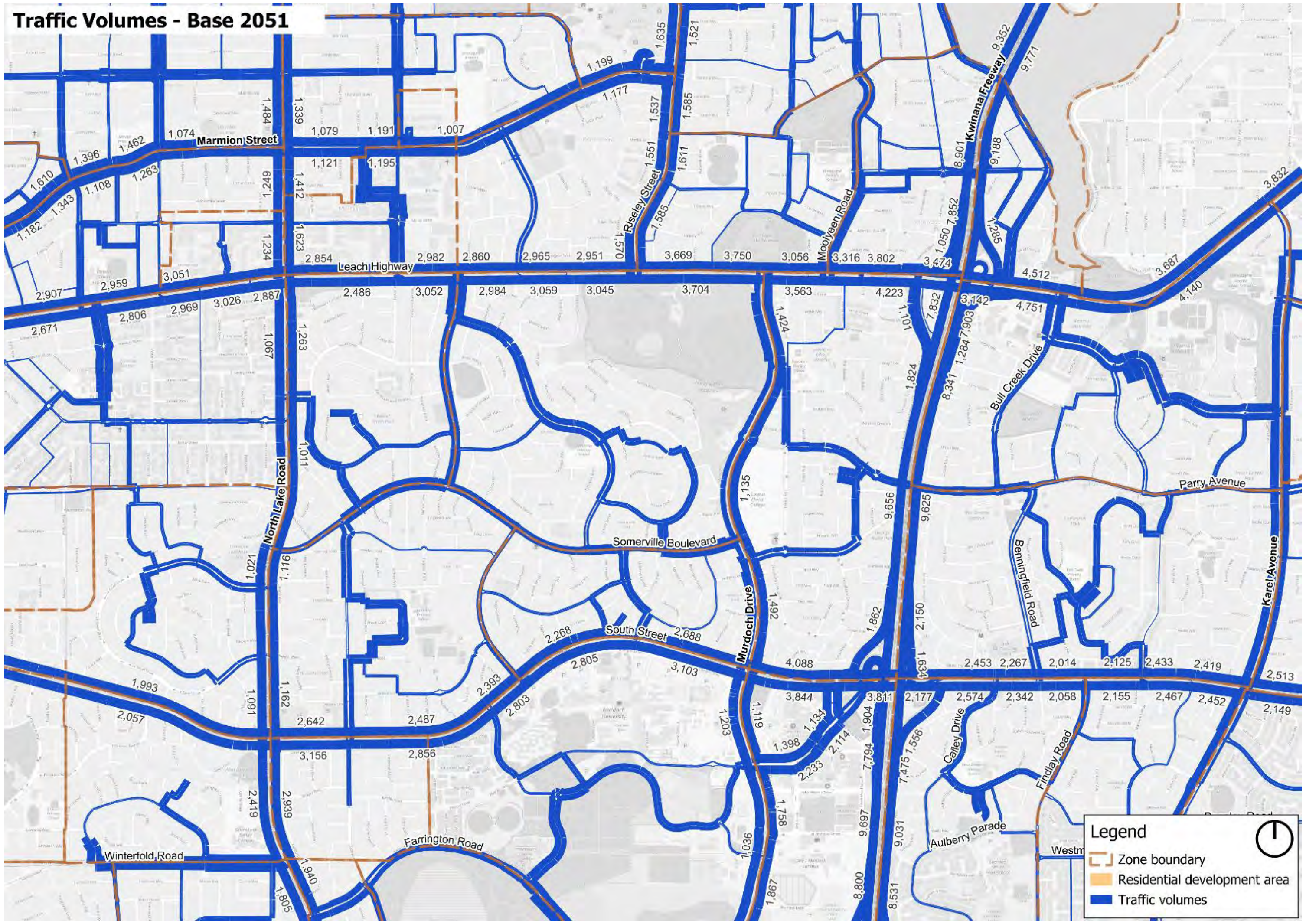


Figure A.24 Existing network flows – 2051 Base (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

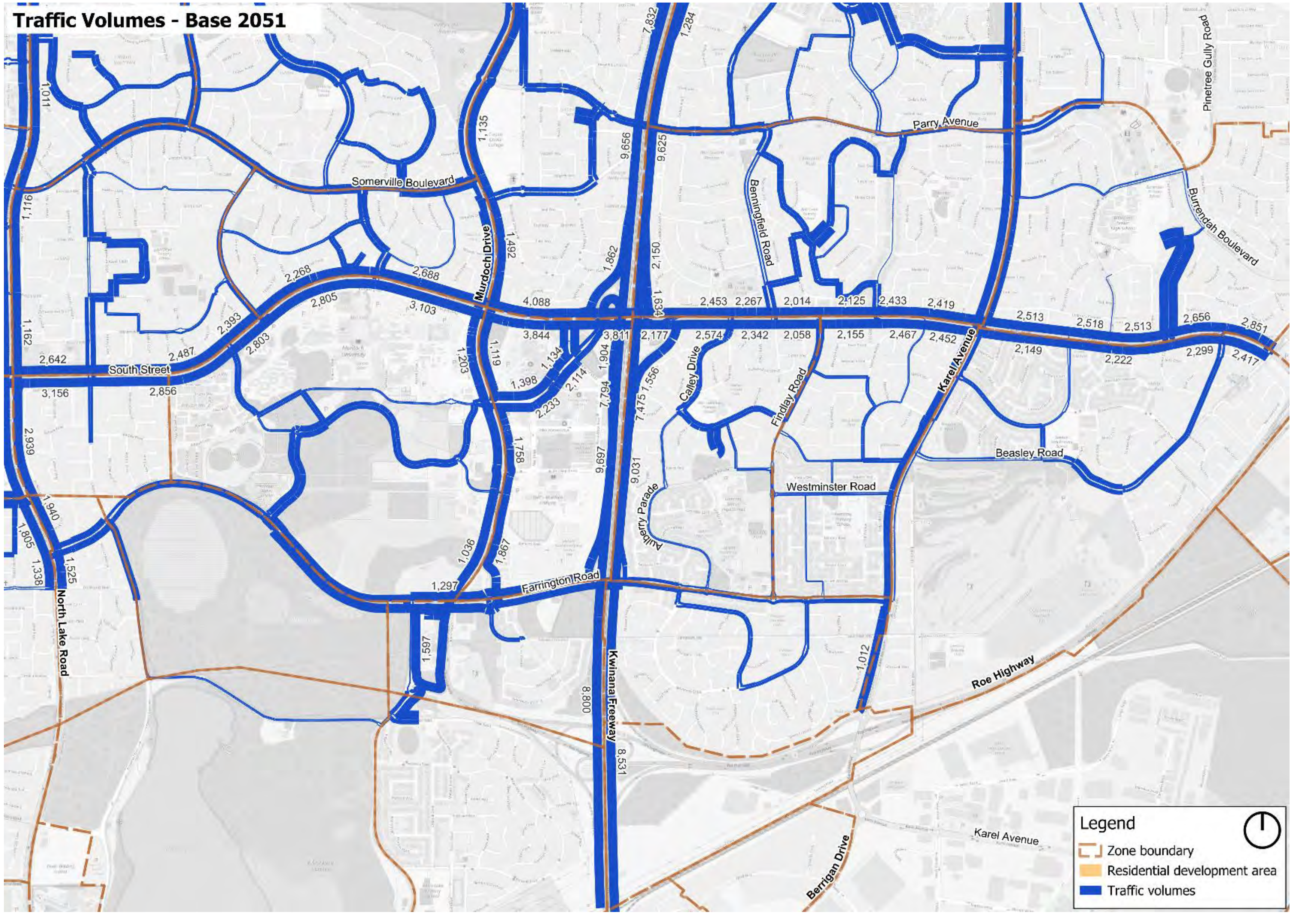


Figure A.25 Existing network flows – 2051 Base (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

A6 2051 scenario 1 (“core growth areas”)

This section summarises the peak hour network flows from the 2051 scenario 1 (“core growth areas”) traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

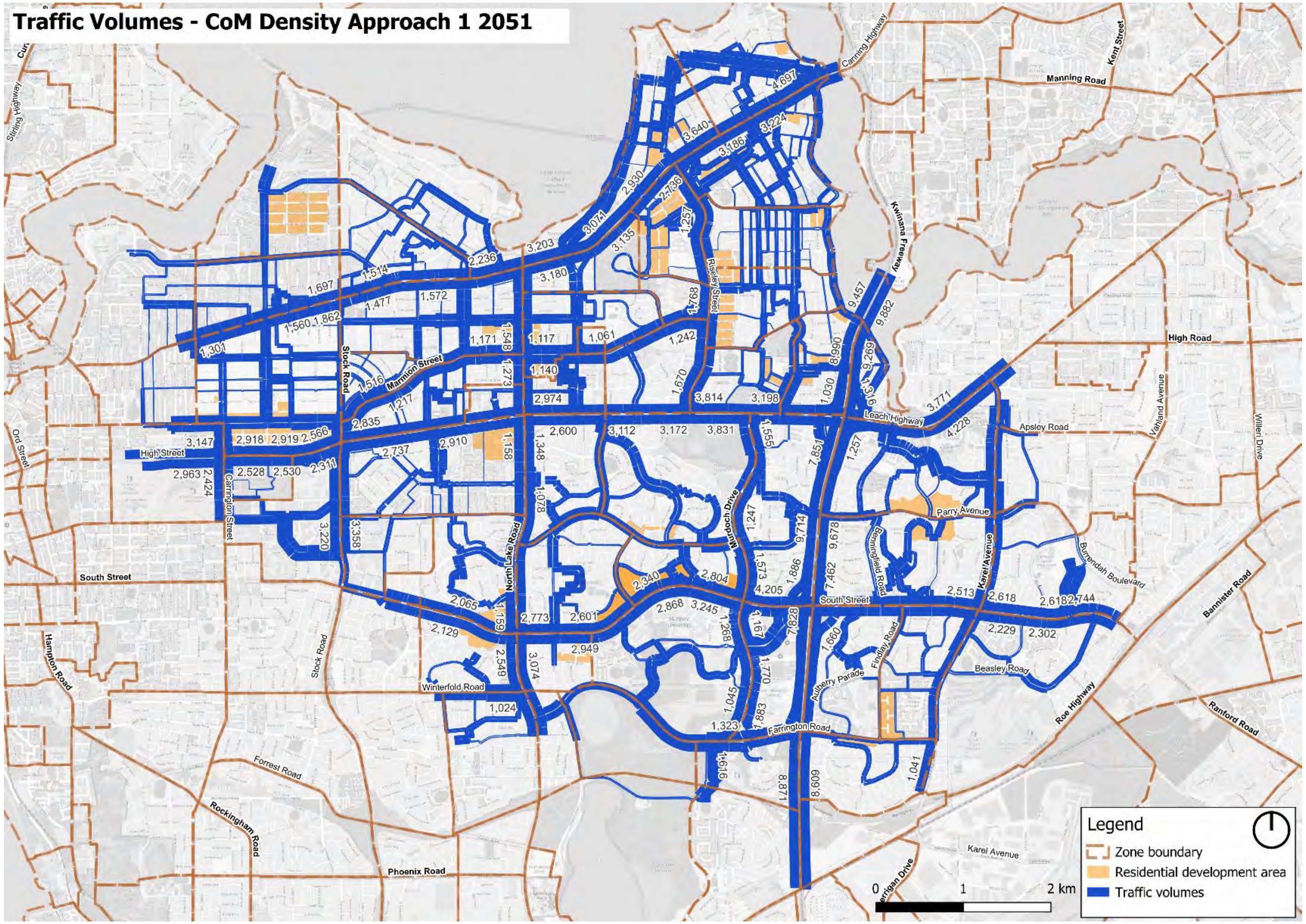


Figure A.26 Existing network flows – 2051 scenario 1 (“core growth areas”)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

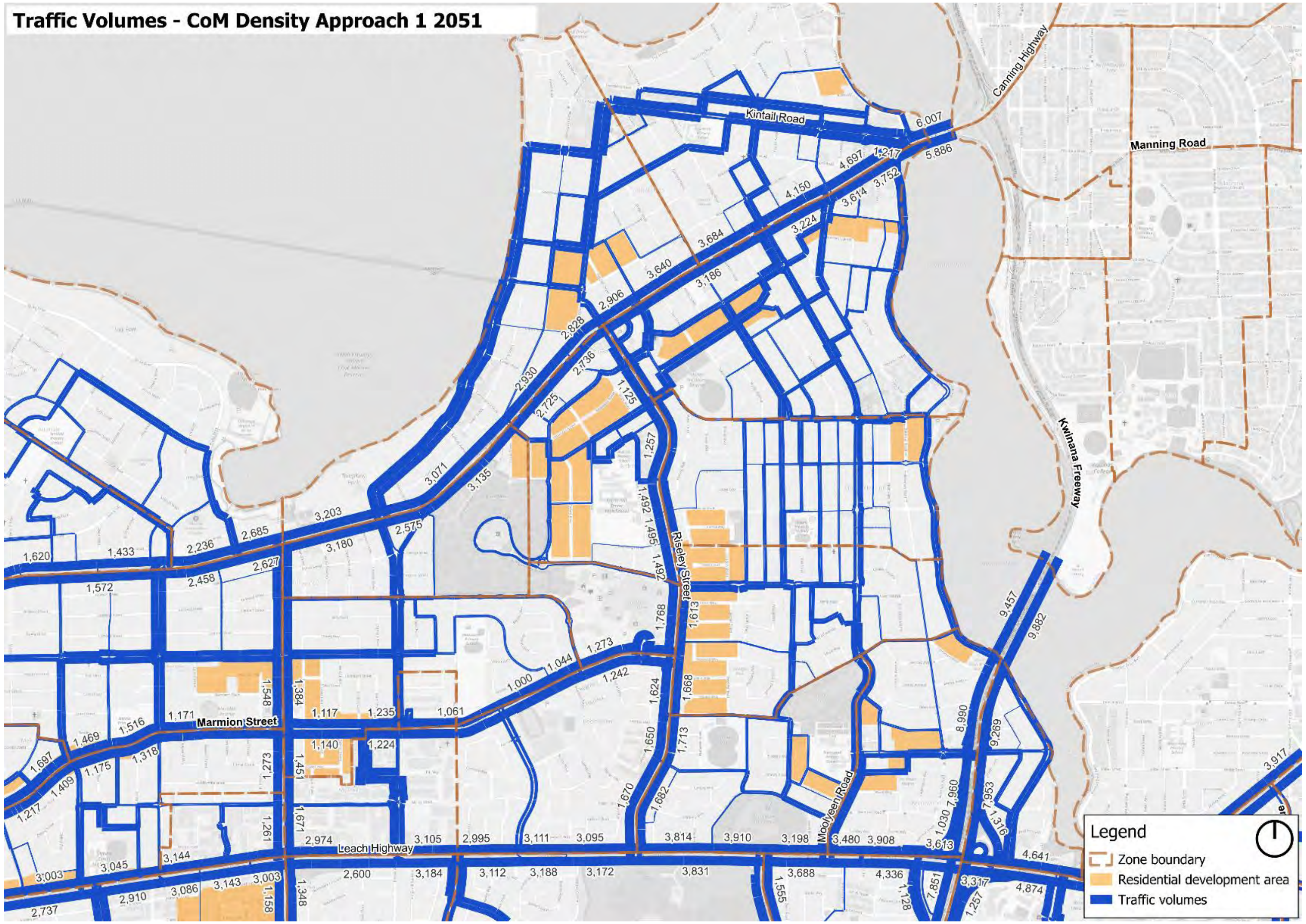


Figure A.27 Existing network flows – 2051 scenario 1 (“core growth areas”) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

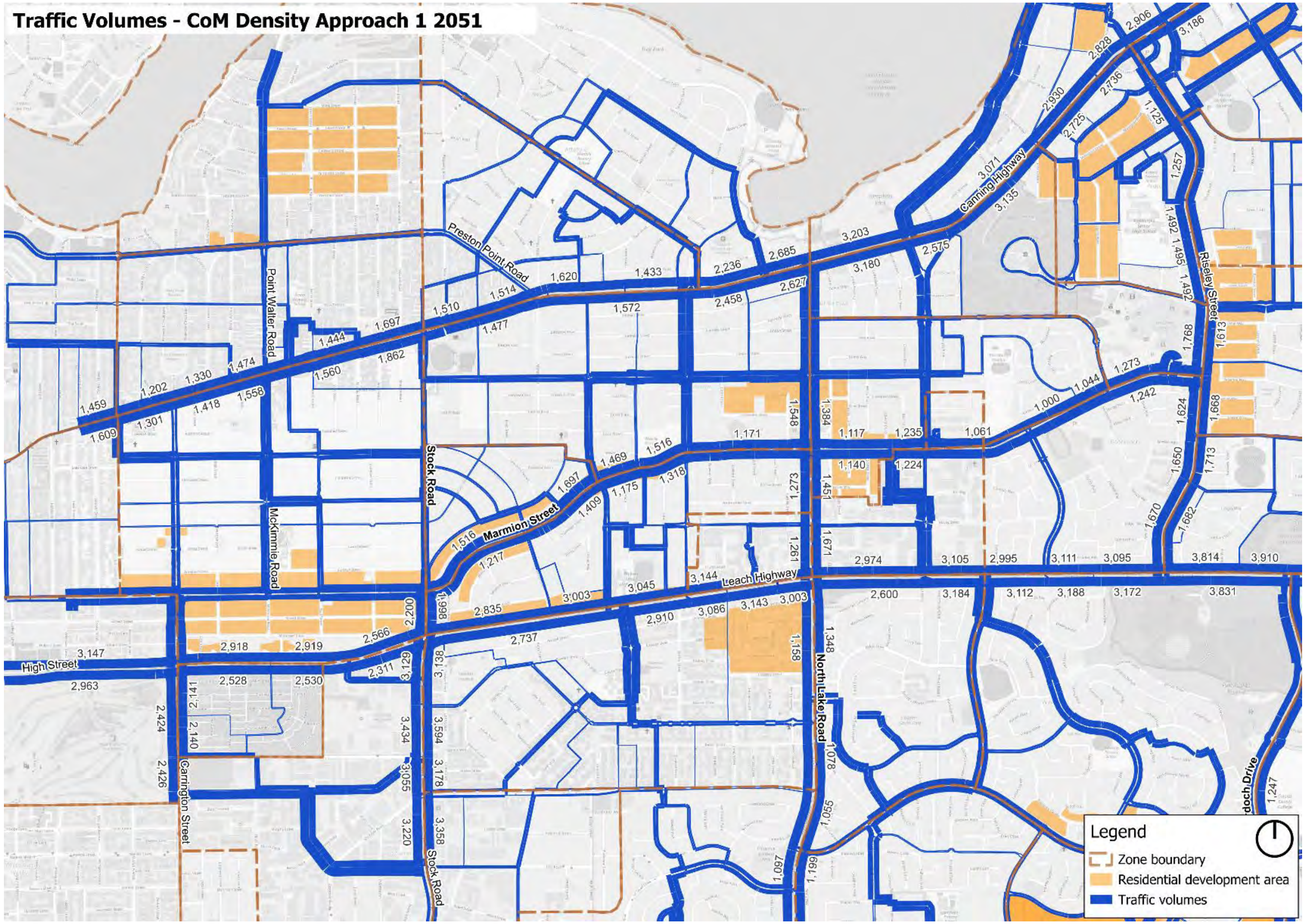


Figure A.28 Existing network flows – 2051 scenario 1 (“core growth areas”) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

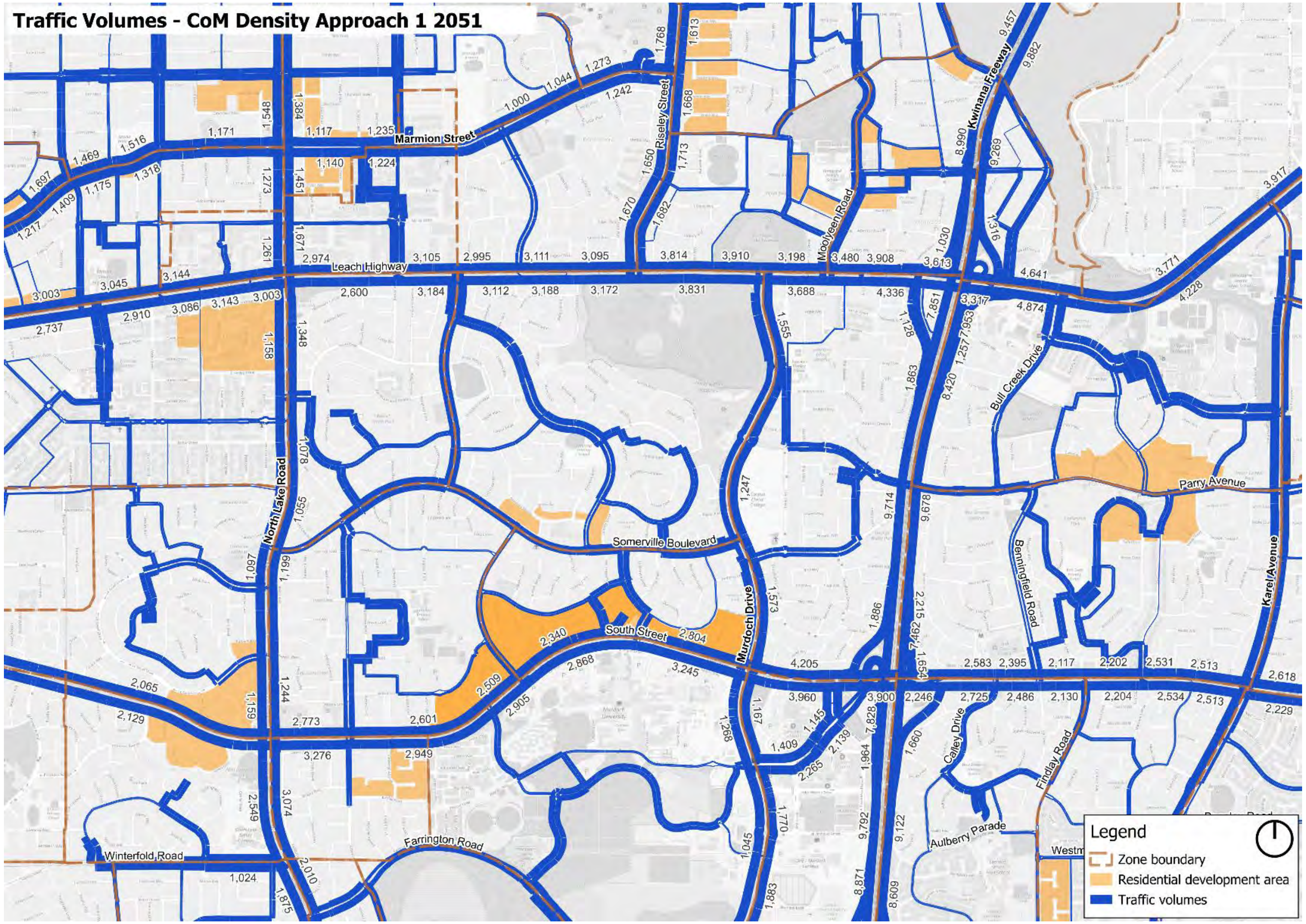


Figure A.29 Existing network flows – 2051 scenario 1 (“core growth areas”) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

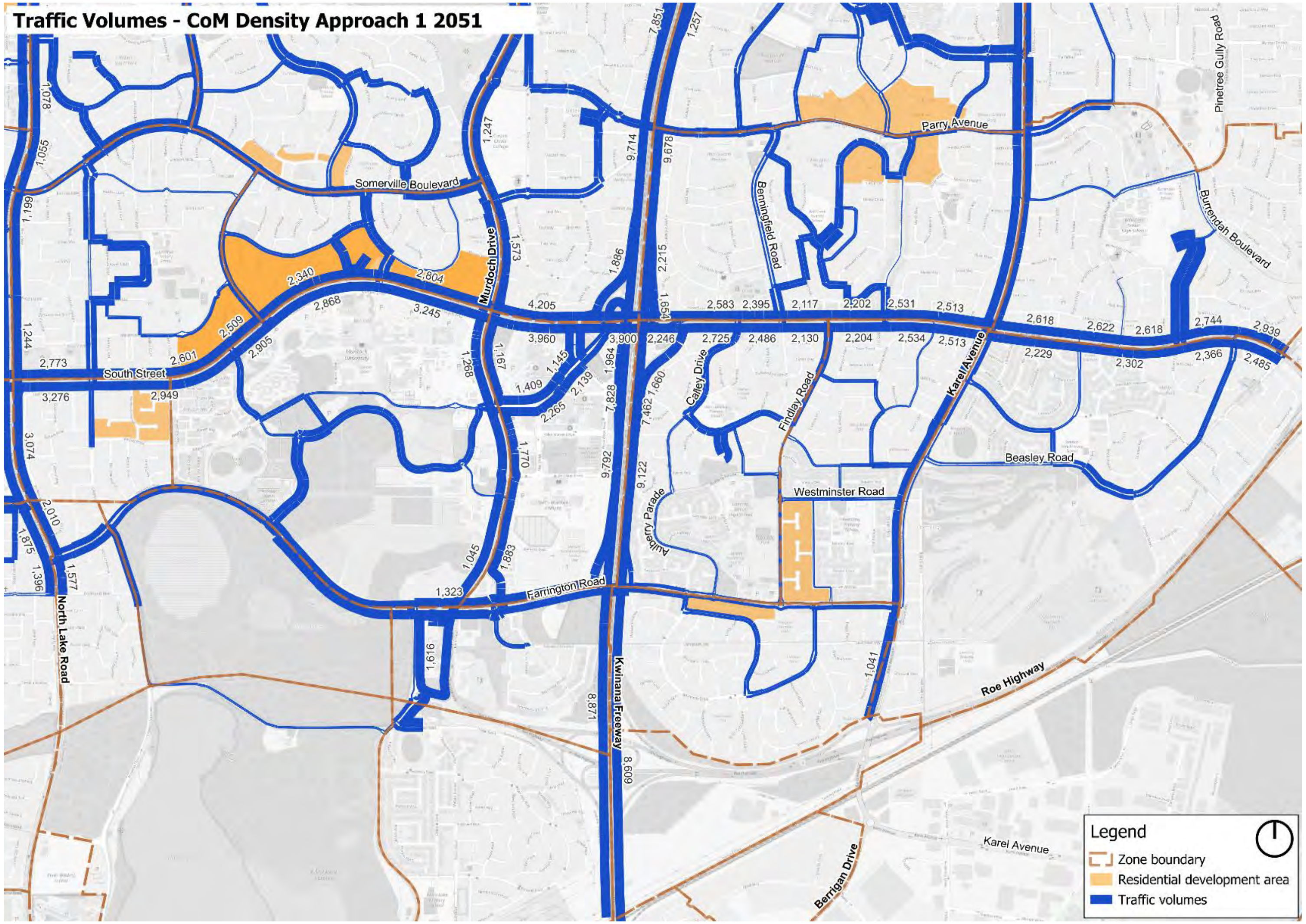


Figure A.30 Existing network flows – 2051 scenario 1 (“core growth areas”) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

A7 2051 scenario 2 (“additional growth”)

This section summarises the peak hour network flows from the 2051 scenario 1 (“additional growth”) traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

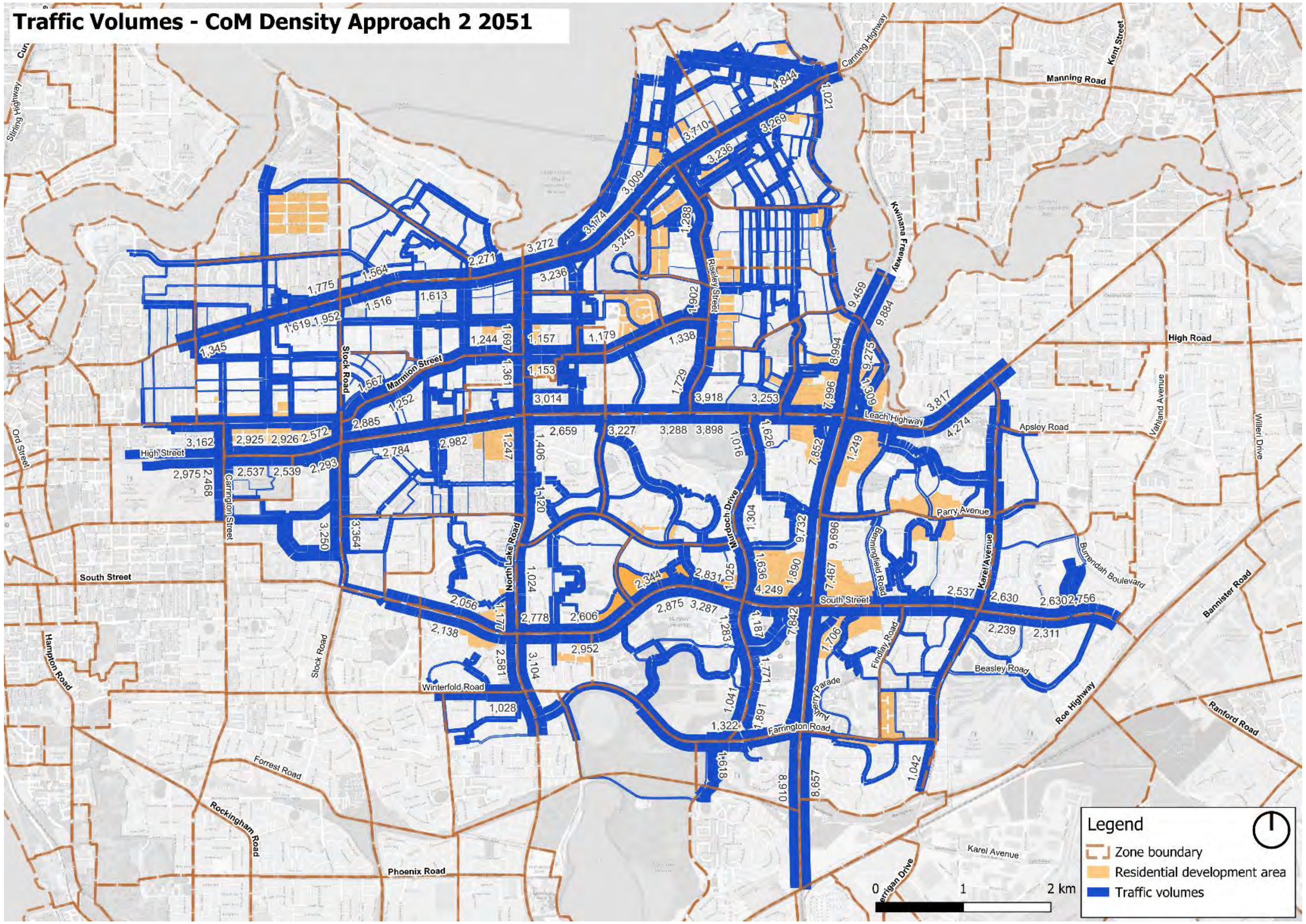


Figure A.31 Existing network flows – 2051 scenario 2 ("additional growth")

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

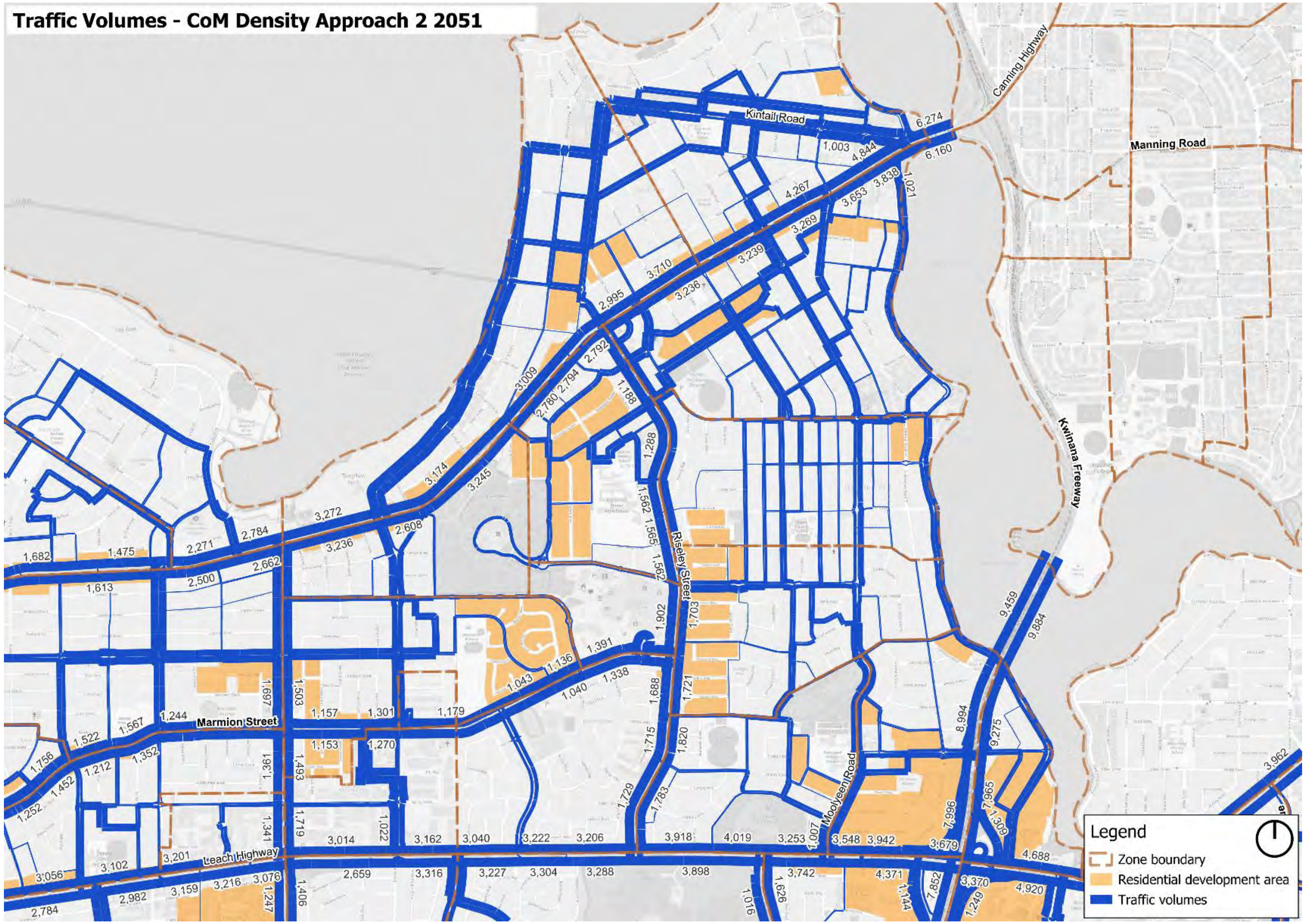


Figure A.32 Existing network flows – 2051 scenario 2 (“additional growth”) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

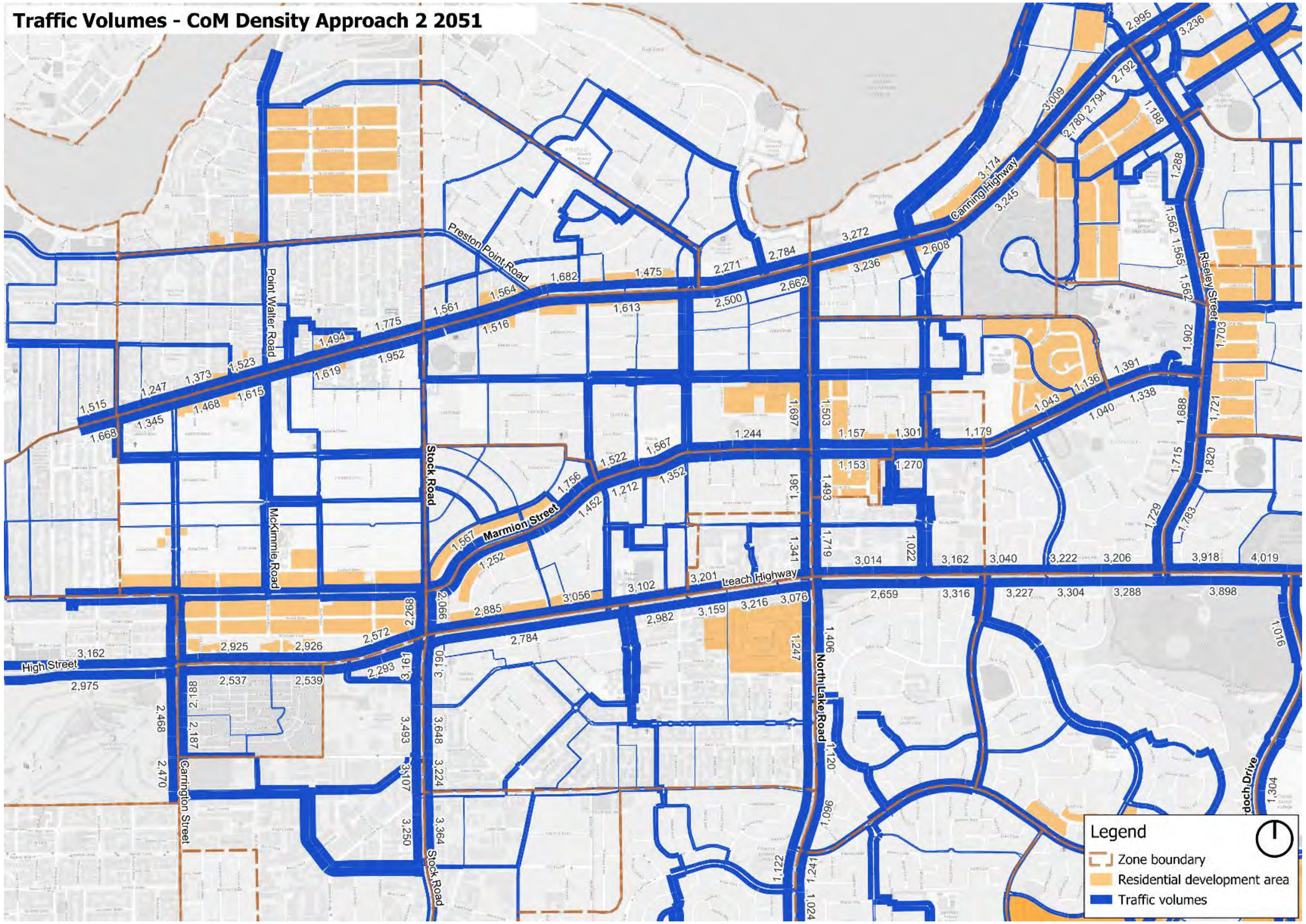


Figure A.33 Existing network flows – 2051 scenario 2 ("additional growth") (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

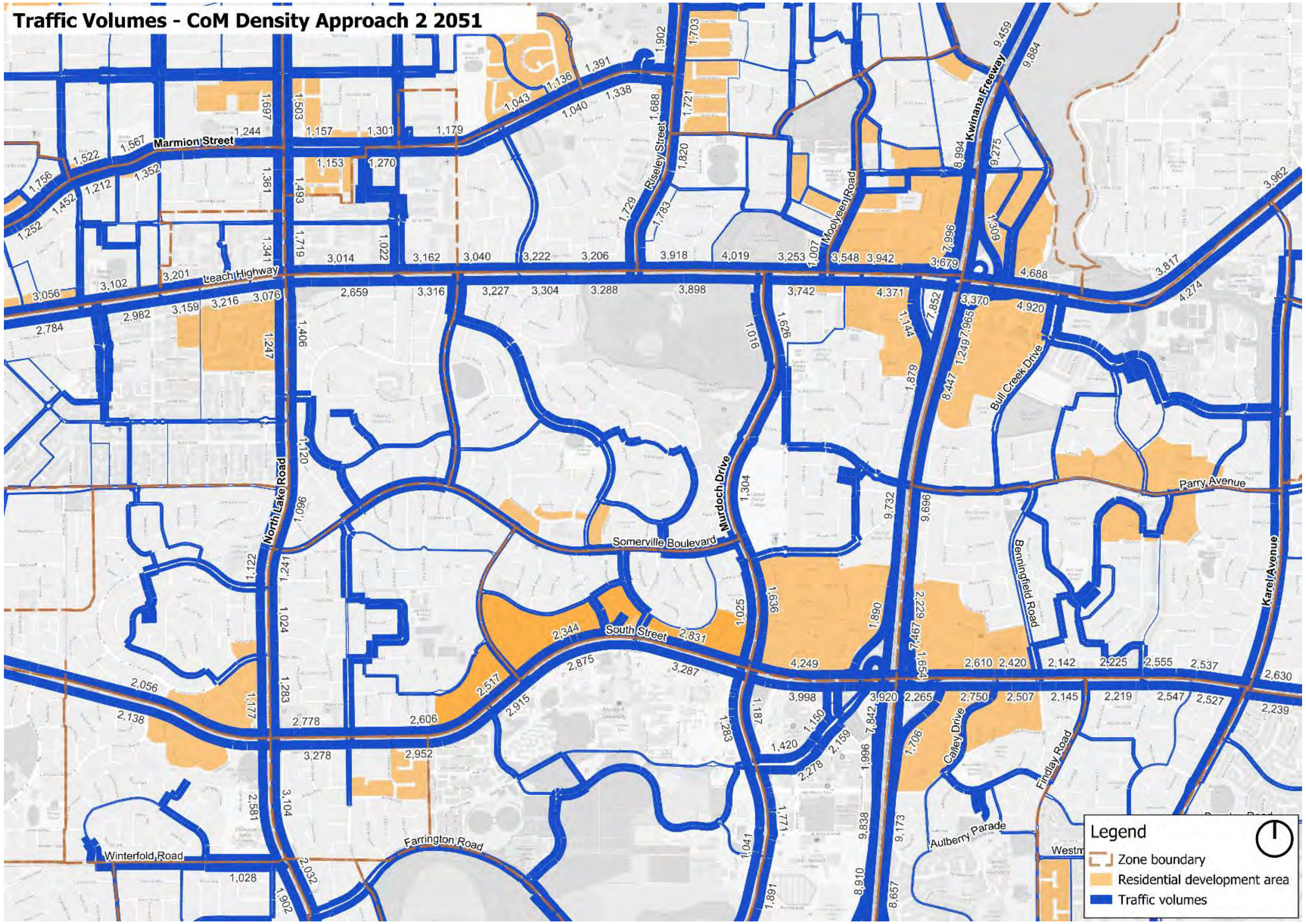


Figure A.34 Existing network flows – 2051 scenario 2 ("additional growth") (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

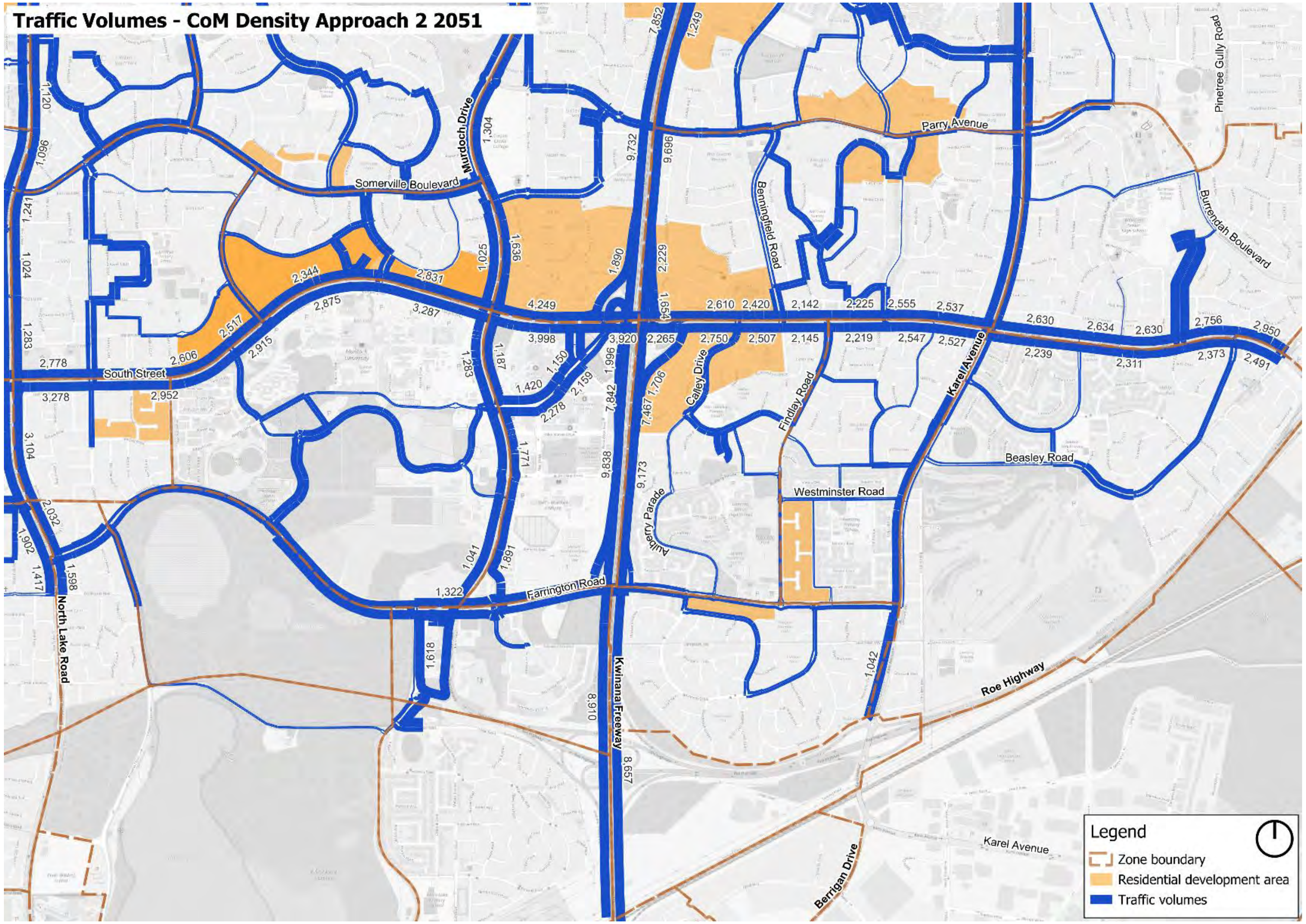


Figure A.35 Existing network flows – 2051 scenario 2 (“additional growth”) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

Appendix B

Forecast network flow differences between scenarios

B0 Overview

This section summarises how network traffic flows change between scenarios. They indicate the roads that new traffic is using in each scenario (and its additional volume), and also traffic re-routing (e.g. to avoid congested areas). There are two types of flow difference plots:

"not shared" – this only presents the difference in traffic flows between two scenarios, without any context of relative difference to the baseline scenario

"shared" – this overlays the difference in traffic flows (from the "not shared" plot) on top of the baseline scenario flow. This provides context for the relative difference to the baseline scenario. For example, the additional traffic may be 100 vehicles, however, the underlying baseline flow may be 2000 vehicles.

These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

The results are summarised in:
(note: *section numbers and names are clickable links*)

Section B1: 2041 baseline versus 2026 existing conditions

Section B2: 2041 scenario 1 ("CoM Density Approach 1") versus 2041 baseline

Section B3: 2041 scenario 2 ("CoM Density Approach 2") versus 2041 baseline

Section B4: 2051 baseline versus 2026 existing conditions

Section B5: 2051 scenario 1 ("CoM Density Approach 1") versus 2051 baseline

Section B6: 2051 scenario 2 ("CoM Density Approach 2") versus 2051 baseline.

B1 2041 baseline versus 2026 existing conditions

This section summarises the difference in peak hour network flows between the 2041 baseline and the 2026 existing conditions traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

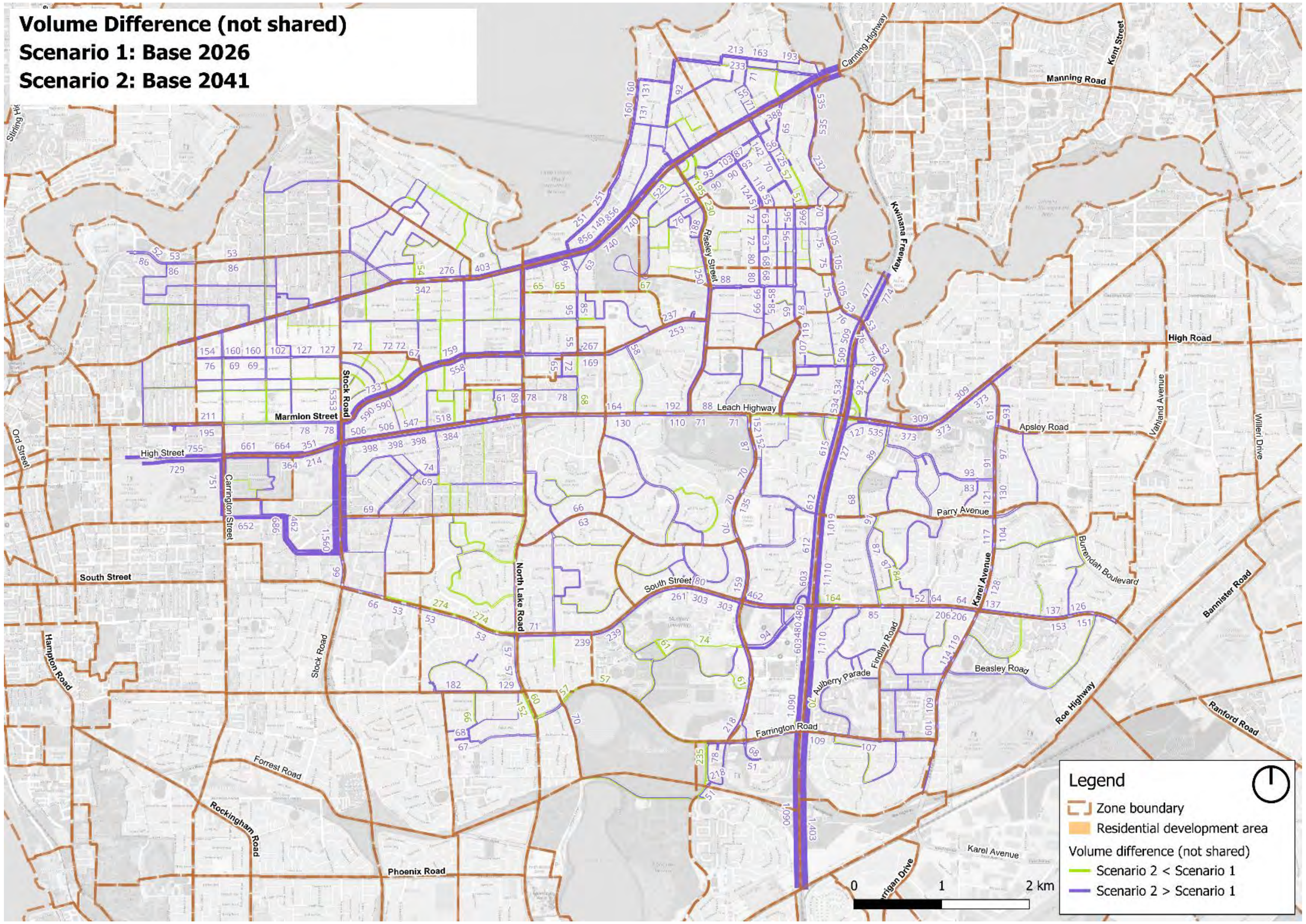


Figure B.1 Change in network flows – 2041 Base vs 2026 Existing (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

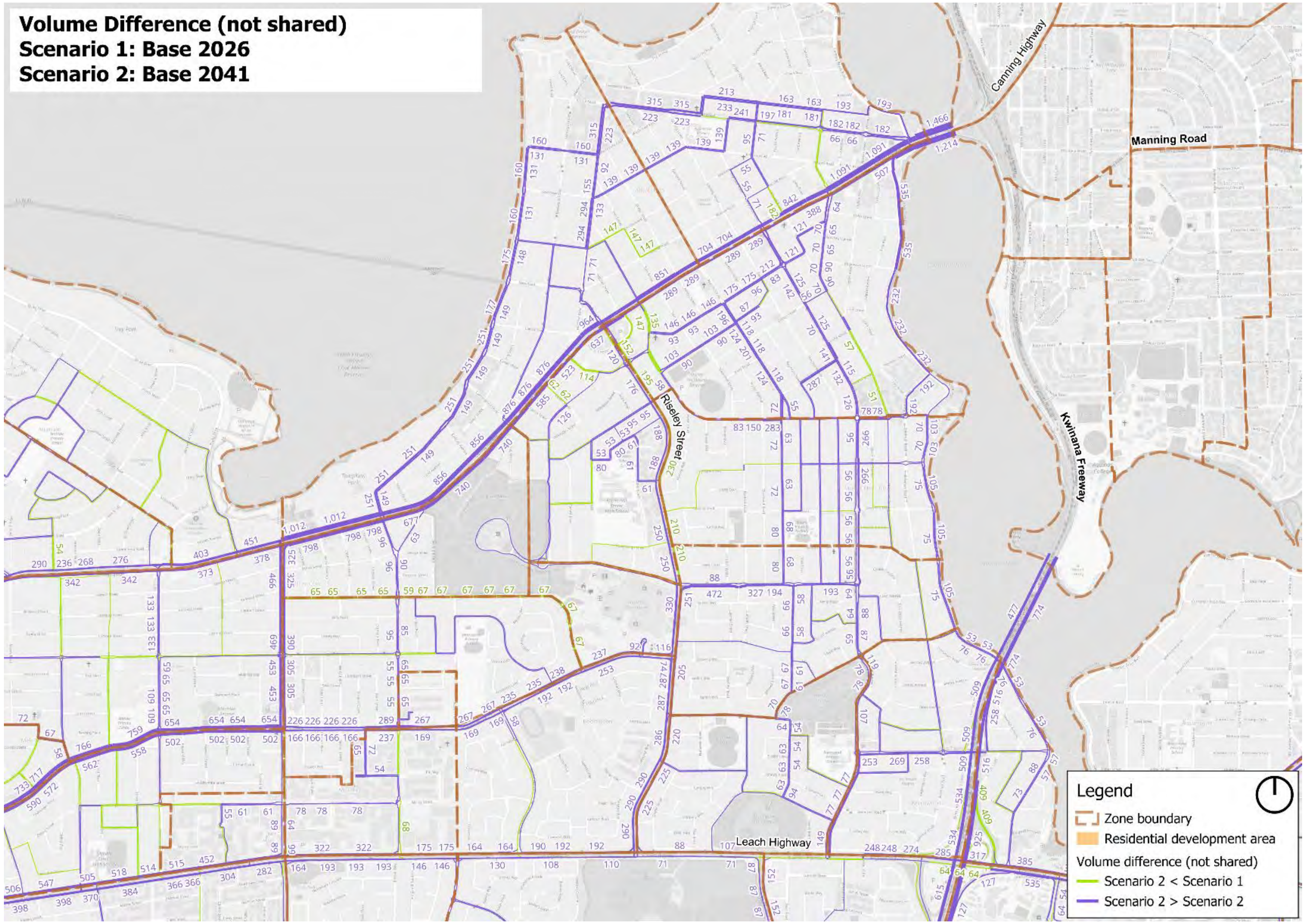


Figure B.2 Change in network flows – 2041 Base vs 2026 Existing (not shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

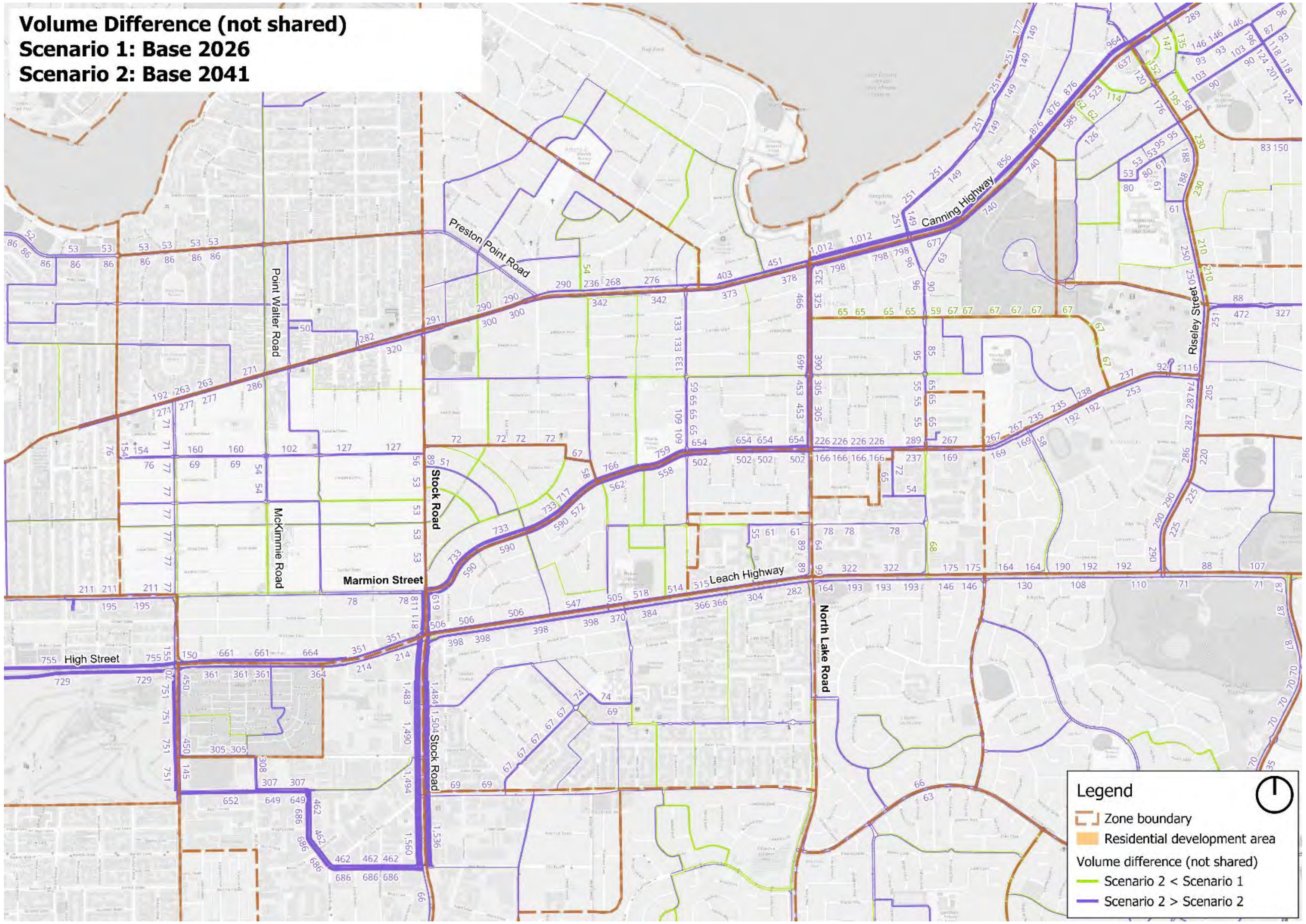


Figure B.3 Change in network flows – 2041 Base vs 2026 Existing (not shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

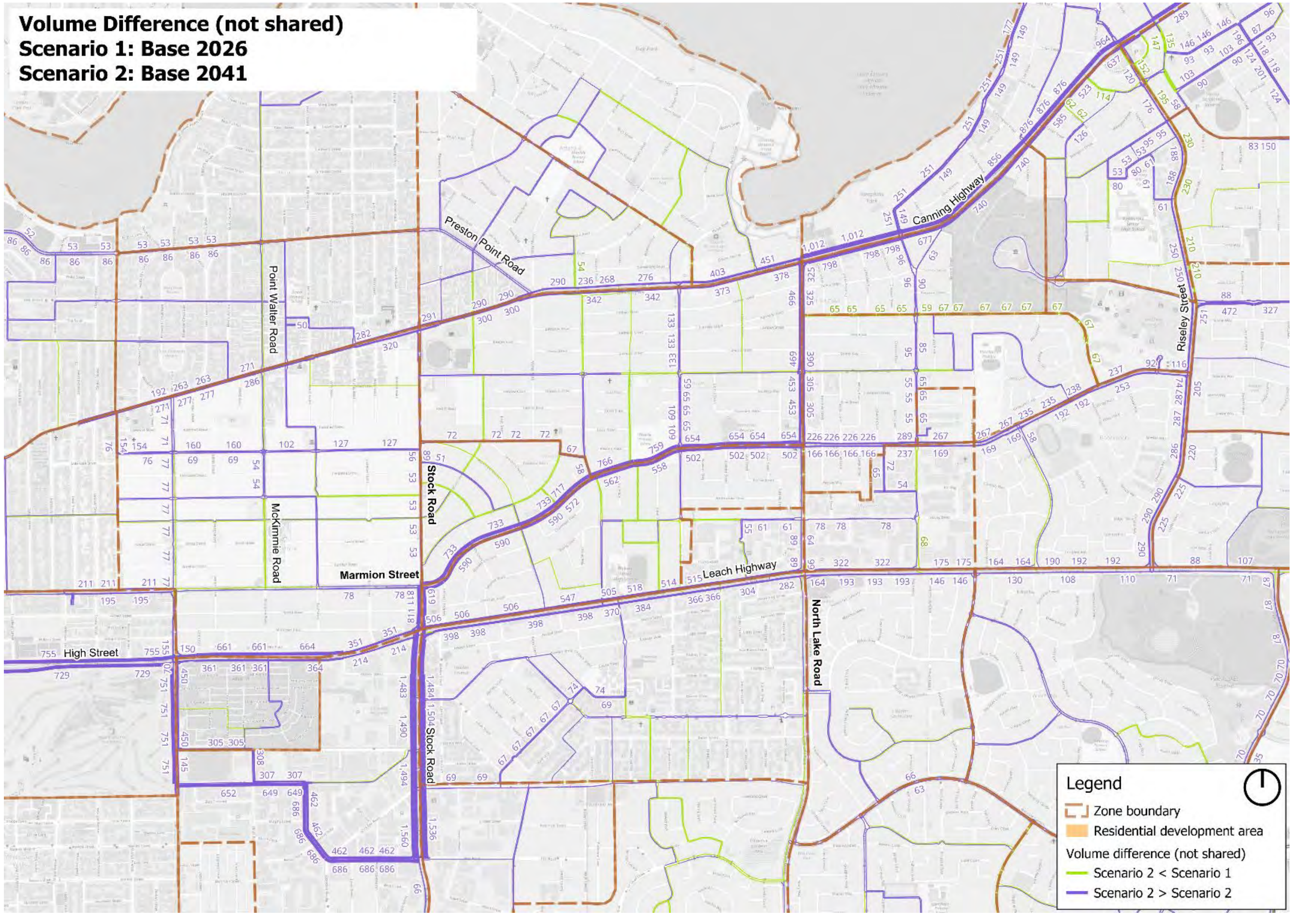


Figure B.4 Change in network flows – 2041 Base vs 2026 Existing (not shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

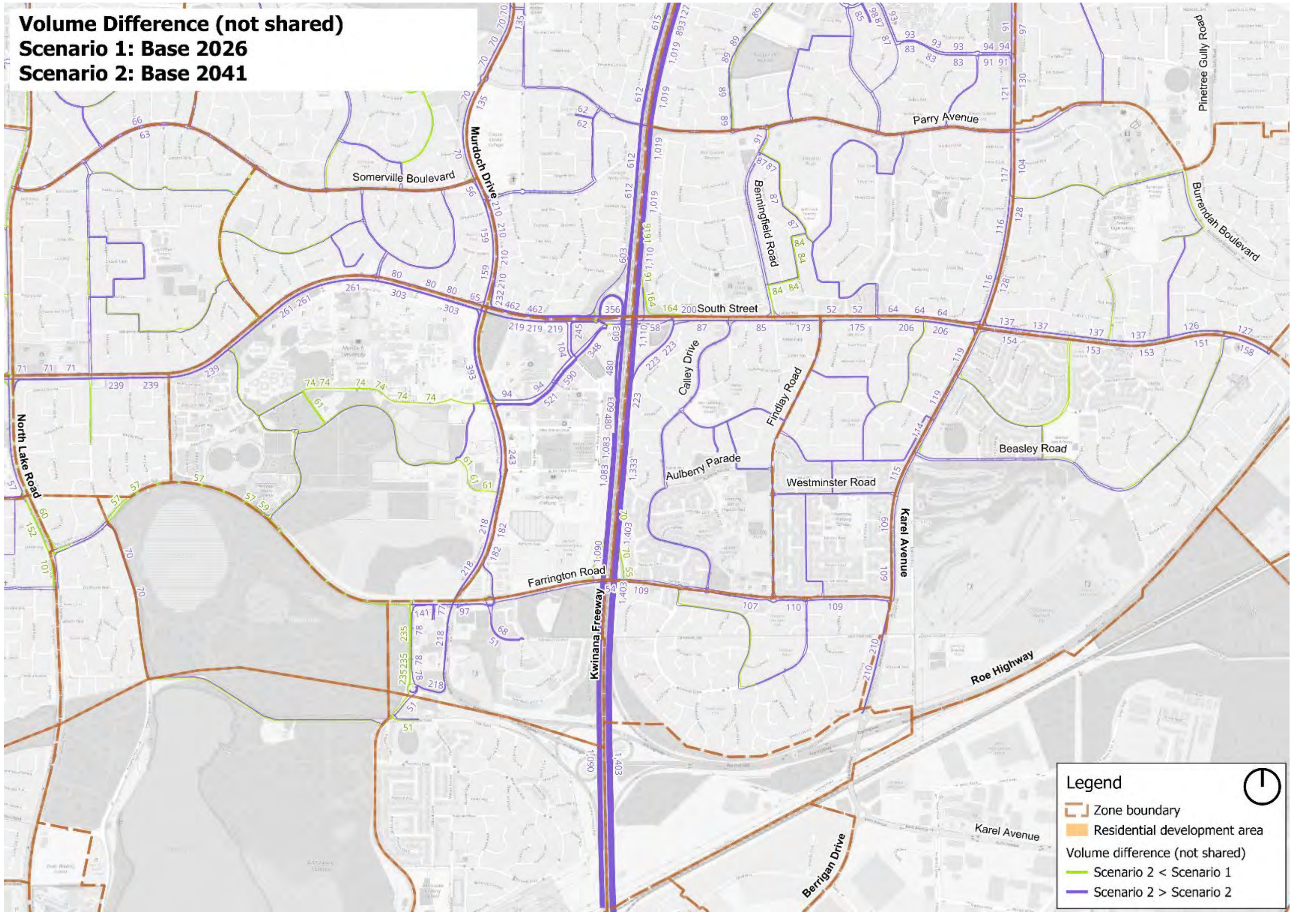


Figure B.5 Change in network flows – 2041 Base vs 2026 Existing (not shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

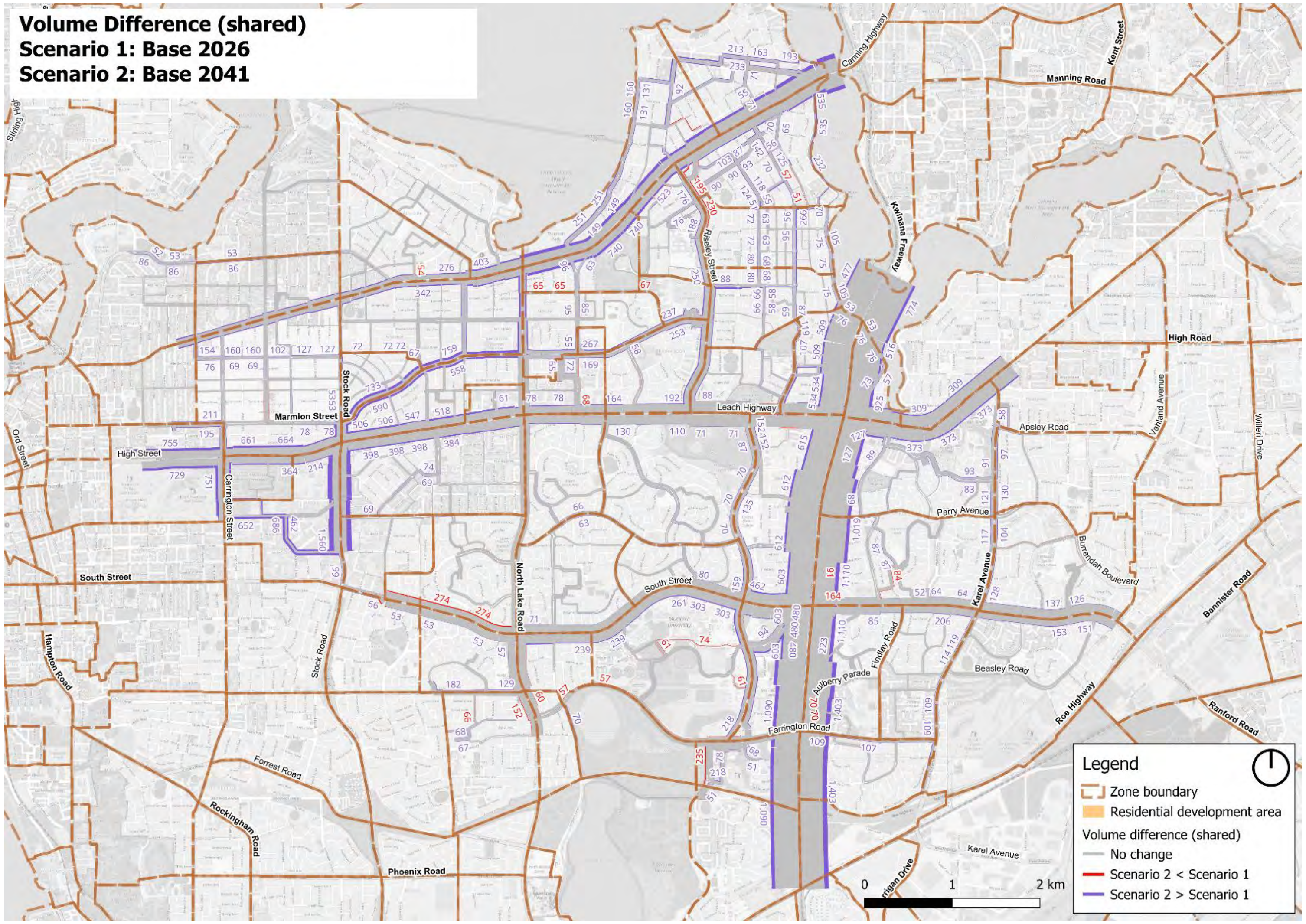


Figure B.6 Change in network flows – 2041 Base vs 2026 Existing (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

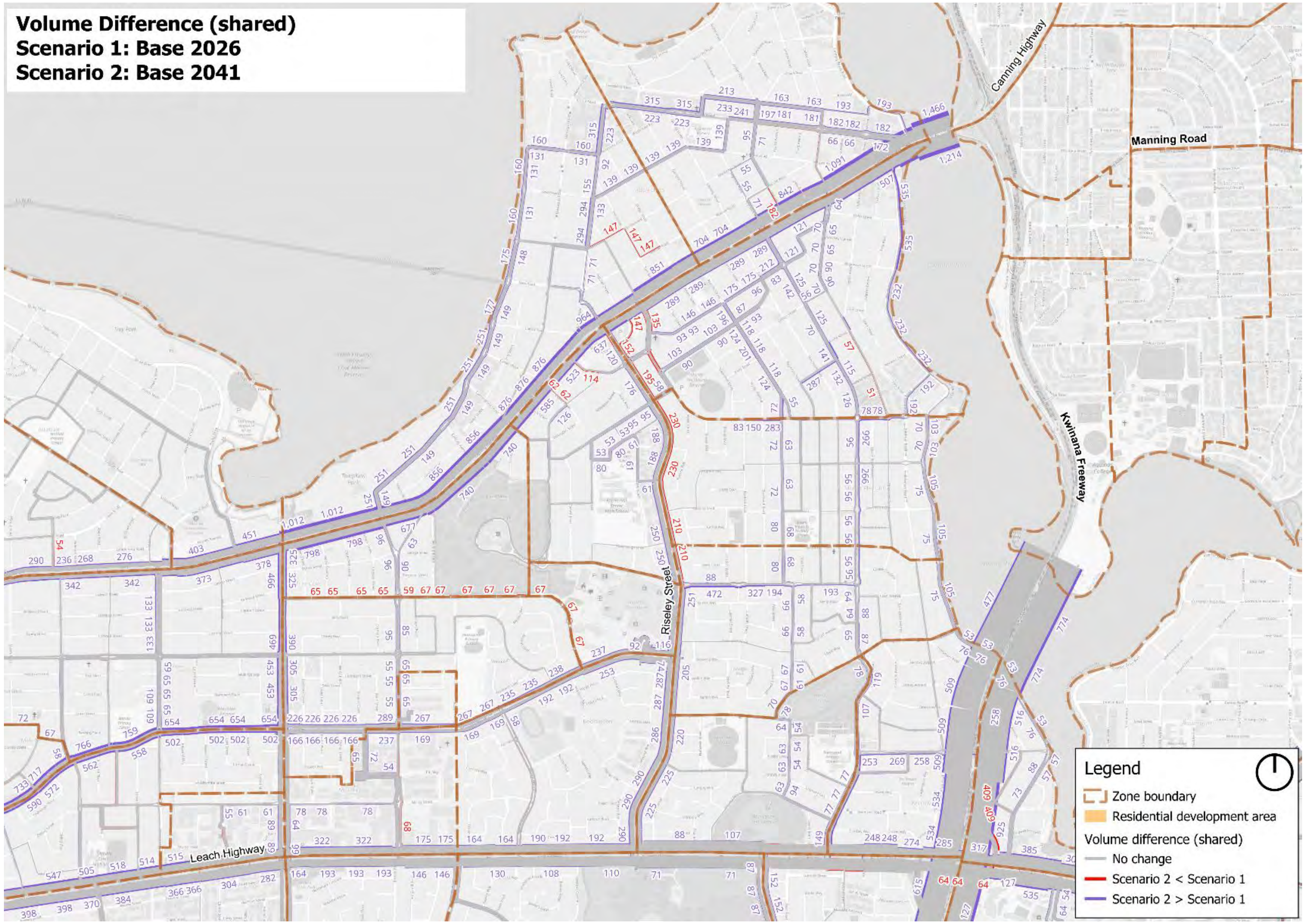


Figure B.7 Change in network flows – 2041 Base vs 2026 Existing (shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

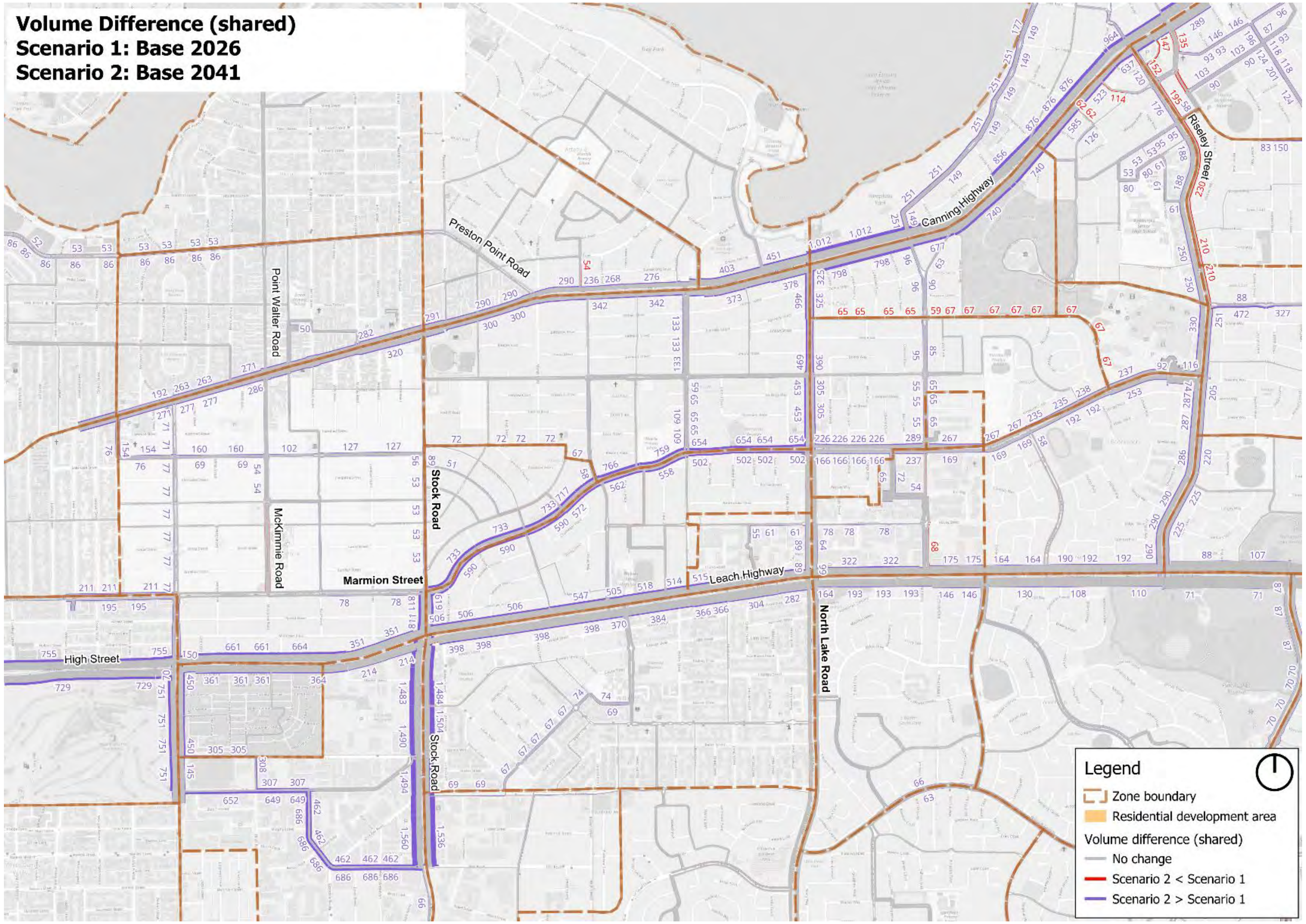


Figure B.8 Change in network flows – 2041 Base vs 2026 Existing (shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

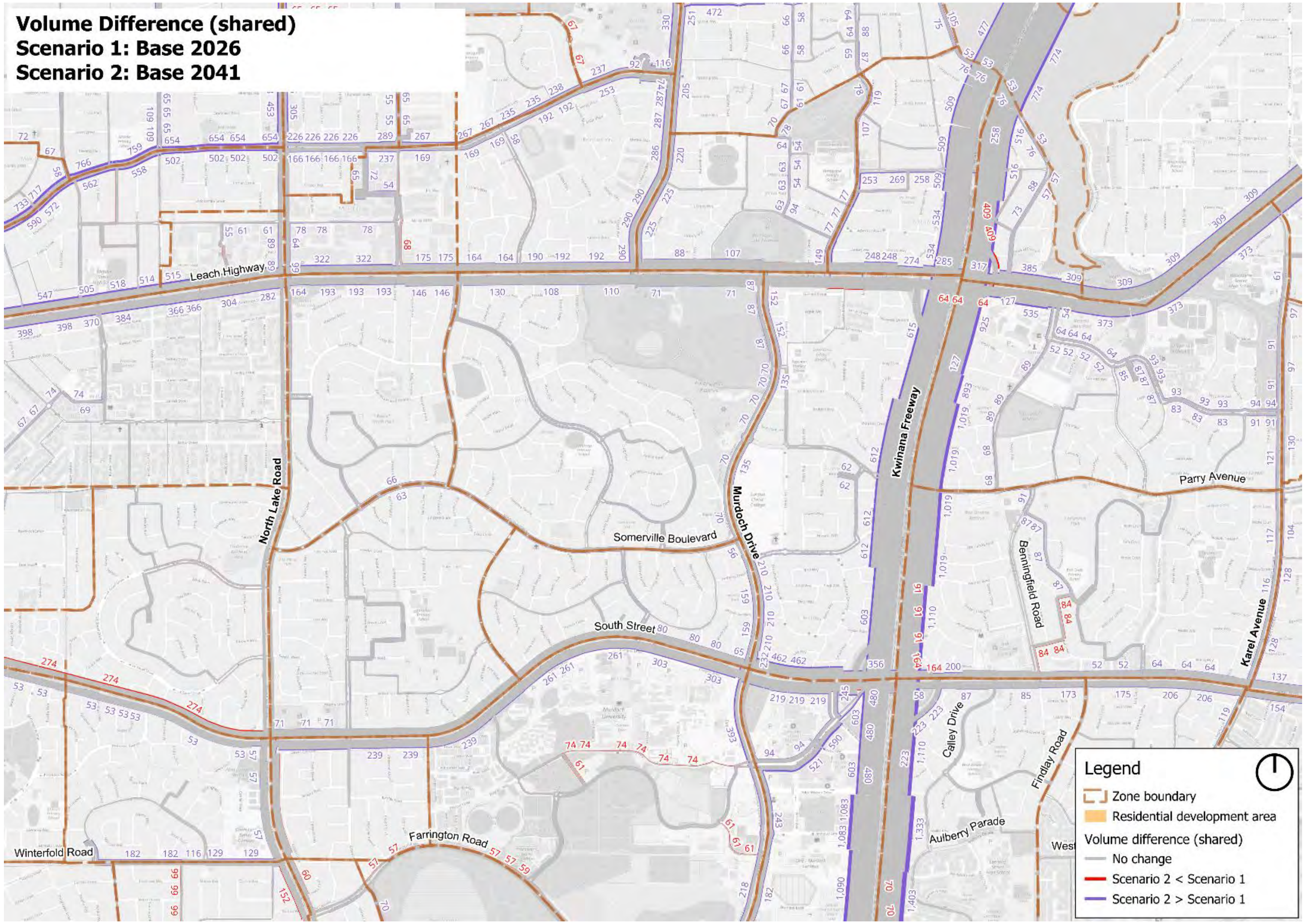


Figure B.9 Change in network flows – 2041 Base vs 2026 Existing (shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

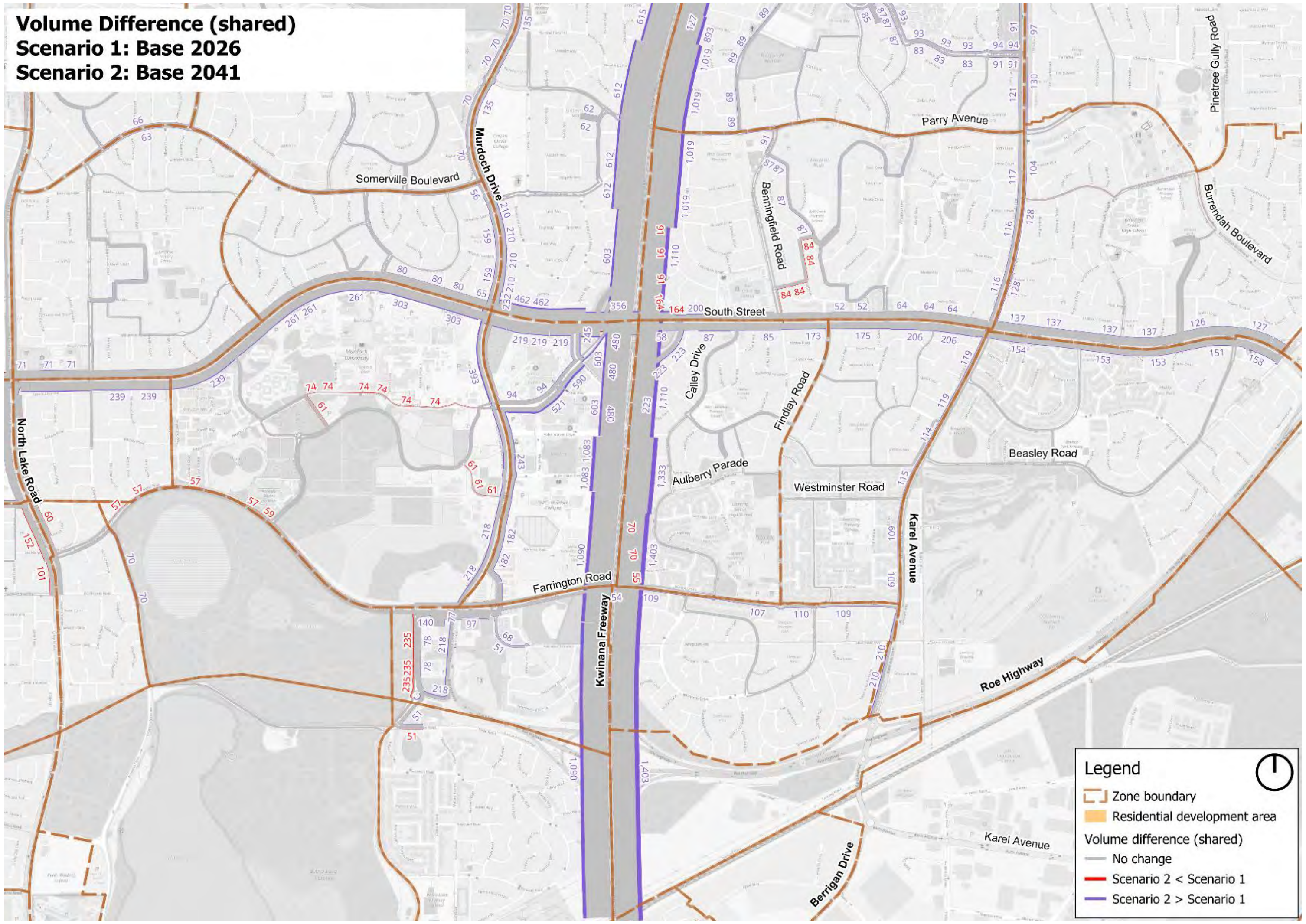


Figure B.10 Change in network flows – 2041 Base vs 2026 Existing (shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

B2 2041 scenario 1 (“CoM Density Approach 1”) versus 2041 baseline

This section summarises the difference in peak hour network flows between the 2041 scenario 1 (“CoM Density Approach 1”) and the 2041 baseline traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

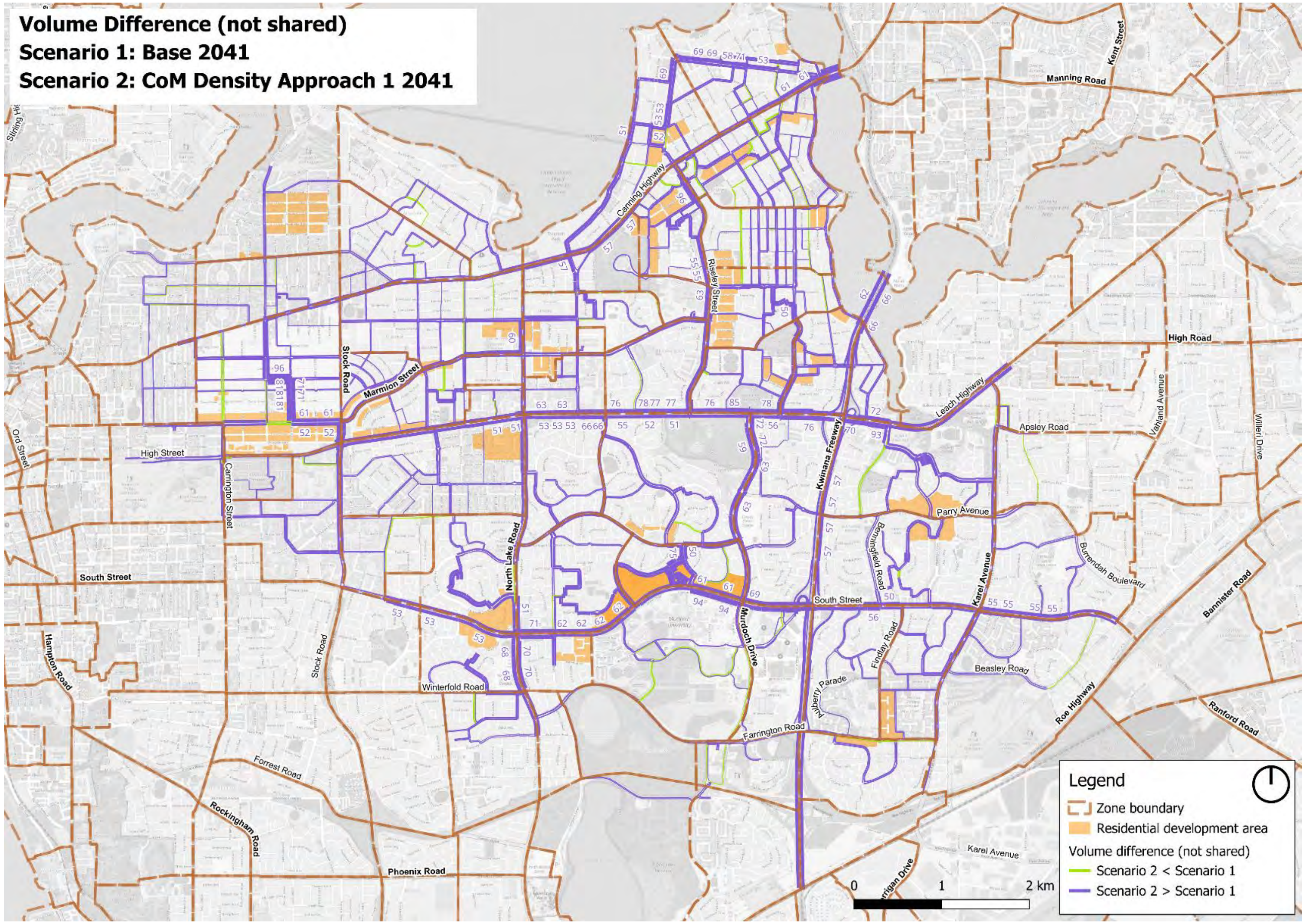


Figure B.11 Change in network flows – 2041 scenario 1 ("CoM Density Approach 1") vs 2041 baseline (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

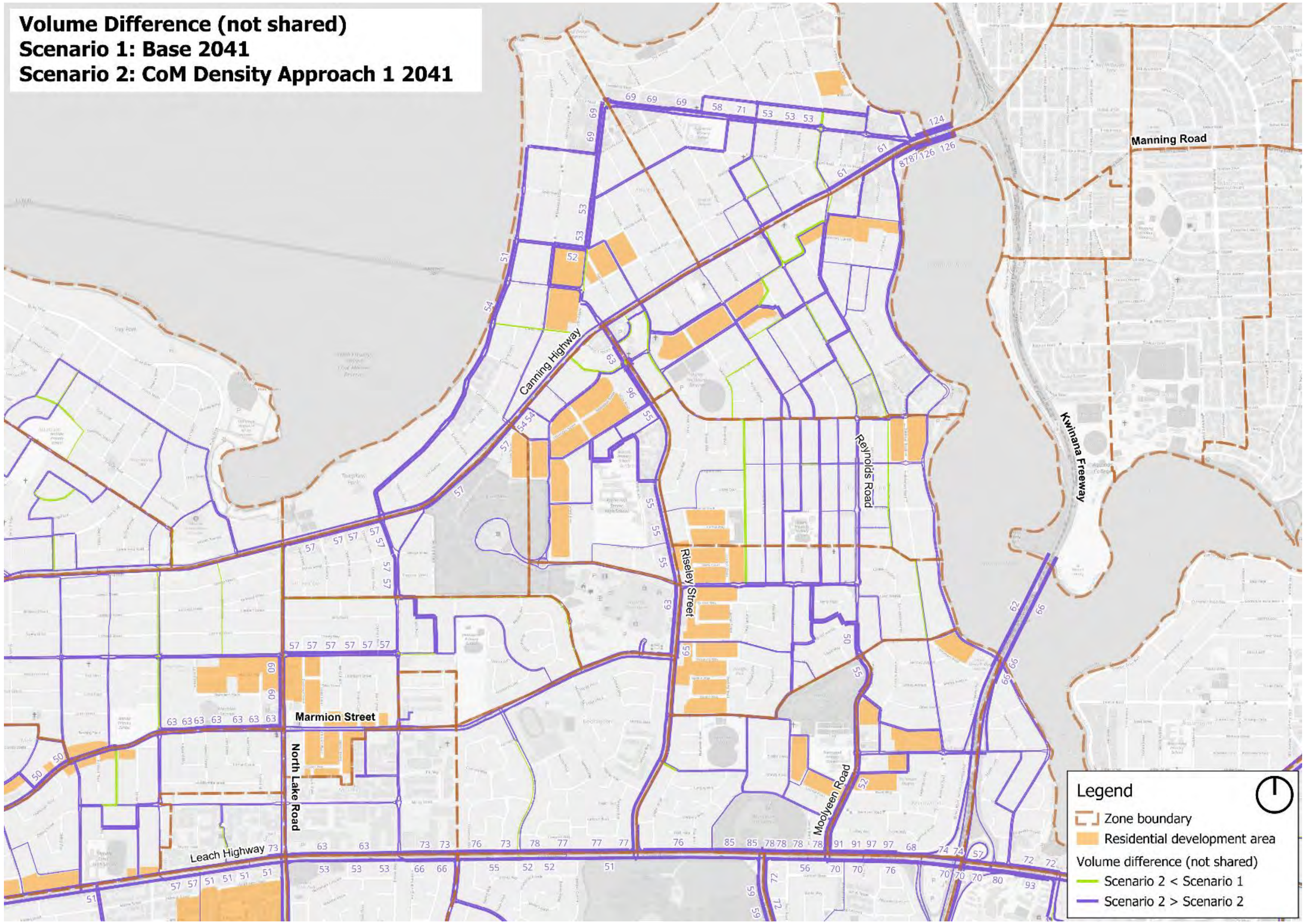


Figure B.12 Change in network flows – 2041 scenario 1 ("CoM Density Approach 1") vs 2041 baseline (not shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

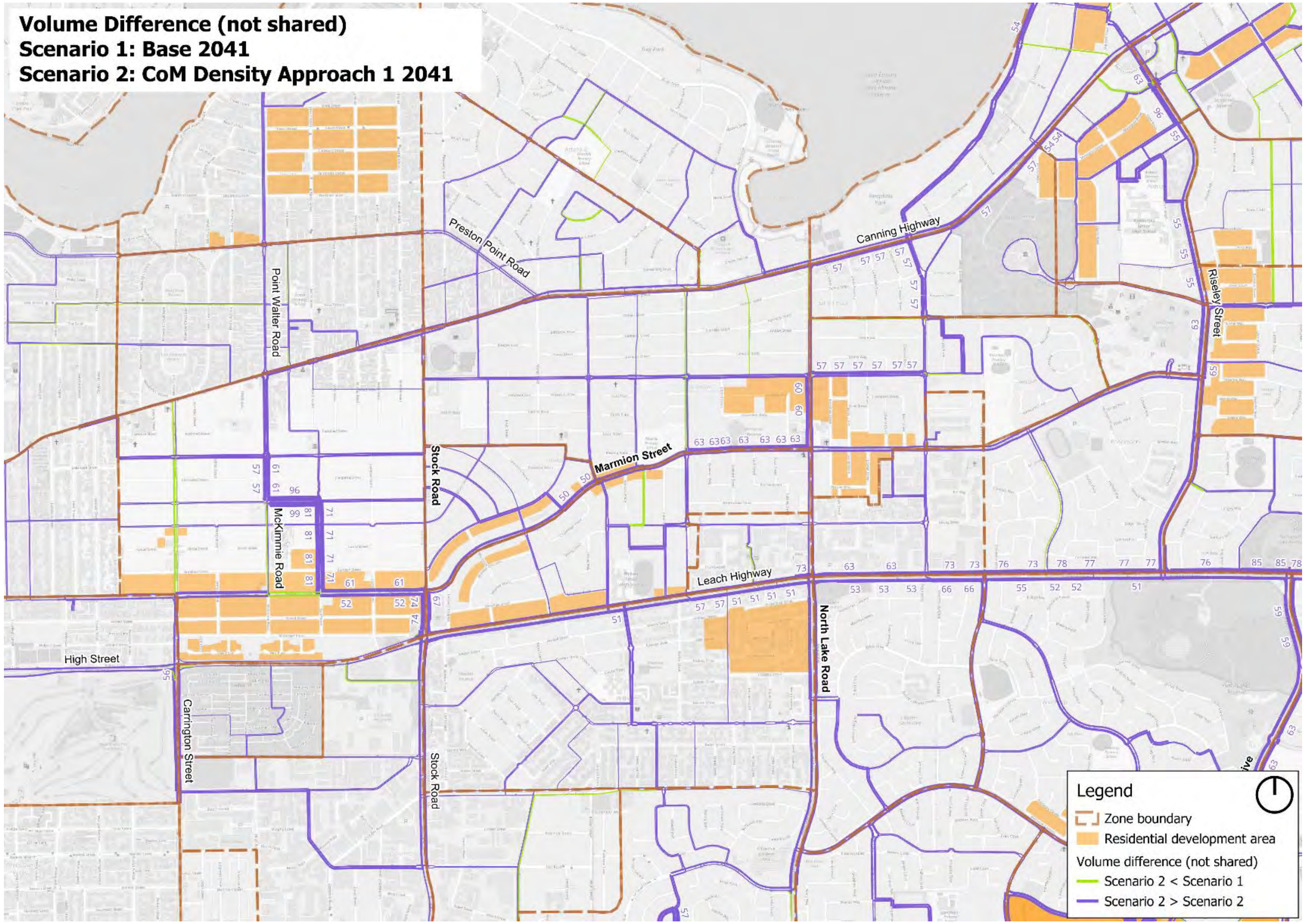


Figure B.13 Change in network flows – 2041 scenario 1 ("CoM Density Approach 1") vs 2041 baseline (not shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

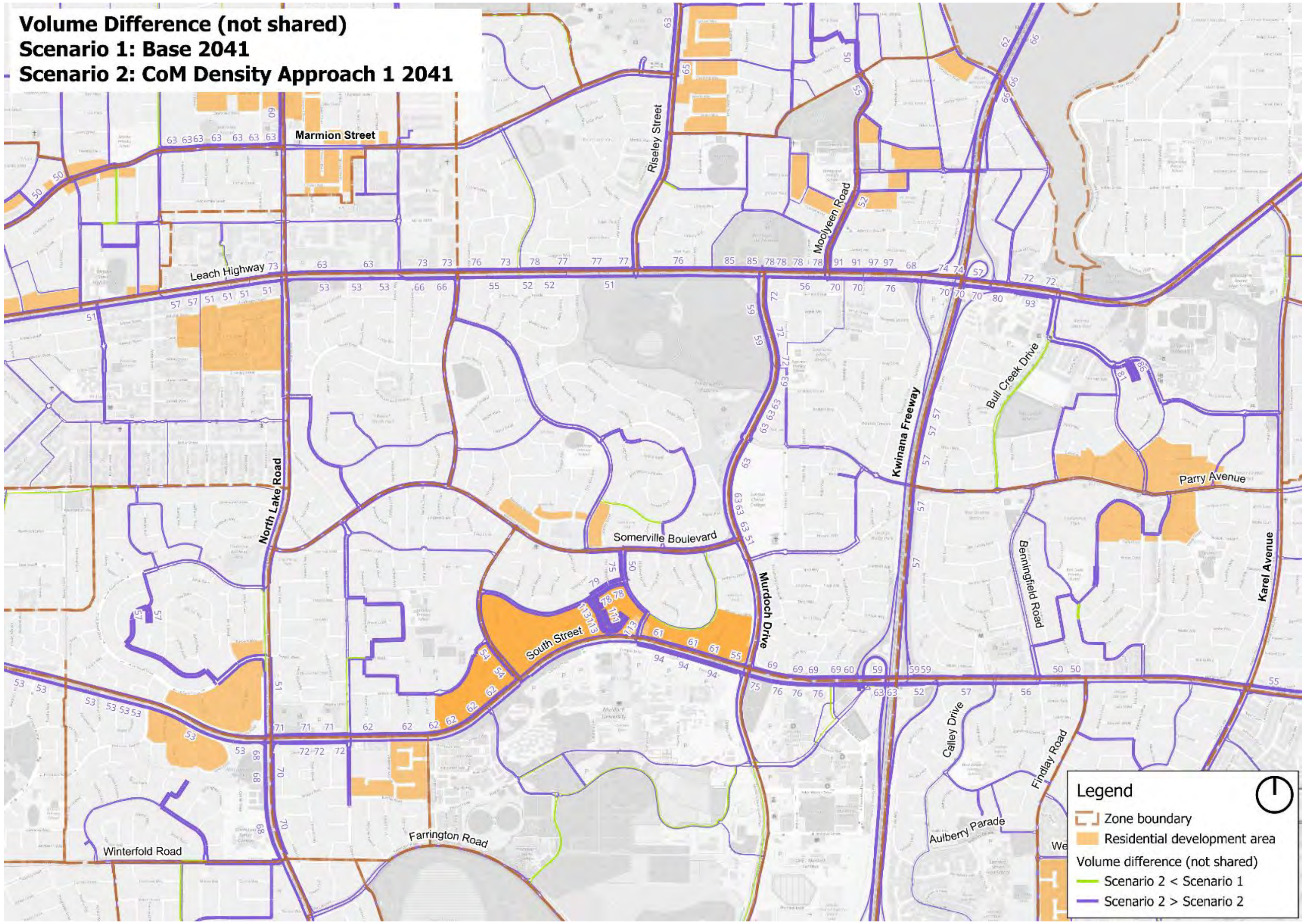


Figure B.14 Change in network flows – 2041 scenario 1 ("CoM Density Approach 1") vs 2041 baseline (not shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

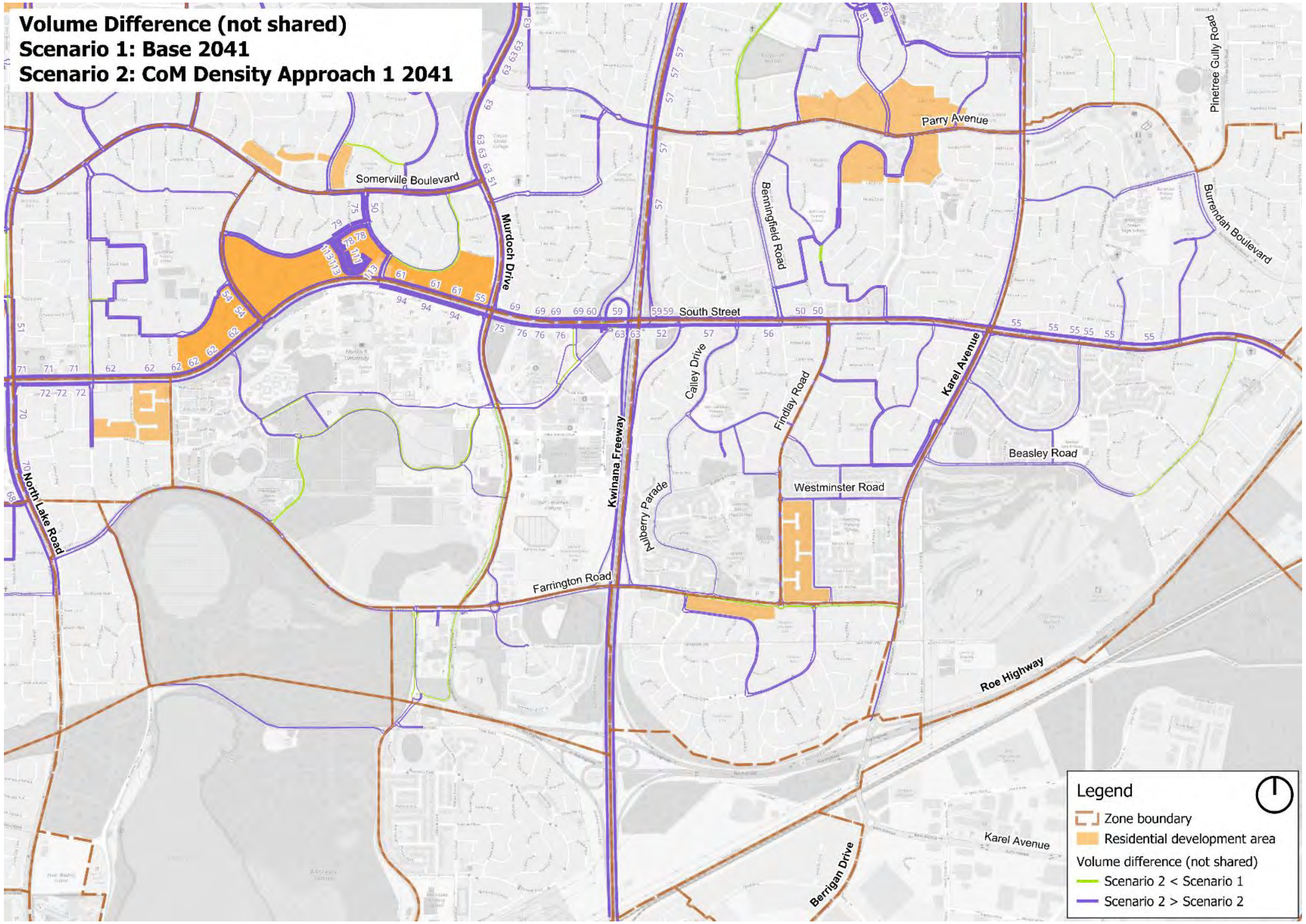


Figure B.15 Change in network flows – 2041 scenario 1 ("CoM Density Approach 1") vs 2041 baseline (not shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

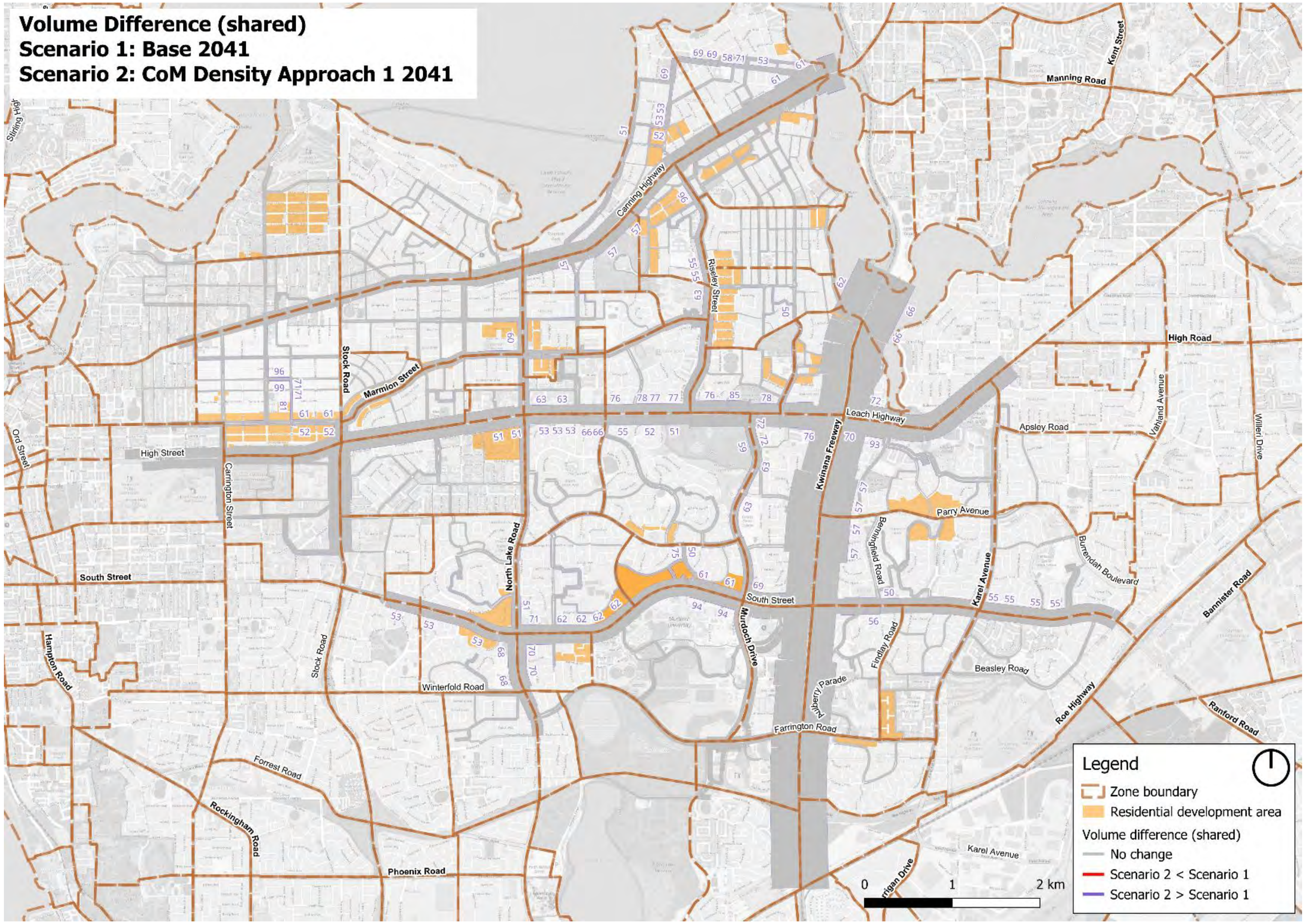


Figure B.16 Change in network flows – 2041 scenario 1 (“CoM Density Approach 1”) vs 2041 baseline (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

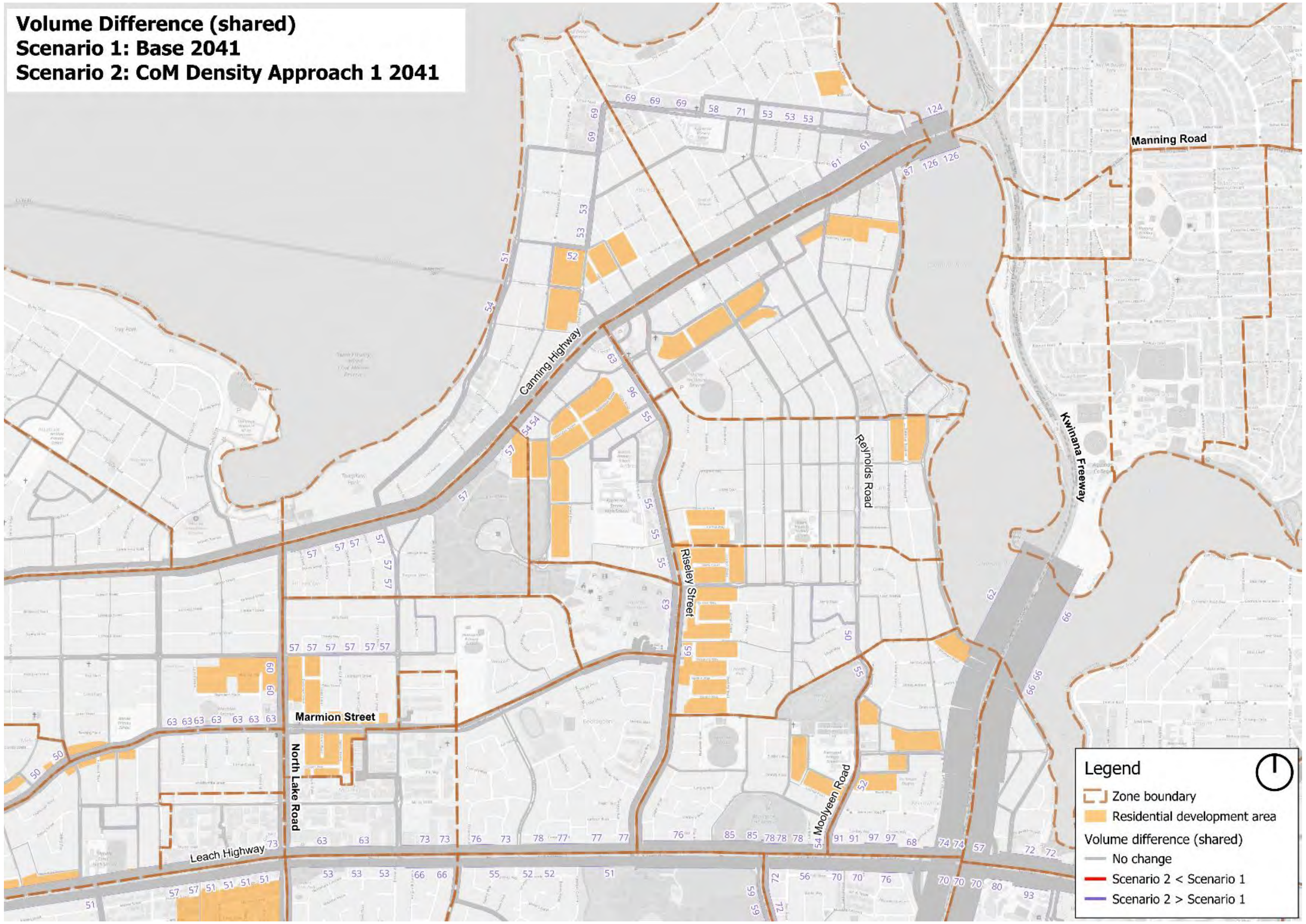


Figure B.17 Change in network flows – 2041 scenario 1 (“CoM Density Approach 1”) vs 2041 baseline (shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

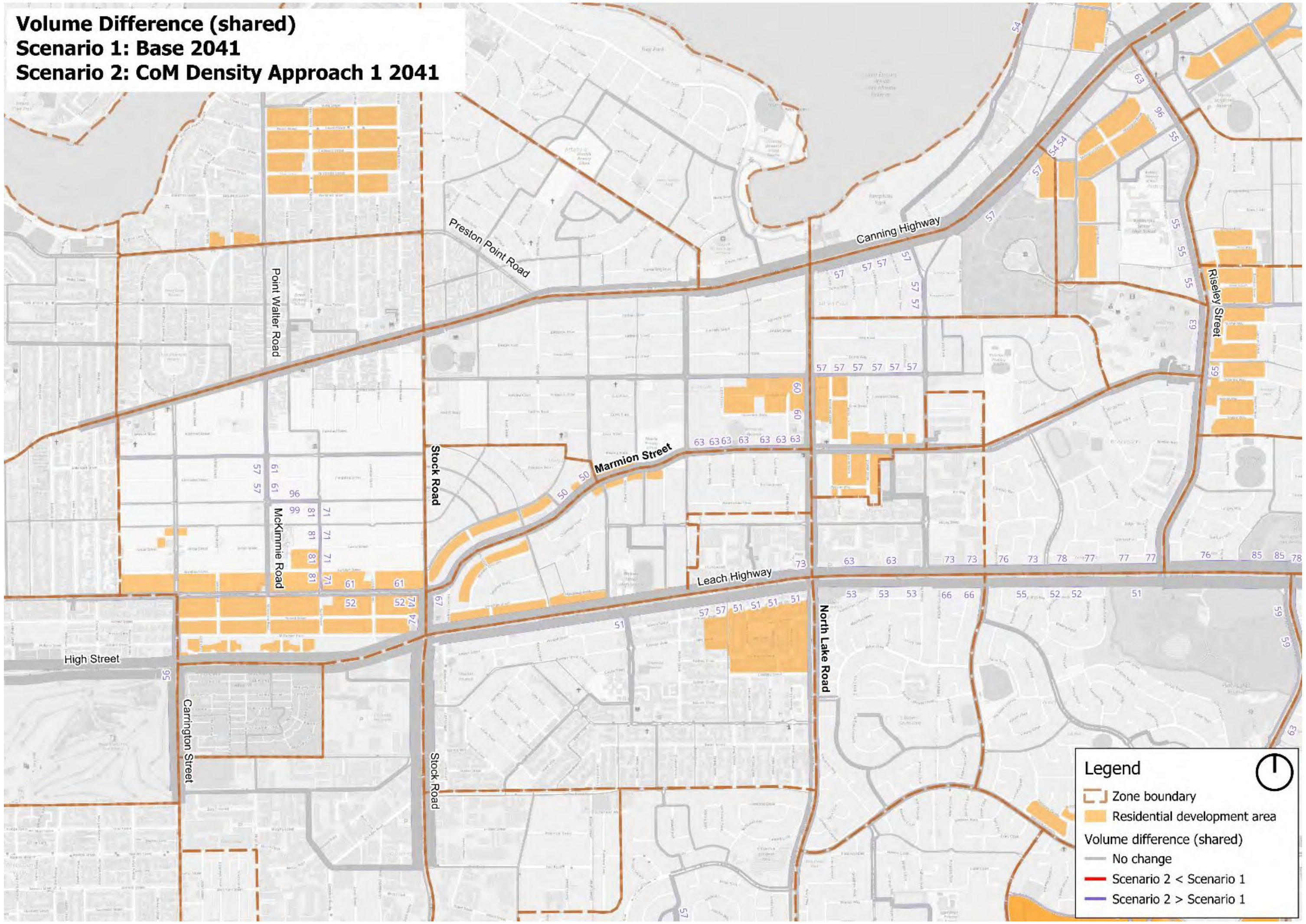


Figure B.18 Change in network flows – 2041 scenario 1 ("CoM Density Approach 1") vs 2041 baseline (shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

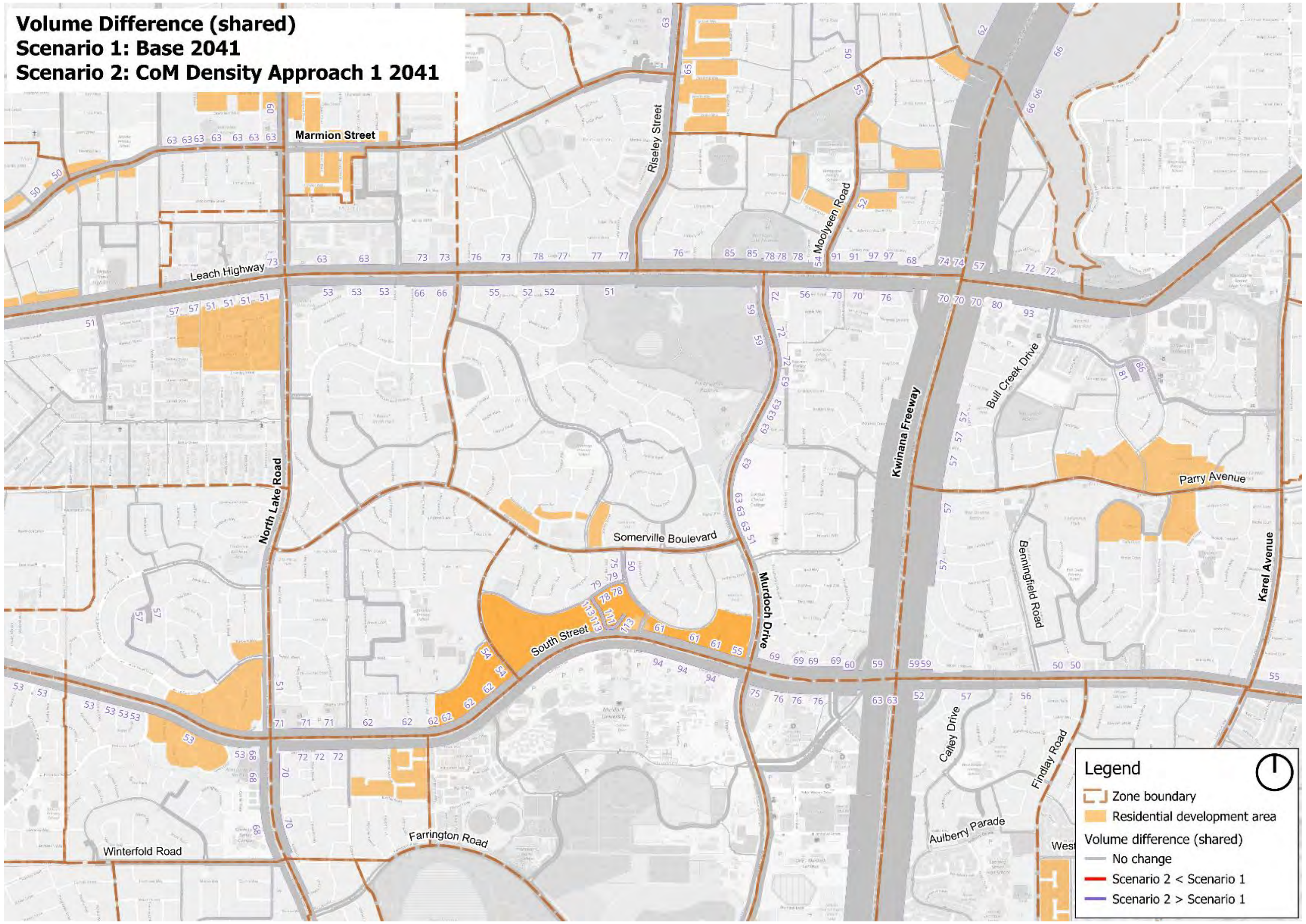


Figure B.19 Change in network flows – 2041 scenario 1 ("CoM Density Approach 1") vs 2041 baseline (shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

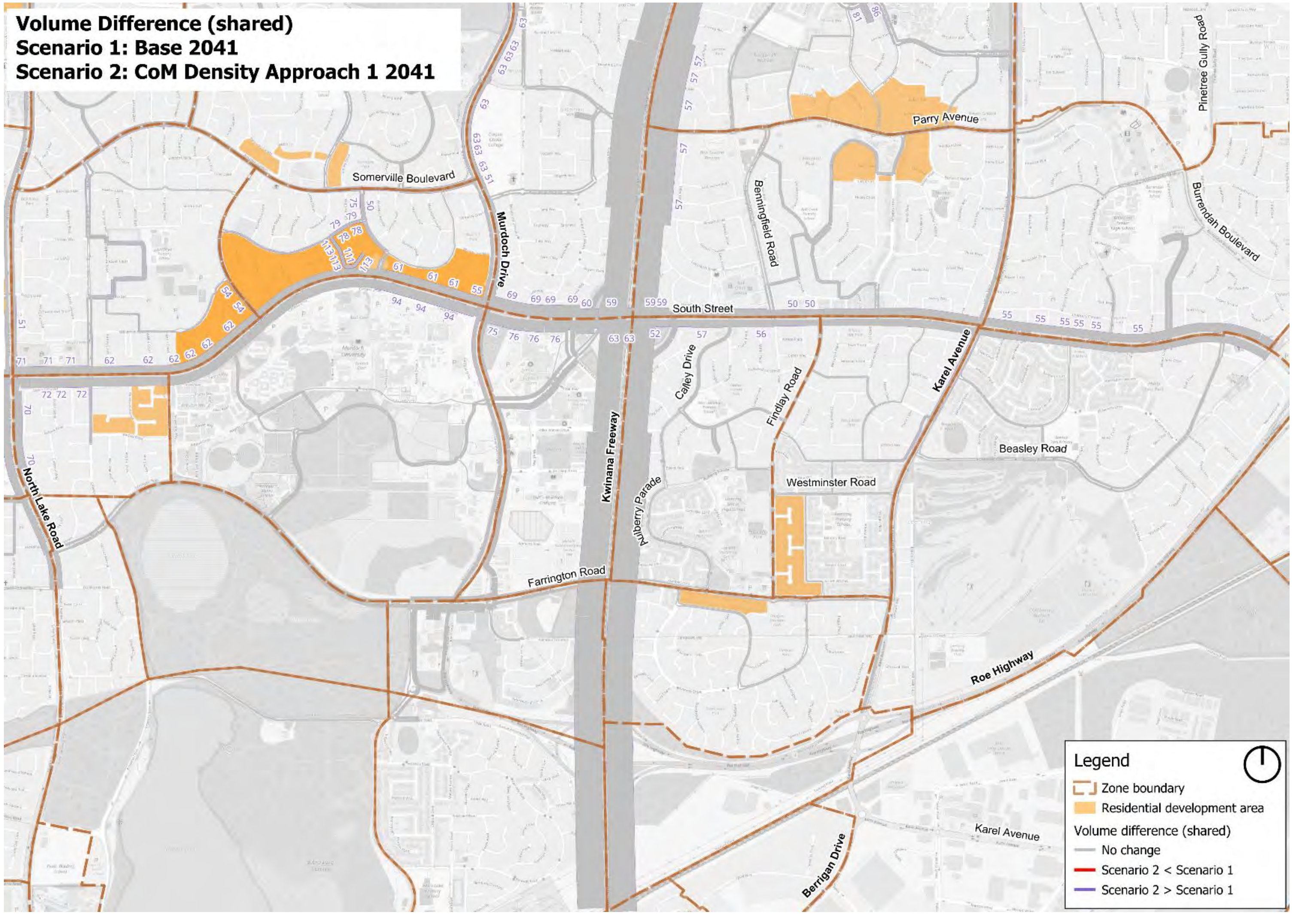


Figure B.20 Change in network flows – 2041 scenario 1 ("CoM Density Approach 1") vs 2041 baseline (shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

B3 2041 scenario 2 (“CoM Density Approach 2”) versus 2041 baseline

This section summarises the difference in peak hour network flows between the 2041 scenario 2 (“CoM Density Approach 2”) and the 2041 scenario 1 (“CoM Density Approach 1”) traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

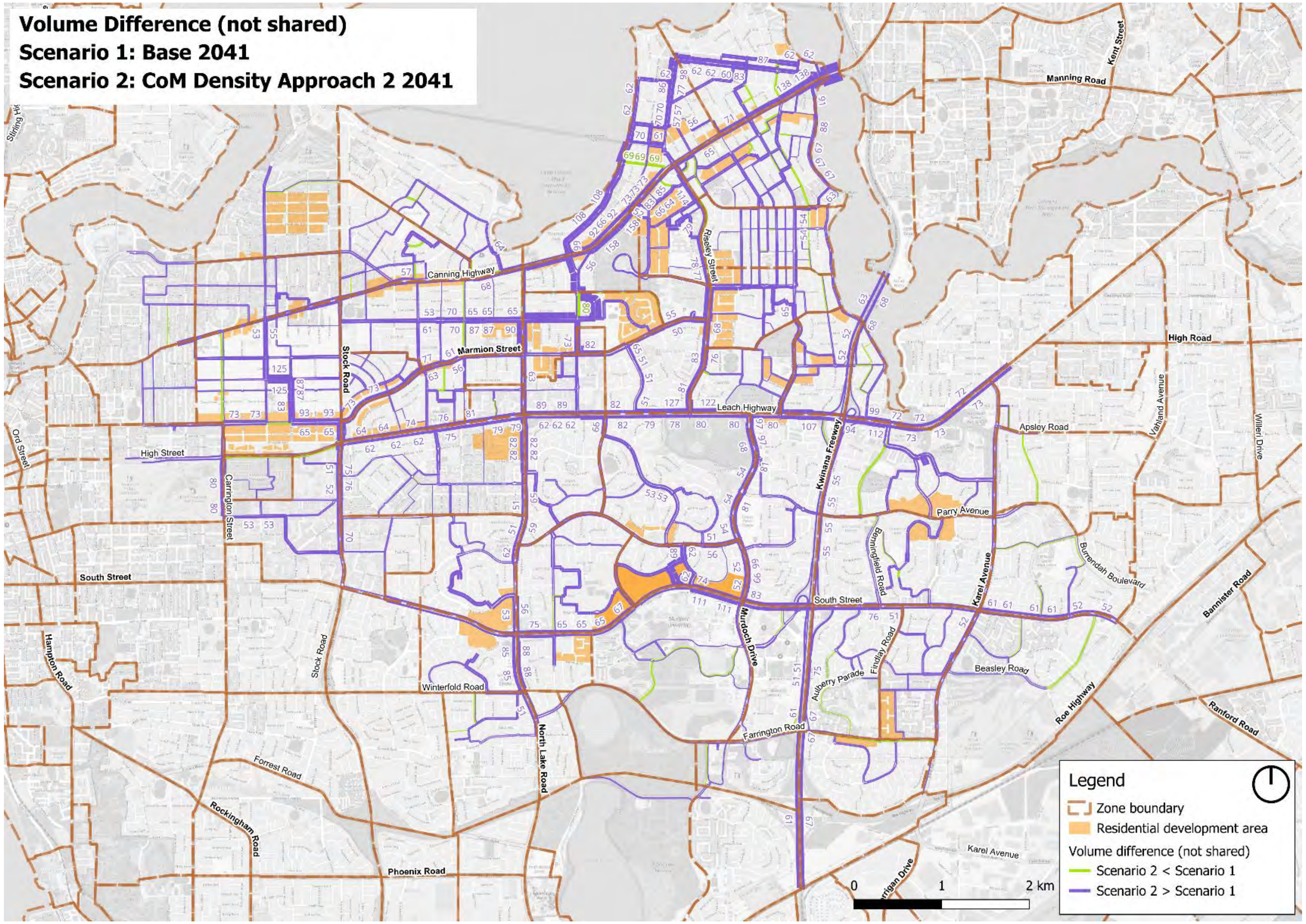


Figure B.21 Change in network flows – 2041 scenario 2 ("CoM Density Approach 2") vs 2041 baseline

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

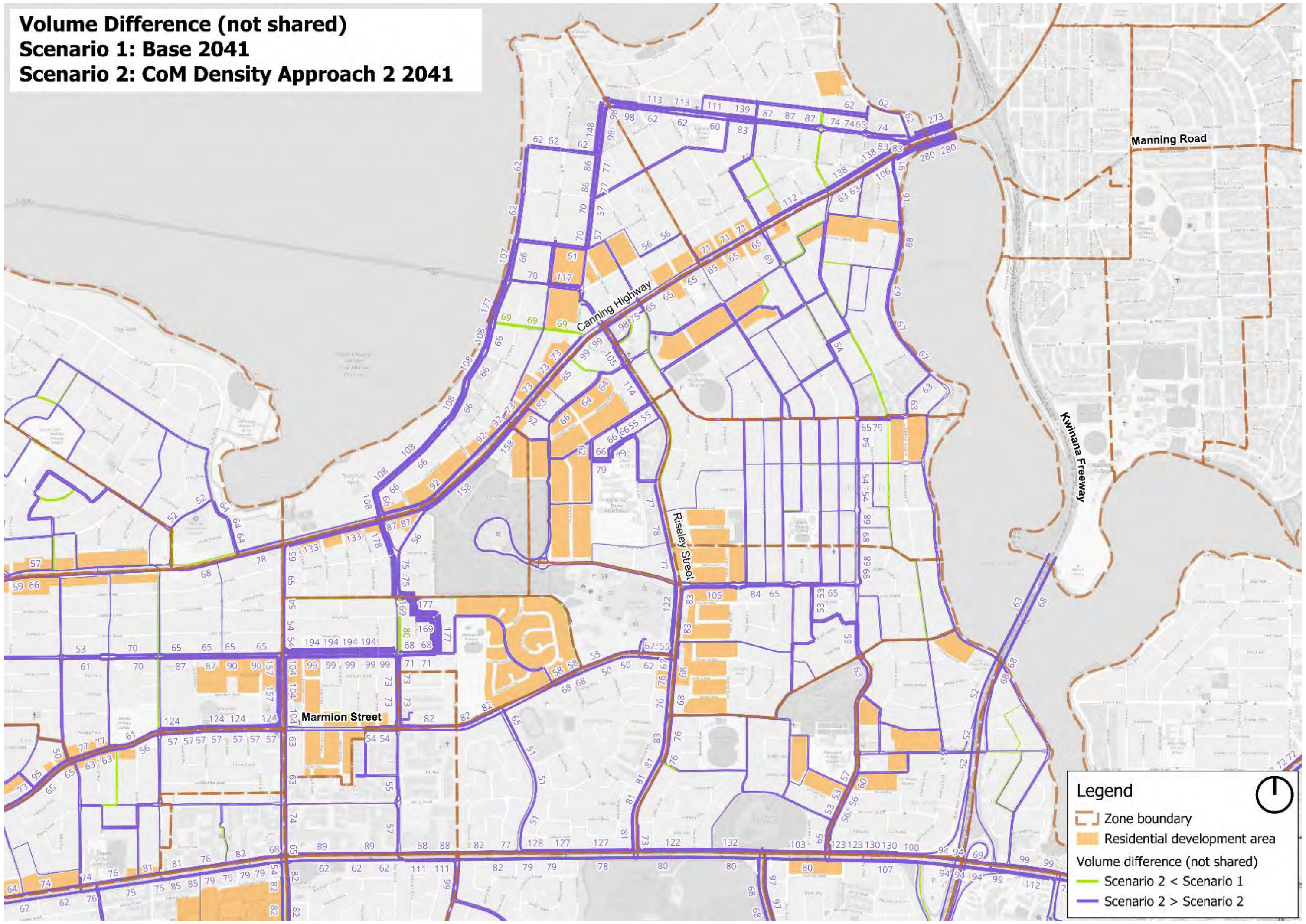


Figure B.22 Change in network flows – 2041 scenario 2 ("CoM Density Approach 2") vs 2041 baseline (not shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

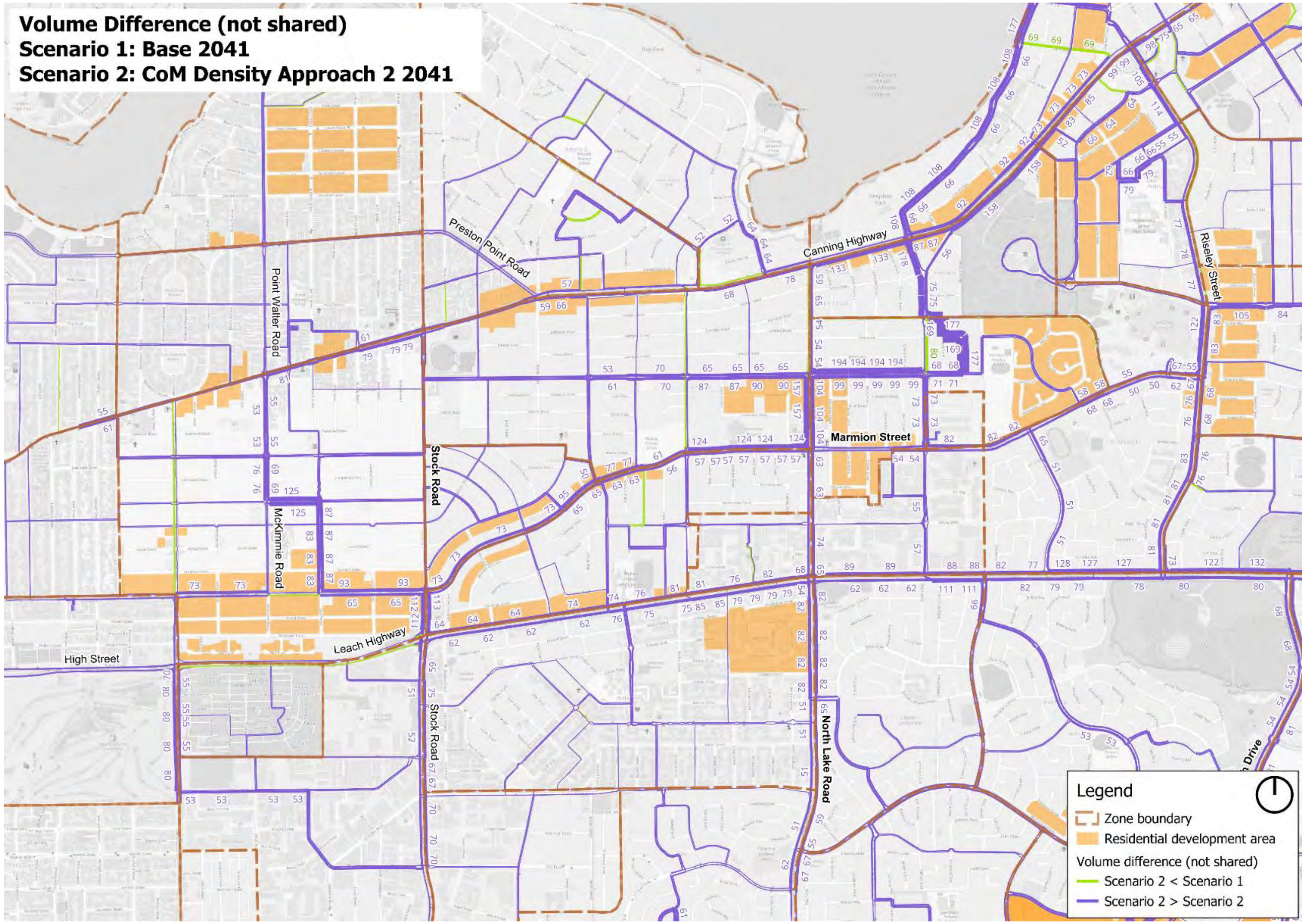


Figure B.23 Change in network flows – 2041 scenario 2 ("CoM Density Approach 2") vs 2041 baseline (not shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

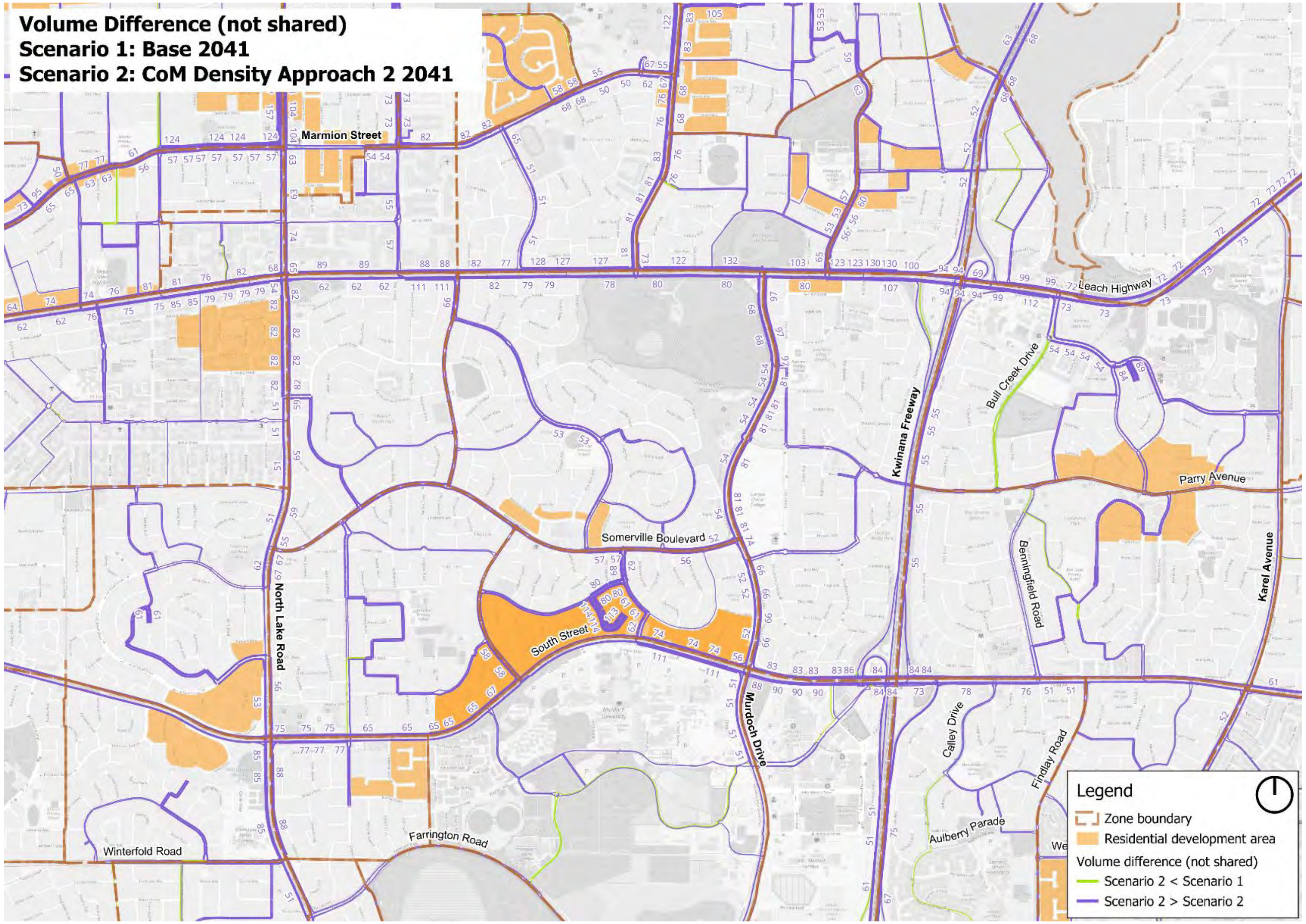


Figure B.24 Change in network flows – 2041 scenario 2 ("CoM Density Approach 2") vs 2041 baseline (not shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

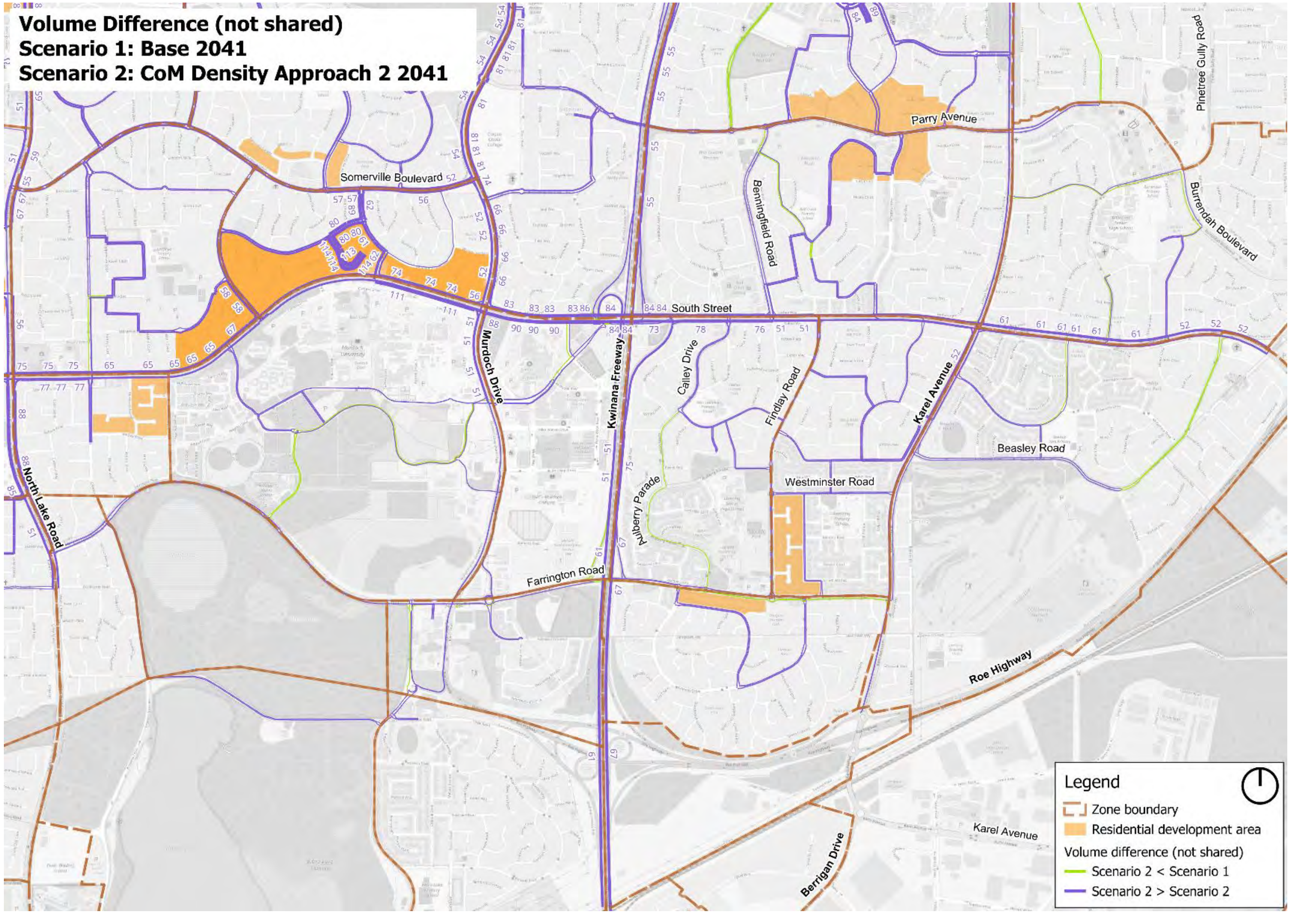


Figure B.25 Change in network flows – 2041 scenario 2 ("CoM Density Approach 2") vs 2041 baseline (not shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

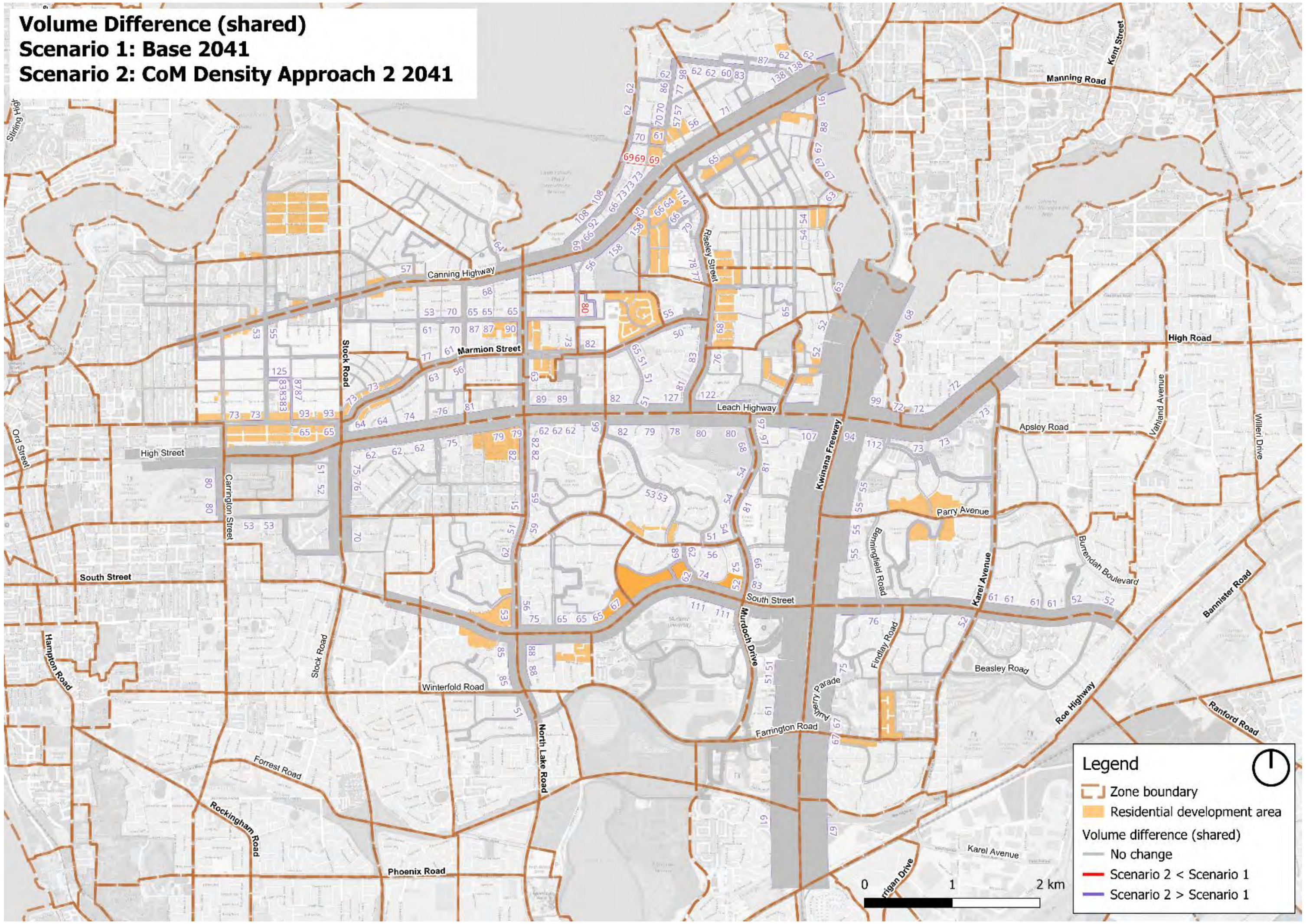


Figure B.26 Change in network flows – 2041 scenario 2 ("CoM Density Approach 2") vs 2041 baseline (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

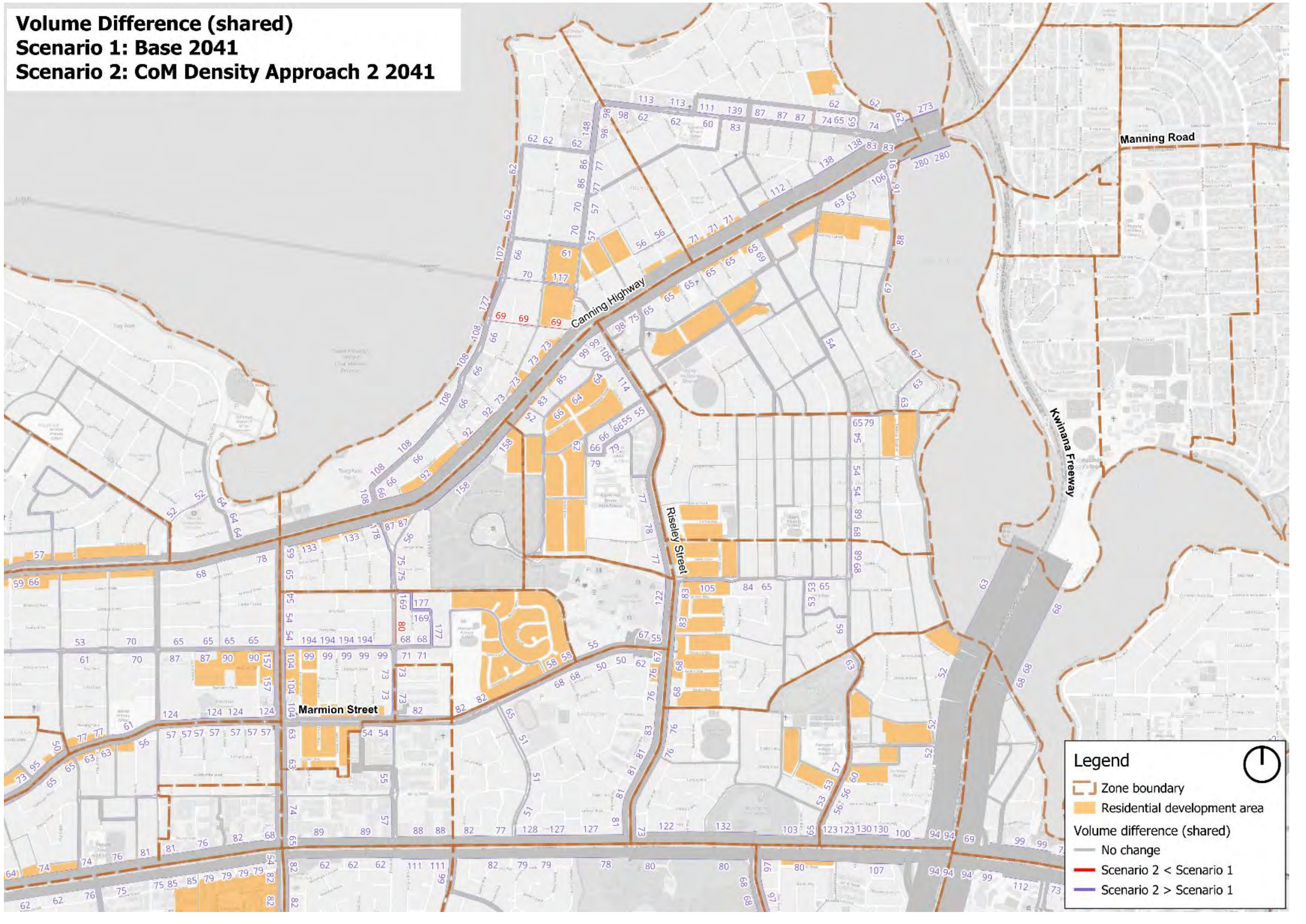


Figure B.27 Change in network flows – 2041 scenario 2 ("CoM Density Approach 2") vs 2041 baseline (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

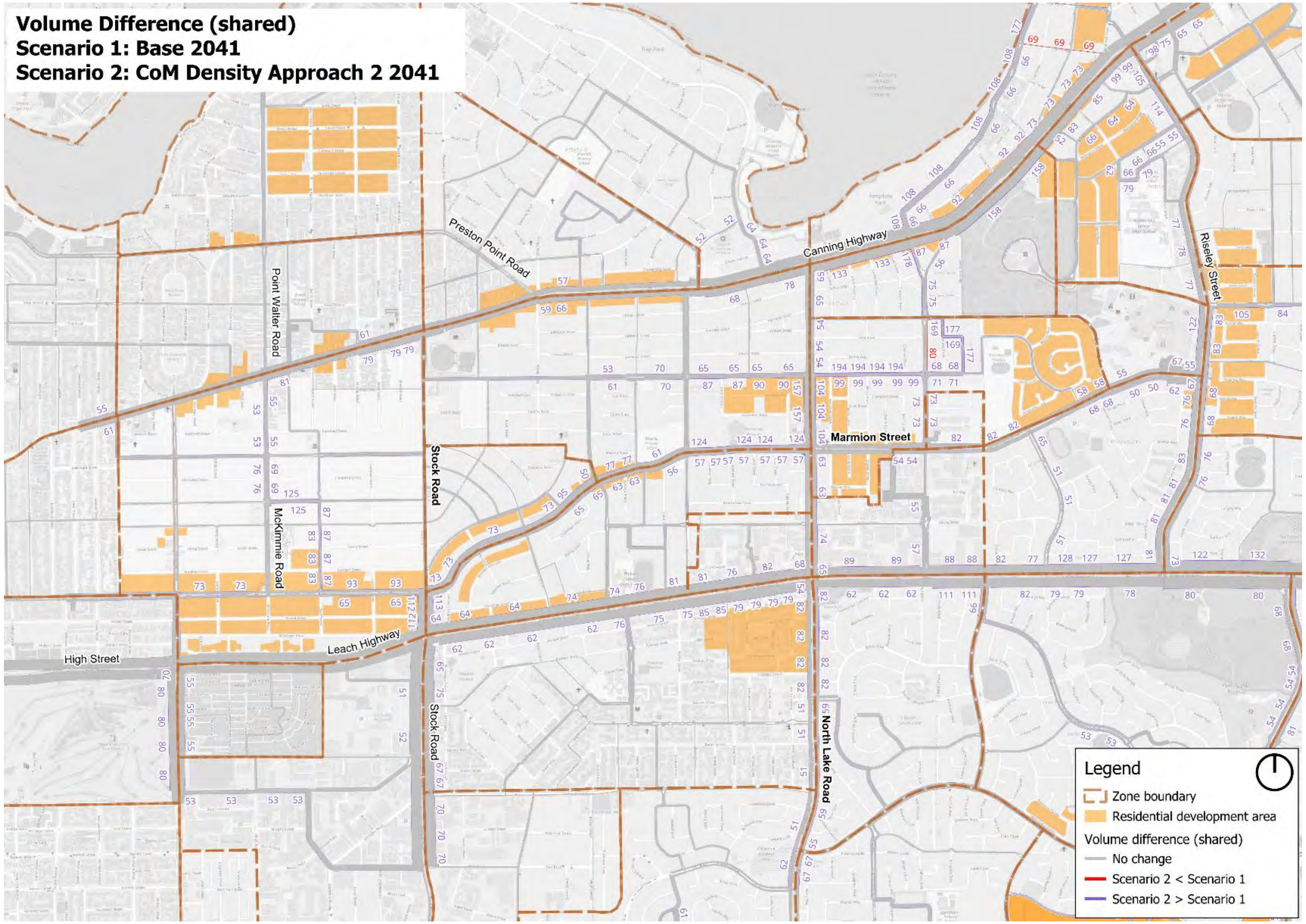


Figure B.28 Change in network flows – 2041 scenario 2 (“CoM Density Approach 2”) vs 2041 baseline (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

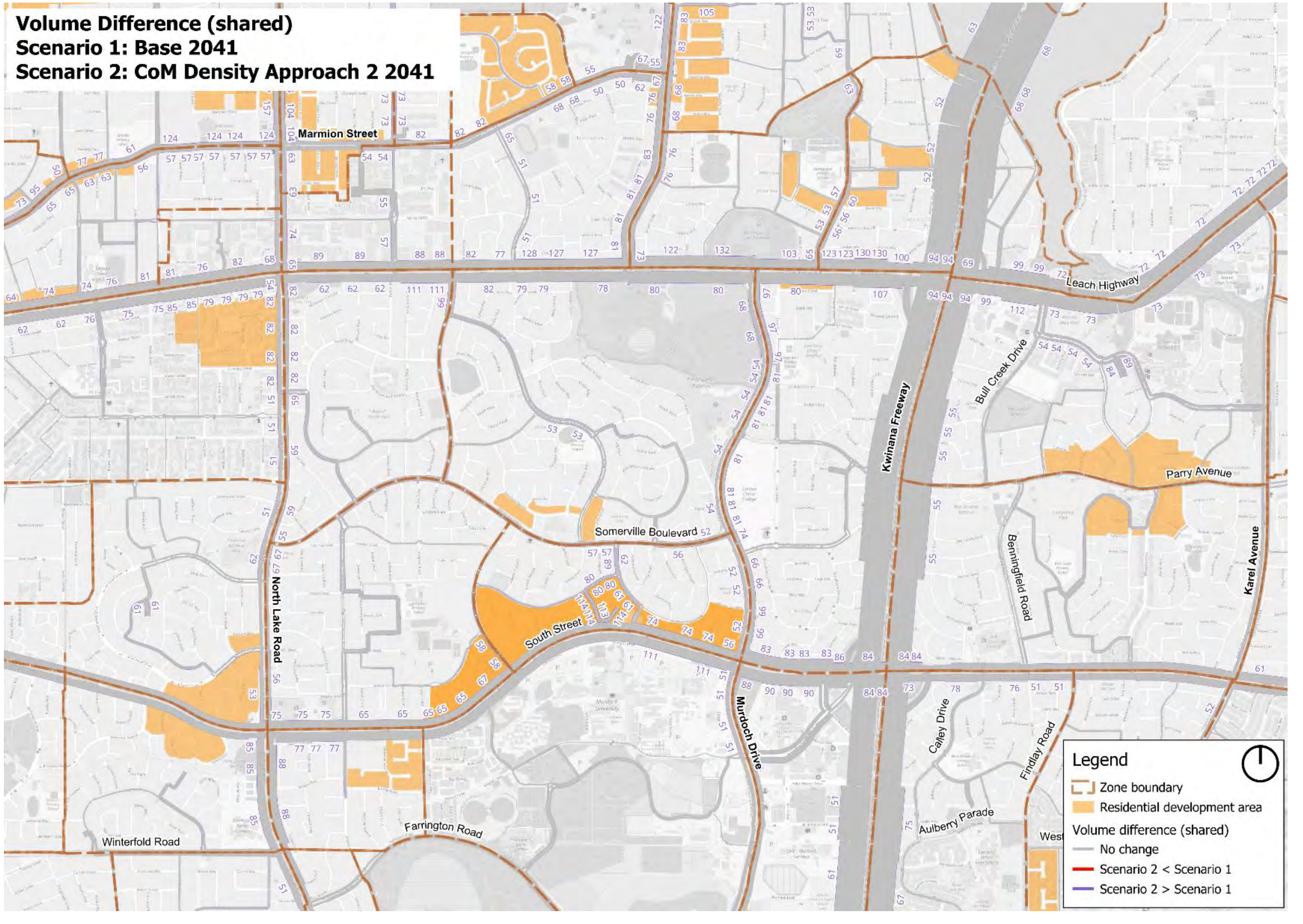


Figure B.29 Change in network flows – 2041 scenario 2 ("CoM Density Approach 2") vs 2041 baseline (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

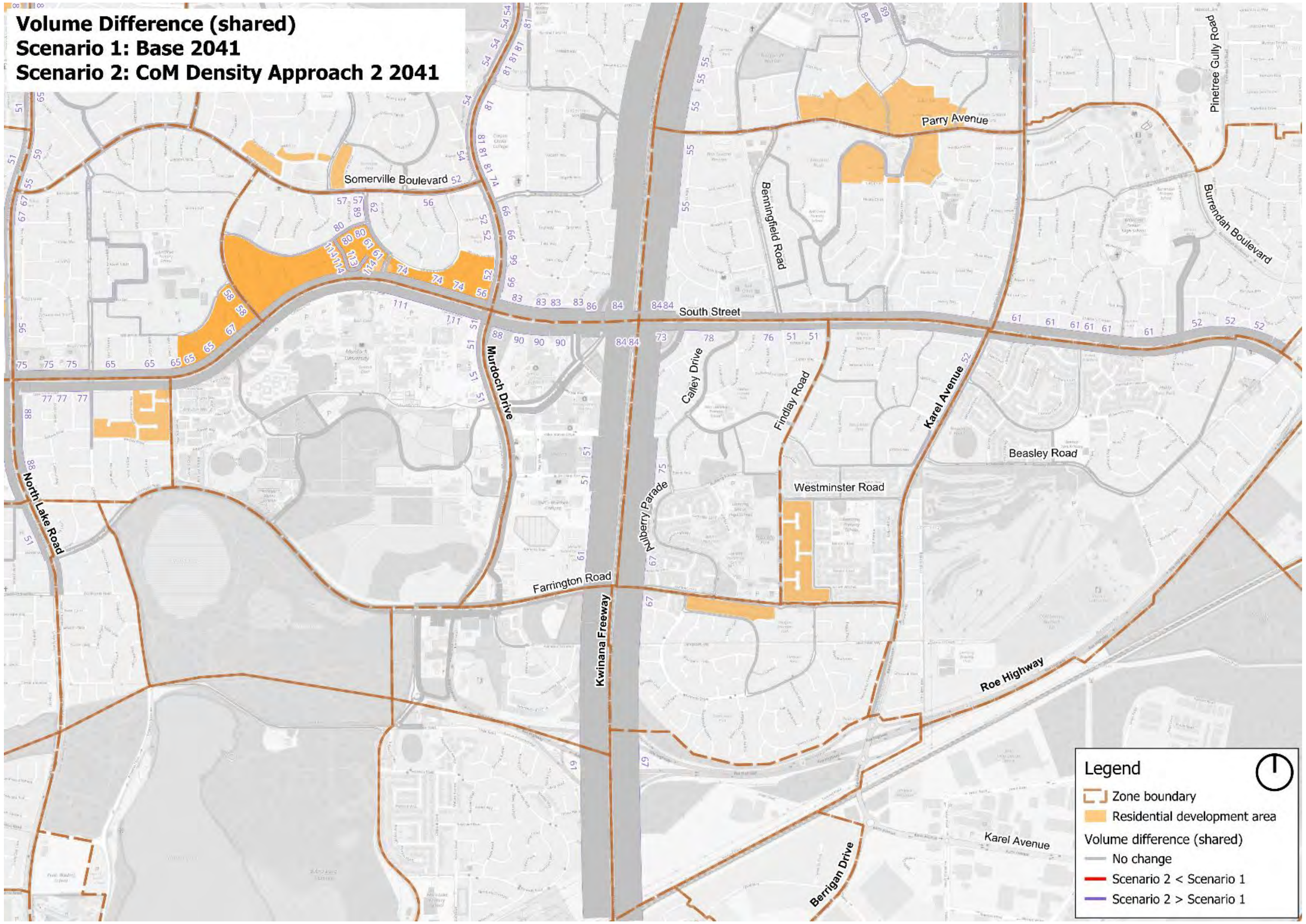


Figure B.30 Change in network flows – 2041 scenario 2 (“CoM Density Approach 2”) vs 2041 baseline (shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

B4 2051 baseline versus 2026 existing conditions

This section summarises the difference in peak hour network flows between the 2051 baseline and the 2026 existing conditions traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

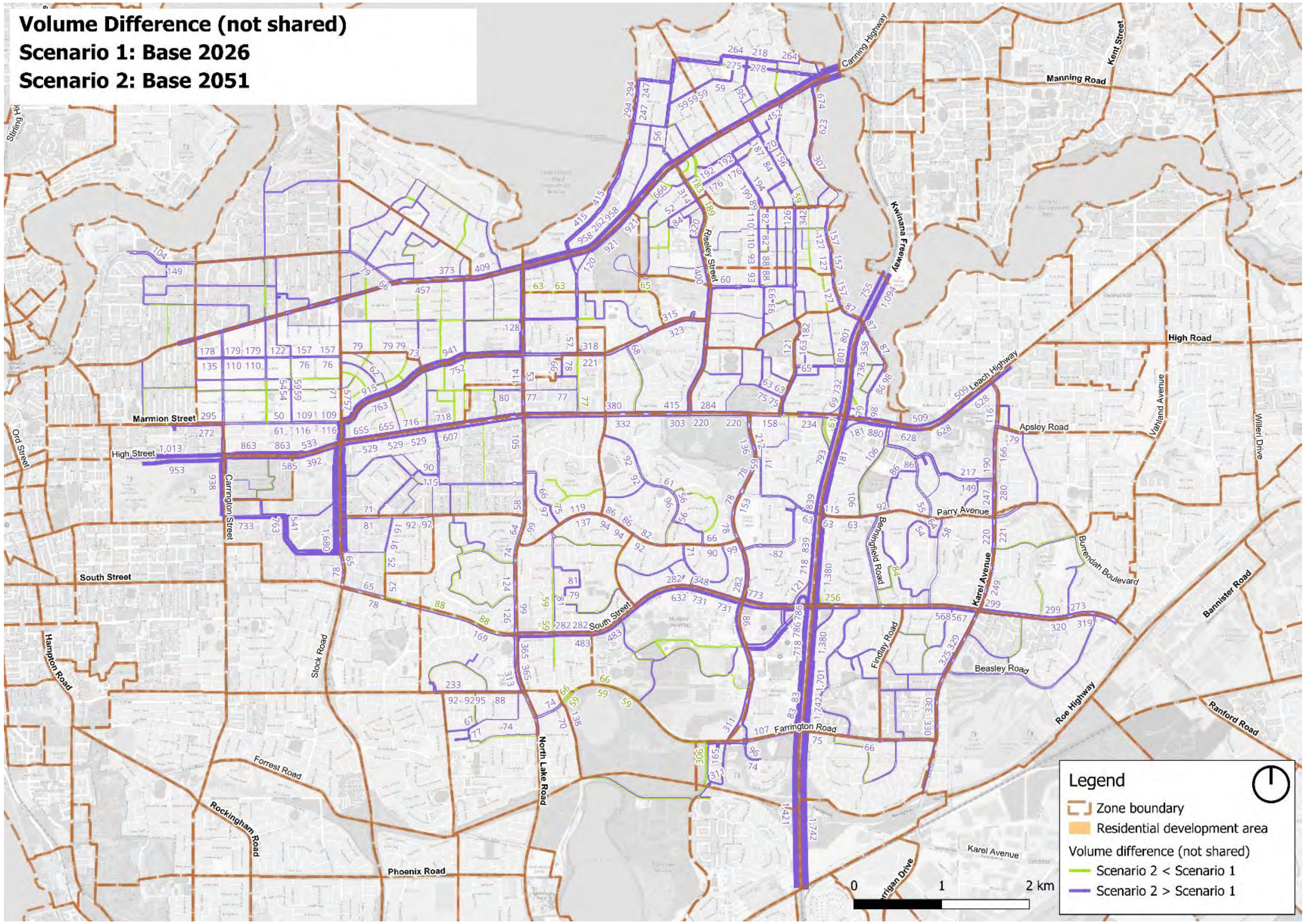


Figure B.31 Change in network flows – 2051 Base vs 2026 Existing (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

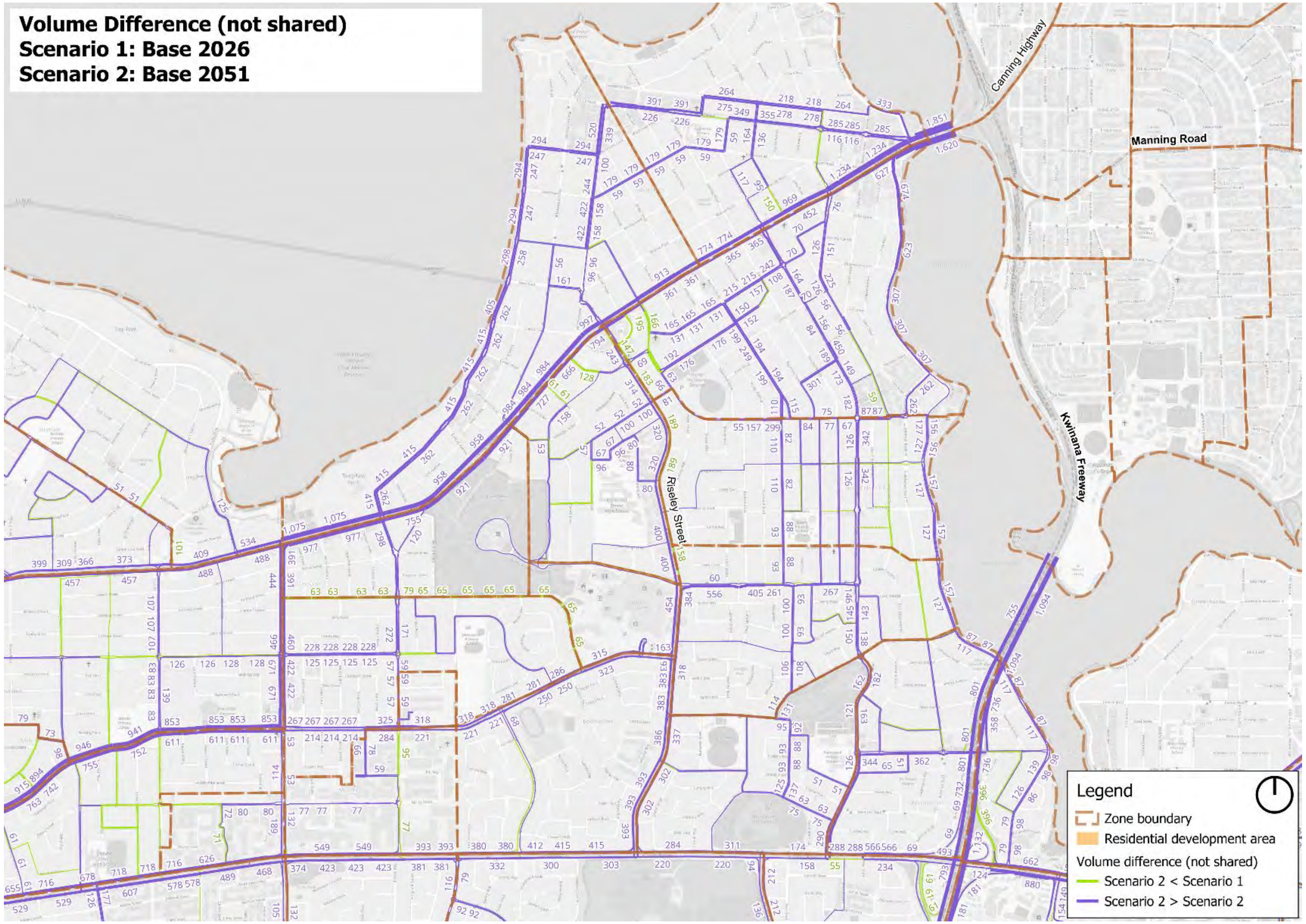


Figure B.32 Change in network flows – 2051 Base vs 2026 Existing (not shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

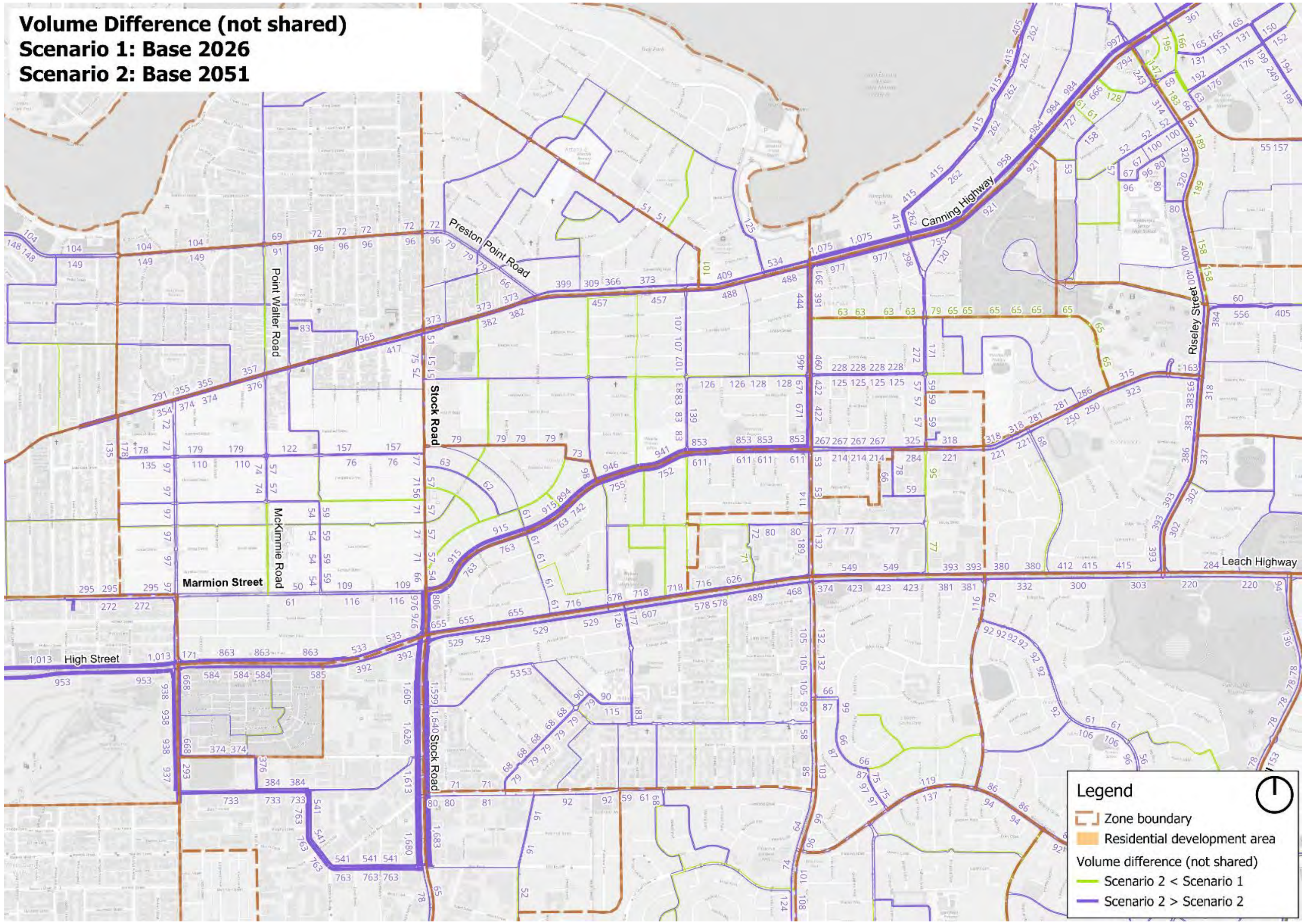


Figure B.33 Change in network flows – 2051 Base vs 2026 Existing (not shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

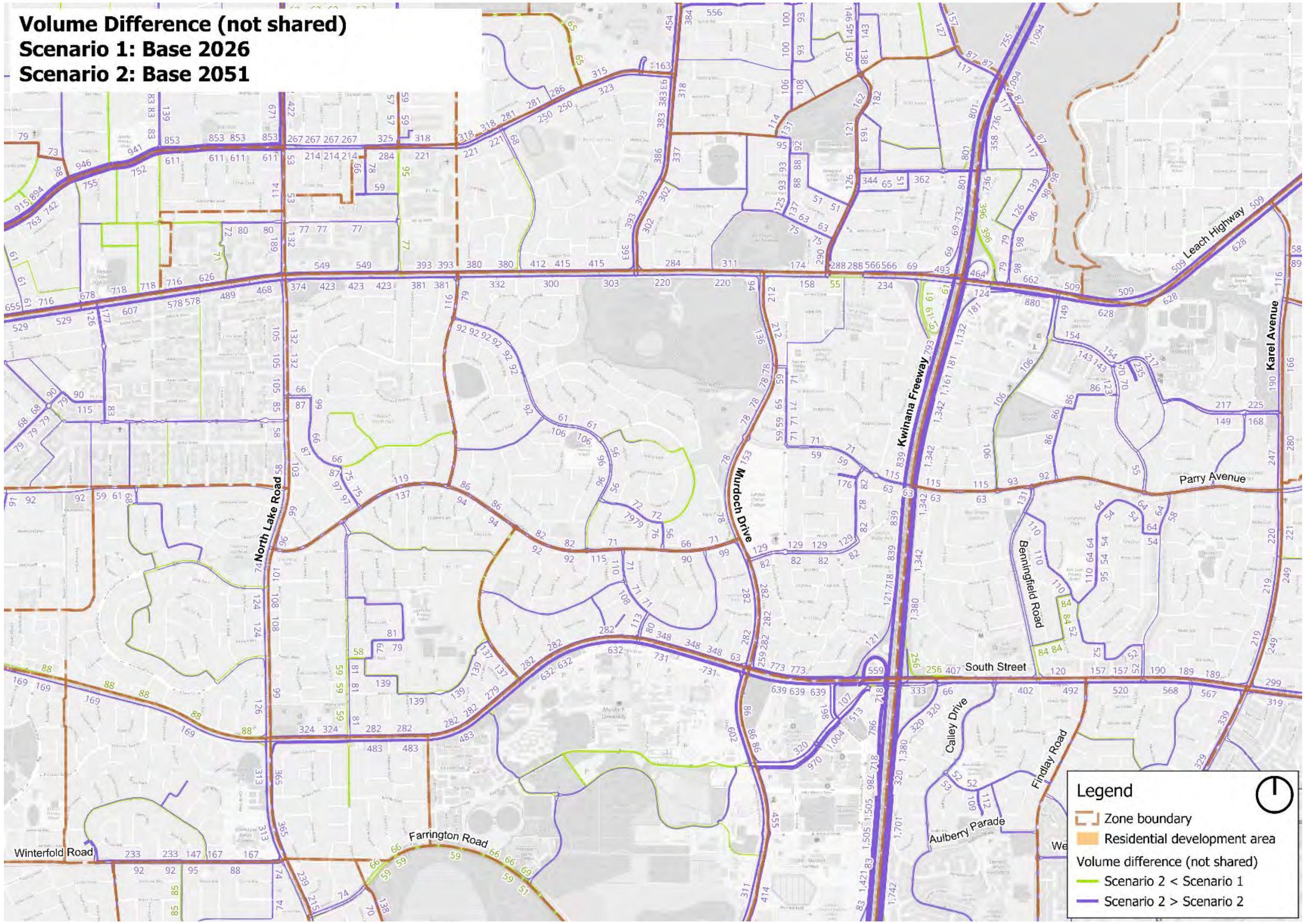


Figure B.34 Change in network flows – 2051 Base vs 2026 Existing (not shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

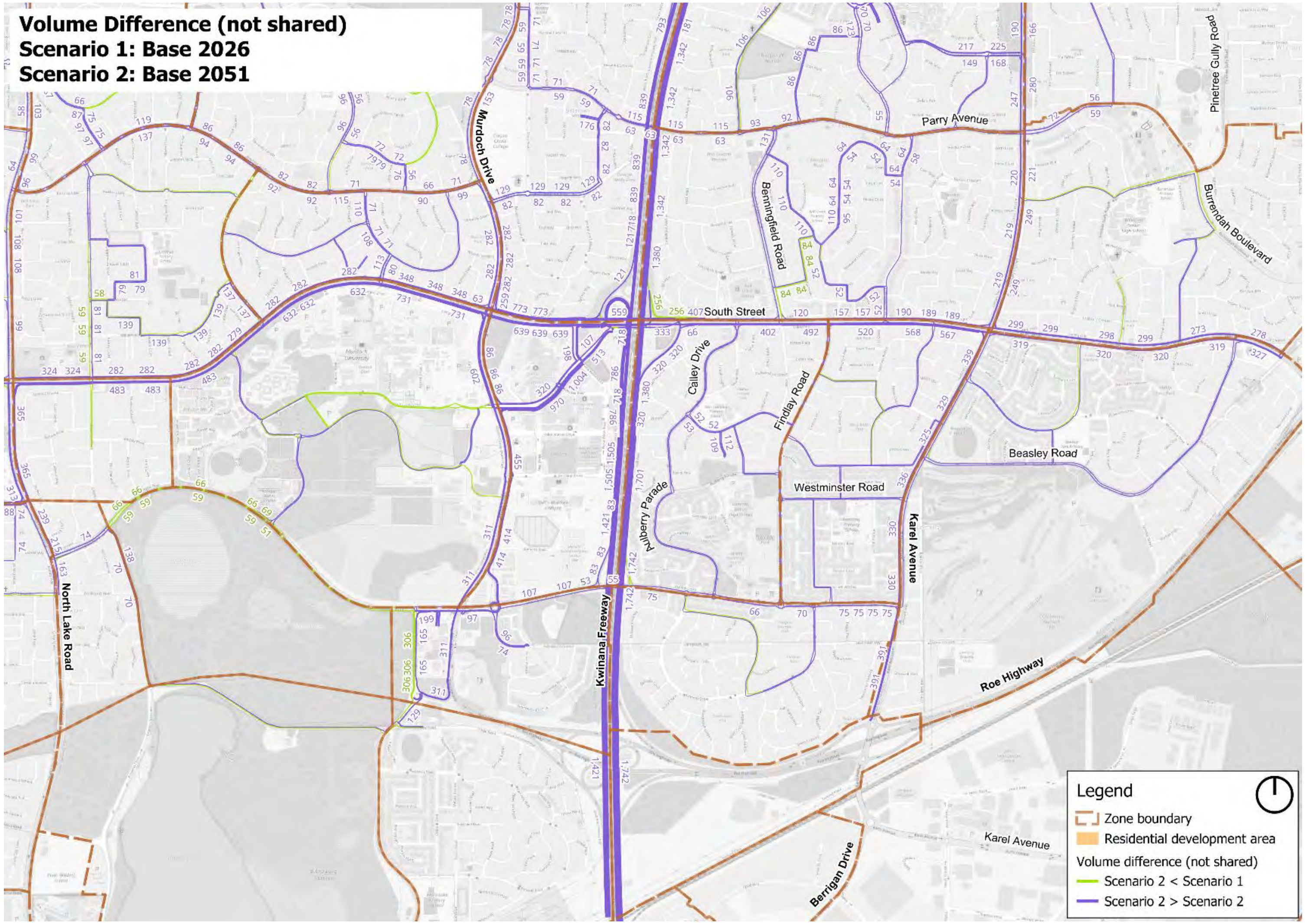


Figure B.35 Change in network flows – 2051 Base vs 2026 Existing (not shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

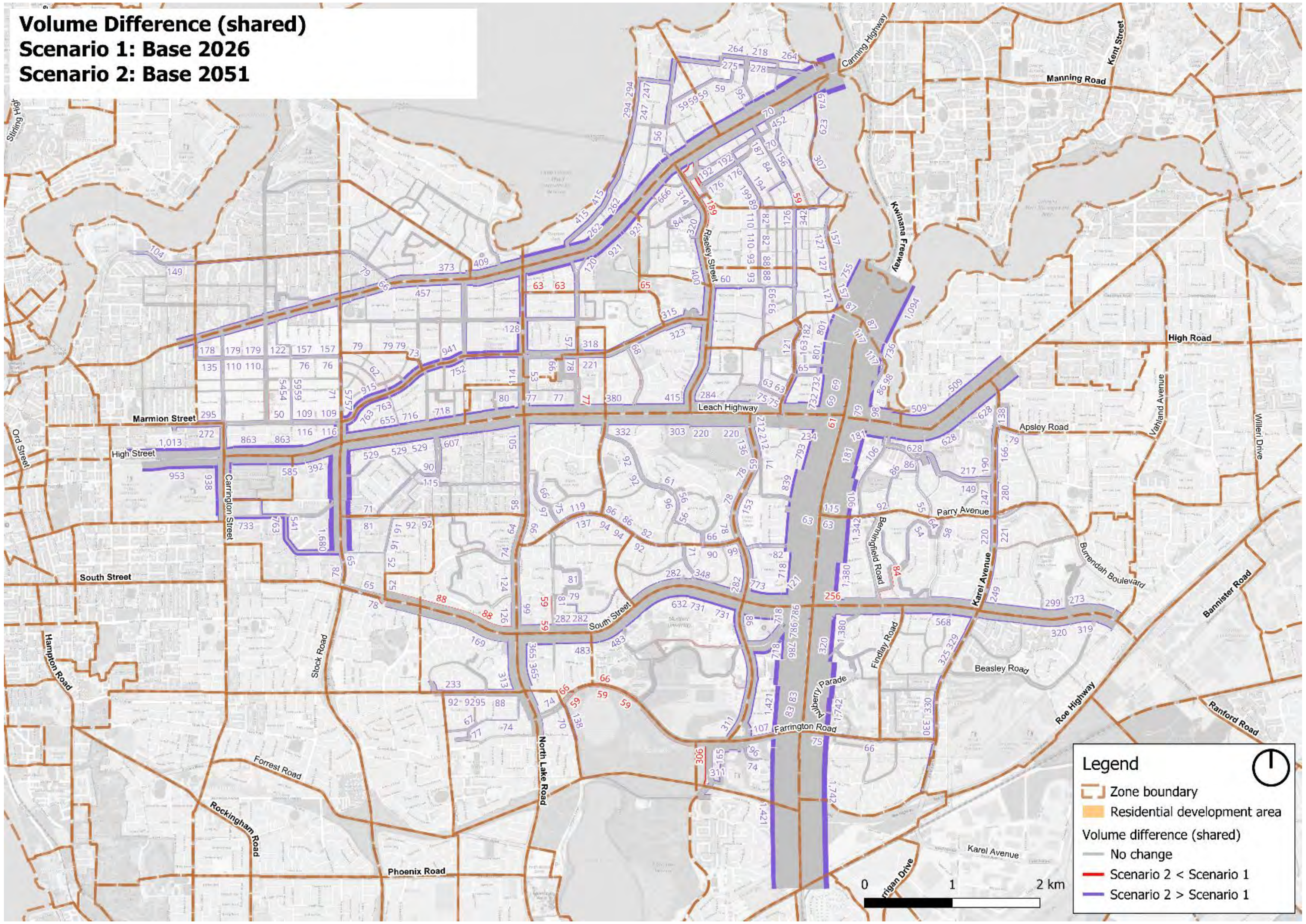


Figure B.36 Change in network flows – 2051 Base vs 2026 Existing (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

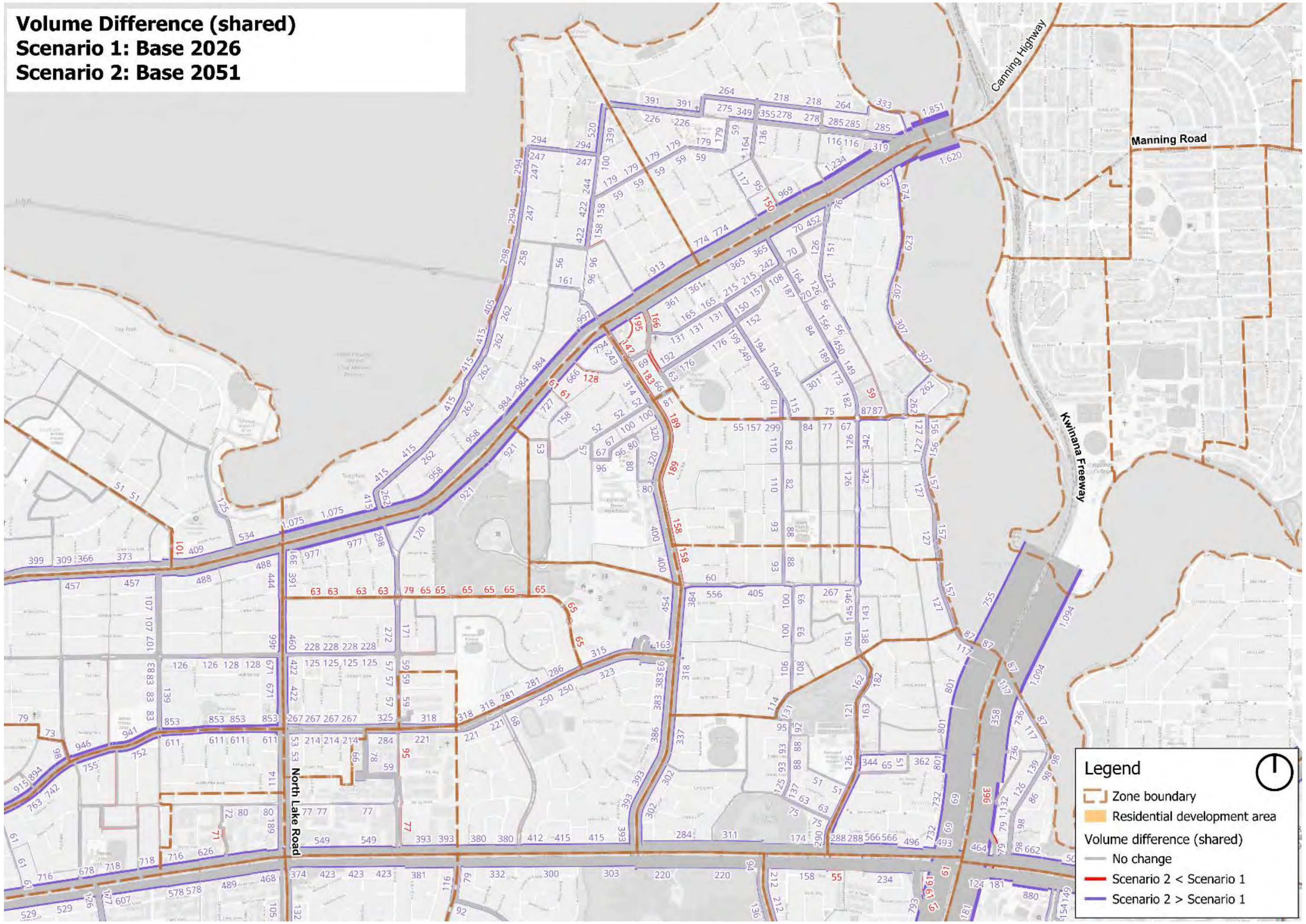


Figure B.37 Change in network flows – 2051 Base vs 2026 Existing (shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

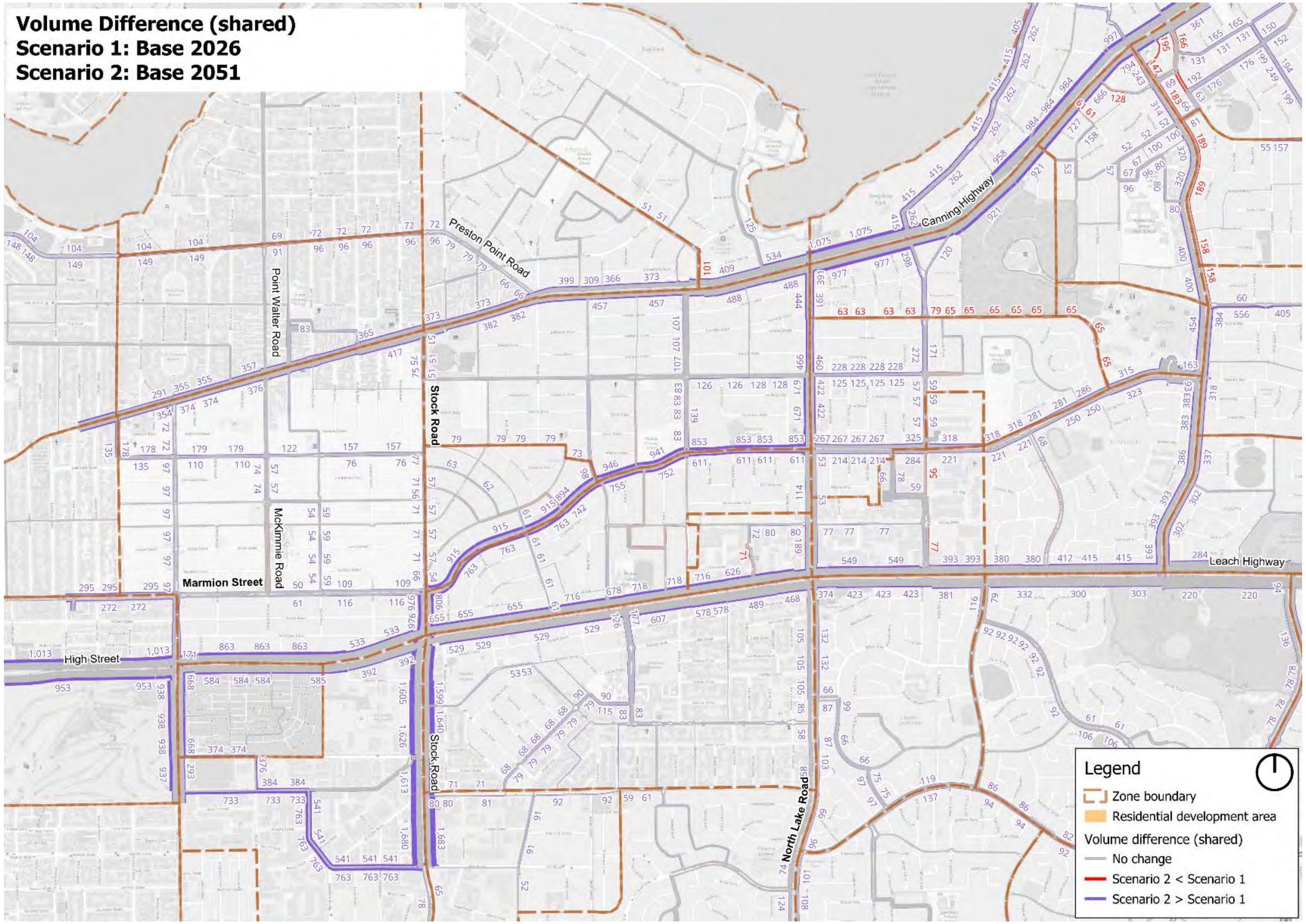


Figure B.38 Change in network flows – 2051 Base vs 2026 Existing (shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

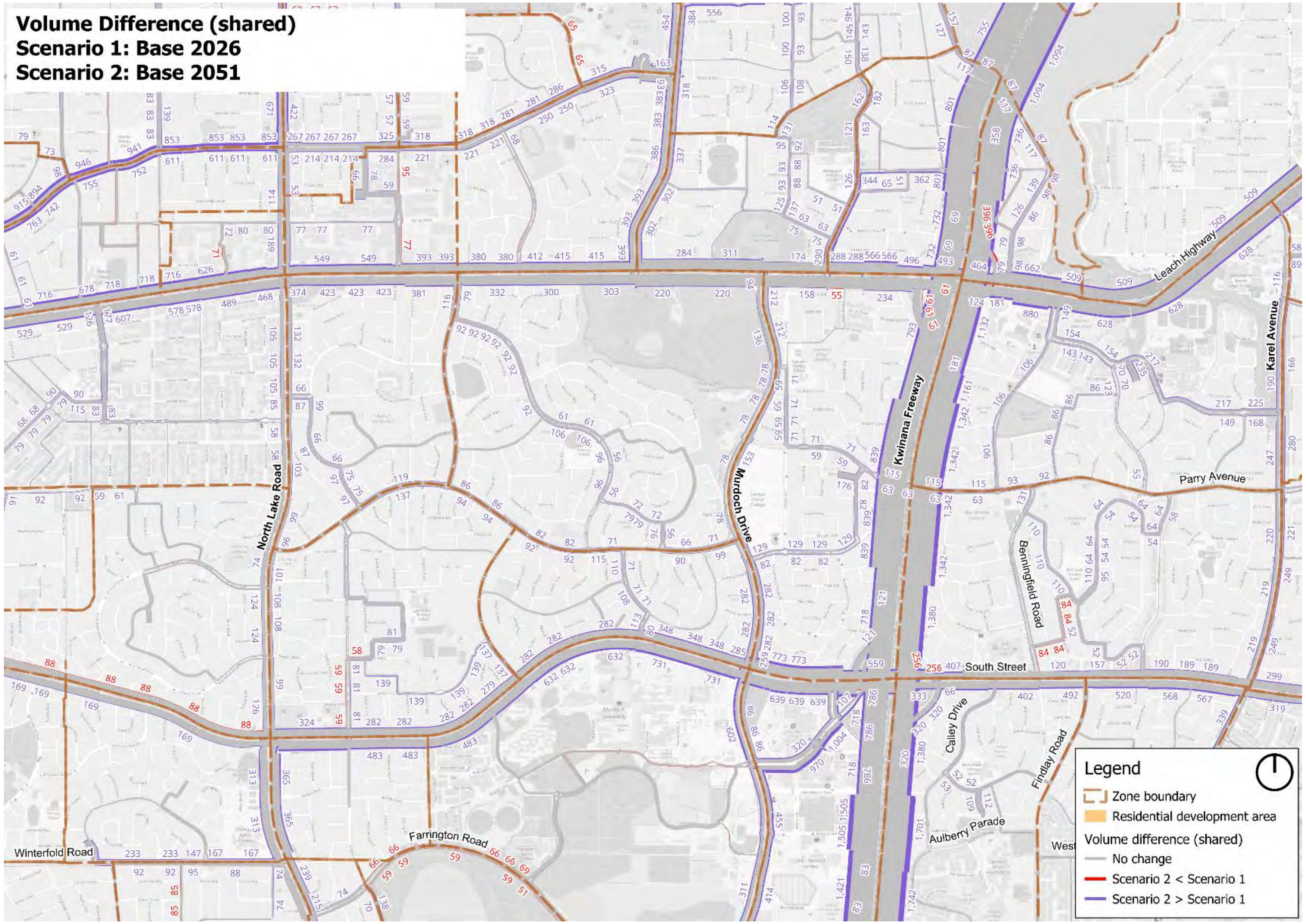


Figure B.39 Change in network flows – 2051 Base vs 2026 Existing (shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

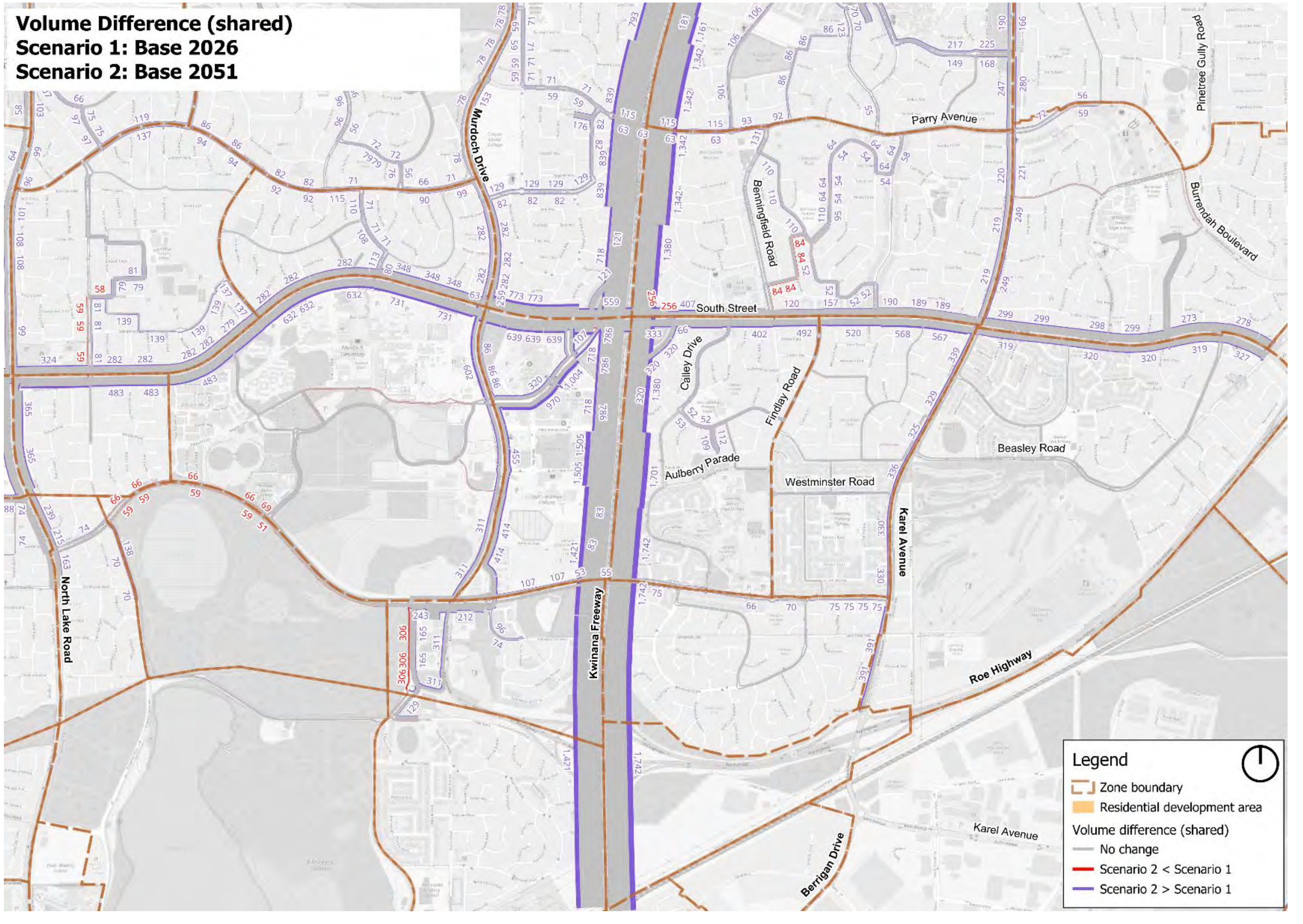


Figure B.40 Change in network flows – 2051 Base vs 2026 Existing (shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

B5 2051 scenario 1 (“CoM Density Approach 1”) versus 2051 baseline

This section summarises the difference in peak hour network flows between the 2051 scenario 1 (“CoM Density Approach 1”) and the 2051 baseline traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

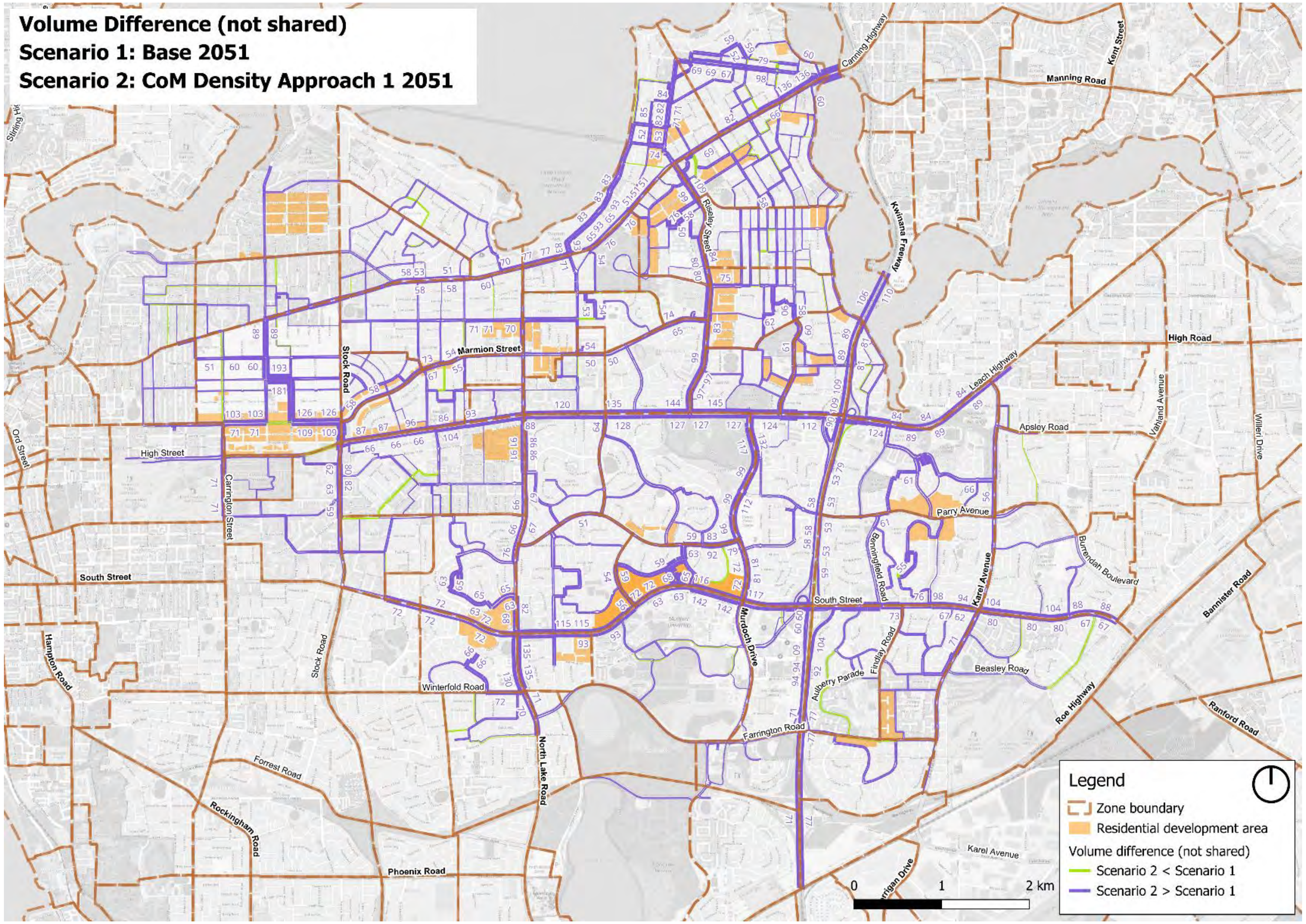


Figure B.41 Change in network flows – 2051 scenario 1 (“CoM Density Approach 1”) vs 2051 baseline (not shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

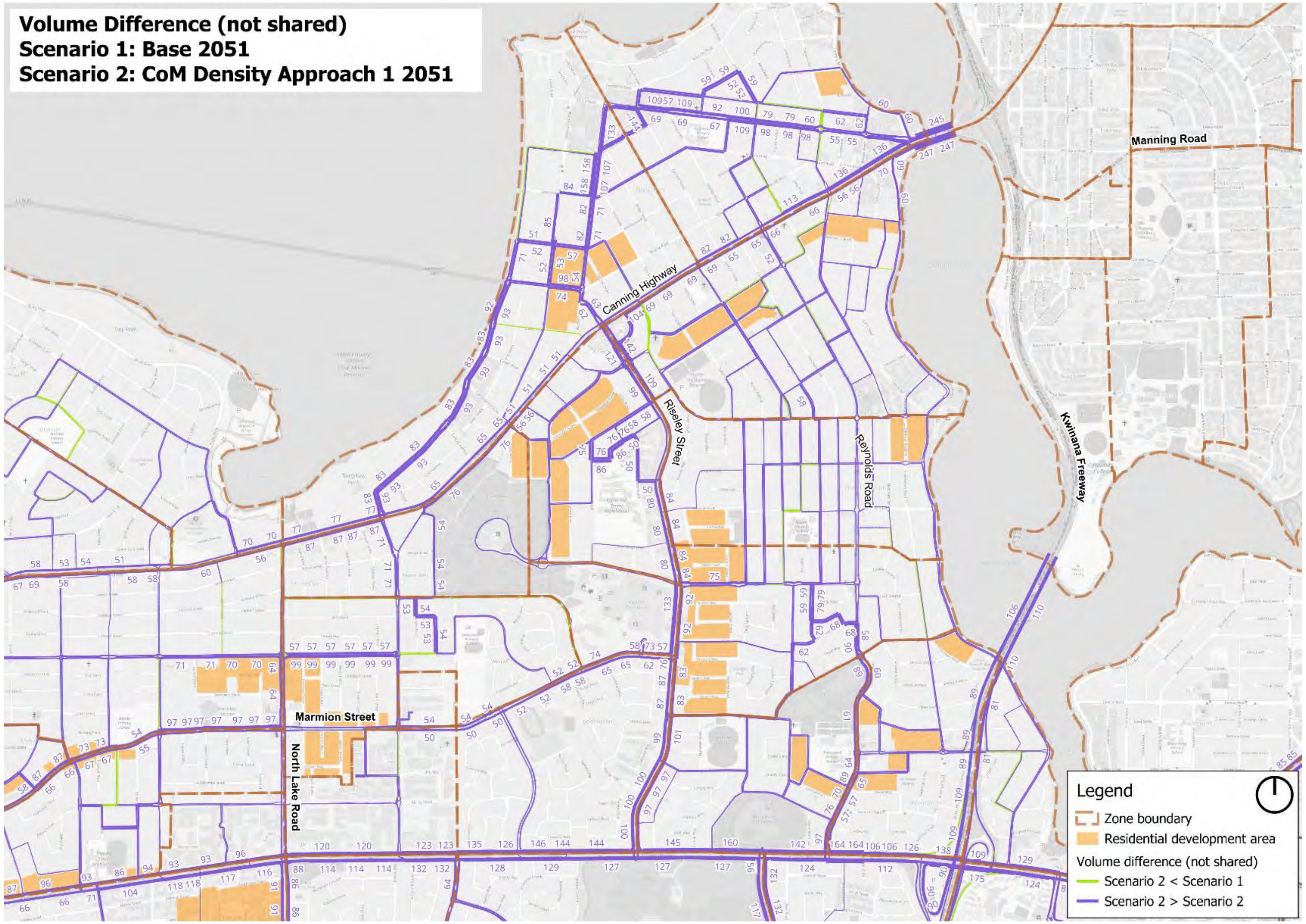


Figure B.42 Change in network flows – 2051 scenario 1 ("CoM Density Approach 1") vs 2051 baseline (not shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

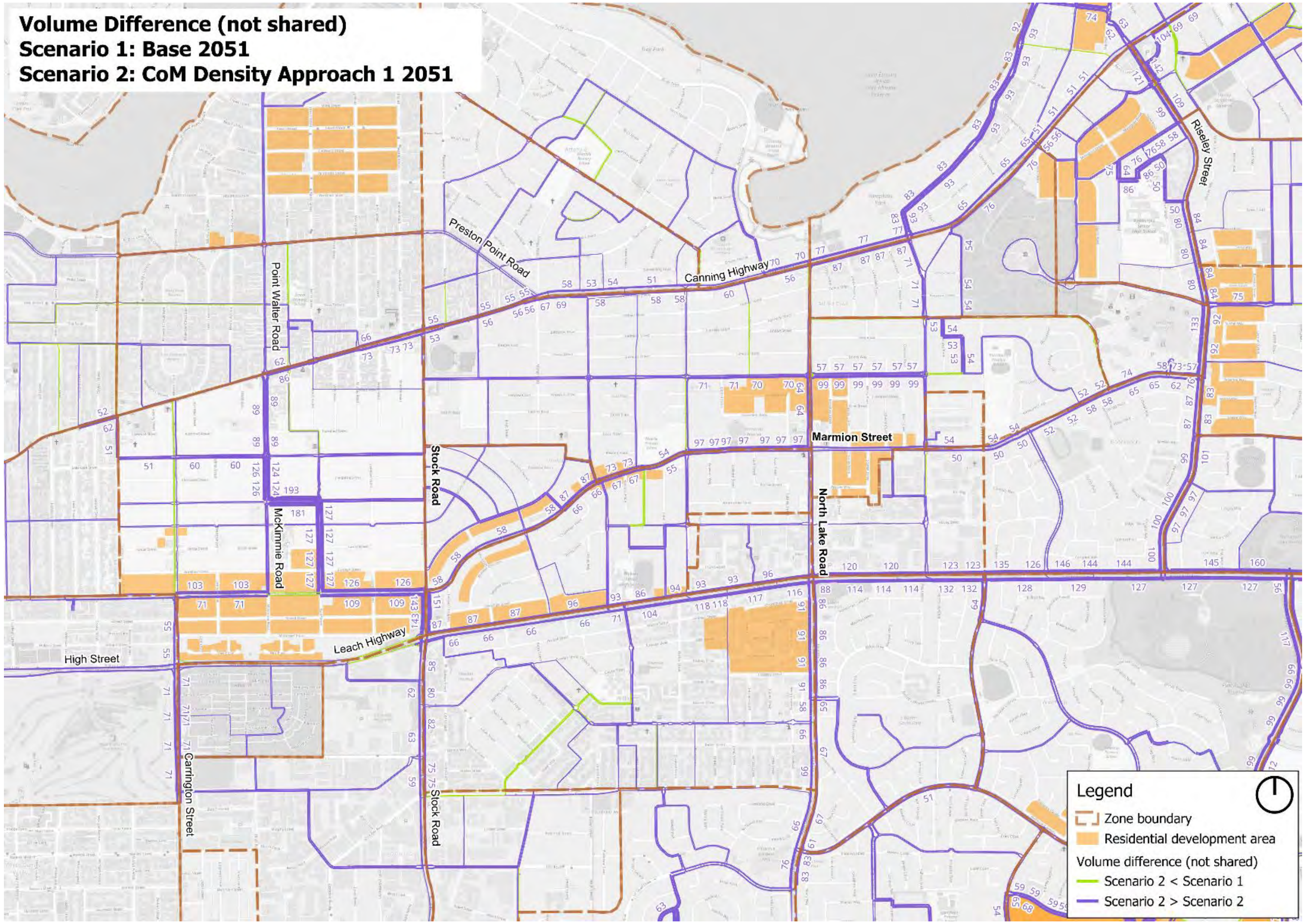


Figure B.43 Change in network flows – 2051 scenario 1 ("CoM Density Approach 1") vs 2051 baseline (not shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

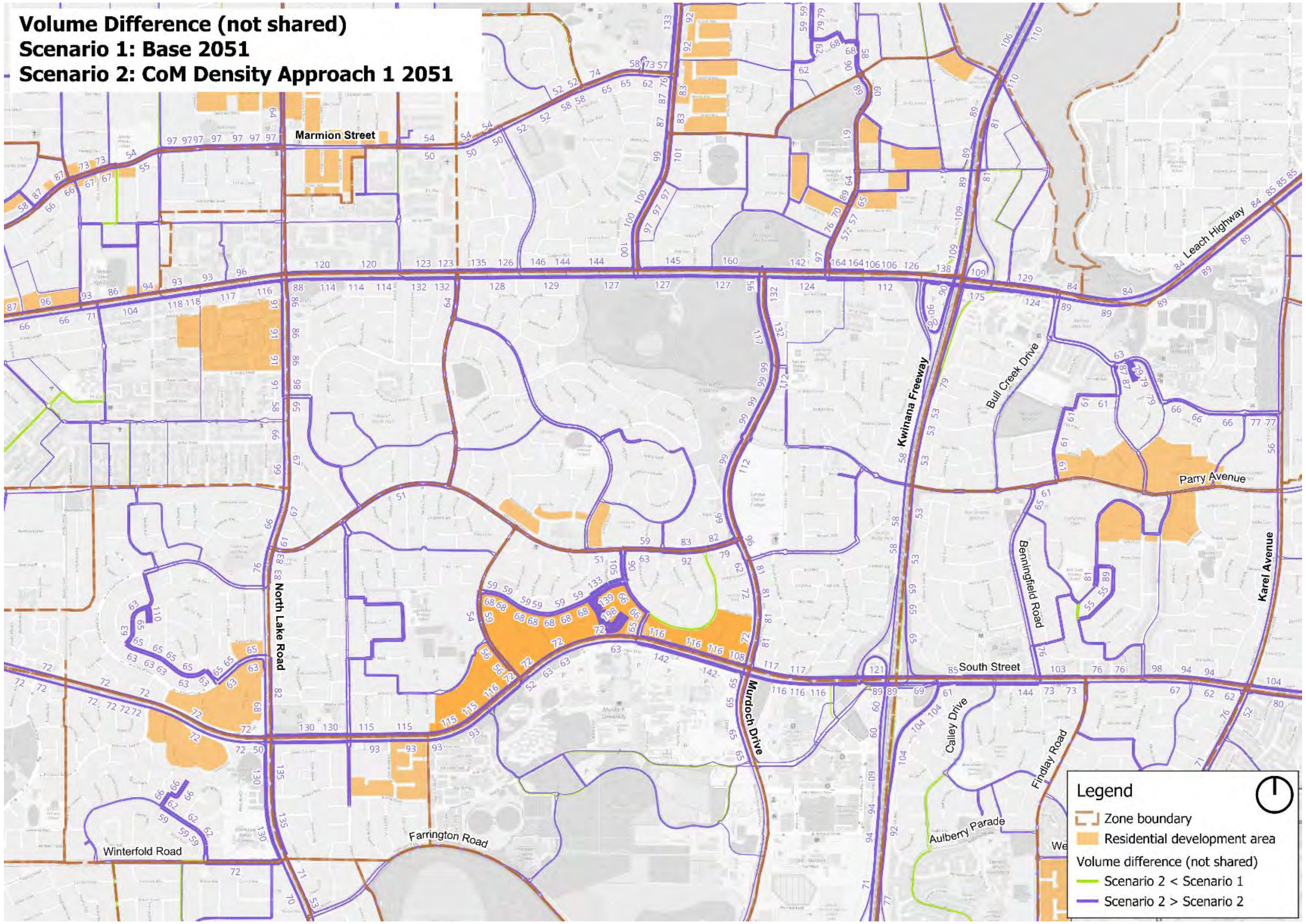


Figure B.44 Change in network flows – 2051 scenario 1 ("CoM Density Approach 1") vs 2051 baseline (not shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

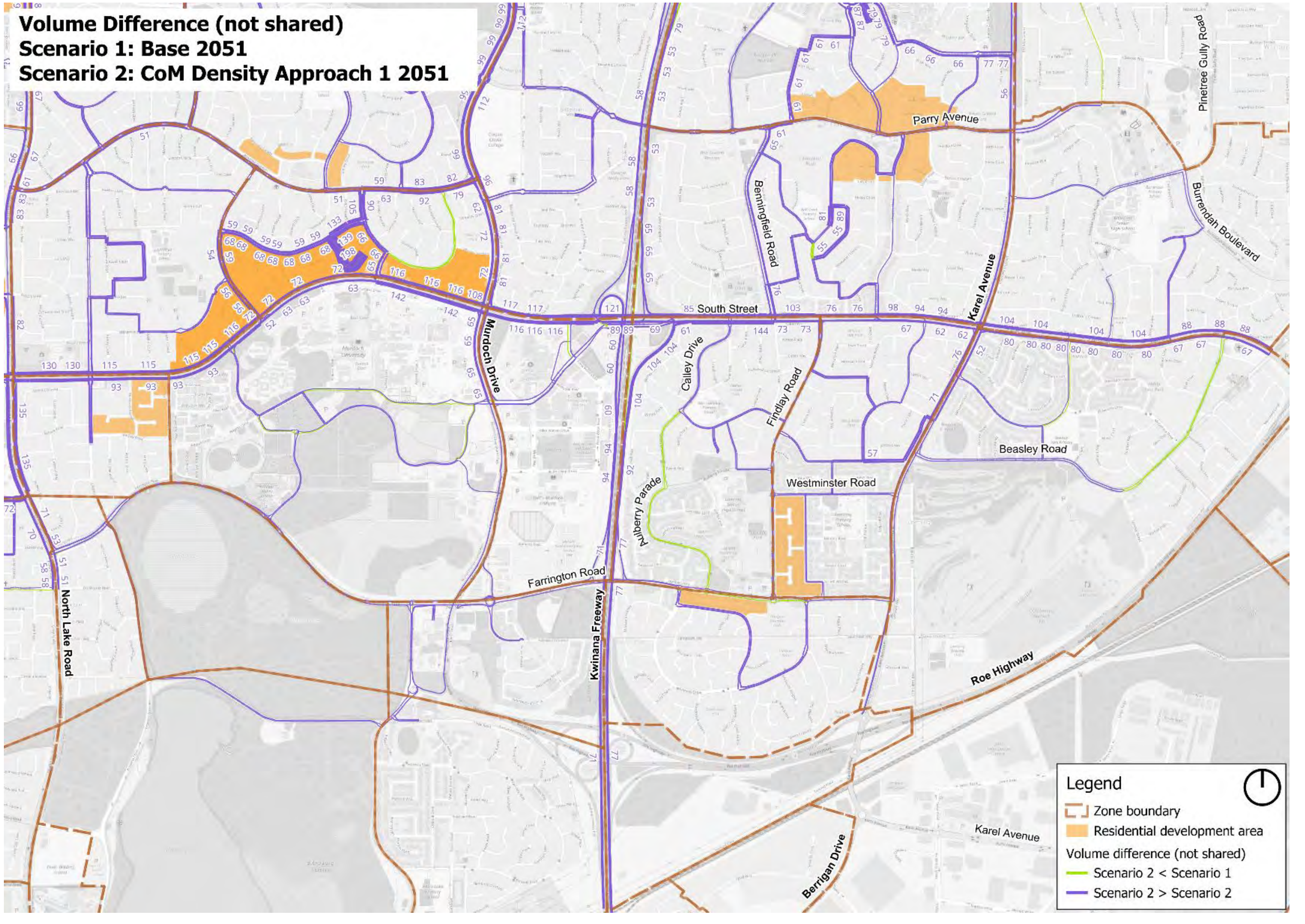


Figure B.45 Change in network flows – 2051 scenario 1 ("CoM Density Approach 1") vs 2051 baseline (not shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

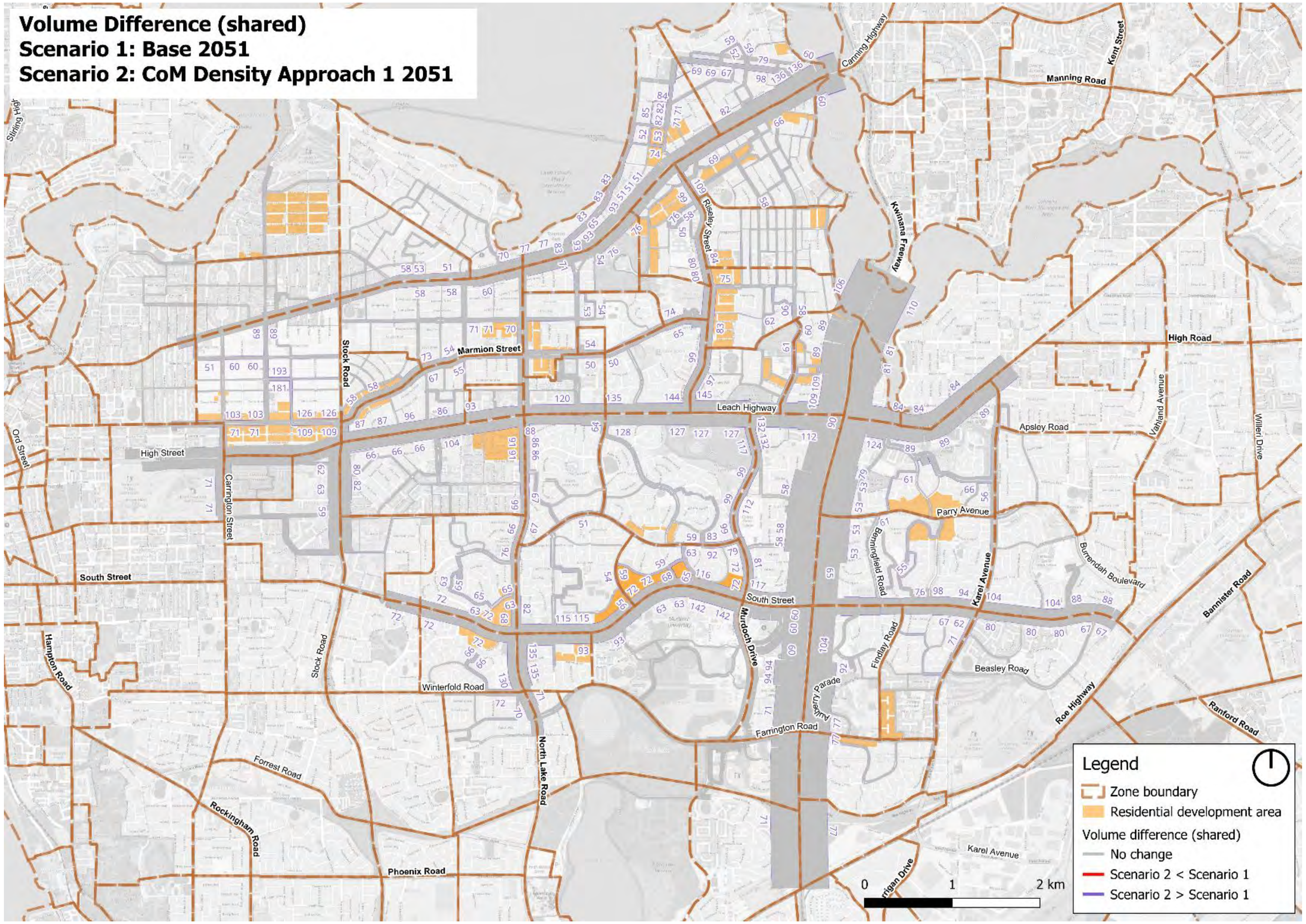


Figure B.46 Change in network flows – 2051 scenario 1 (“CoM Density Approach 1”) vs 2051 baseline (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

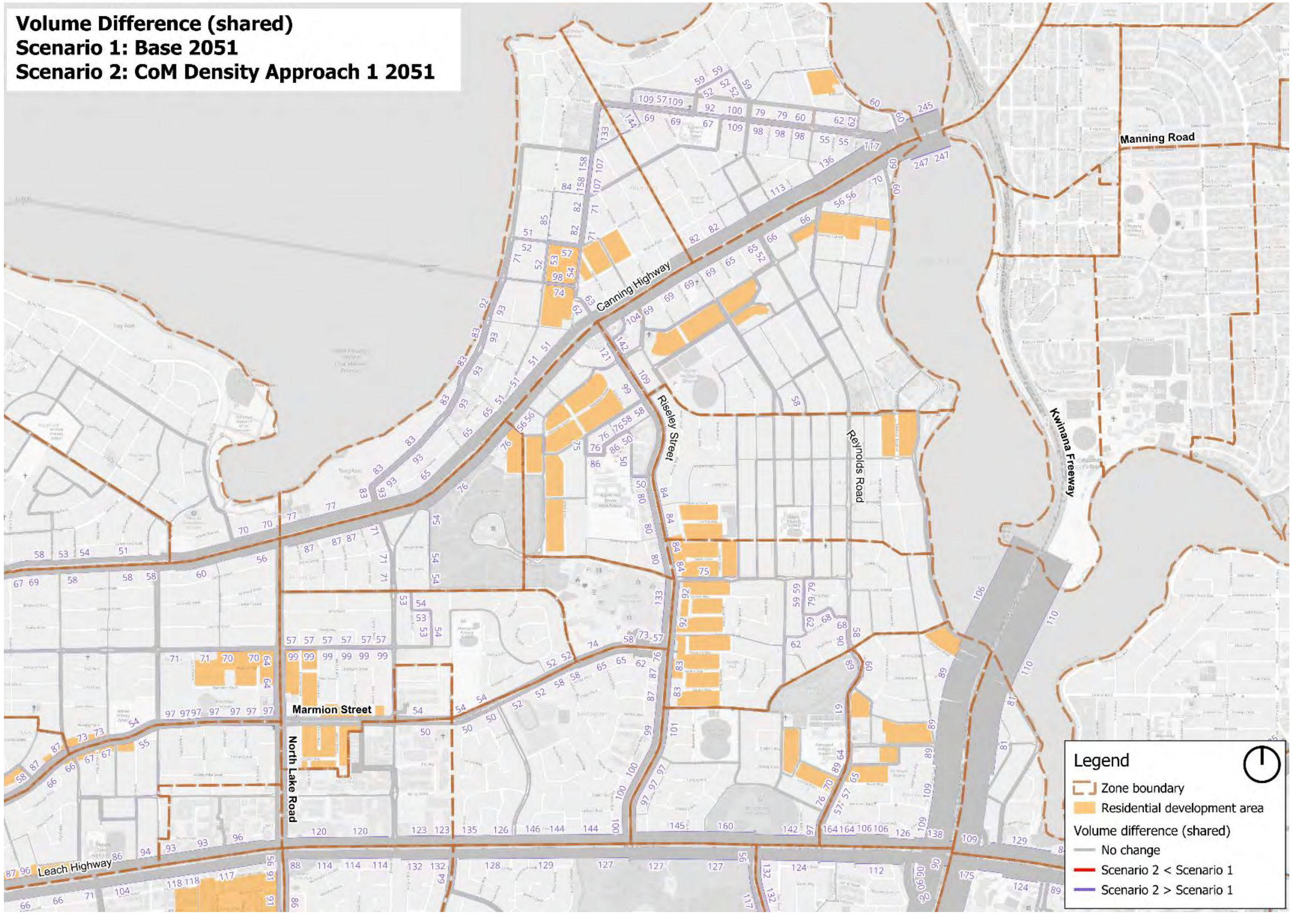


Figure B.47 Change in network flows – 2051 scenario 1 ("CoM Density Approach 1") vs 2051 baseline (shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

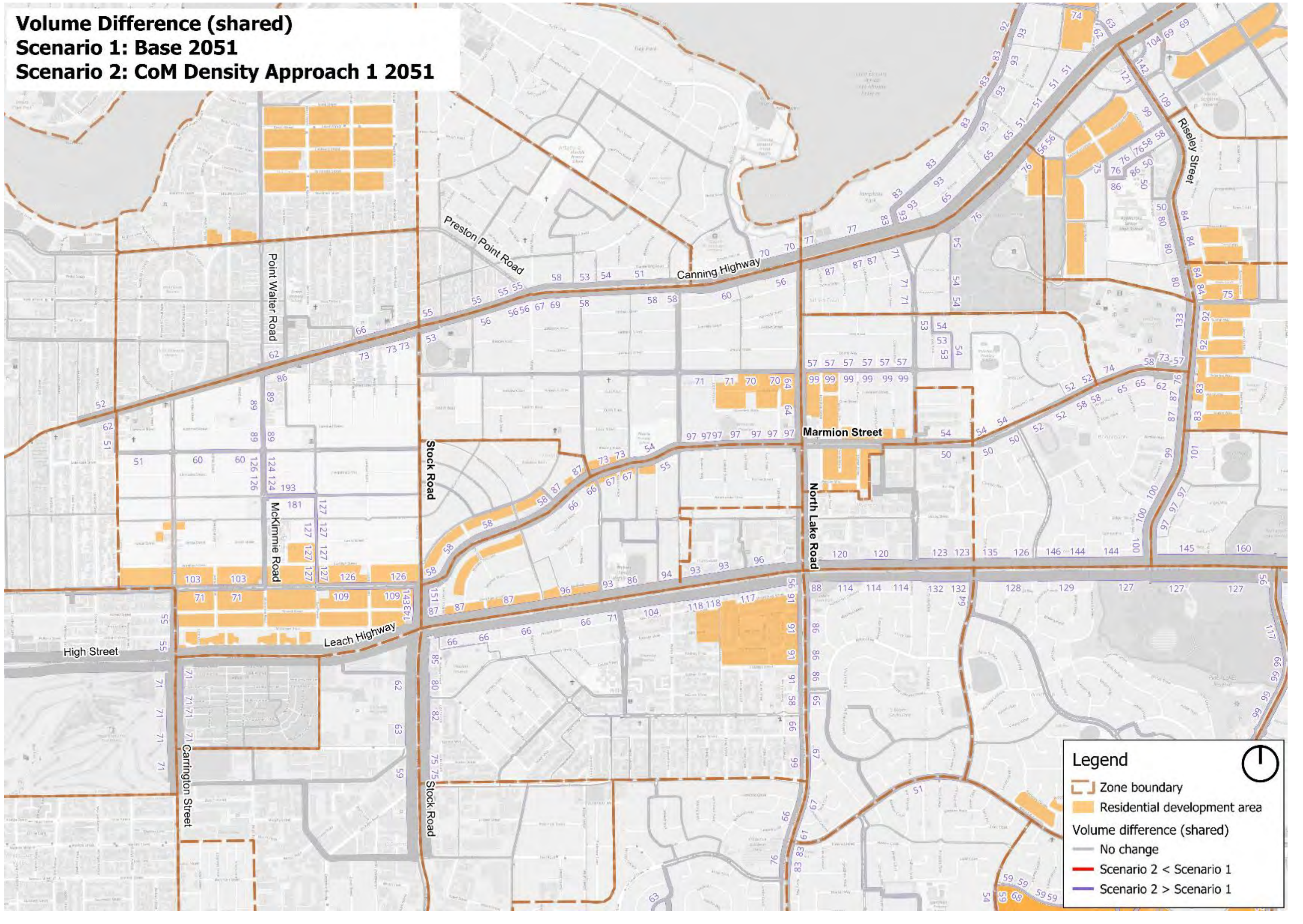


Figure B.48 Change in network flows – 2051 scenario 1 ("CoM Density Approach 1") vs 2051 baseline (shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

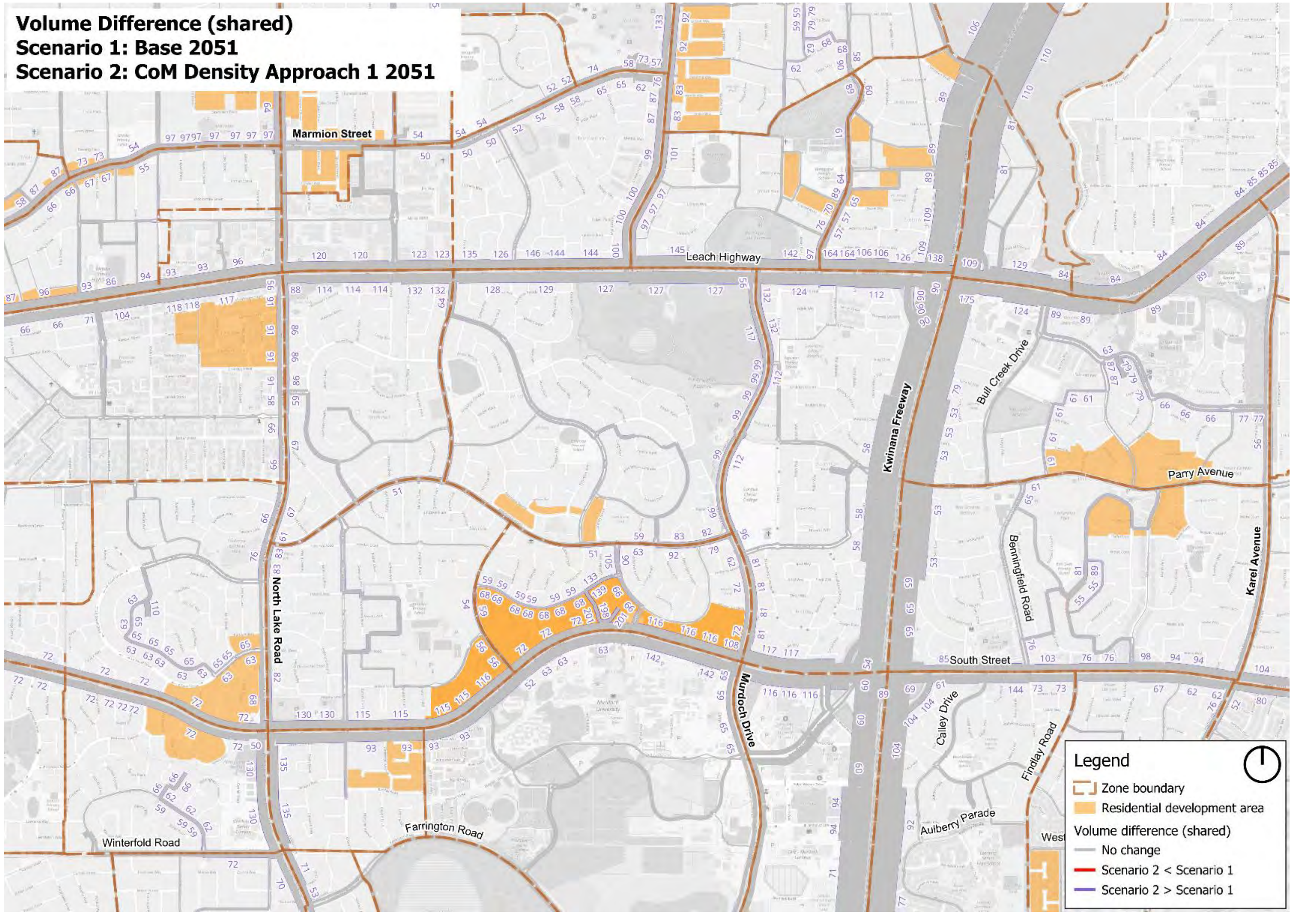


Figure B.49 Change in network flows – 2051 scenario 1 ("CoM Density Approach 1") vs 2051 baseline (shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

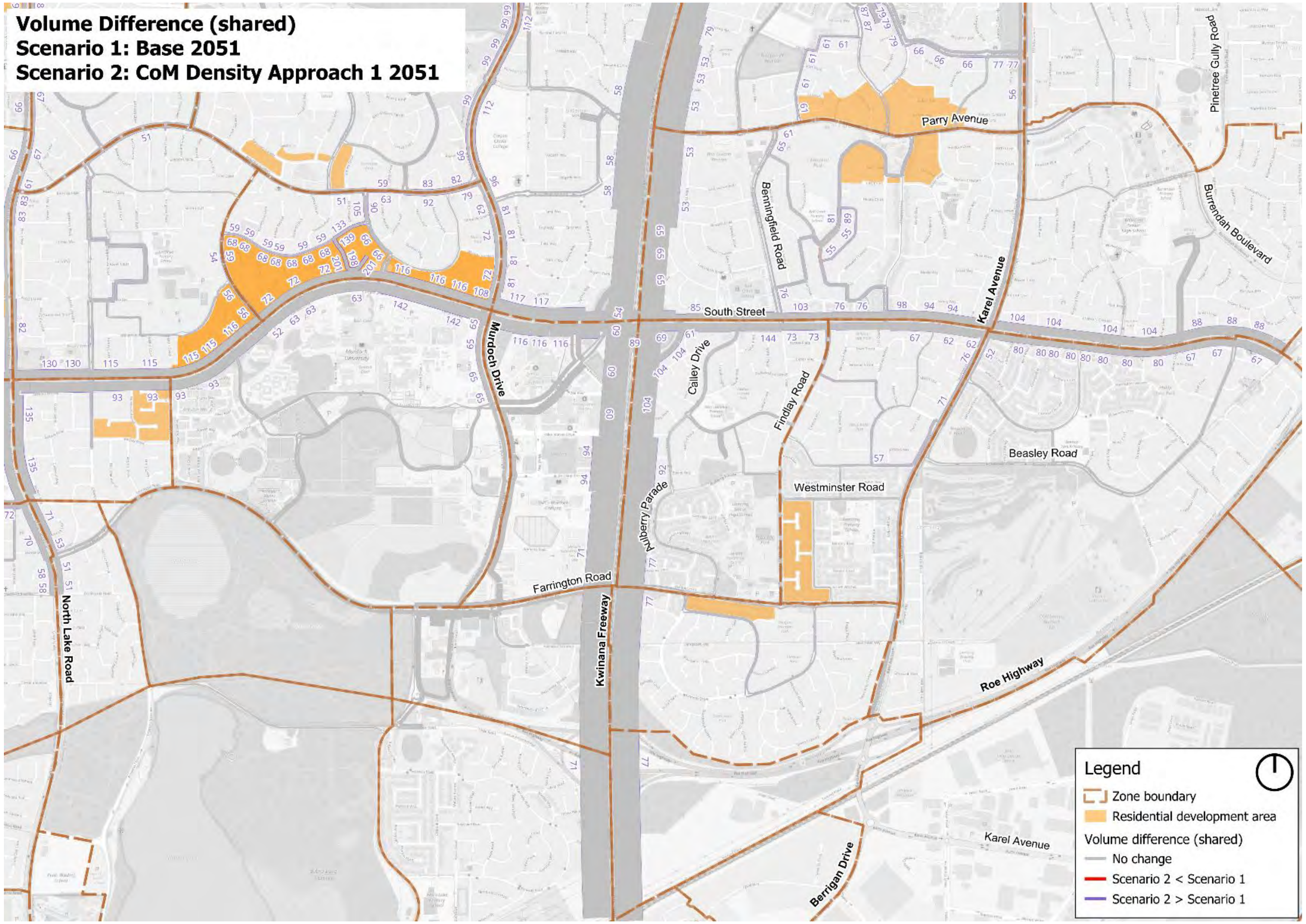


Figure B.50 Change in network flows – 2051 scenario 1 ("CoM Density Approach 1") vs 2051 baseline (shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

B6 2051 scenario 2 ("CoM Density Approach 2") versus 2051 baseline

This section summarises the difference in peak hour network flows between the 2051 scenario 2 ("CoM Density Approach 2") and the 2051 scenario 1 ("CoM Density Approach 1") traffic assignment model. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

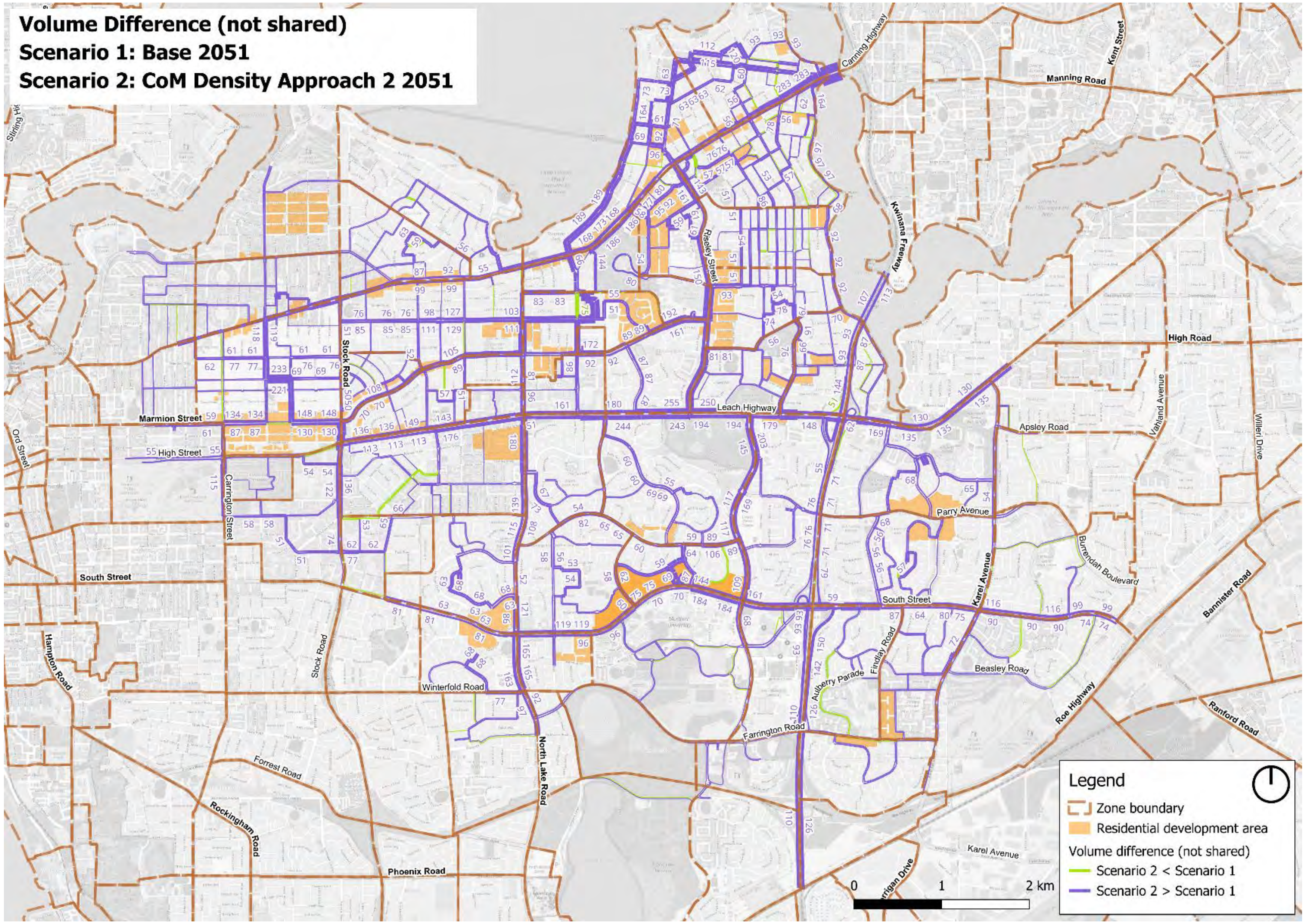


Figure B.51 Change in network flows – 2051 scenario 2 ("CoM Density Approach 2") vs 2051 baseline

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

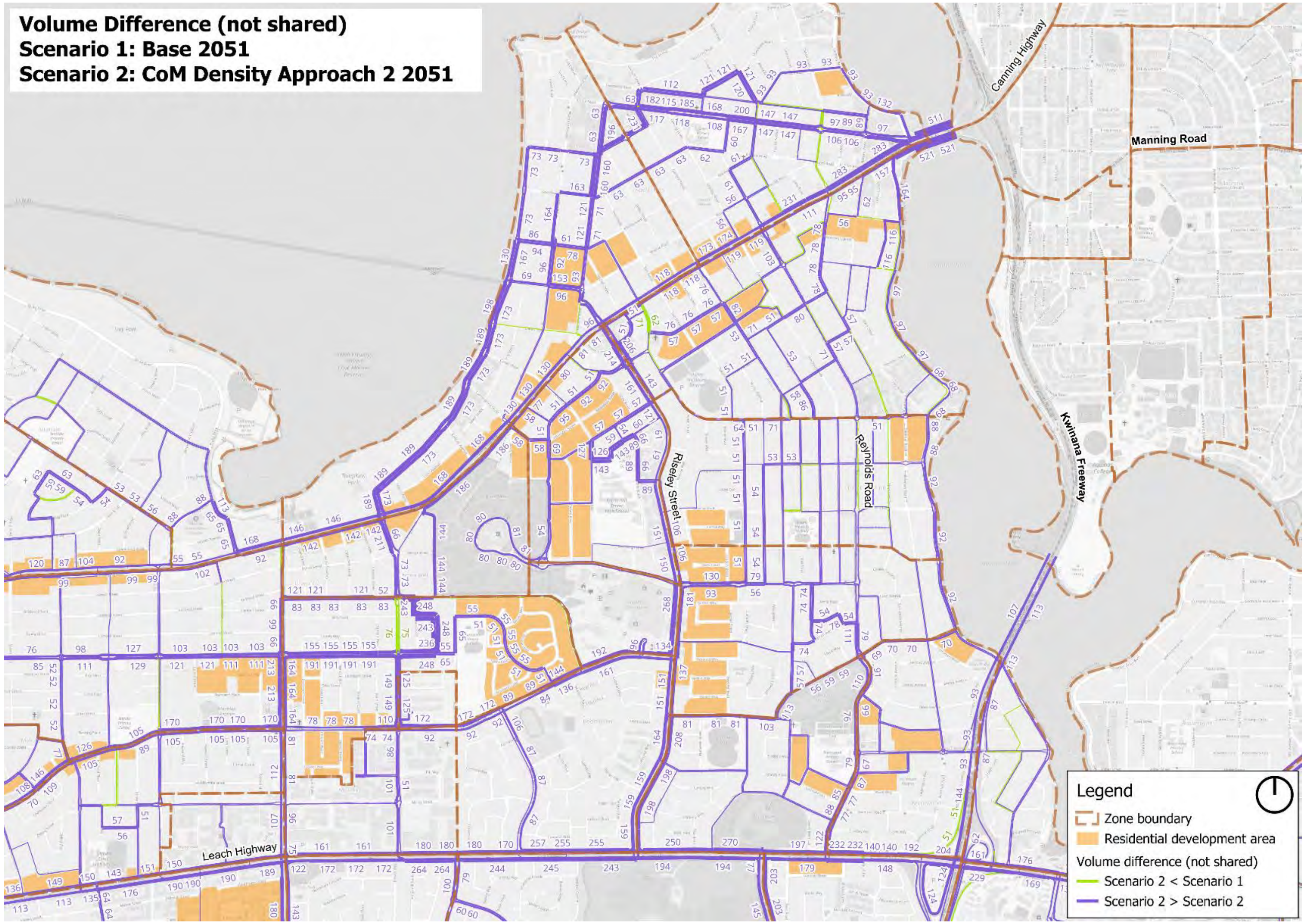


Figure B.52 Change in network flows – 2051 scenario 2 (“CoM Density Approach 2”) vs 2051 baseline (not shared) (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

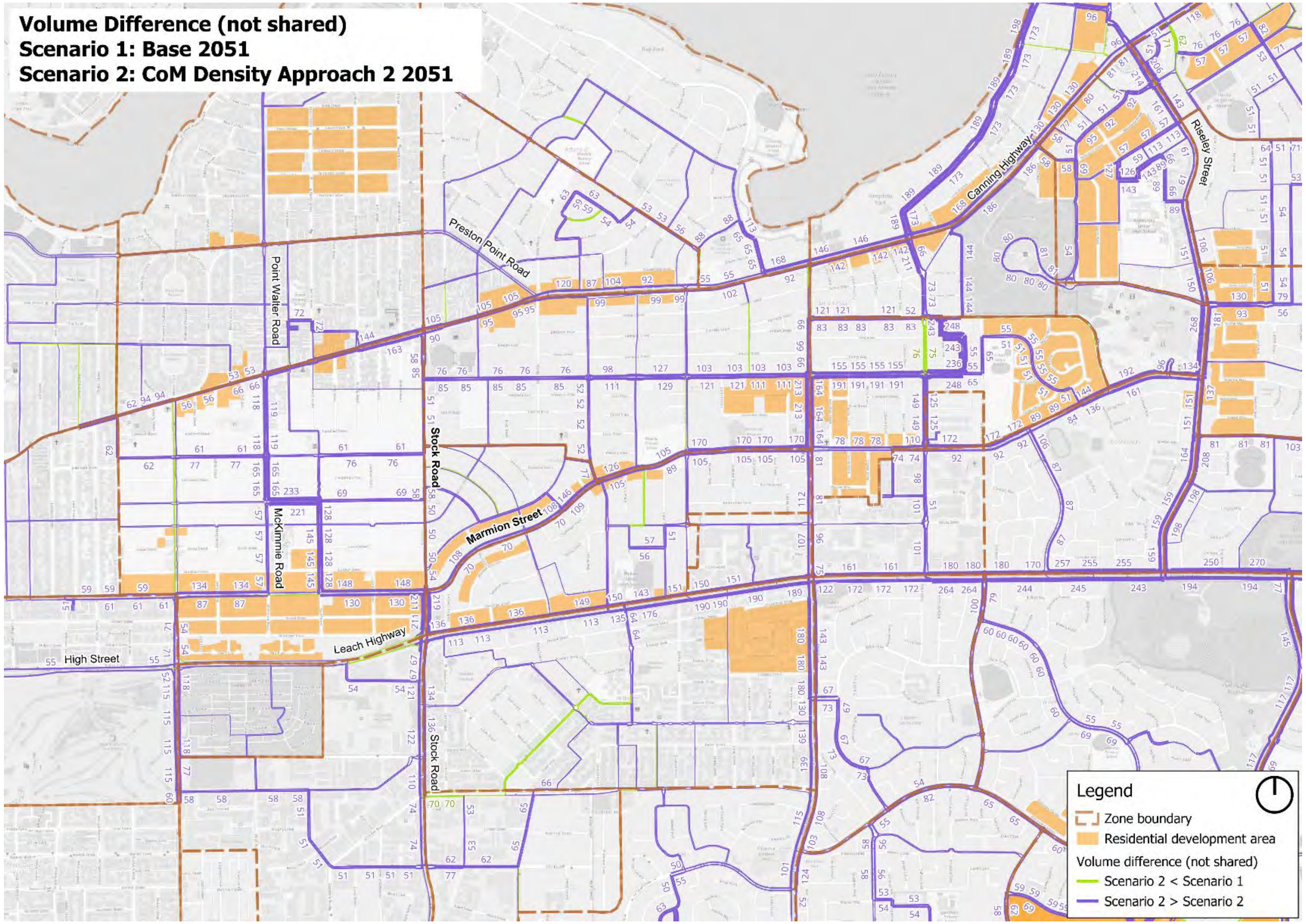


Figure B.53 Change in network flows – 2051 scenario 2 ("CoM Density Approach 2") vs 2051 baseline (not shared) (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

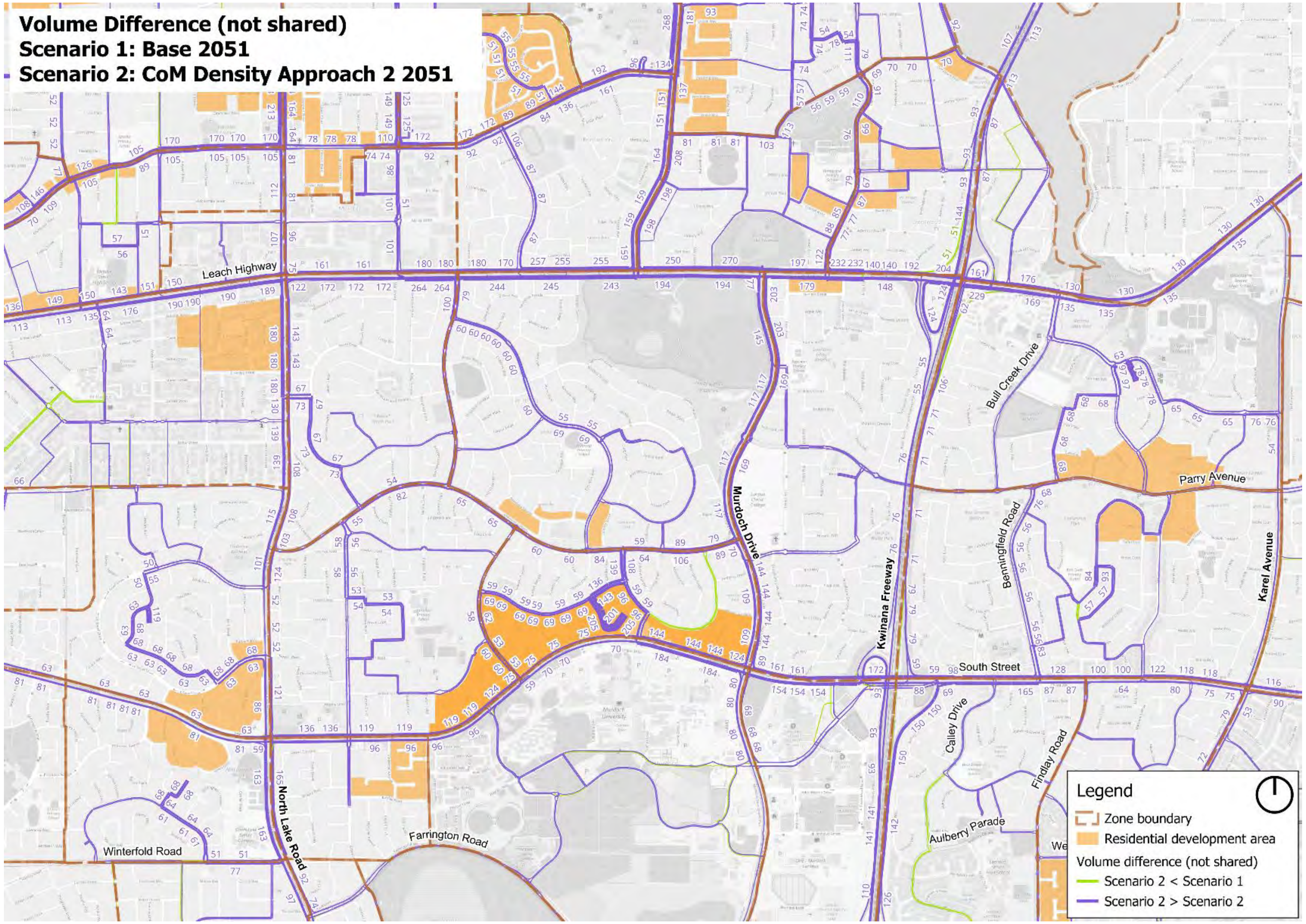


Figure B.54 Change in network flows – 2051 scenario 2 ("CoM Density Approach 2") vs 2051 baseline (not shared) (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

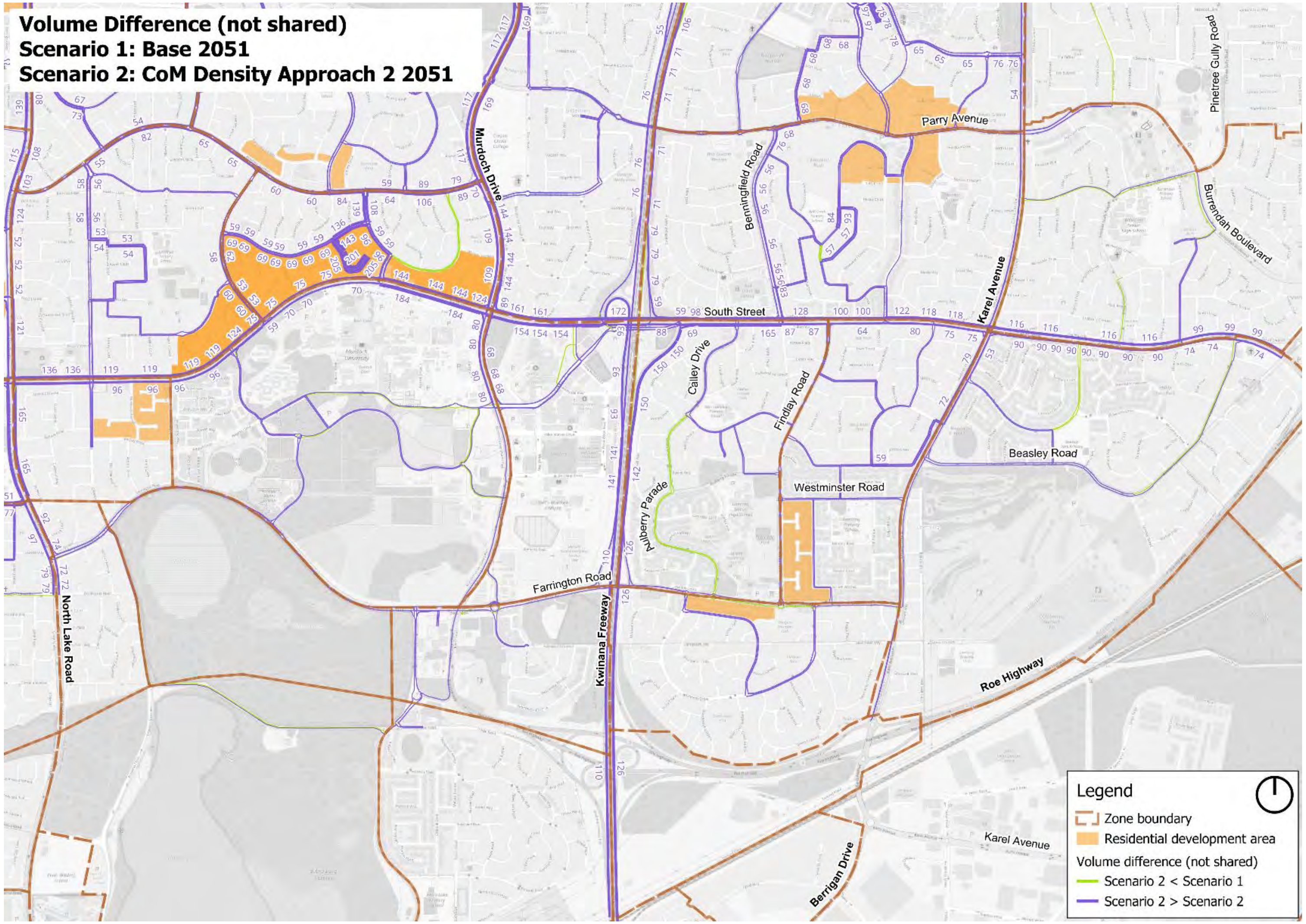


Figure B.55 Change in network flows – 2051 scenario 2 ("CoM Density Approach 2") vs 2051 baseline (not shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

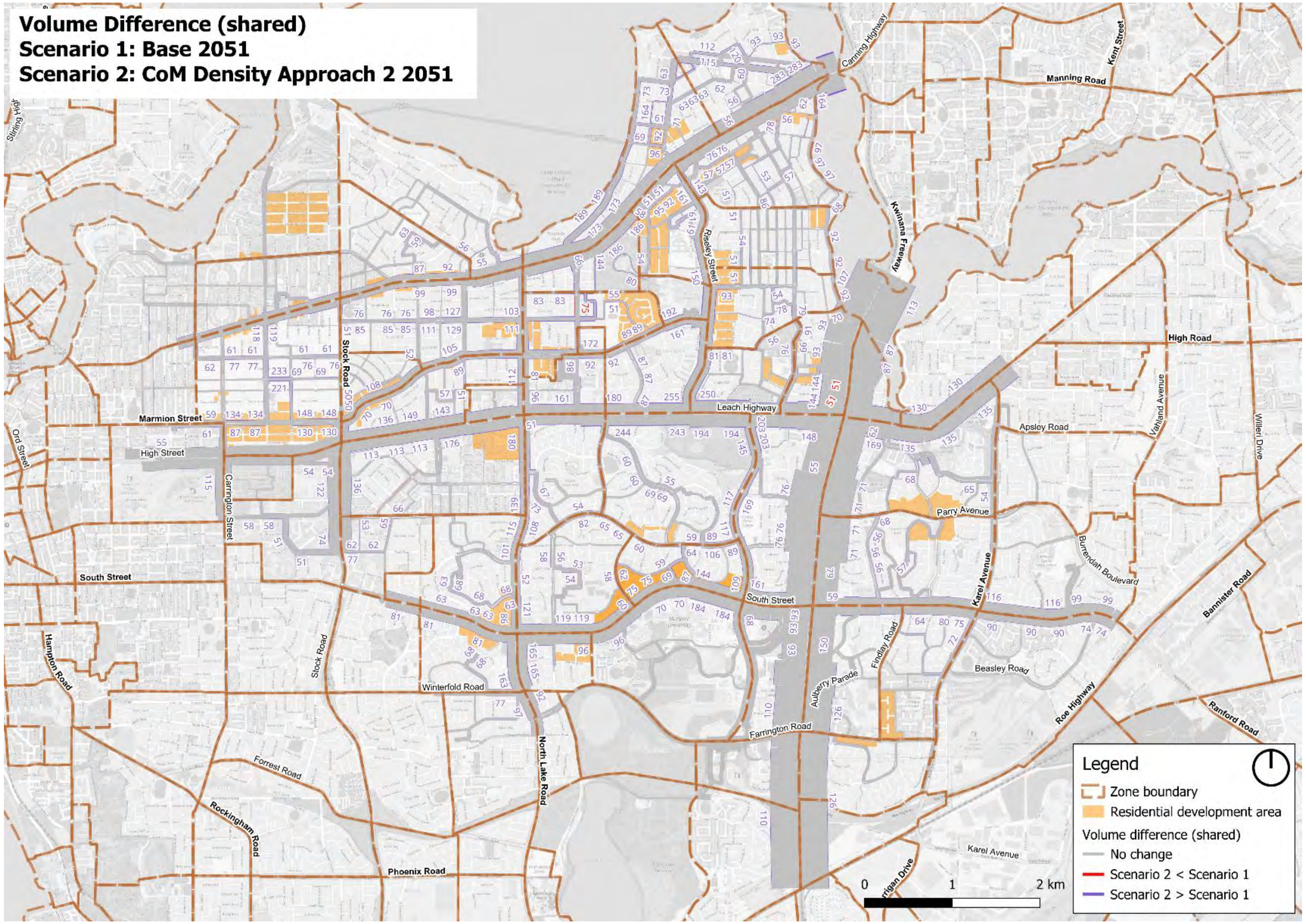


Figure B.56 Change in network flows – 2051 scenario 2 (“CoM Density Approach 2”) vs 2051 baseline (shared)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

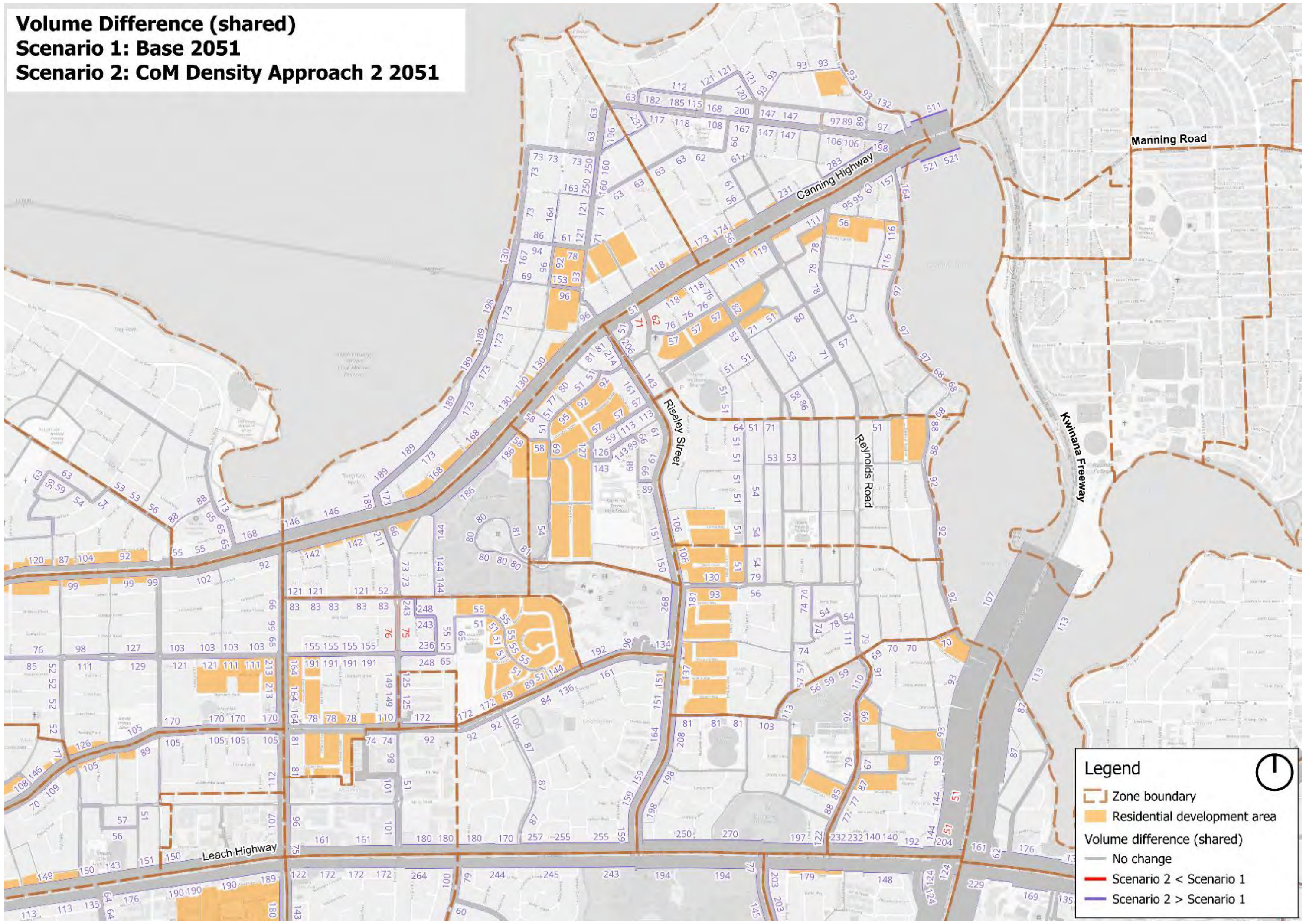


Figure B.57 Change in network flows – 2051 scenario 2 ("CoM Density Approach 2") vs 2051 baseline (zoomed, Canning Highway)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

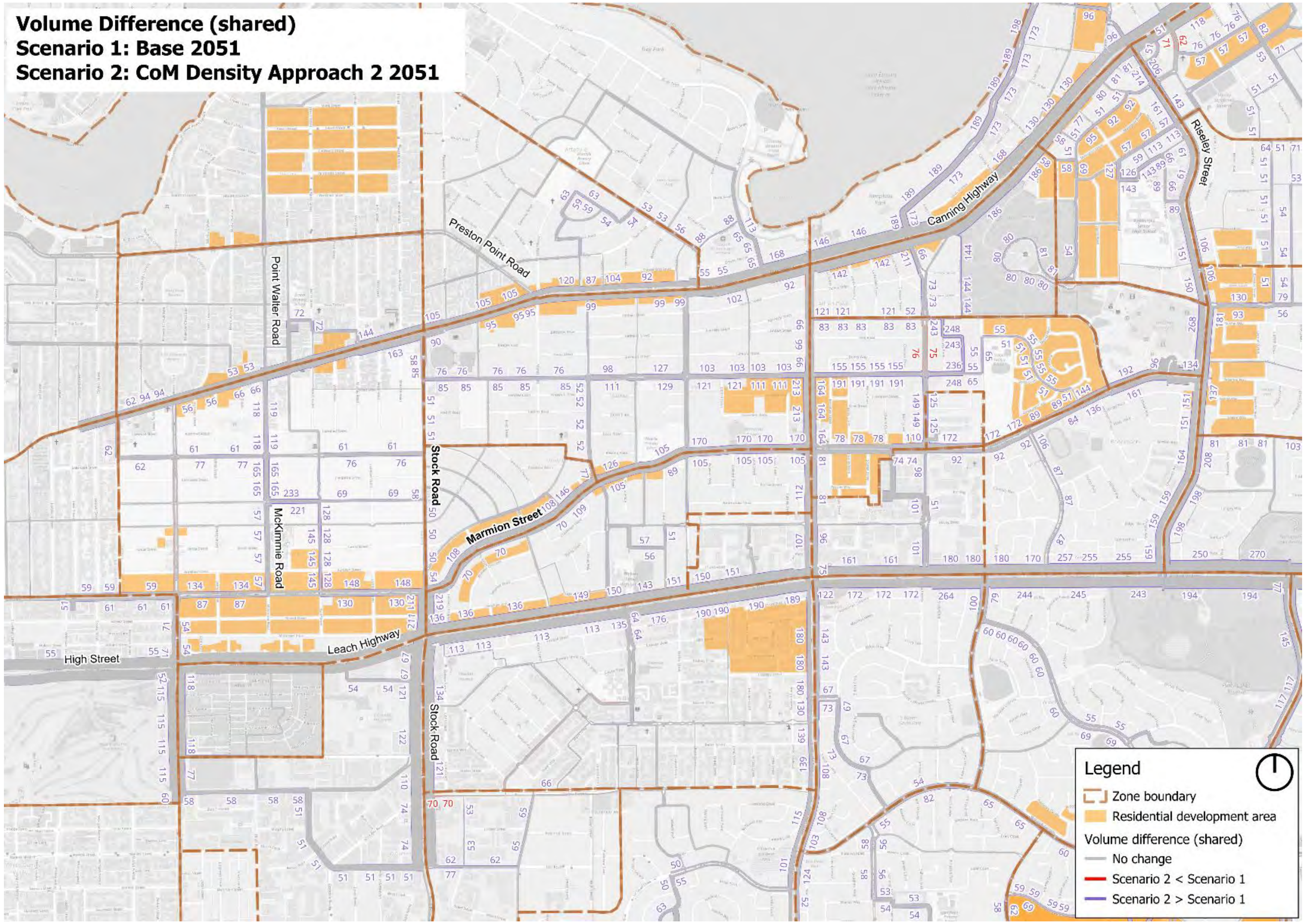


Figure B.58 Change in network flows – 2051 scenario 2 ("CoM Density Approach 2") vs 2051 baseline (zoomed, Stock Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

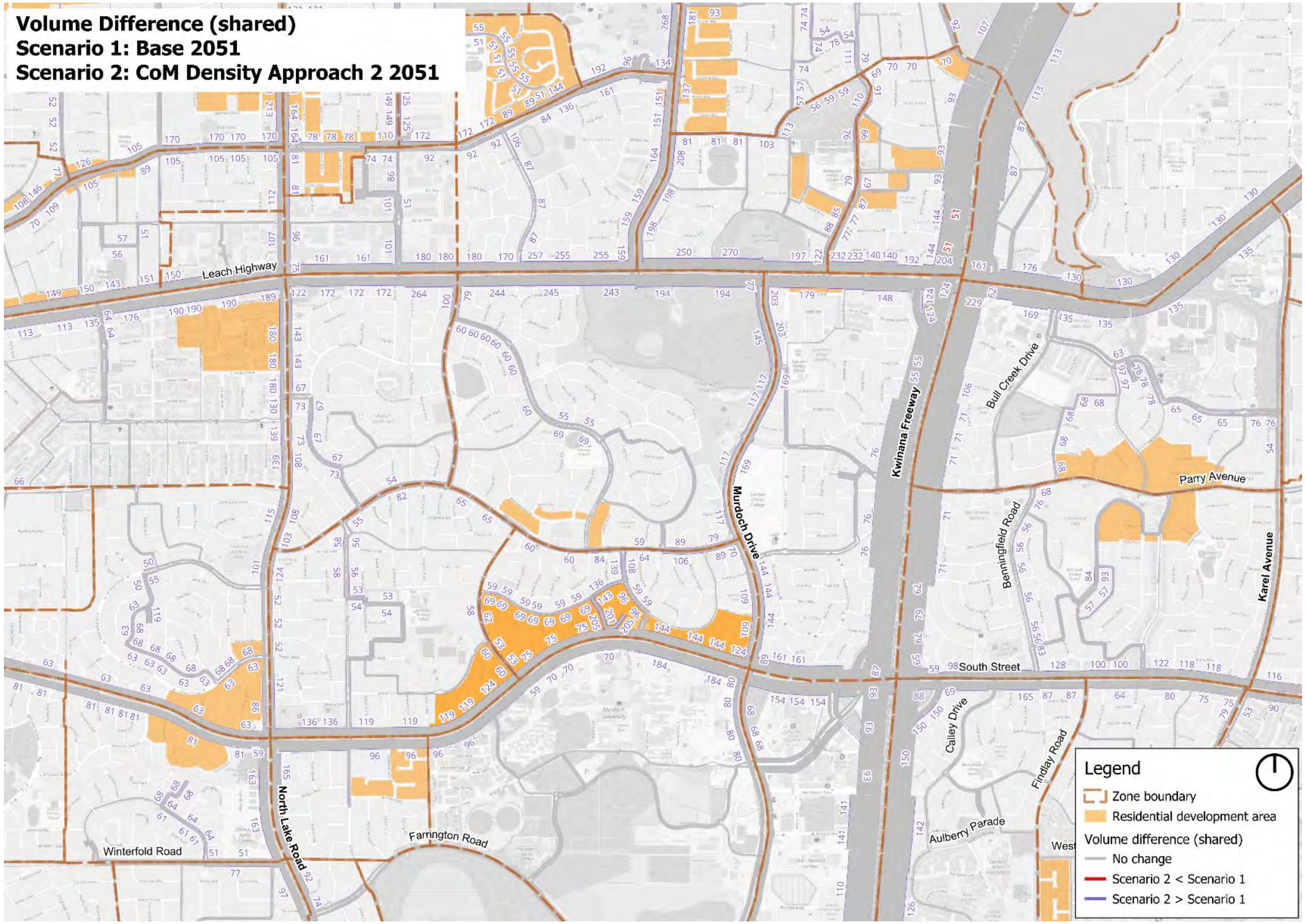


Figure B.59 Change in network flows – 2051 scenario 2 ("CoM Density Approach 2") vs 2051 baseline (zoomed, Leach Highway and South Street)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

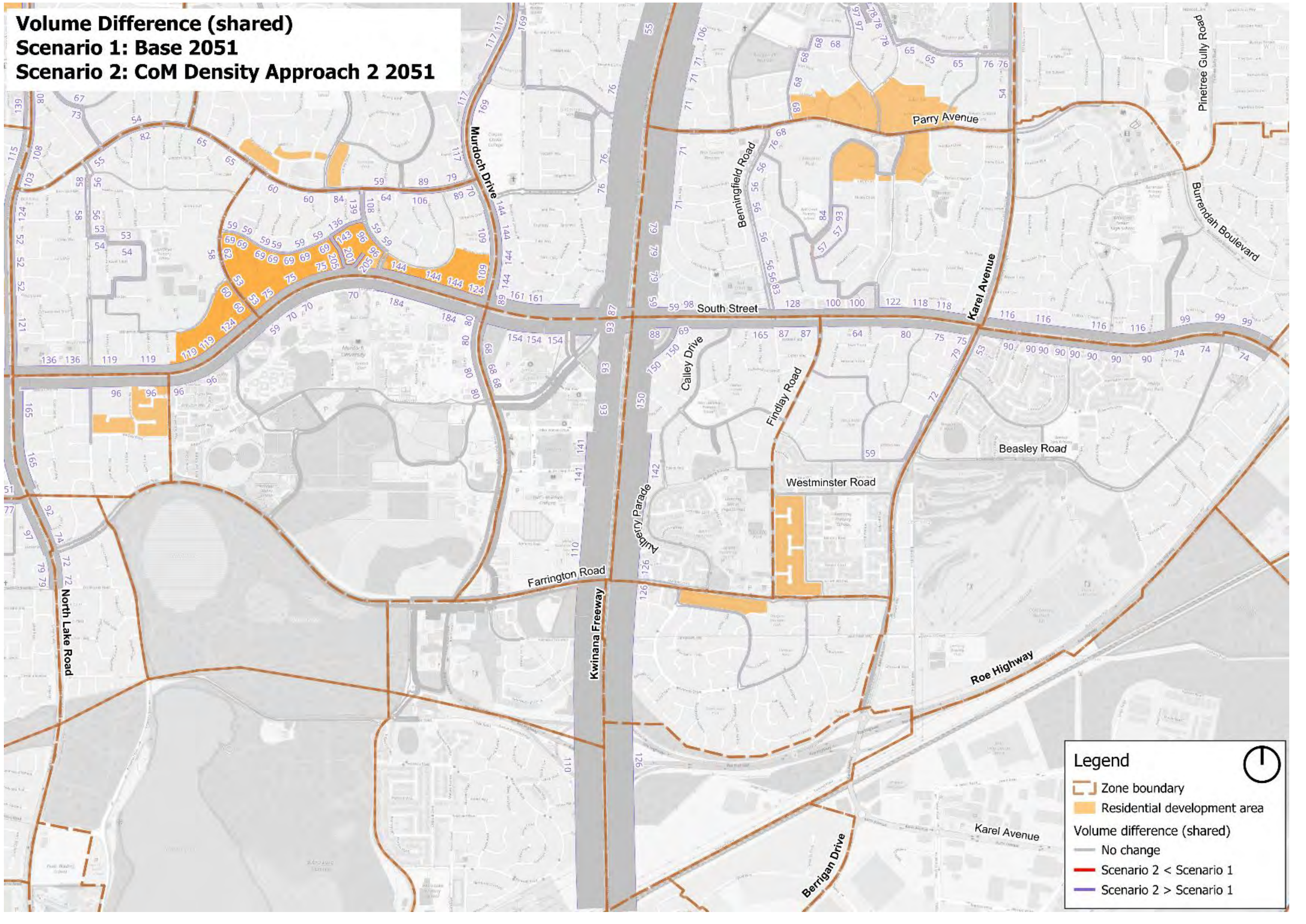


Figure B.60 Change in network flows – 2051 scenario 2 ("CoM Density Approach 2") vs 2051 baseline (shared) (zoomed, Farrington Road)

Notes These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM)

Appendix C

Forecast network congestion and intersection performance

C0 Overview

This section summarises the peak hour network congestion, indicated by volume-capacity ratios on road corridors and intersection performance, from the traffic assignment model and SIDRA intersection modelling, respectively. The underlying network flows are based on estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

The results are summarised in:
(note: *section numbers and names are clickable links*)

Section C1: 2026 existing conditions

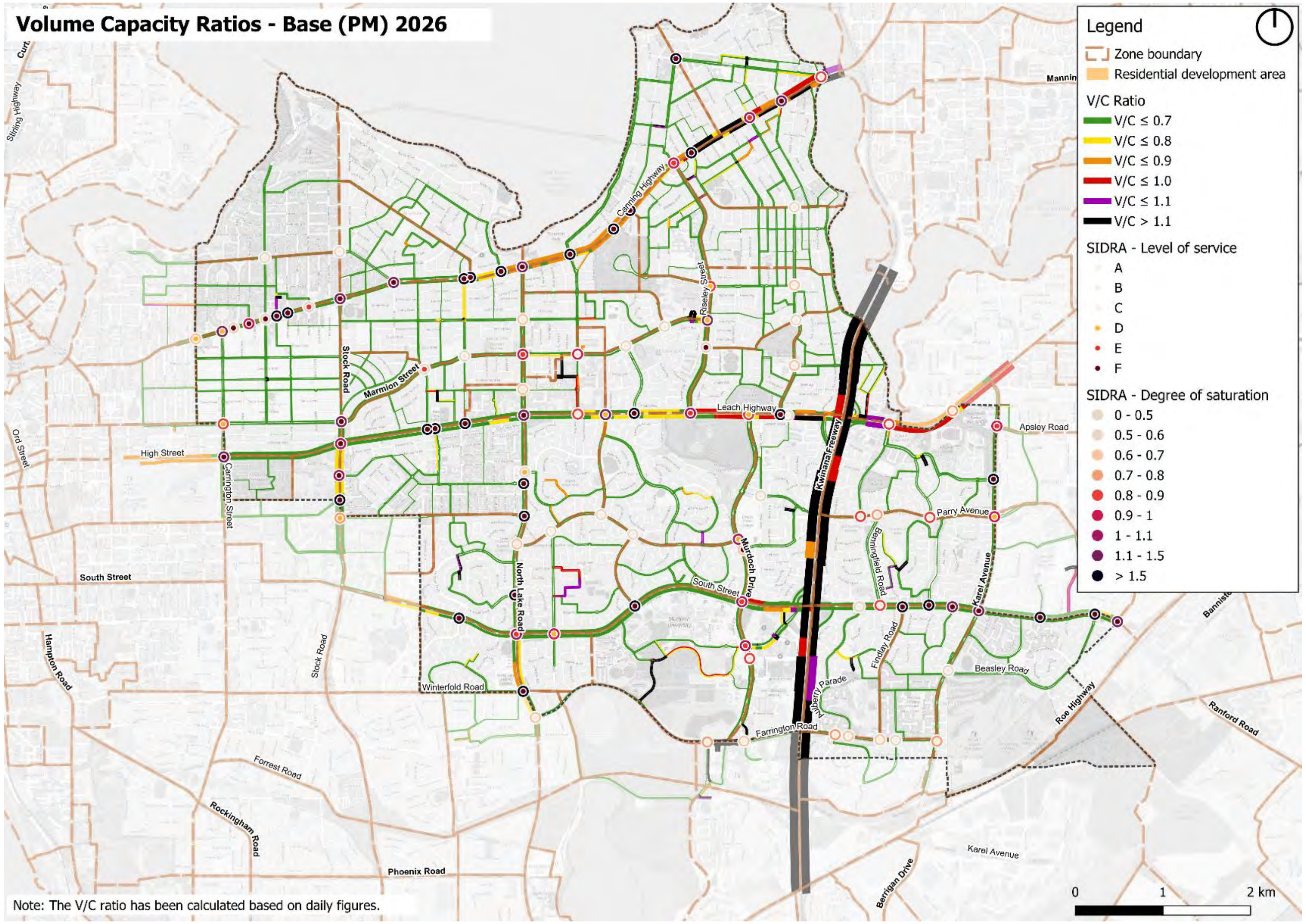
Section 0: 

Figure C.6 Existing network volume-capacity ratios and intersection performance– 2026 Base PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

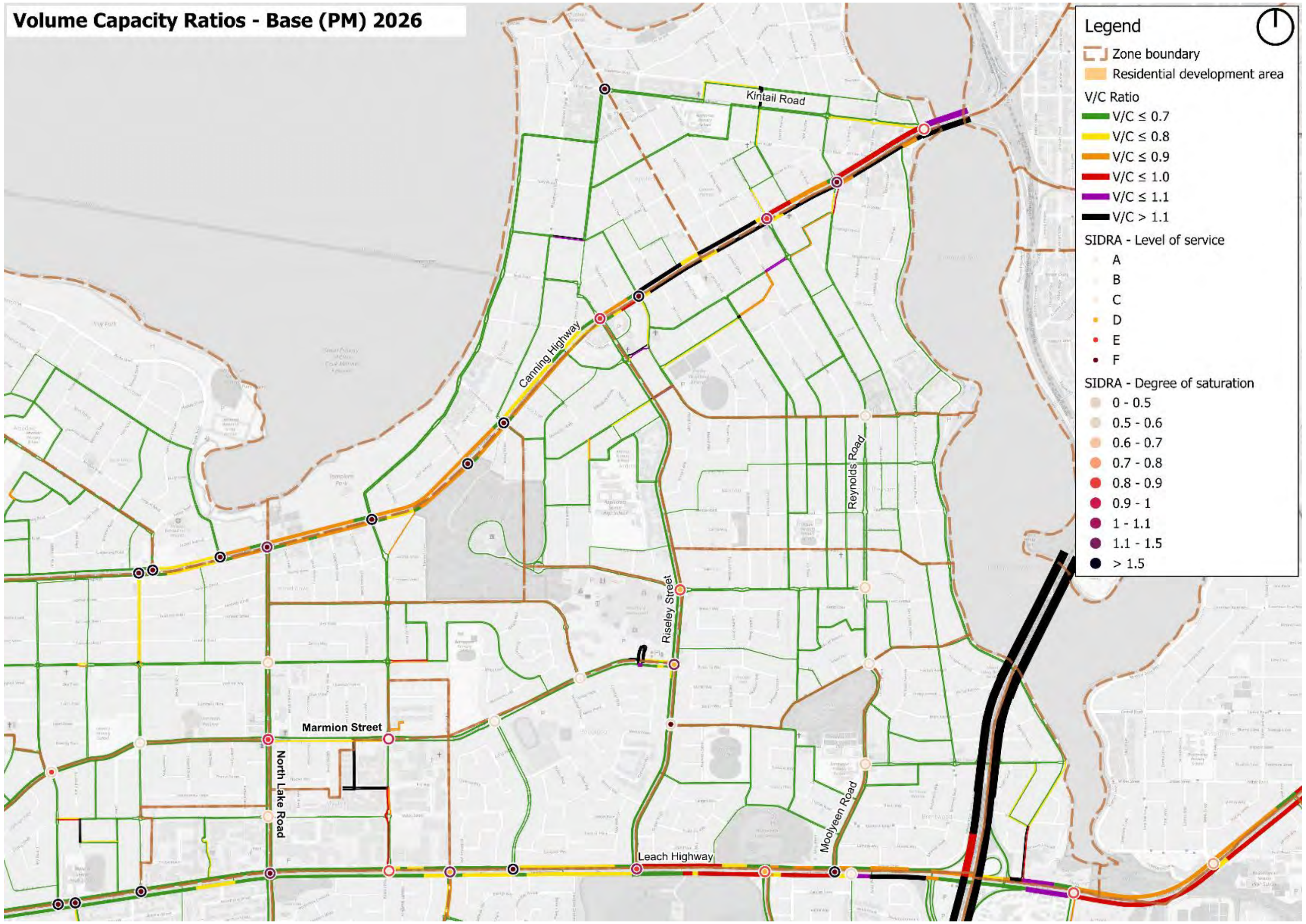


Figure C.7 Existing network volume-capacity ratios and intersection performance– 2026 Base PM (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

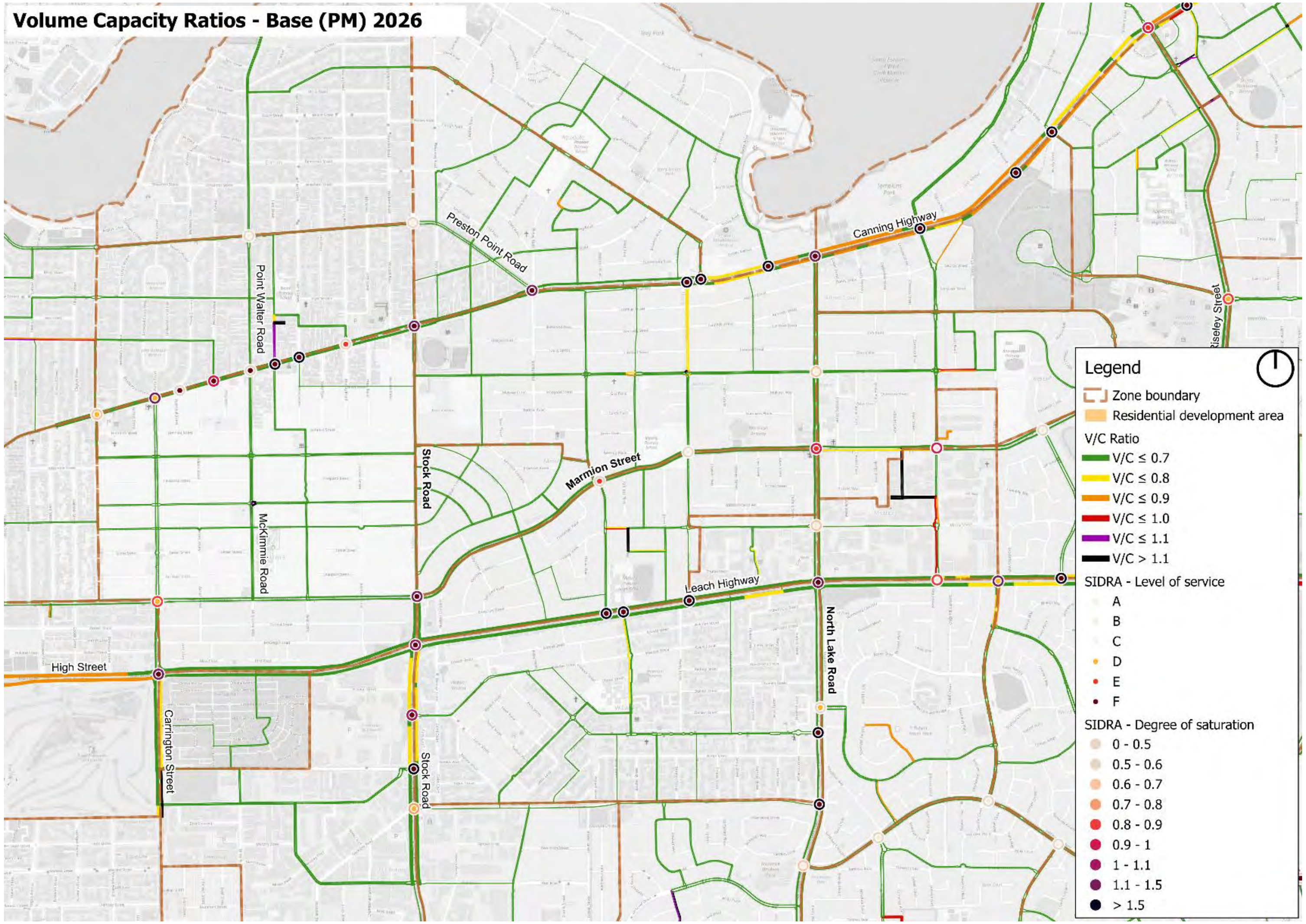


Figure C.8 Existing network volume-capacity ratios and intersection performance– 2026 Base PM (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

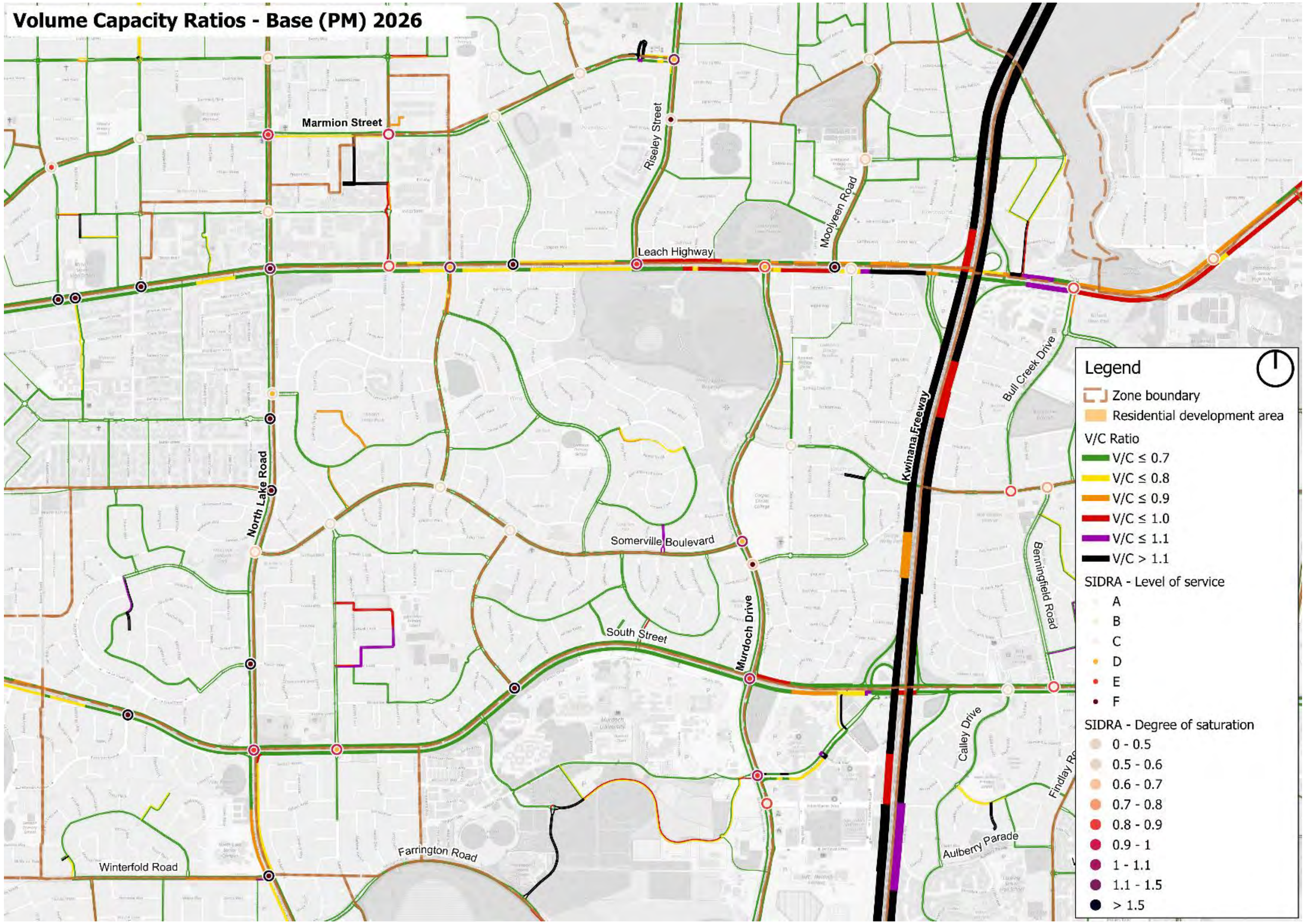


Figure C.9 Existing network volume-capacity ratios and intersection performance– 2026 Base PM (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

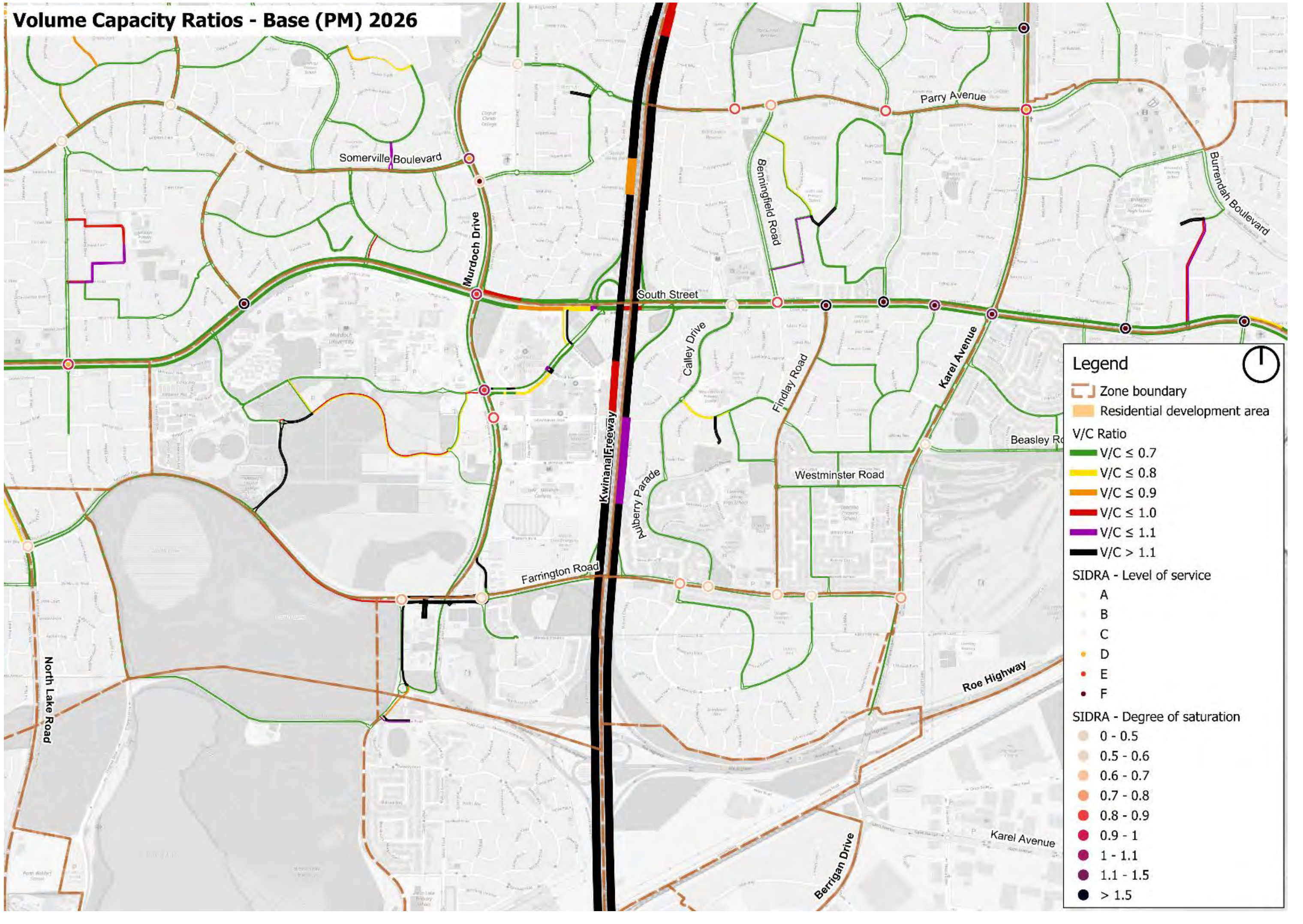


Figure C.10 Existing network volume-capacity ratios and intersection performance– 2026 Base PM (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

2041 baseline

Section C3: 2041 scenario 1 (“CoM Density Approach 1”)

Section C4: 2041 scenario 2 (“CoM Density Approach 2”)

Section C5: 2051 baseline

Section C6: 2051 scenario 1 (“CoM Density Approach 1”)

Section C7: 2051 scenario 2 (“CoM Density Approach 2”)

Separate plots are provided for the AM and PM peak hours to indicate different intersection performances. However, the volume-capacity ratio results are the same between these plots, as they are based on estimated peak hour flows, factored from a daily demand model.

C1 2026 existing conditions

This section summarises the peak hour network congestion, indicated by volume-capacity ratios on road corridors and intersection performance, from the traffic assignment model and SIDRA intersection modelling, respectively, for the 2026 existing conditions. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

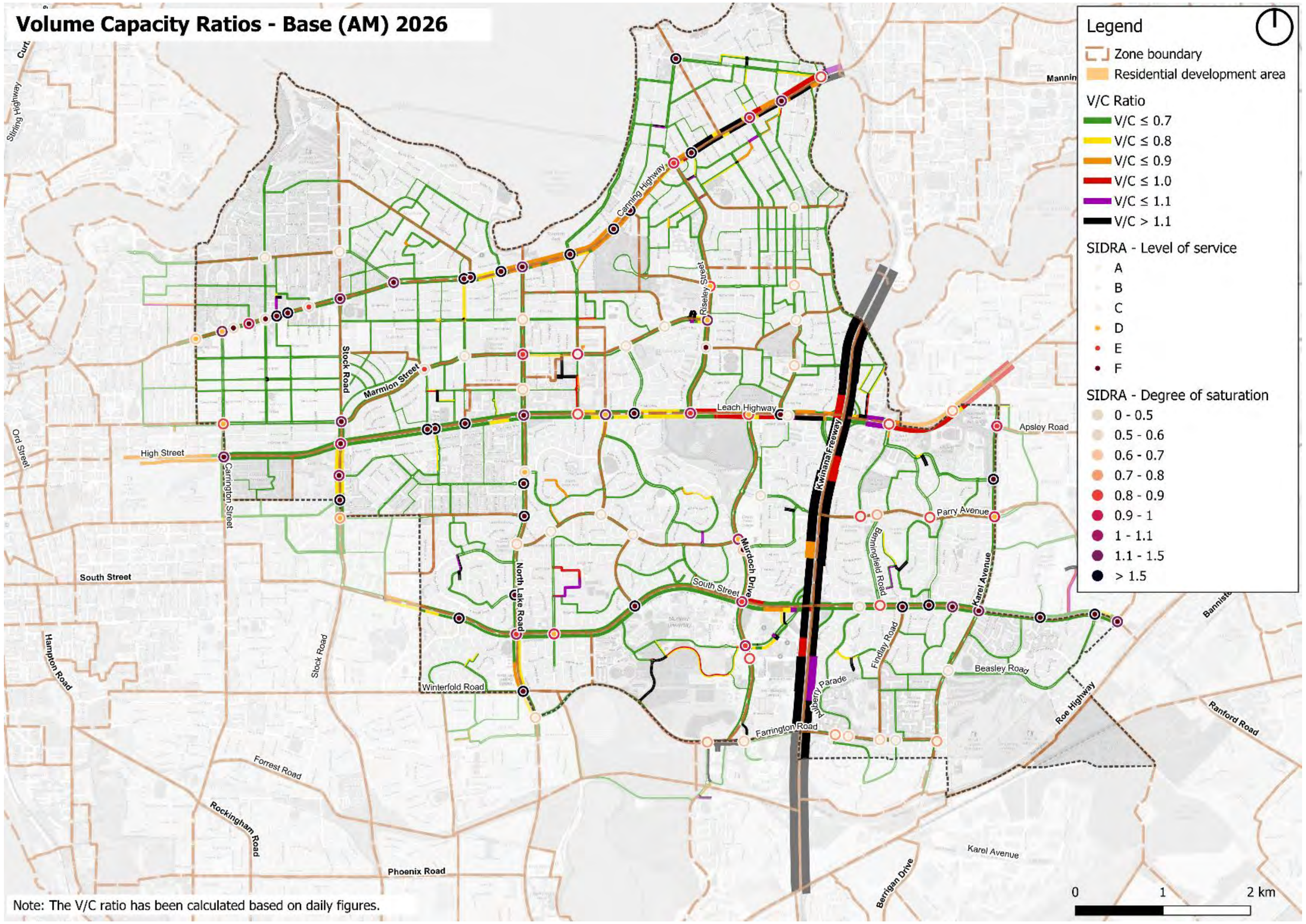


Figure C.1 Existing network volume-capacity ratios and intersection performance– 2026 Base AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

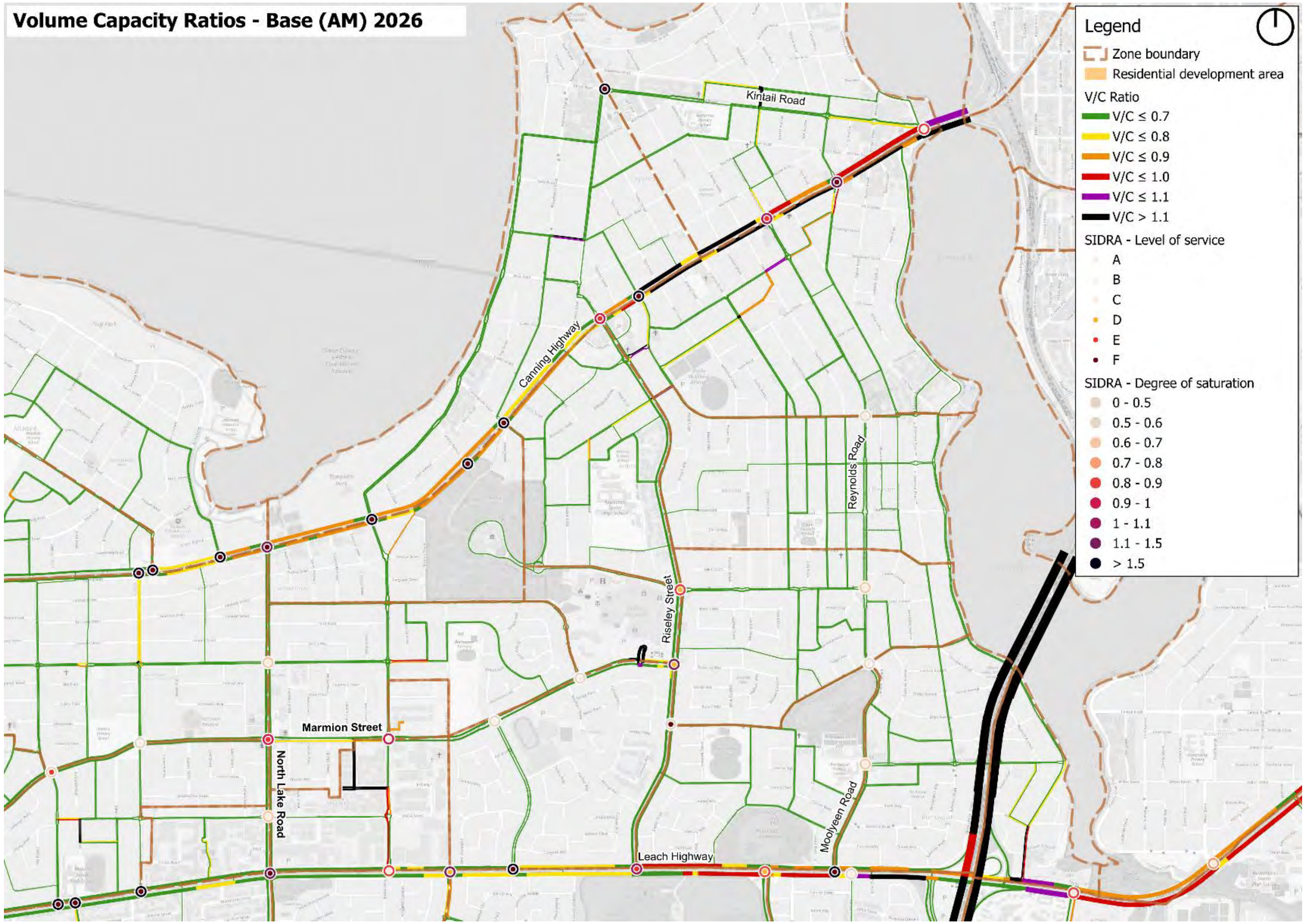


Figure C.2 Existing network volume-capacity ratios and intersection performance– 2026 Base AM (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

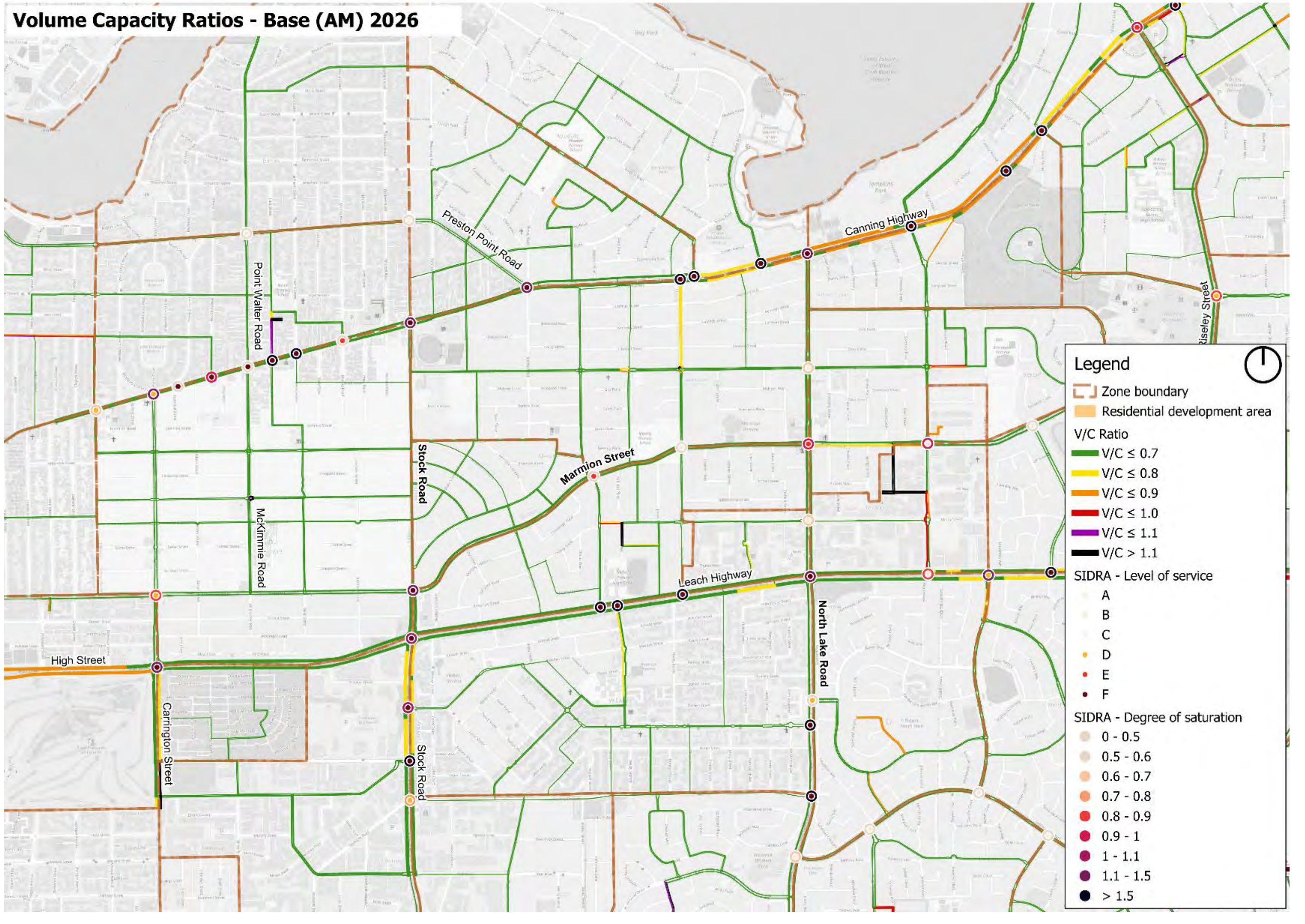


Figure C.3 Existing network volume-capacity ratios and intersection performance– 2026 Base AM (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

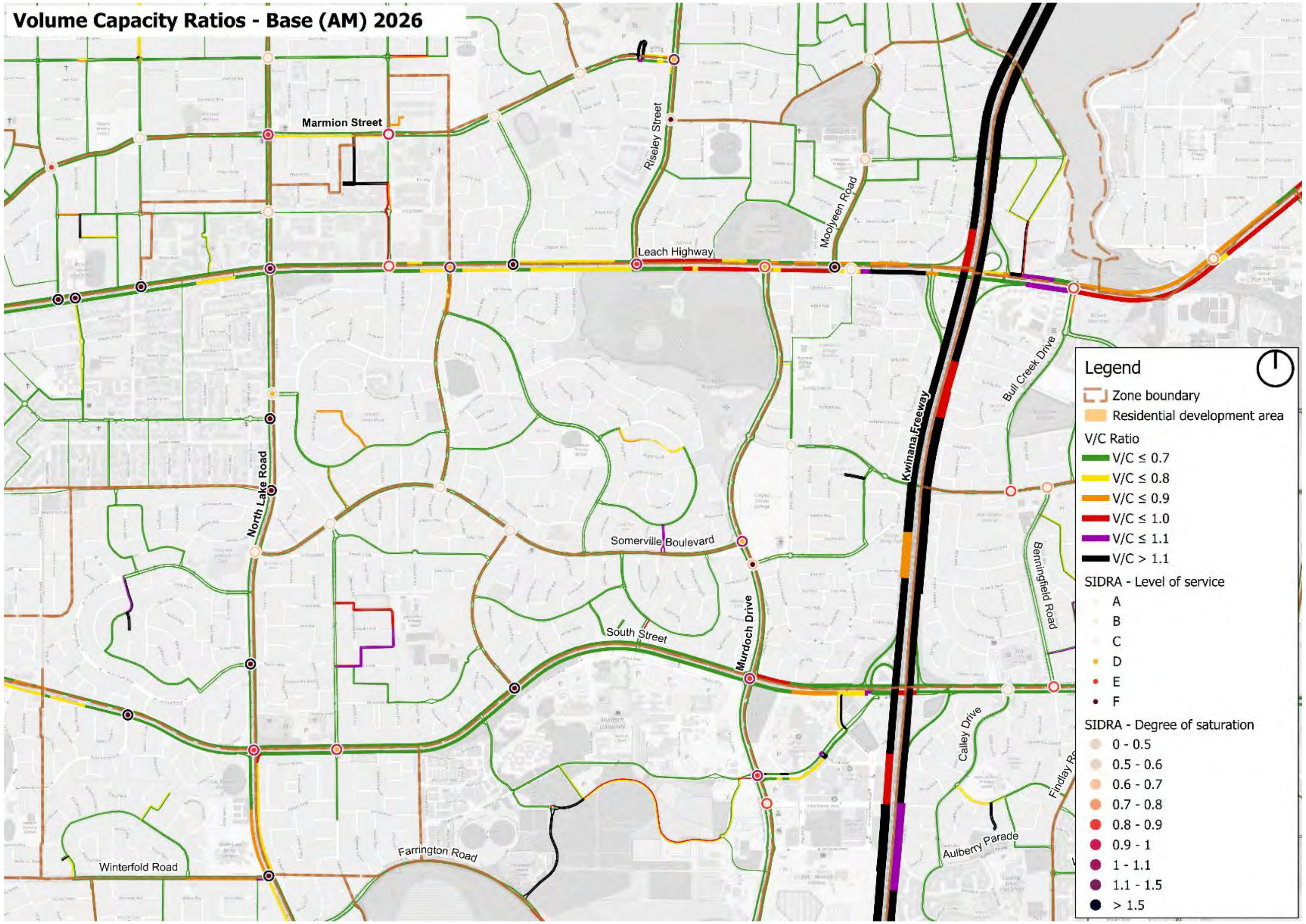


Figure C.4 Existing network volume-capacity ratios and intersection performance– 2026 Base AM (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

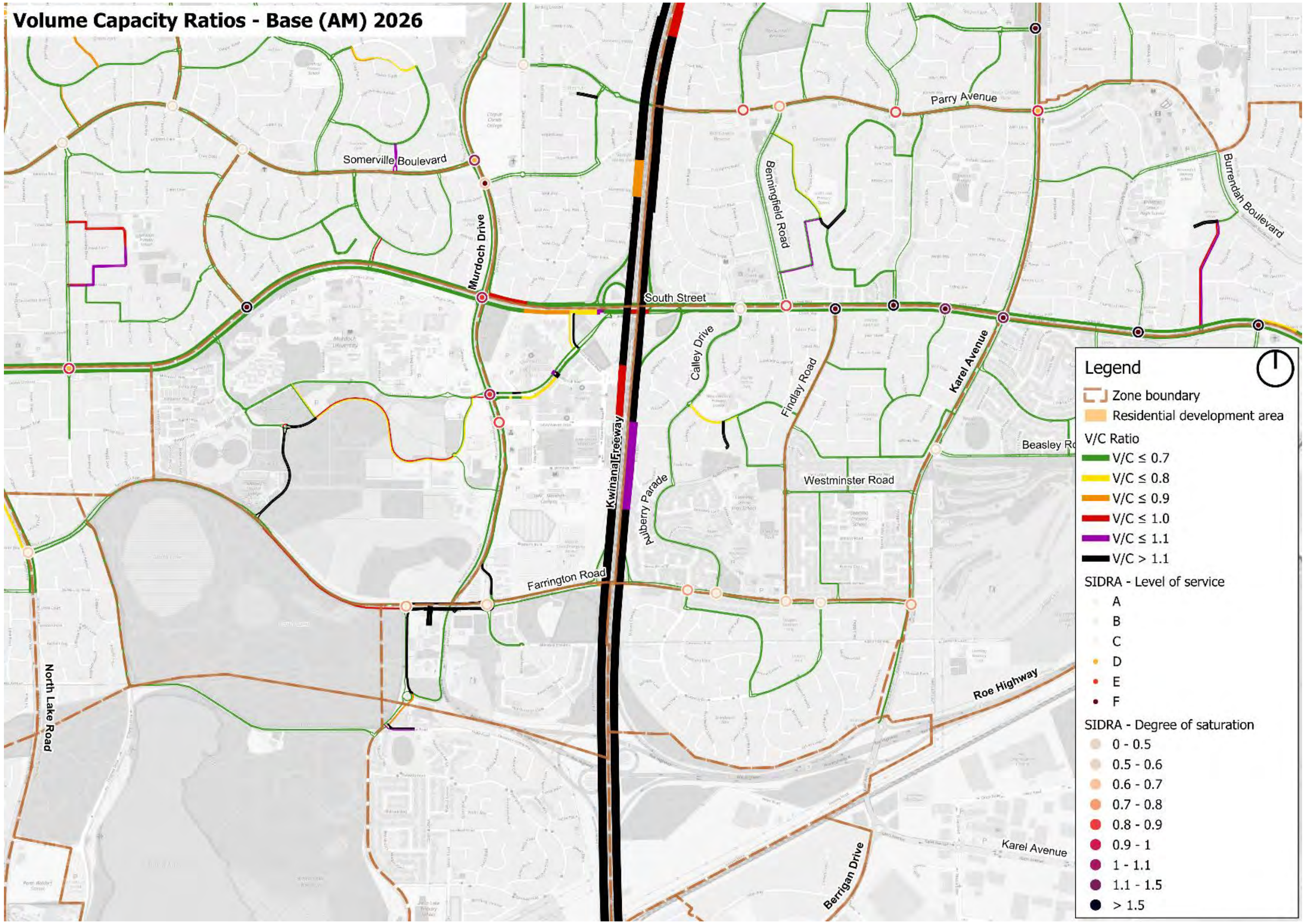


Figure C.5 Existing network volume-capacity ratios and intersection performance– 2026 Base AM (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

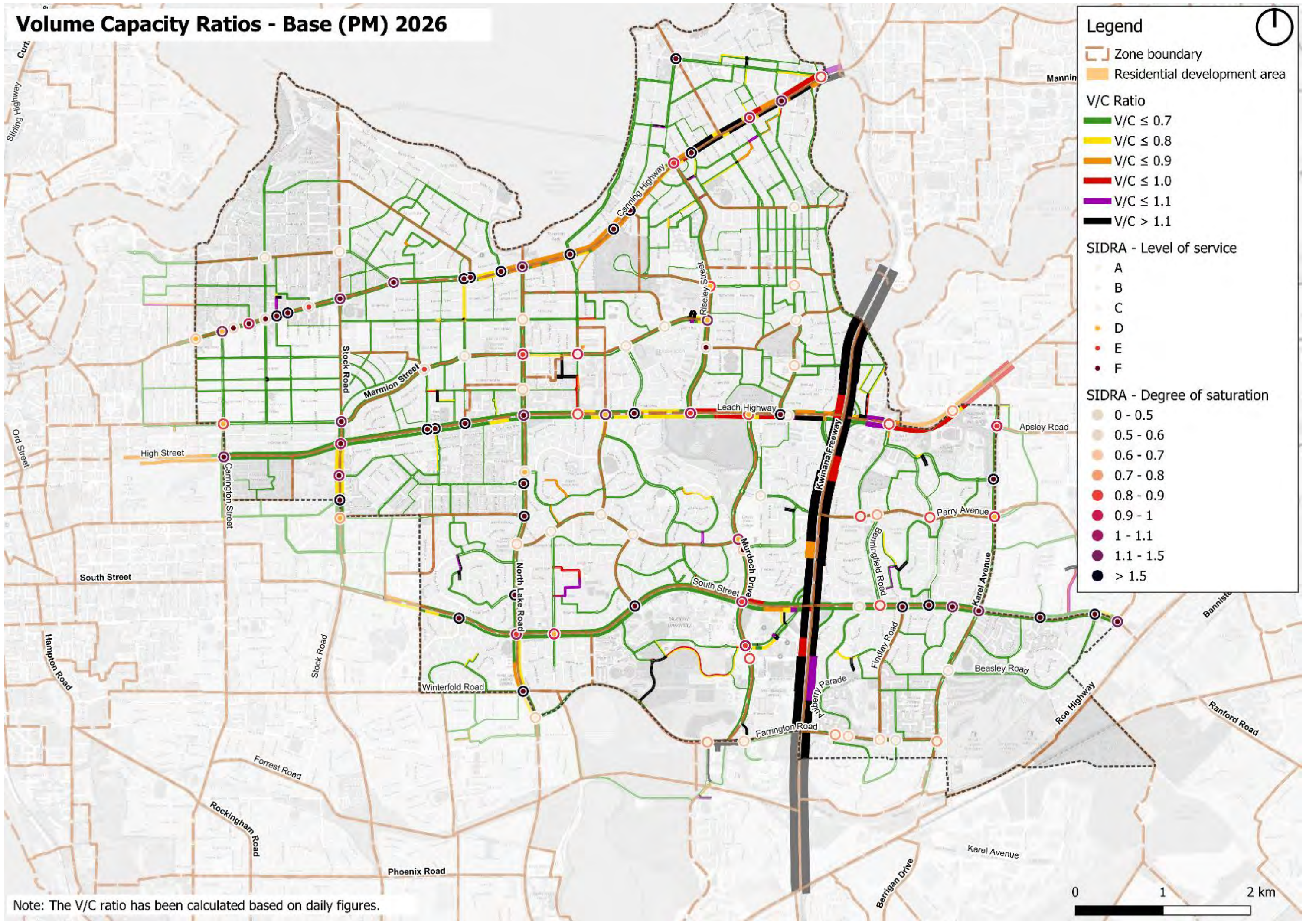


Figure C.6 Existing network volume-capacity ratios and intersection performance– 2026 Base PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

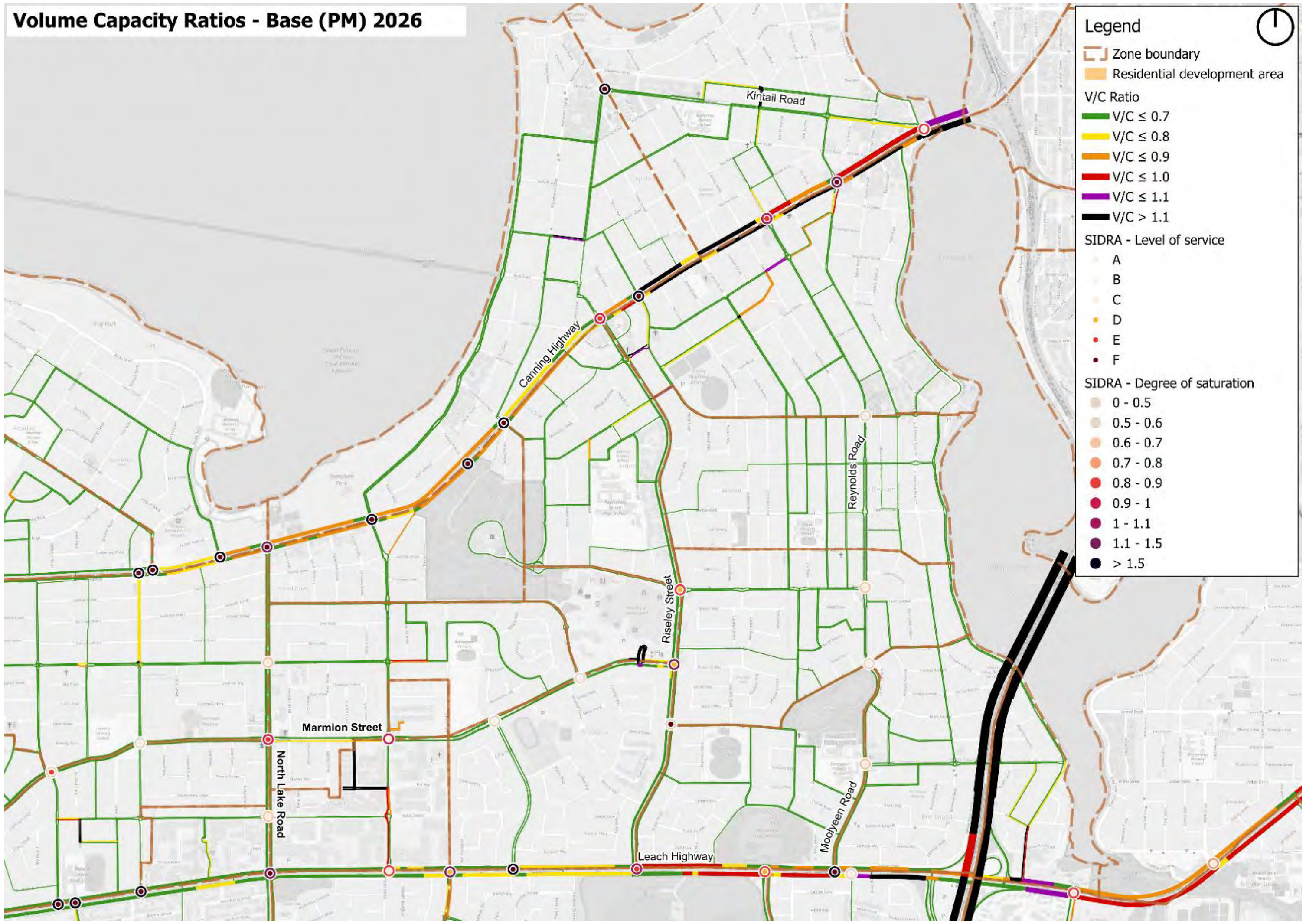


Figure C.7 Existing network volume-capacity ratios and intersection performance– 2026 Base PM (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

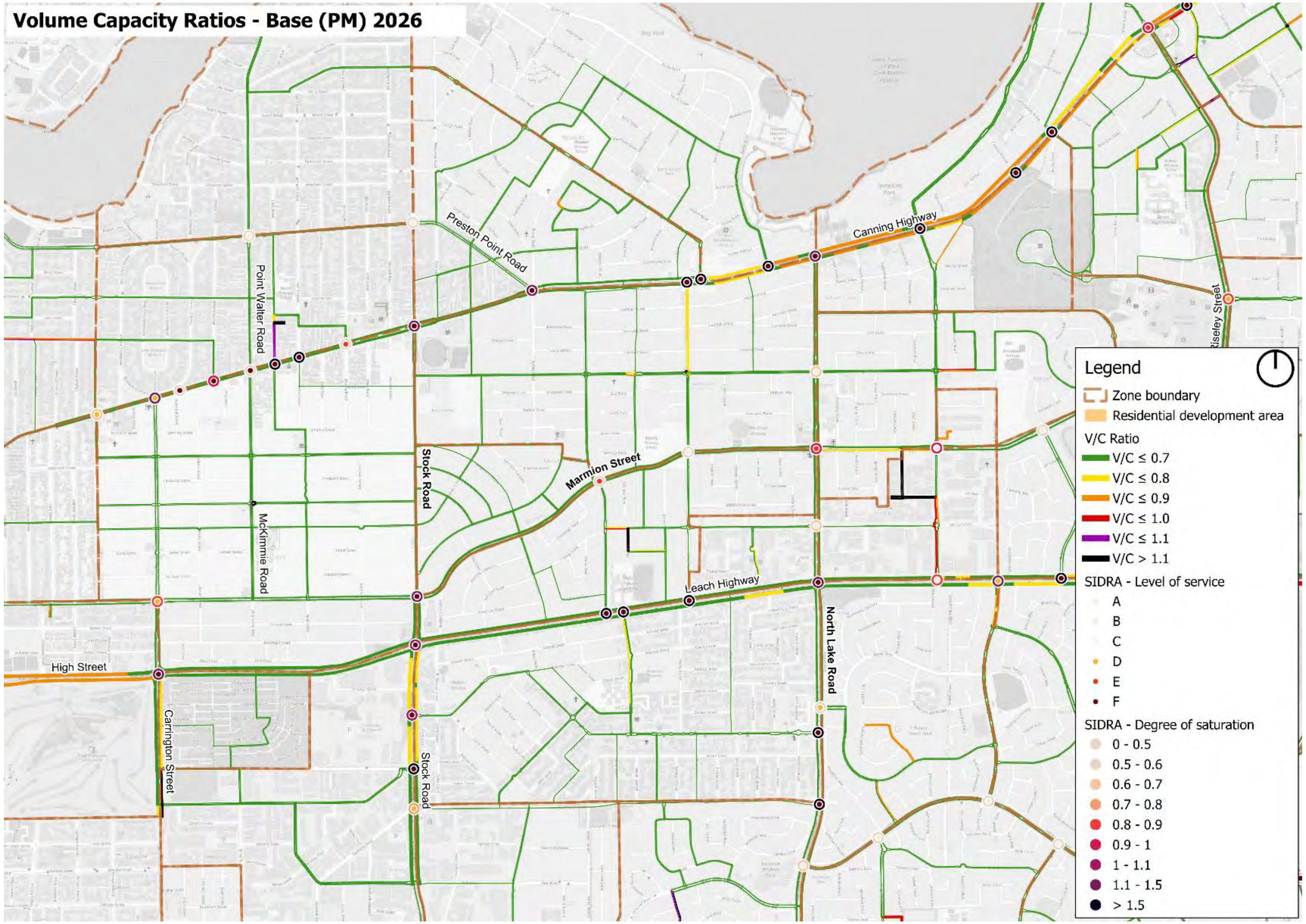


Figure C.8 Existing network volume-capacity ratios and intersection performance– 2026 Base PM (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

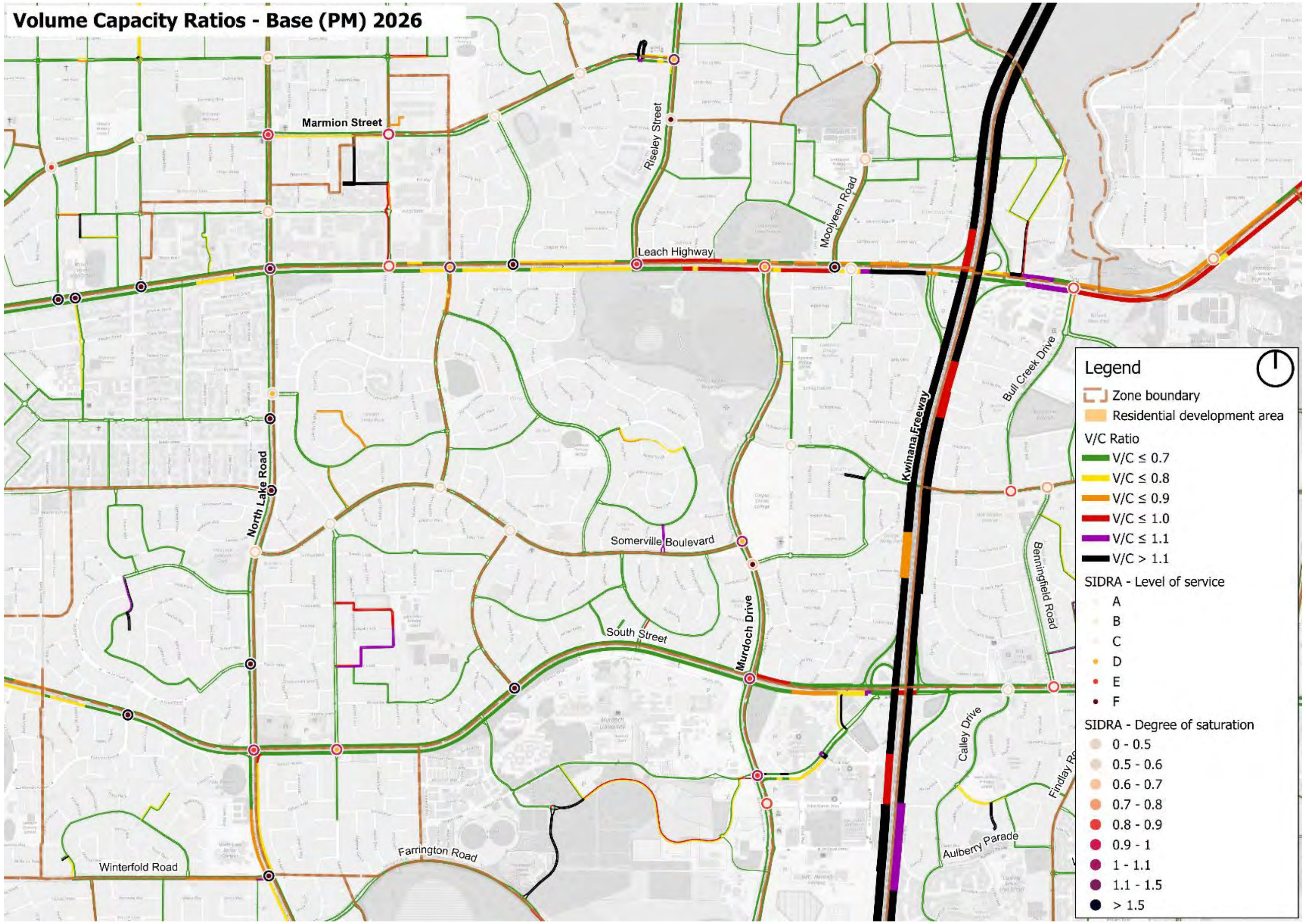


Figure C.9 Existing network volume-capacity ratios and intersection performance– 2026 Base PM (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

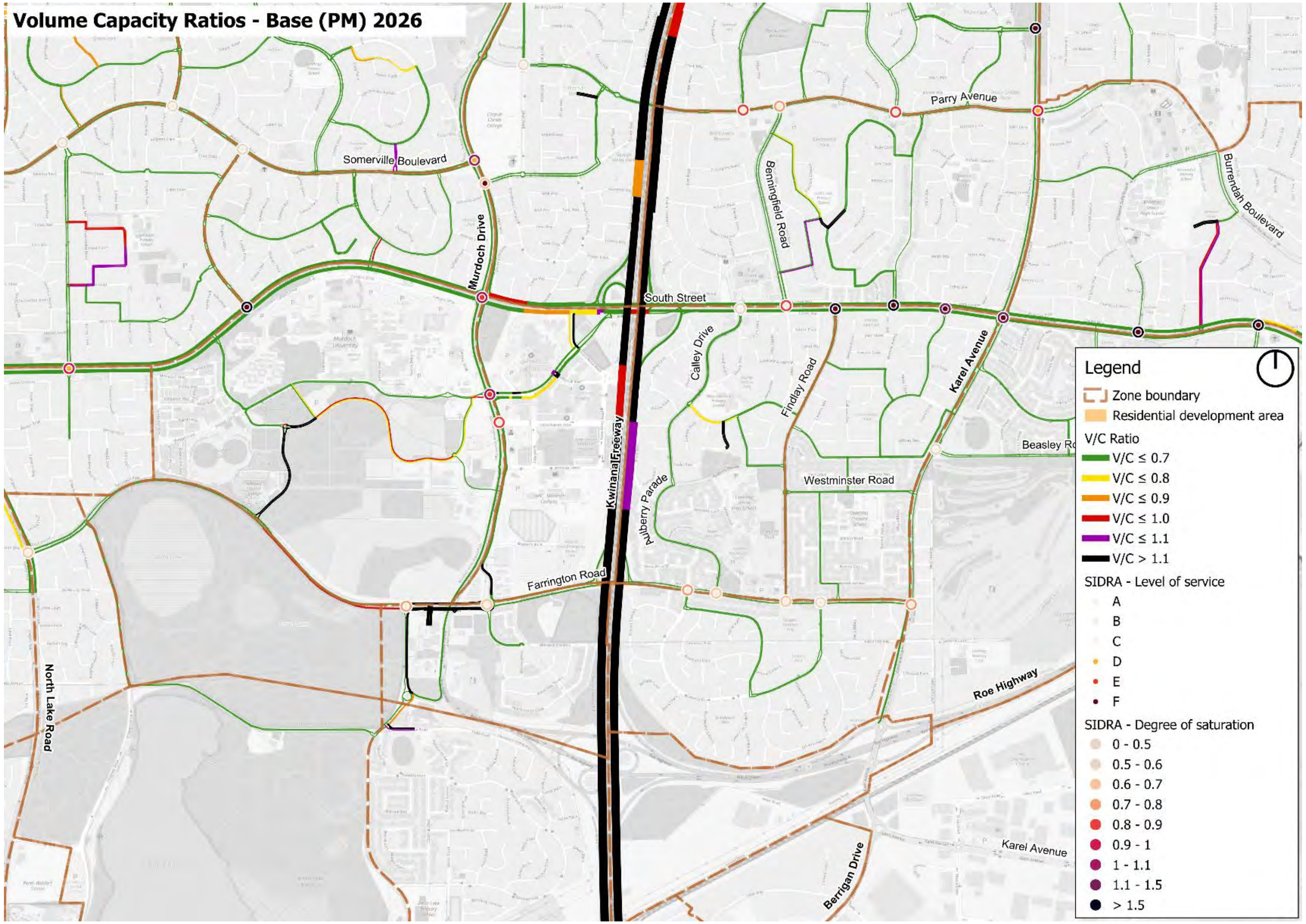


Figure C.10 Existing network volume-capacity ratios and intersection performance– 2026 Base PM (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

C2 2041 baseline

This section summarises the peak hour network congestion, indicated by volume-capacity ratios on road corridors and intersection performance, from the traffic assignment model and SIDRA intersection modelling, respectively, for the 2041 baseline conditions. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

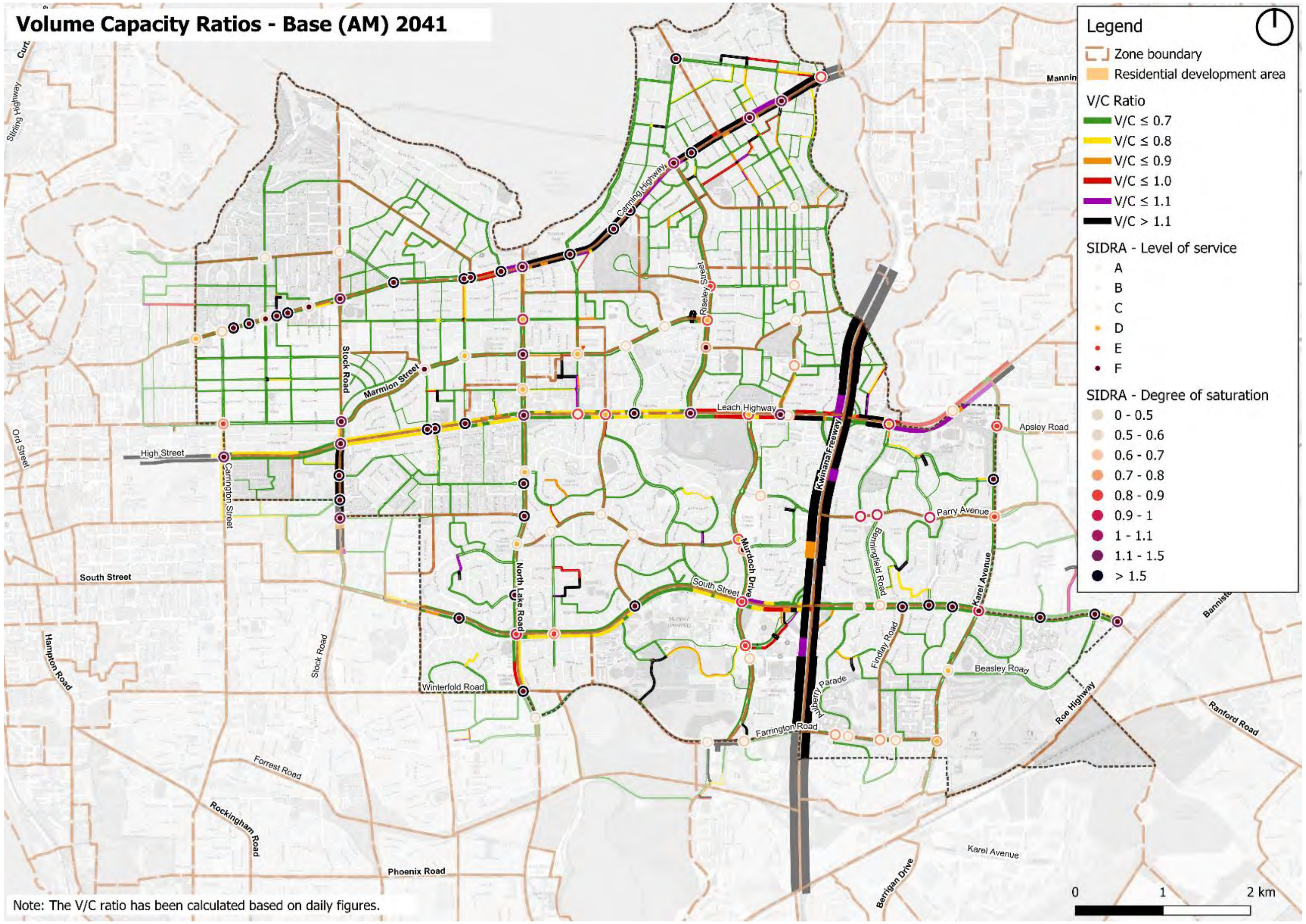


Figure C.11 Existing network volume-capacity ratios and intersection performance– 2041 Base AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

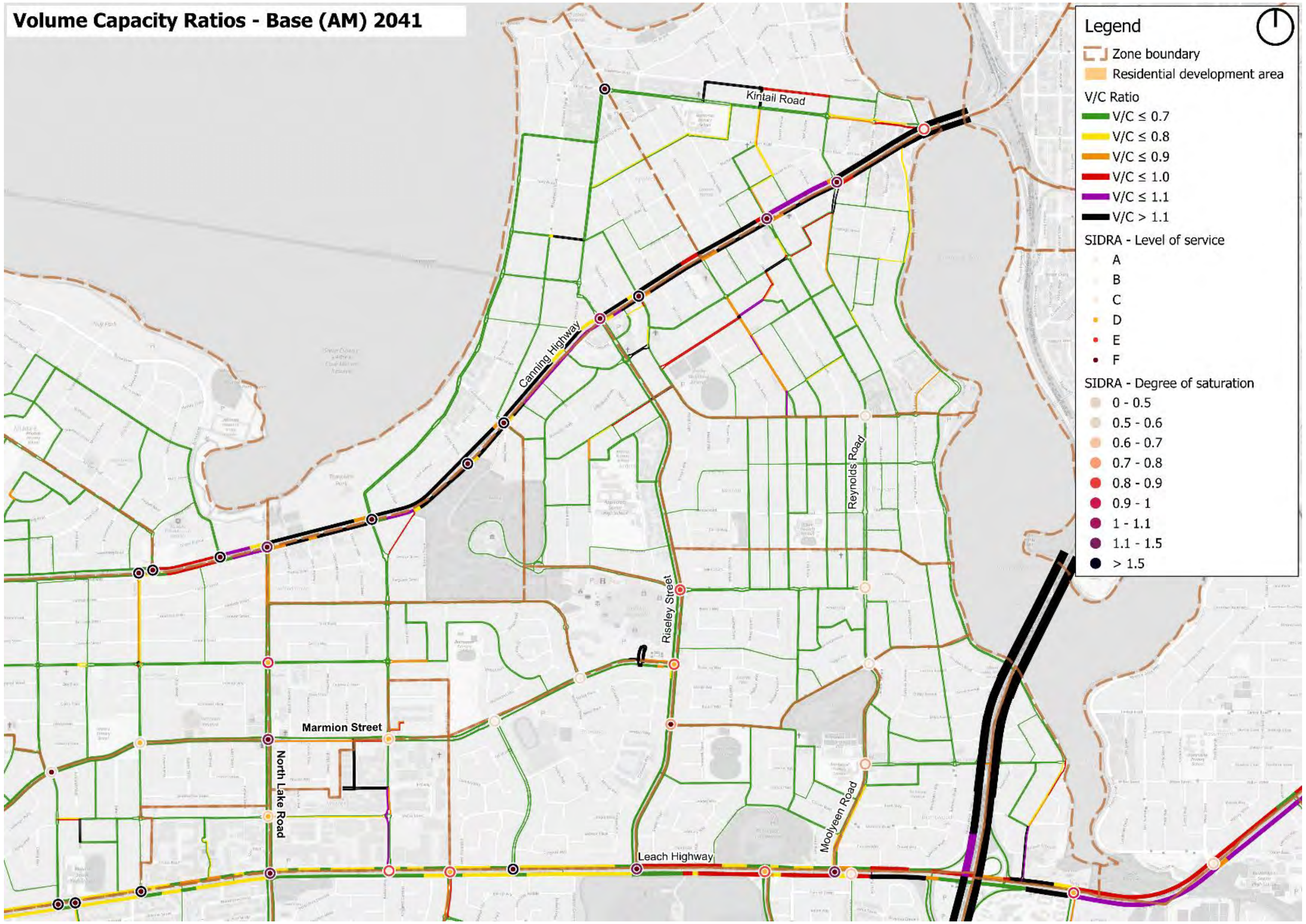


Figure C.12 Existing network volume-capacity ratios and intersection performance– 2041 Base AM (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

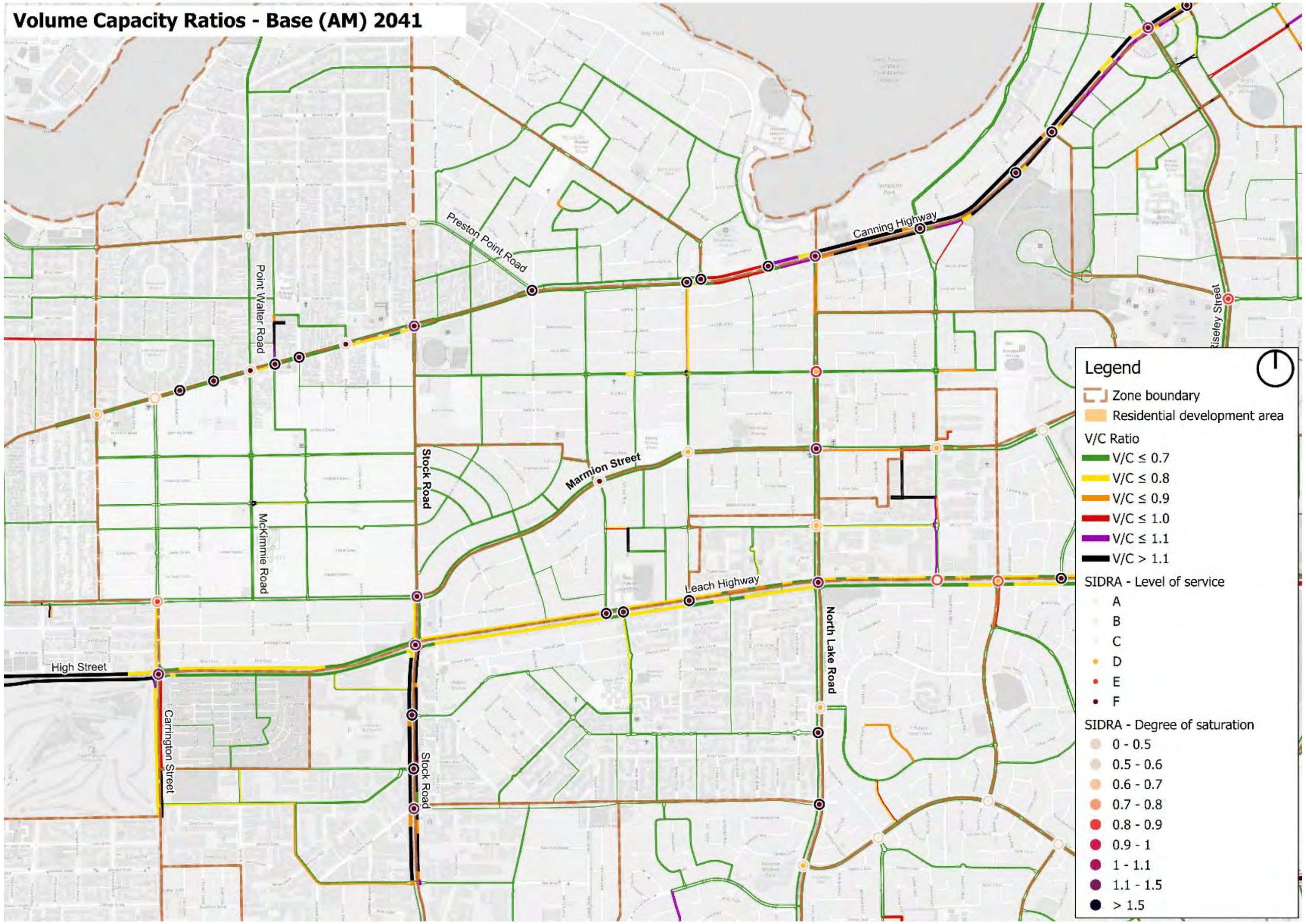


Figure C.13 Existing network volume-capacity ratios and intersection performance– 2041 Base AM (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

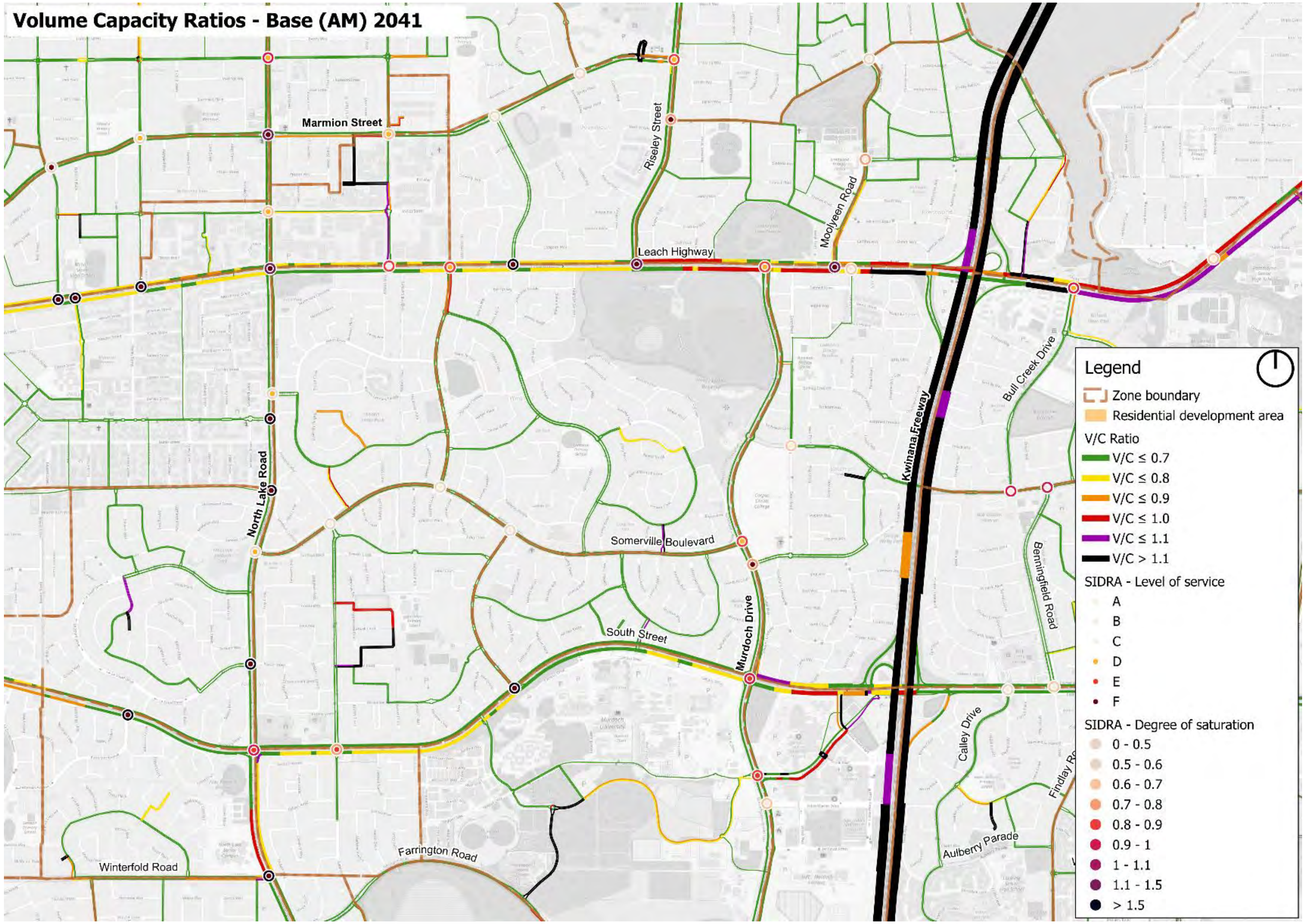


Figure C.14 Existing network volume-capacity ratios and intersection performance– 2041 Base AM (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

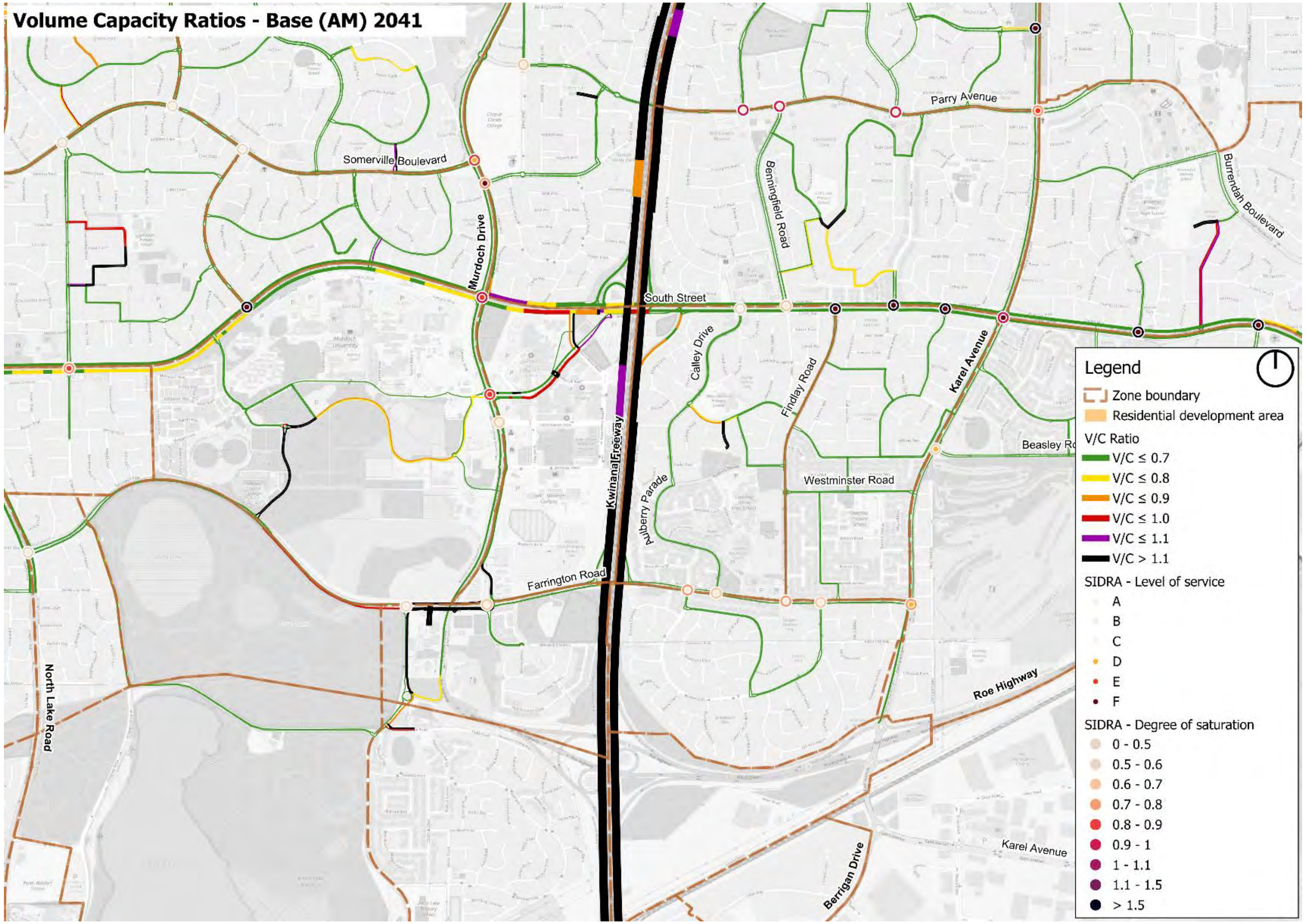


Figure C.15 Existing network volume-capacity ratios and intersection performance– 2041 Base AM (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

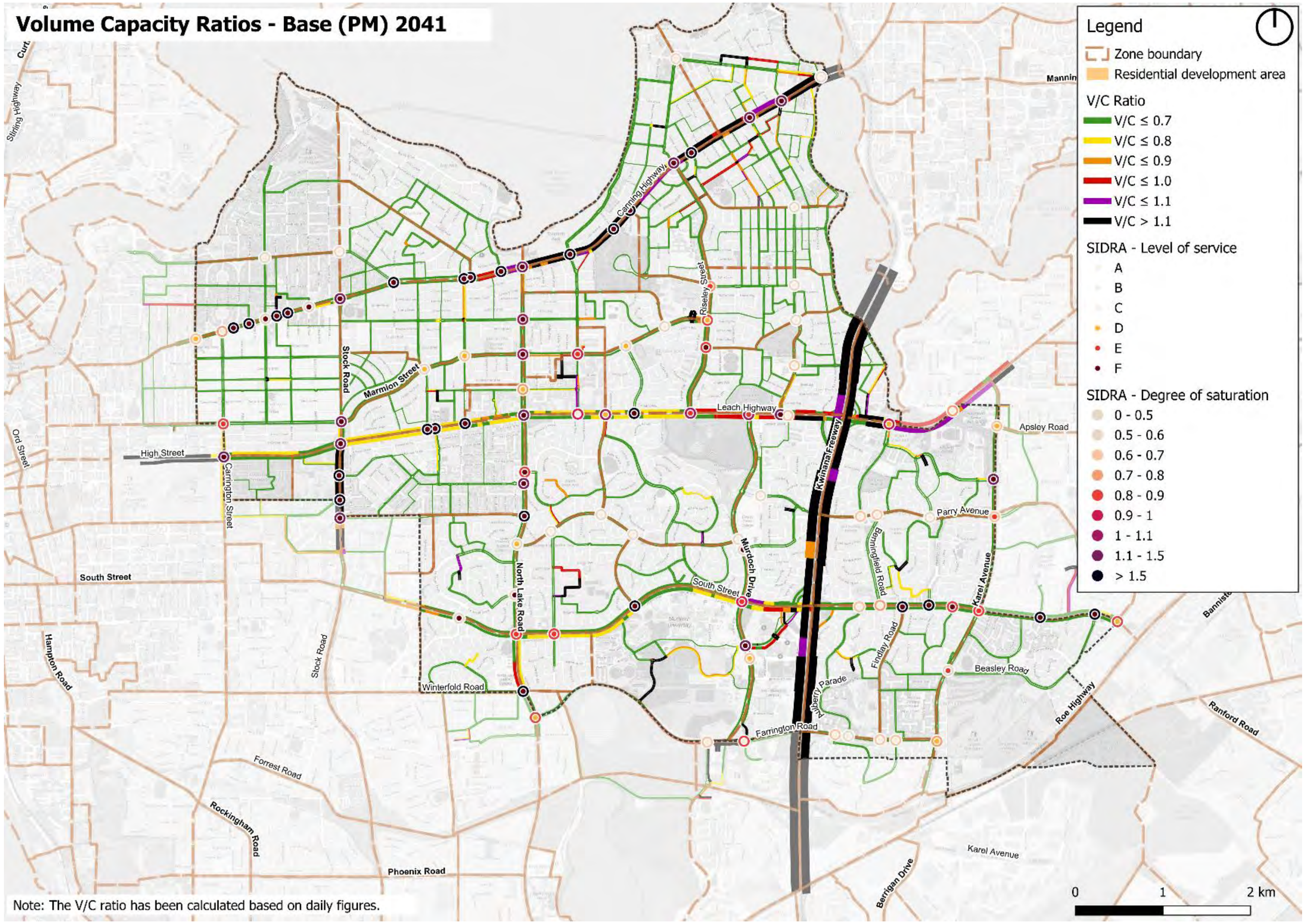


Figure C.16 Existing network volume-capacity ratios and intersection performance– 2041 Base PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

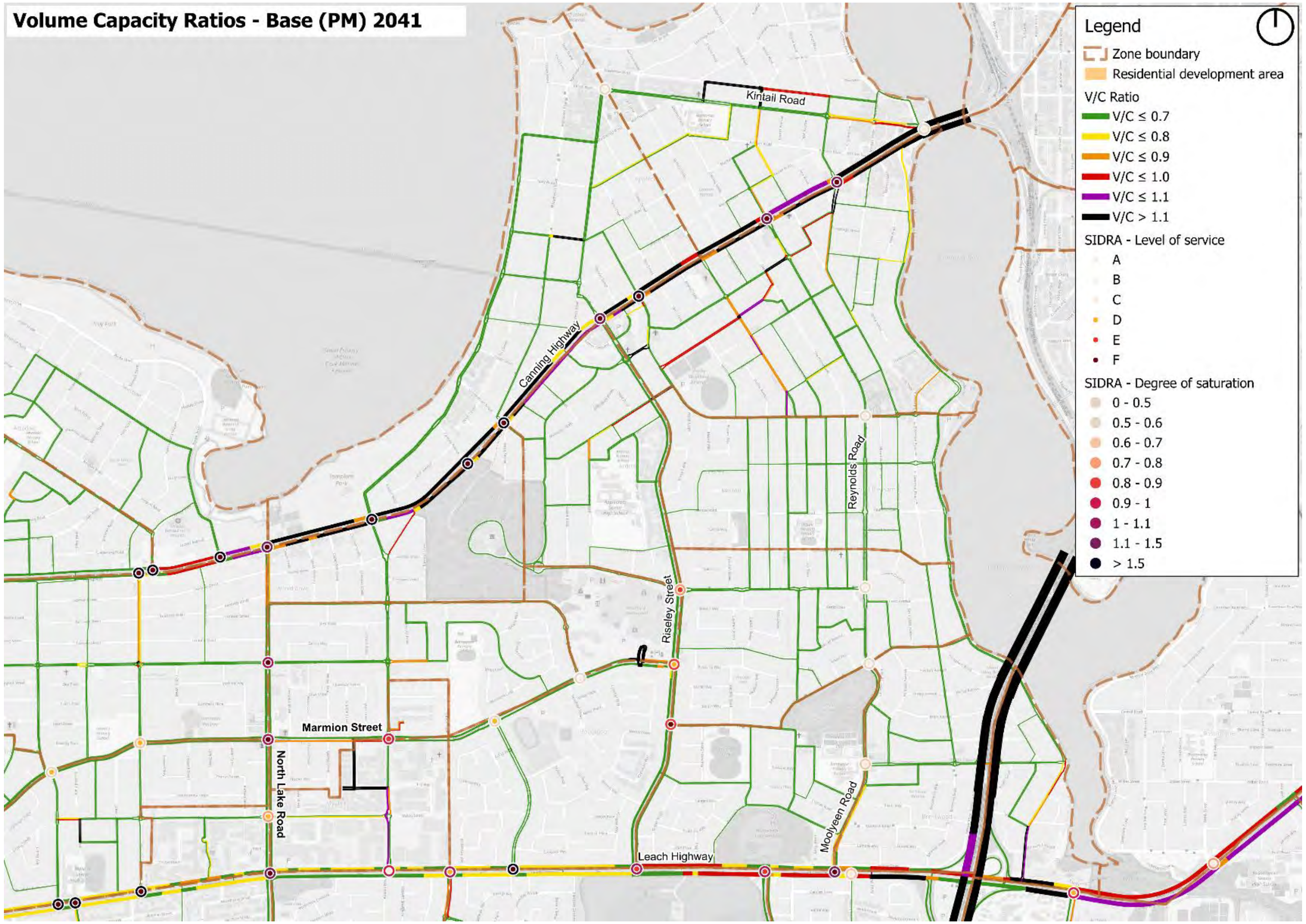


Figure C.17 Existing network volume-capacity ratios and intersection performance– 2041 Base PM (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

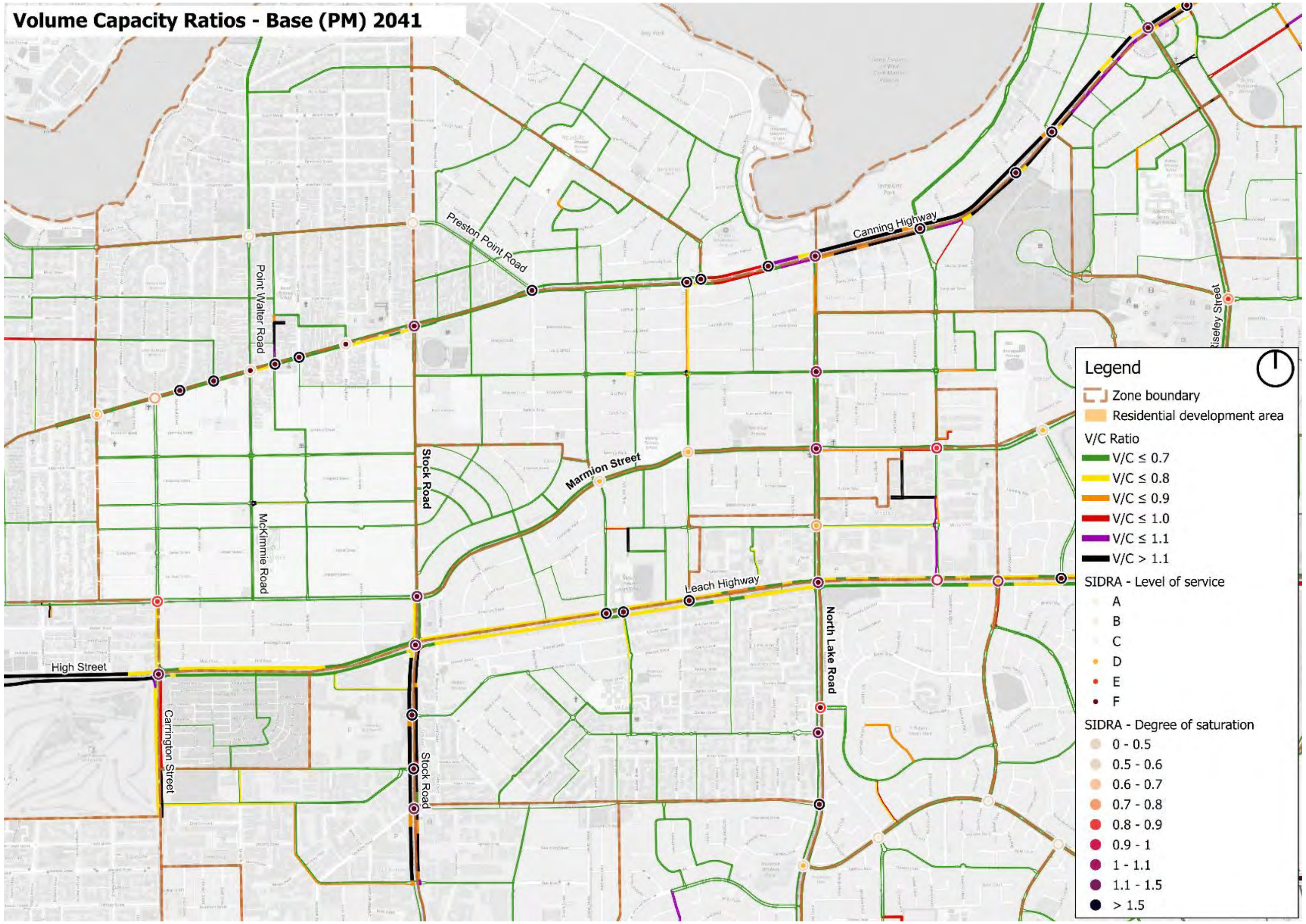


Figure C.18 Existing network volume-capacity ratios and intersection performance– 2041 Base PM (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

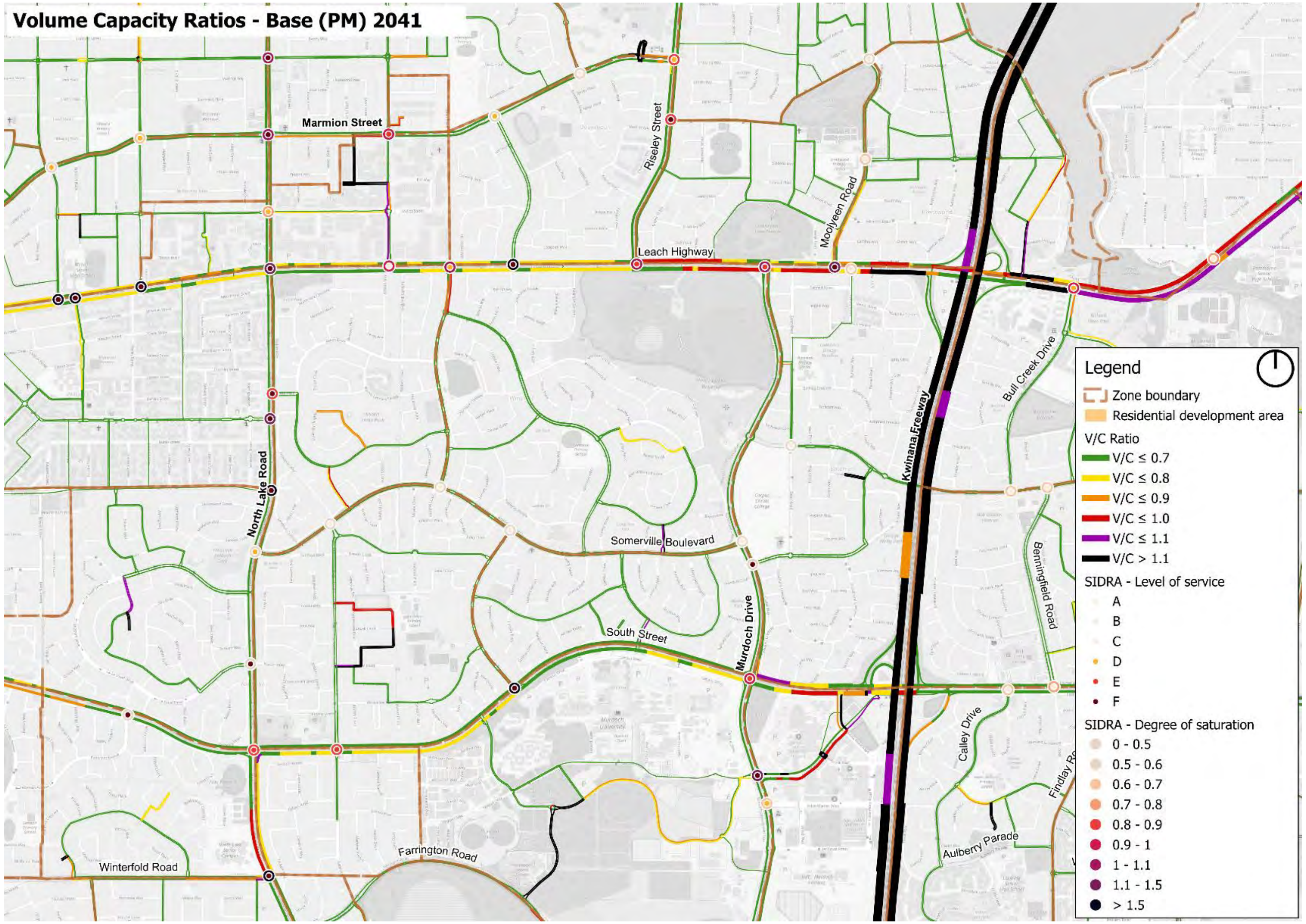


Figure C.19 Existing network volume-capacity ratios and intersection performance– 2041 Base PM (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

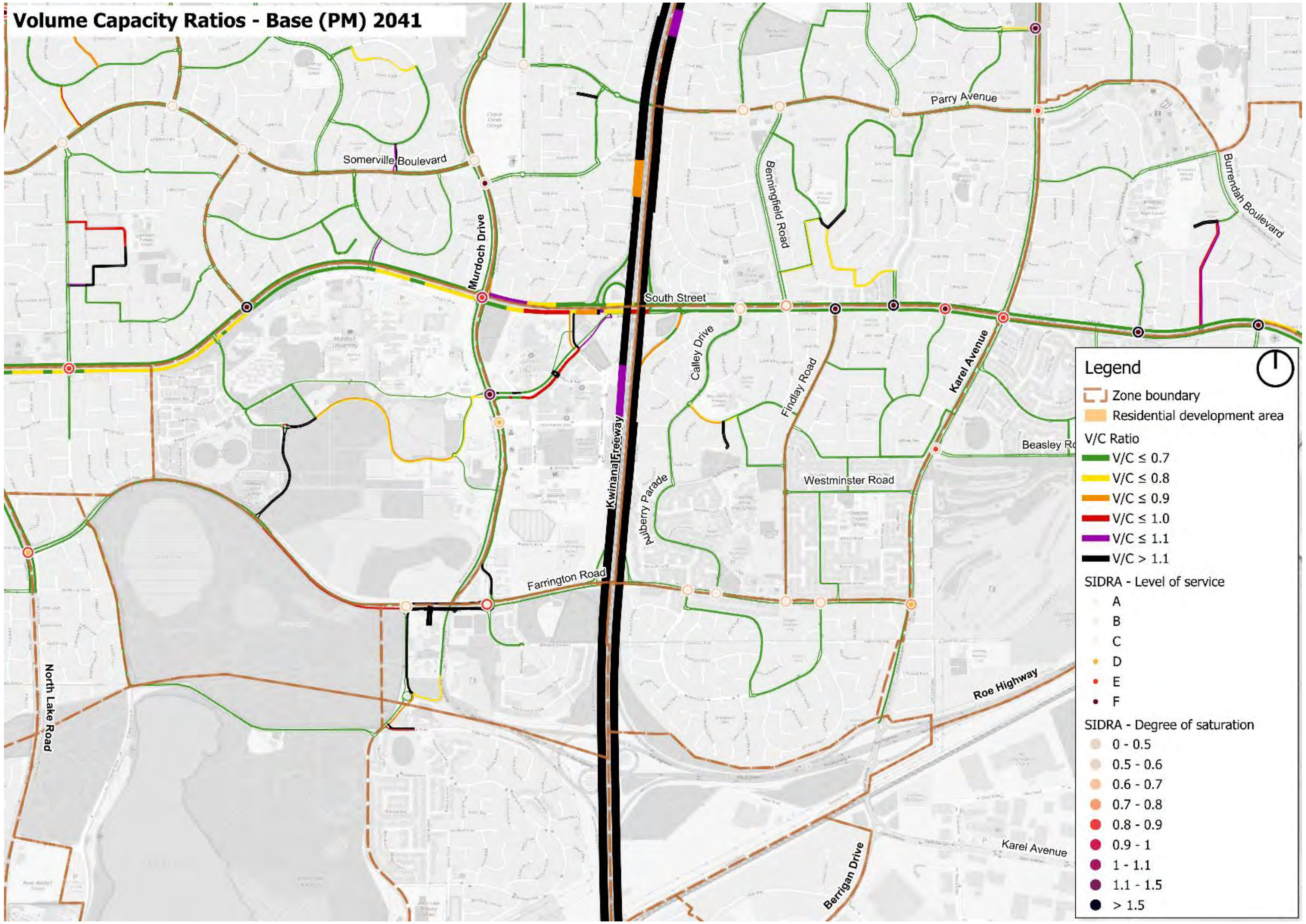


Figure C.20 Existing network volume-capacity ratios and intersection performance– 2041 Base PM (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

C3 2041 scenario 1 (“CoM Density Approach 1”)

This section summarises the peak hour network congestion, indicated by volume-capacity ratios on road corridors and intersection performance, from the traffic assignment model and SIDRA intersection modelling, respectively, for the 2041 scenario 1 (“CoM Density Approach 1”). These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

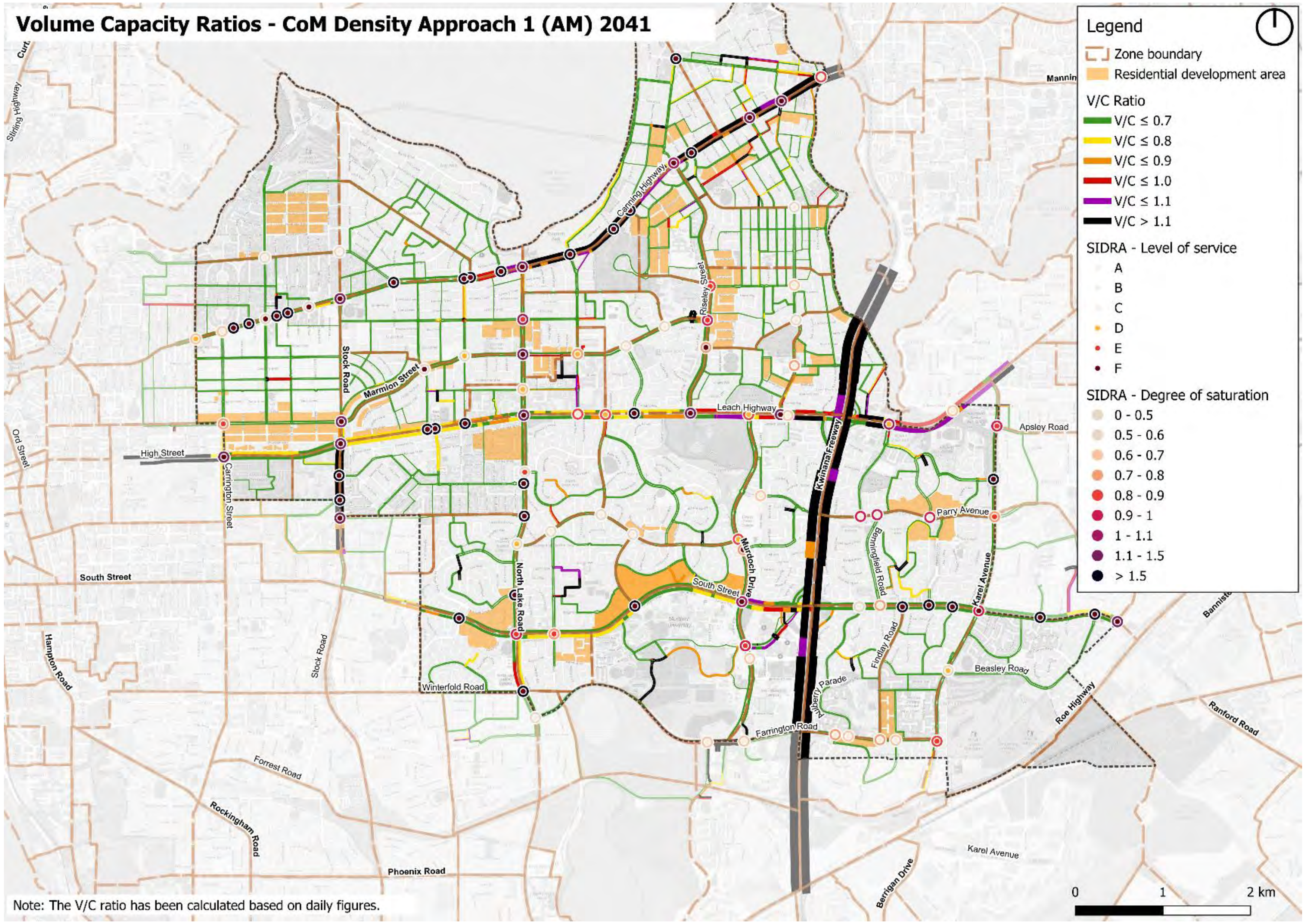


Figure C.21 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 AM ("CoM Density Approach 1")

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

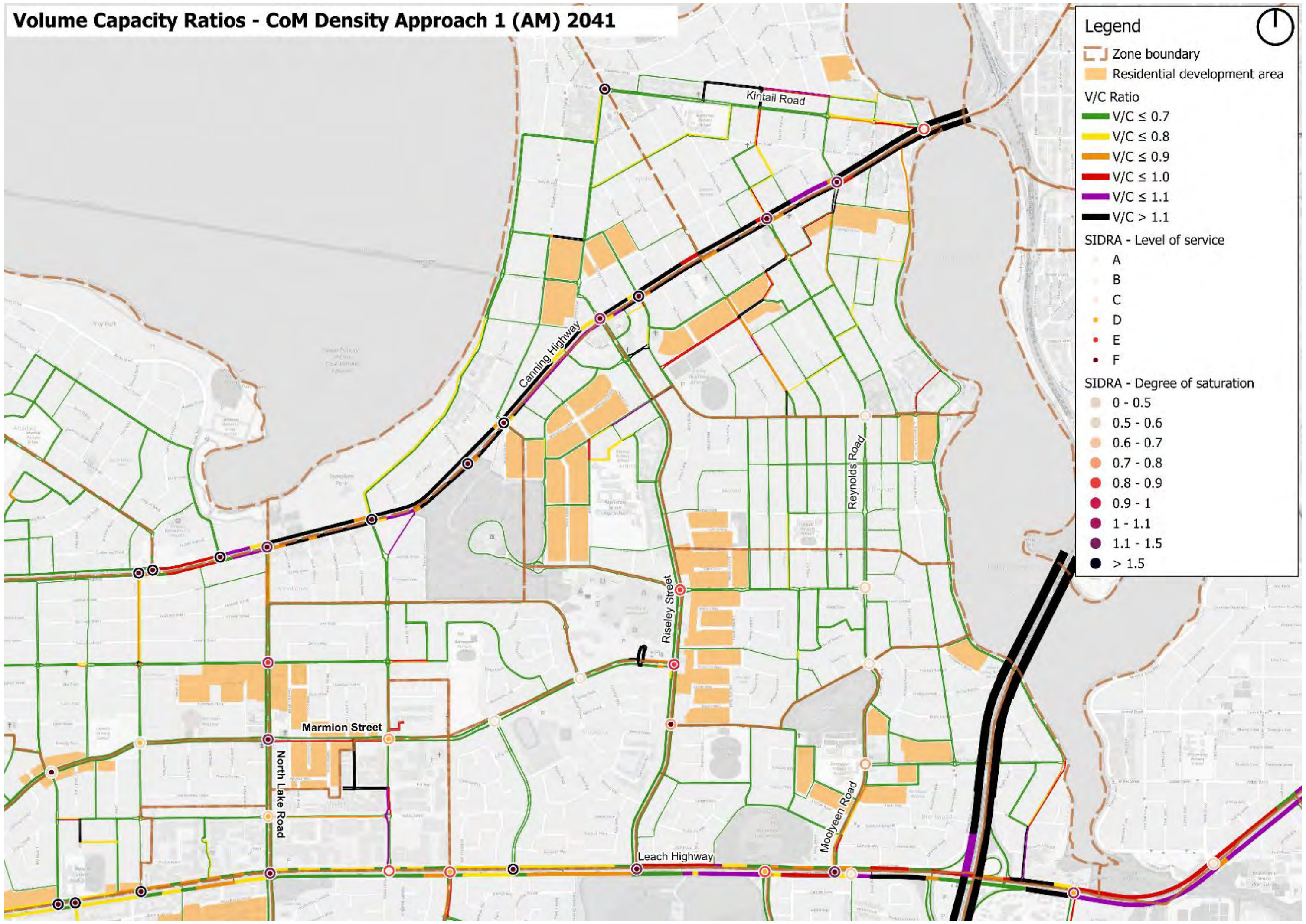


Figure C.22 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 AM (“CoM Density Approach 1”) (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

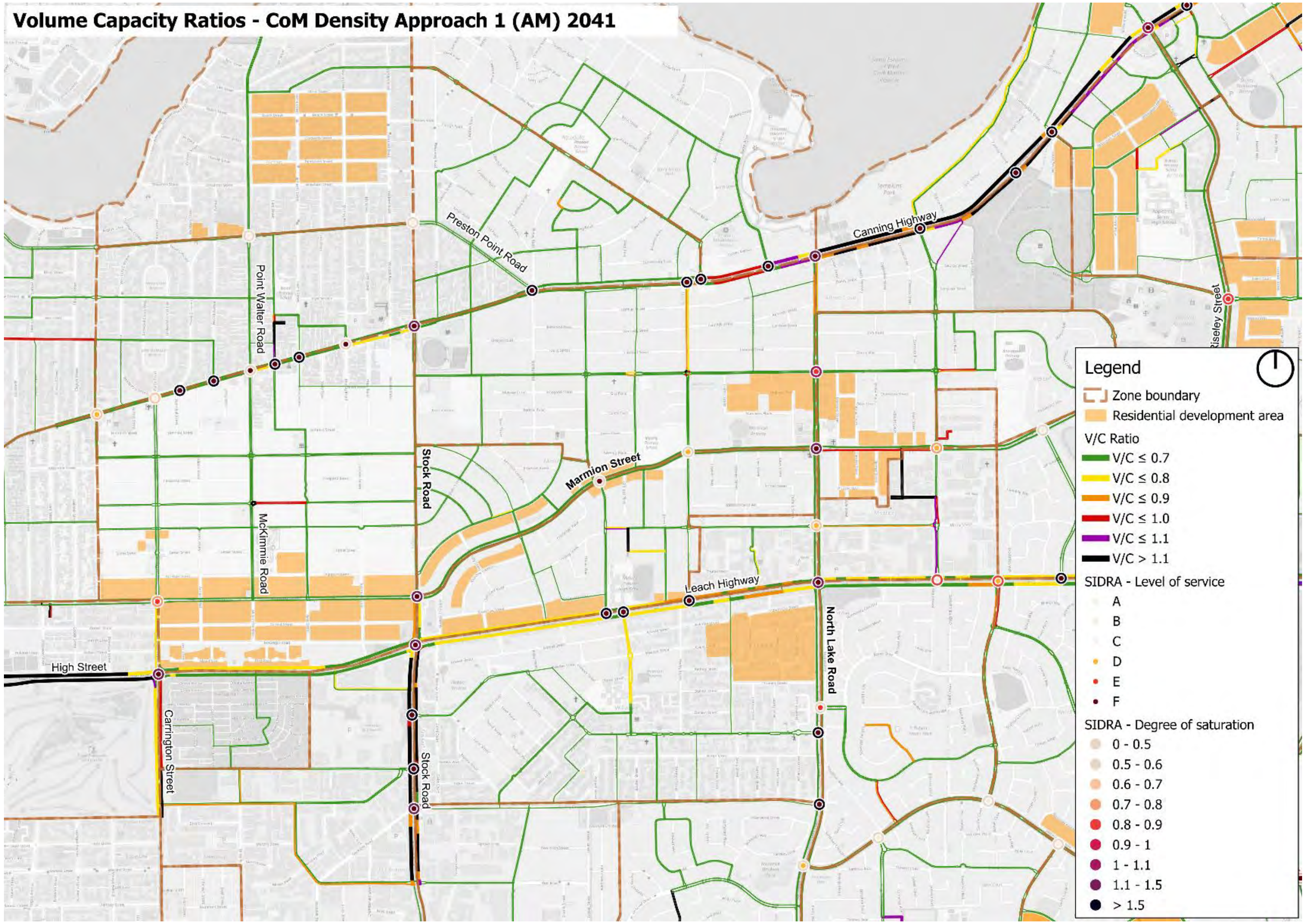


Figure C.23 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 AM ("CoM Density Approach 1") (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

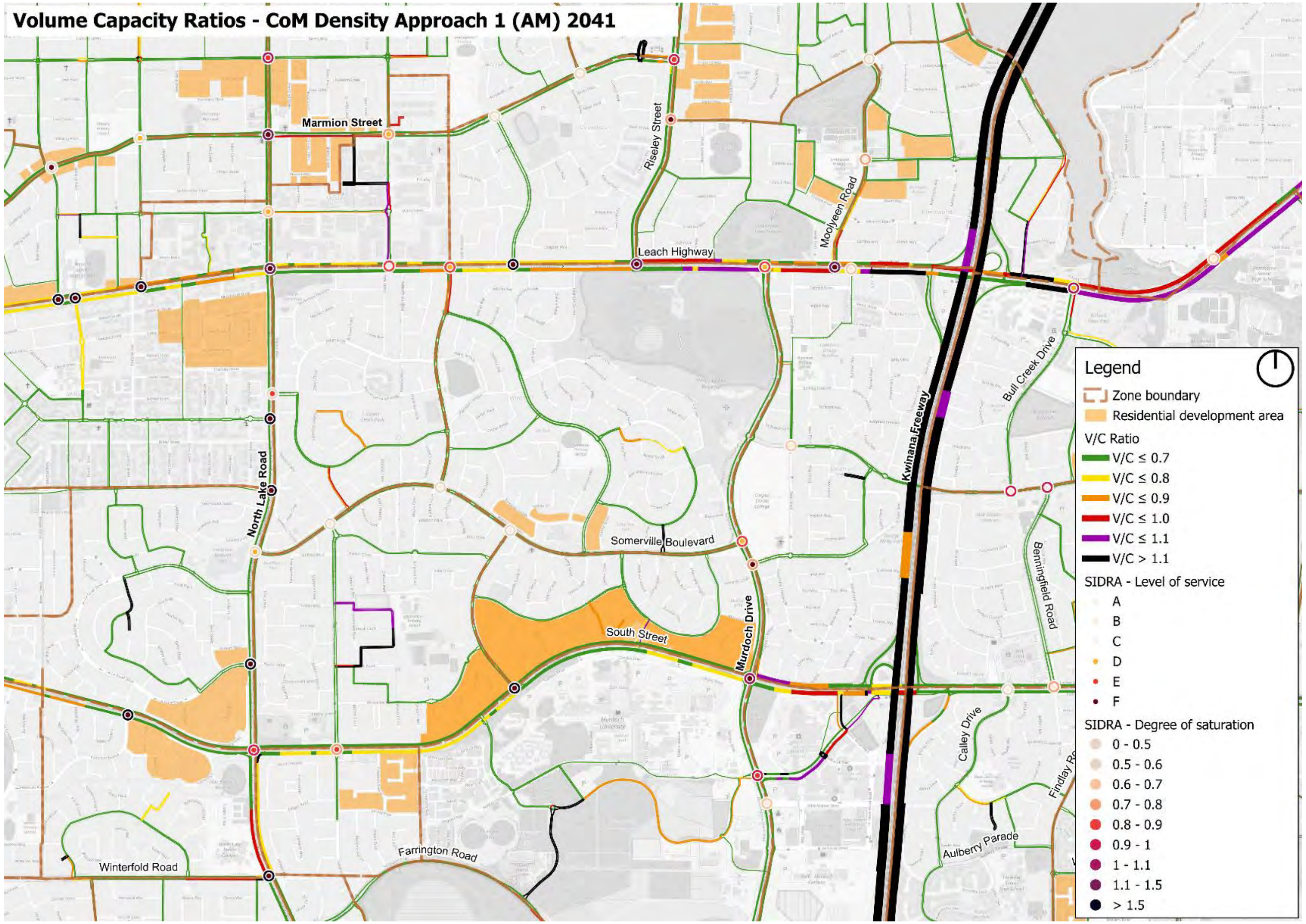


Figure C.24 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 AM (“CoM Density Approach 1”) (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

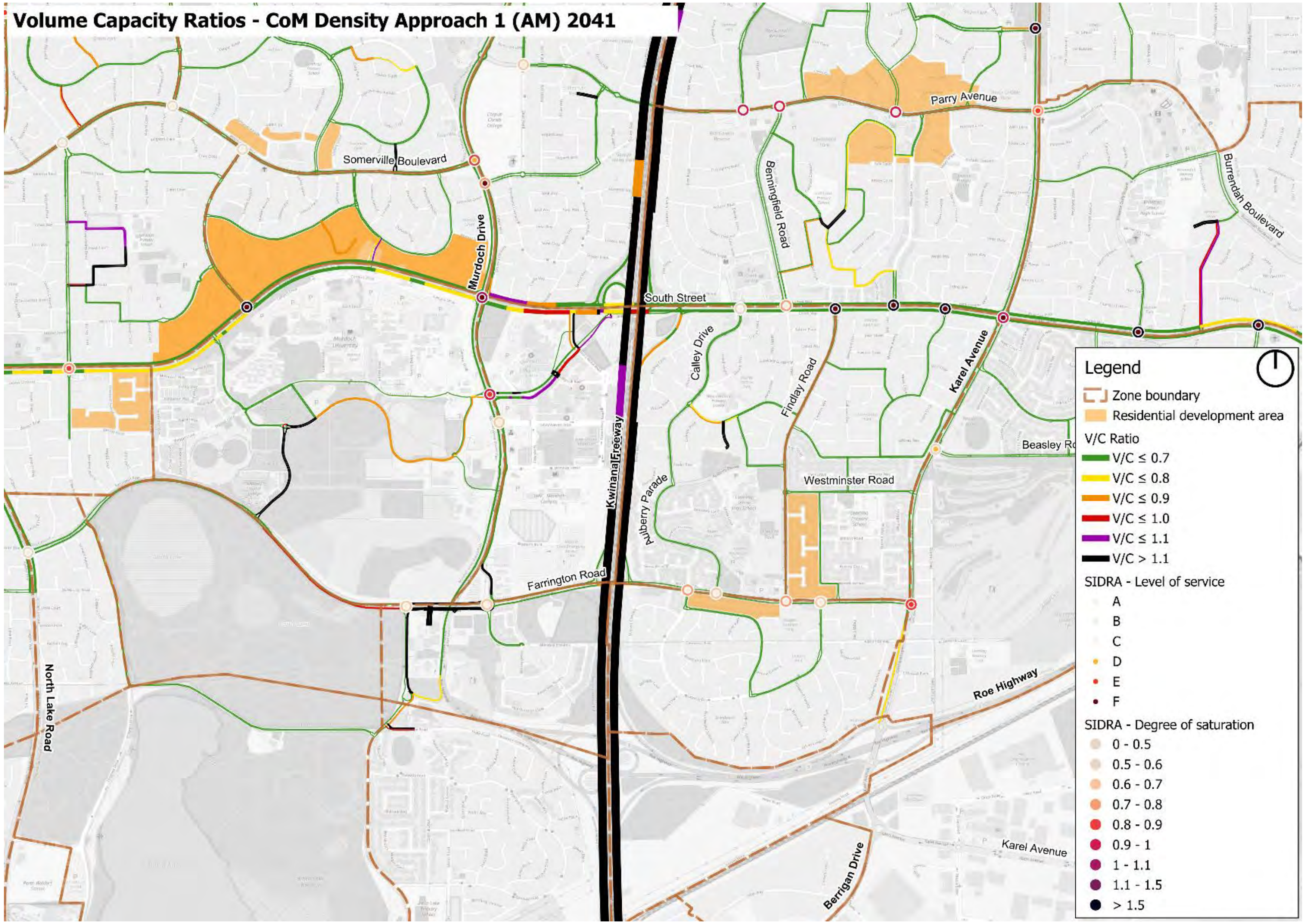


Figure C.25 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 AM (“CoM Density Approach 1”) (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

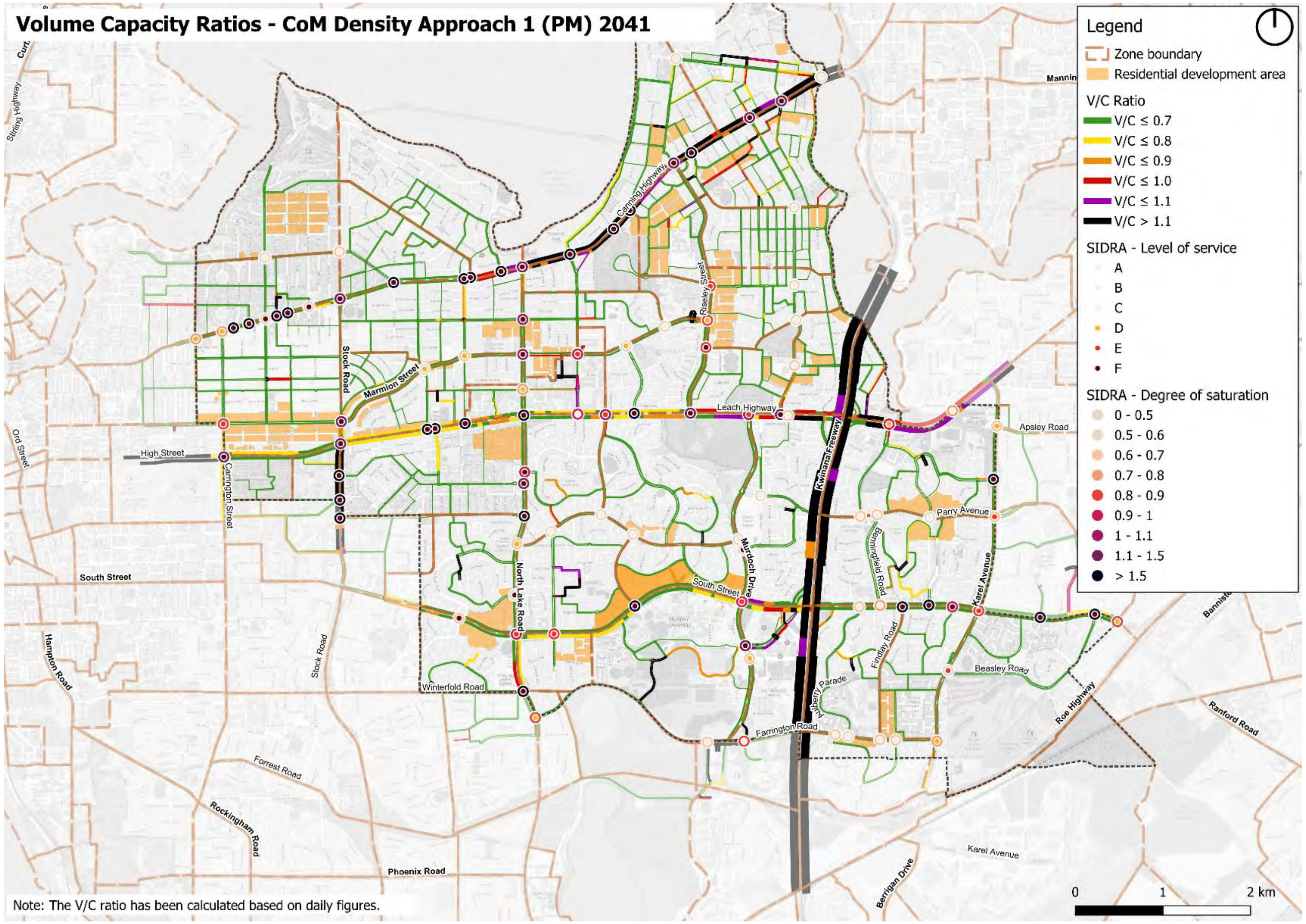


Figure C.26 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 PM ("CoM Density Approach 1")

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

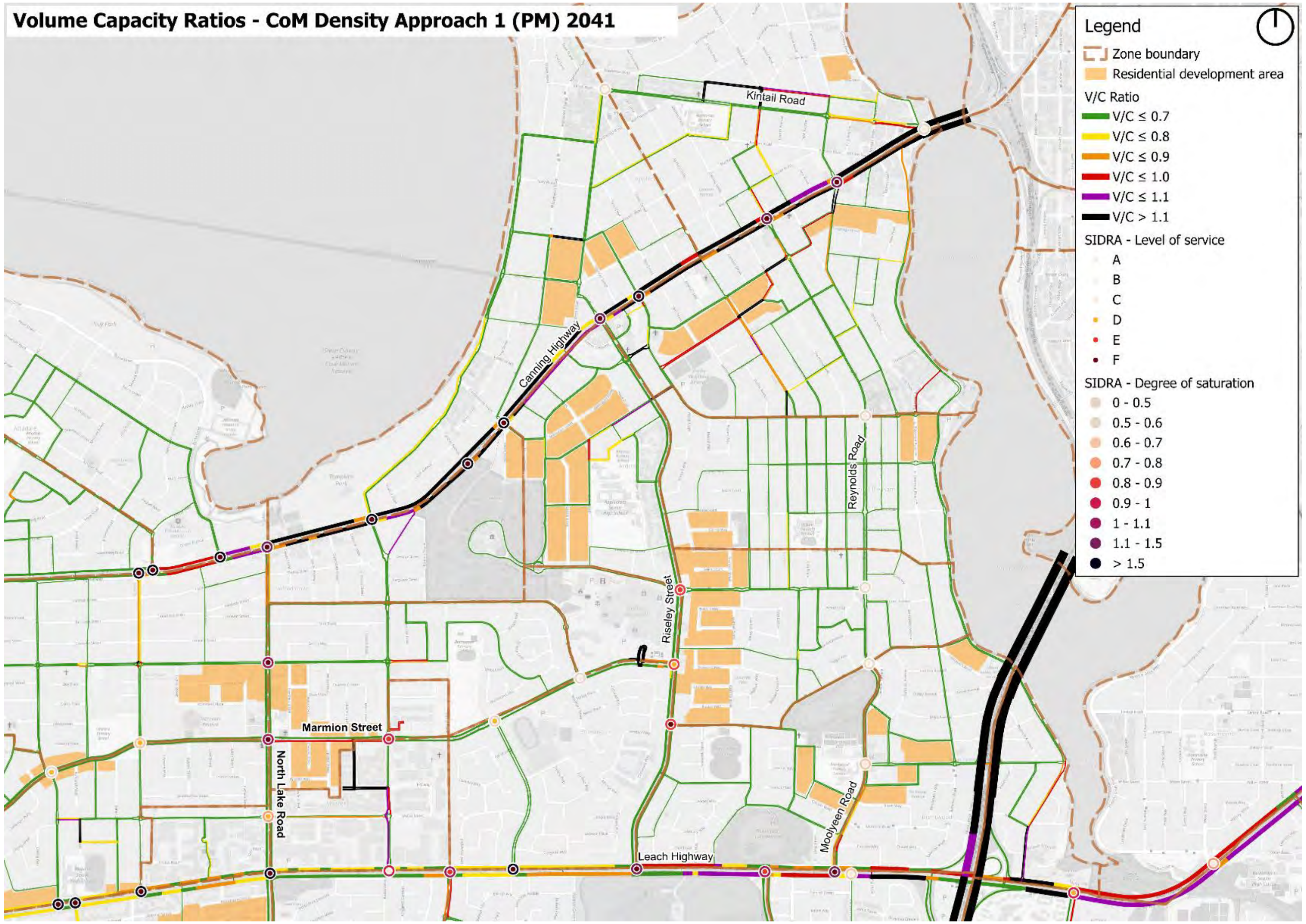


Figure C.27 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 PM ("CoM Density Approach 1") (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

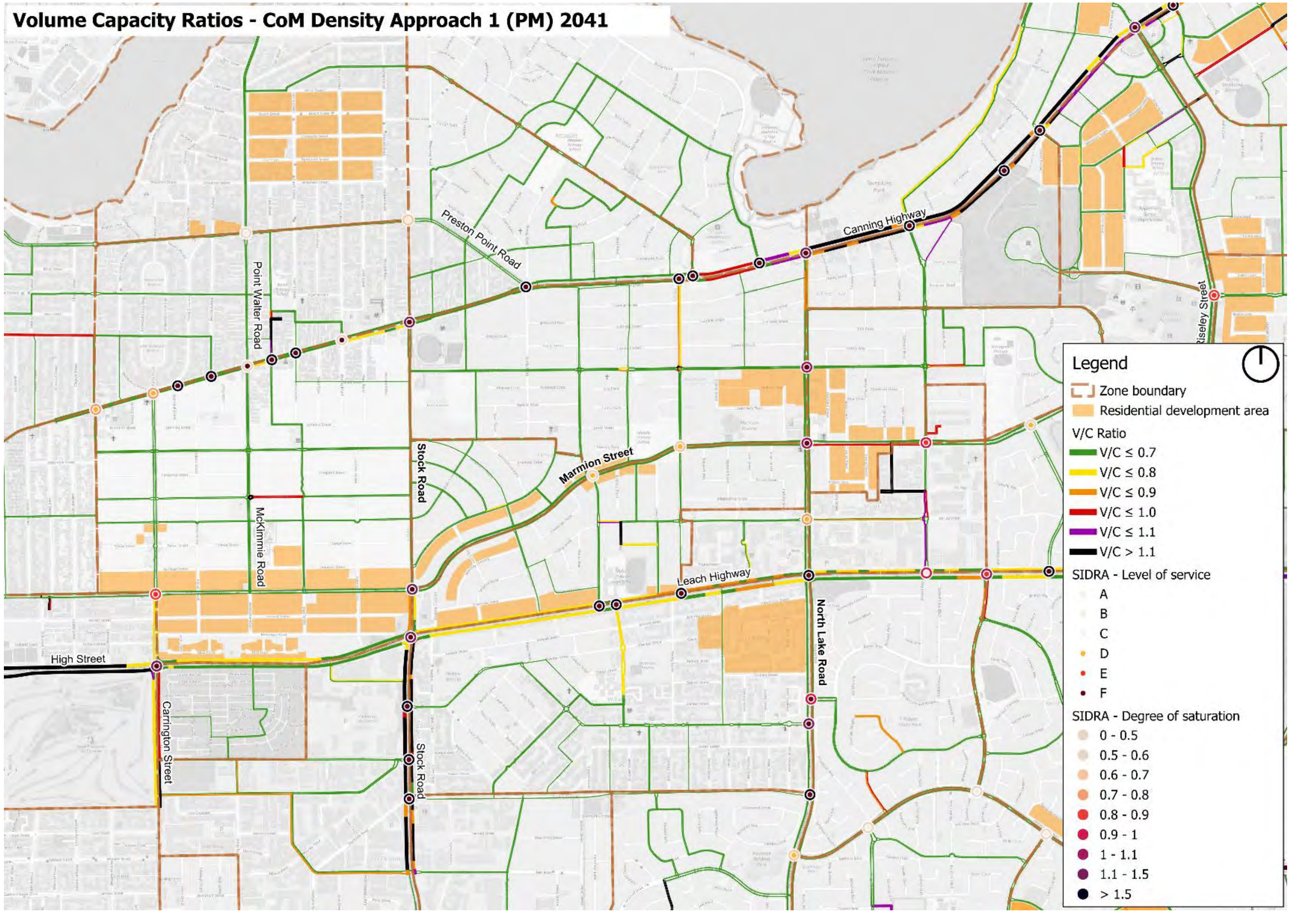


Figure C.28 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 PM ("CoM Density Approach 1") (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

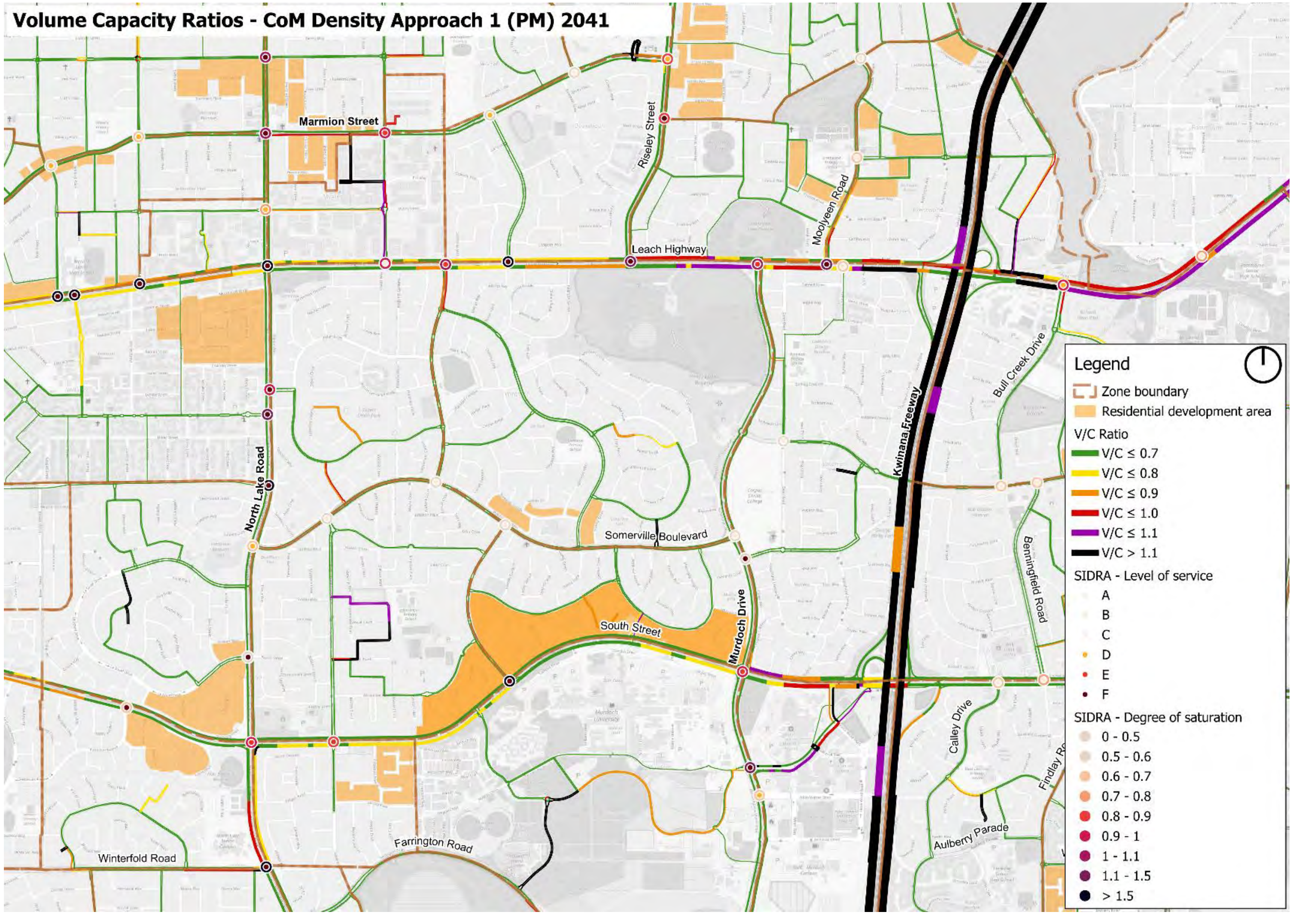


Figure C.29 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 PM ("CoM Density Approach 1") (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

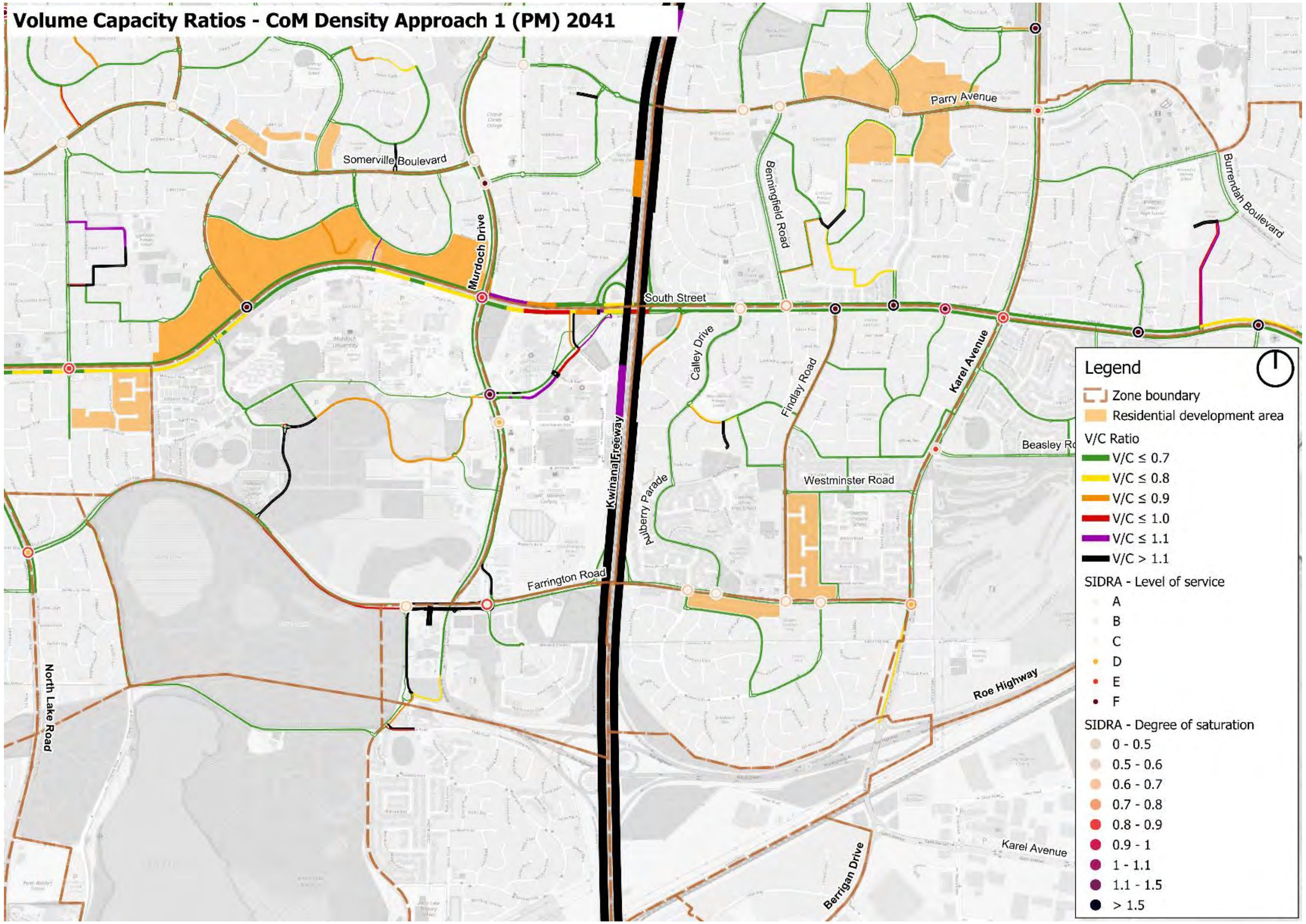


Figure C.30 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 PM (“CoM Density Approach 1”) (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

C4 2041 scenario 2 ("CoM Density Approach 2")

This section summarises the peak hour network congestion, indicated by volume-capacity ratios on road corridors and intersection performance, from the traffic assignment model and SIDRA intersection modelling, respectively, for the 2041 scenario 2 ("CoM Density Approach 2"). These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

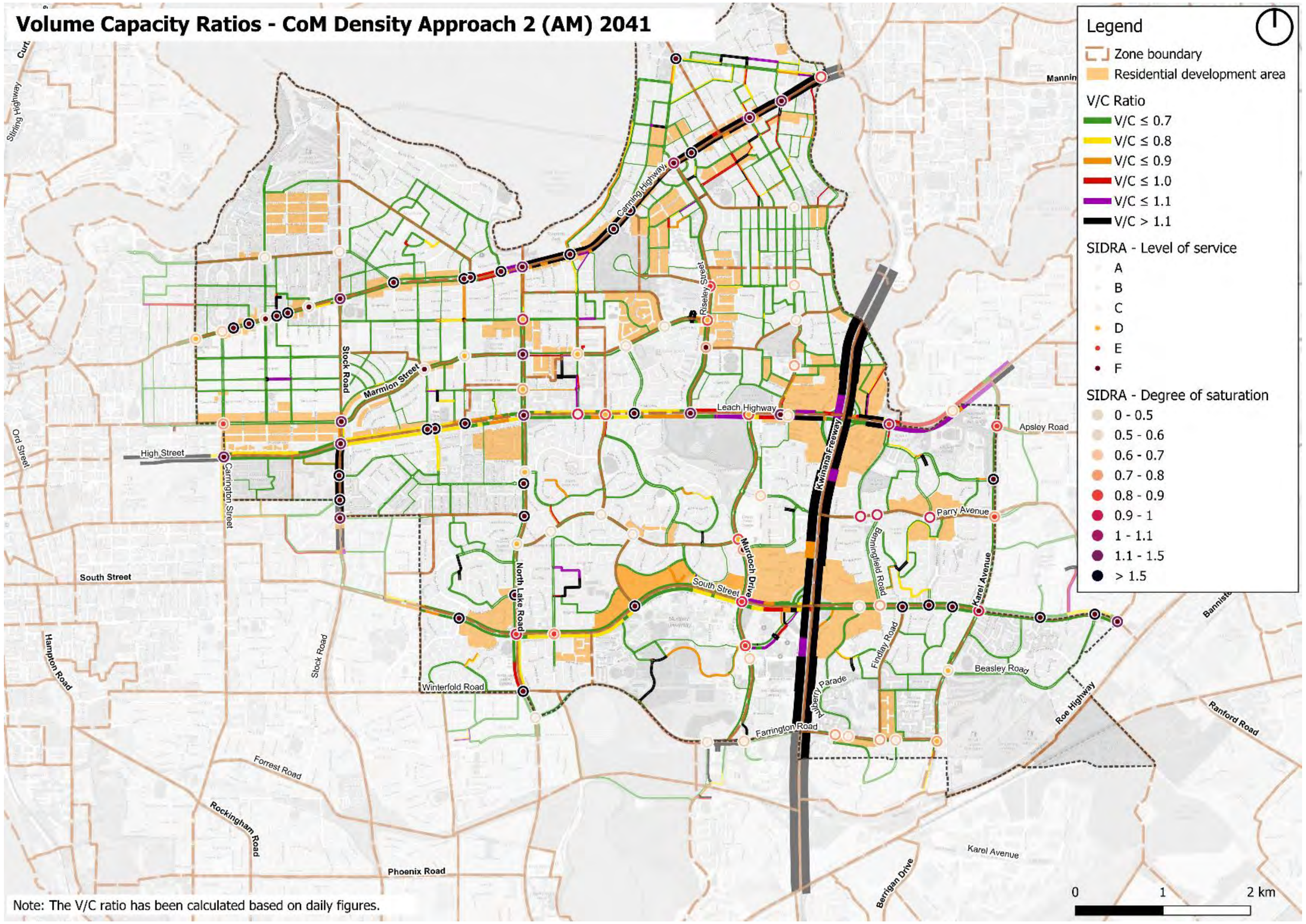


Figure C.31 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 AM ("CoM Density Approach 2")

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

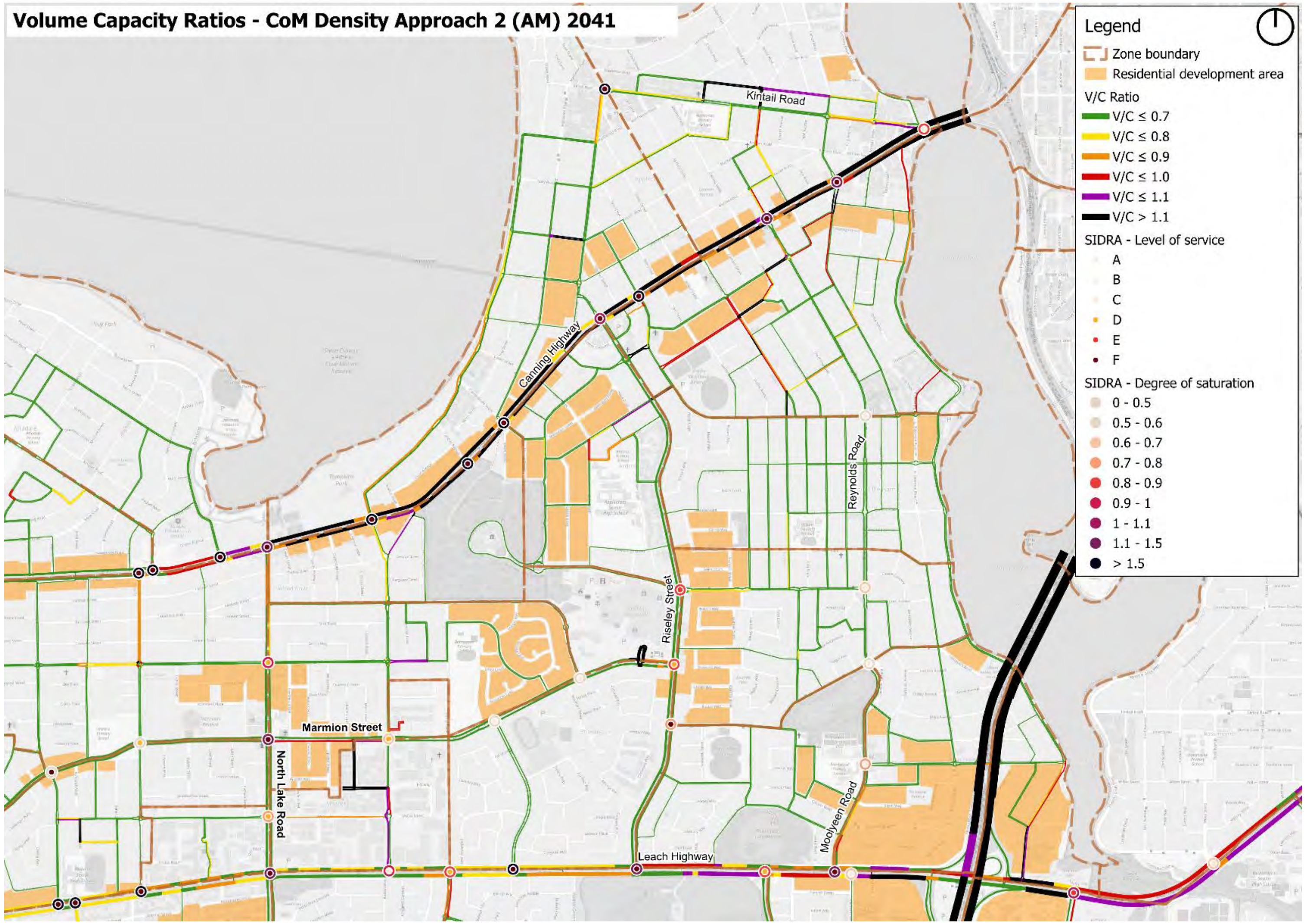


Figure C.32 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 AM (“CoM Density Approach 2”) (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

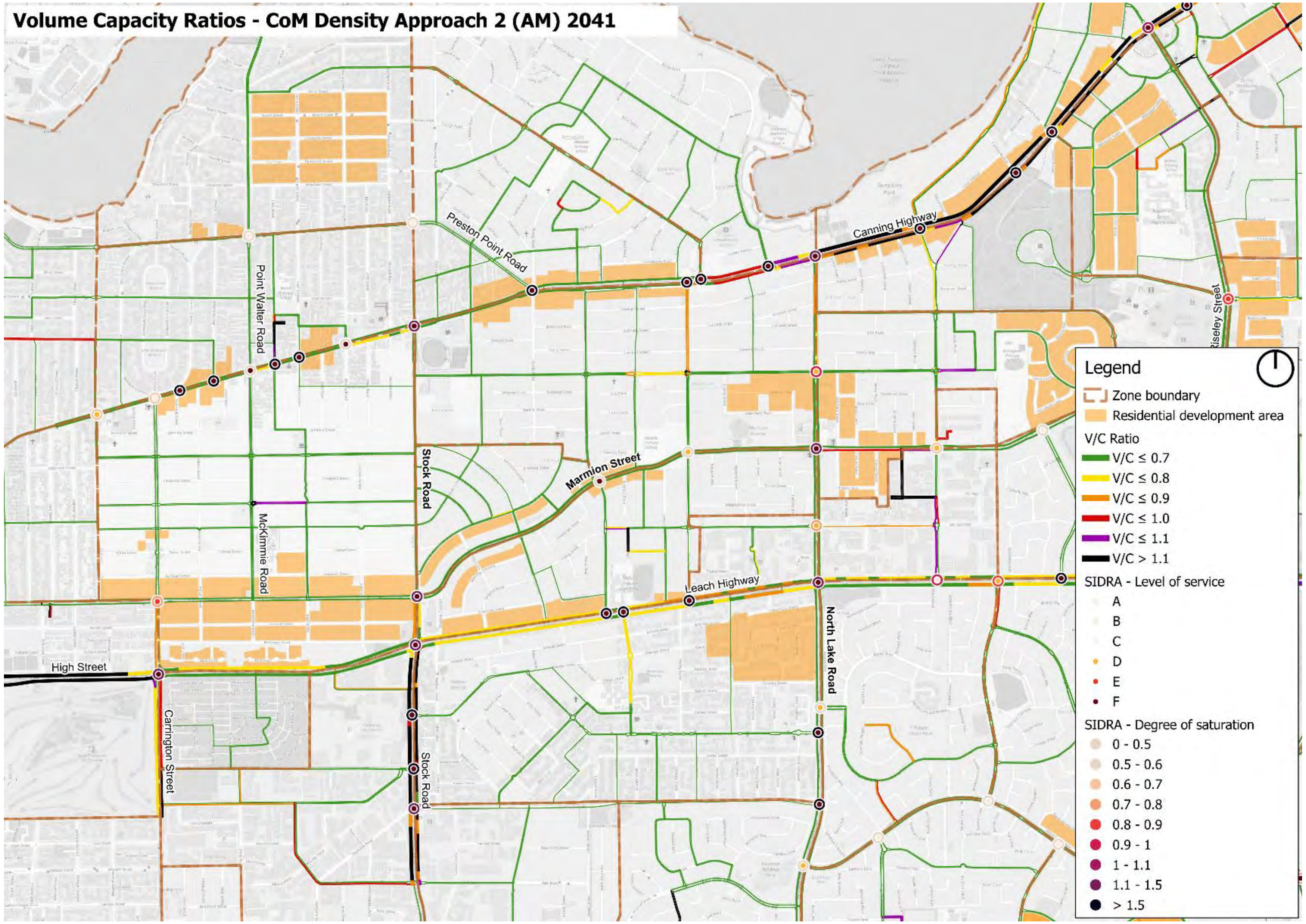


Figure C.33 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 AM ("CoM Density Approach 2") (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

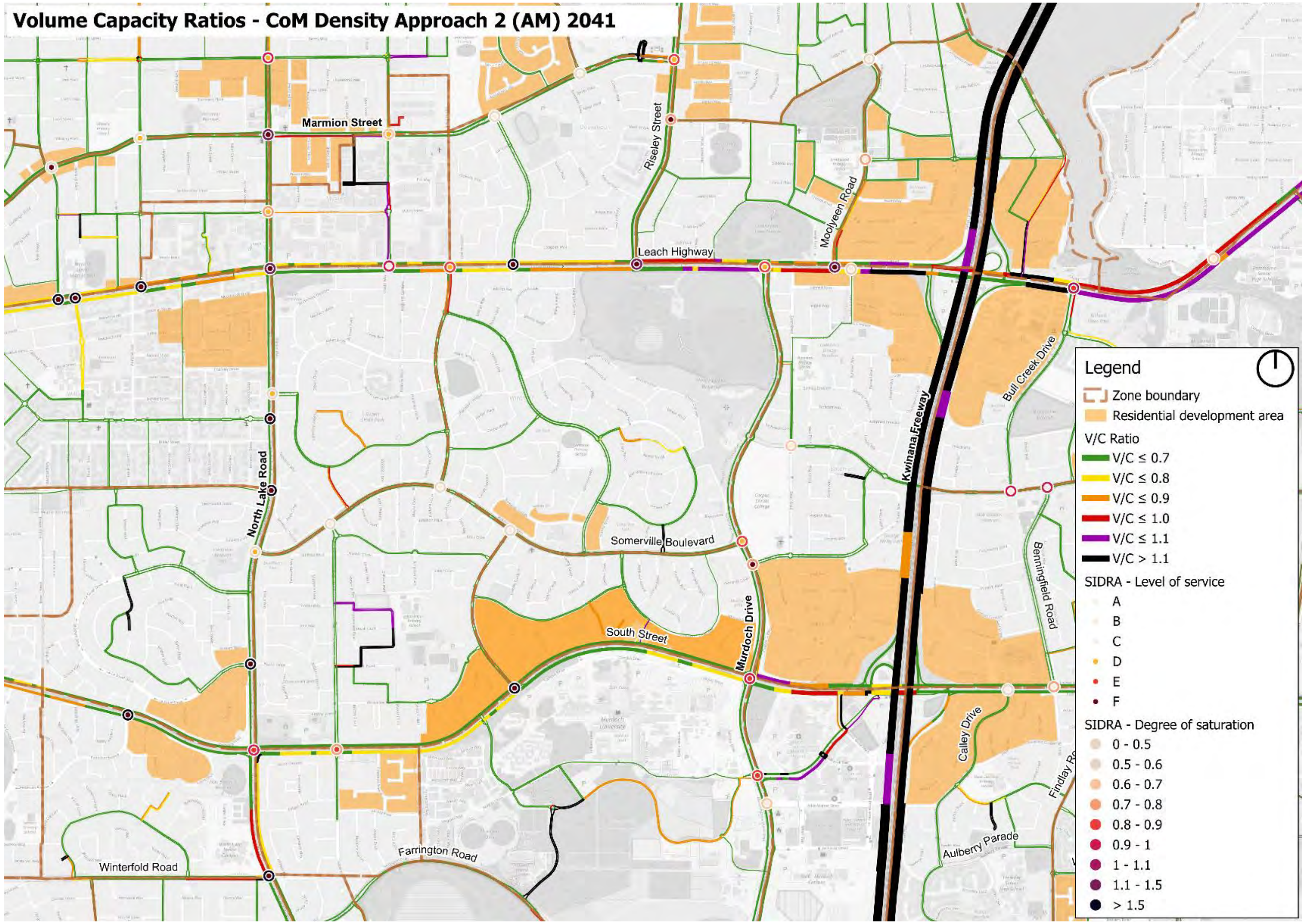


Figure C.34 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 AM (“CoM Density Approach 2”) (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

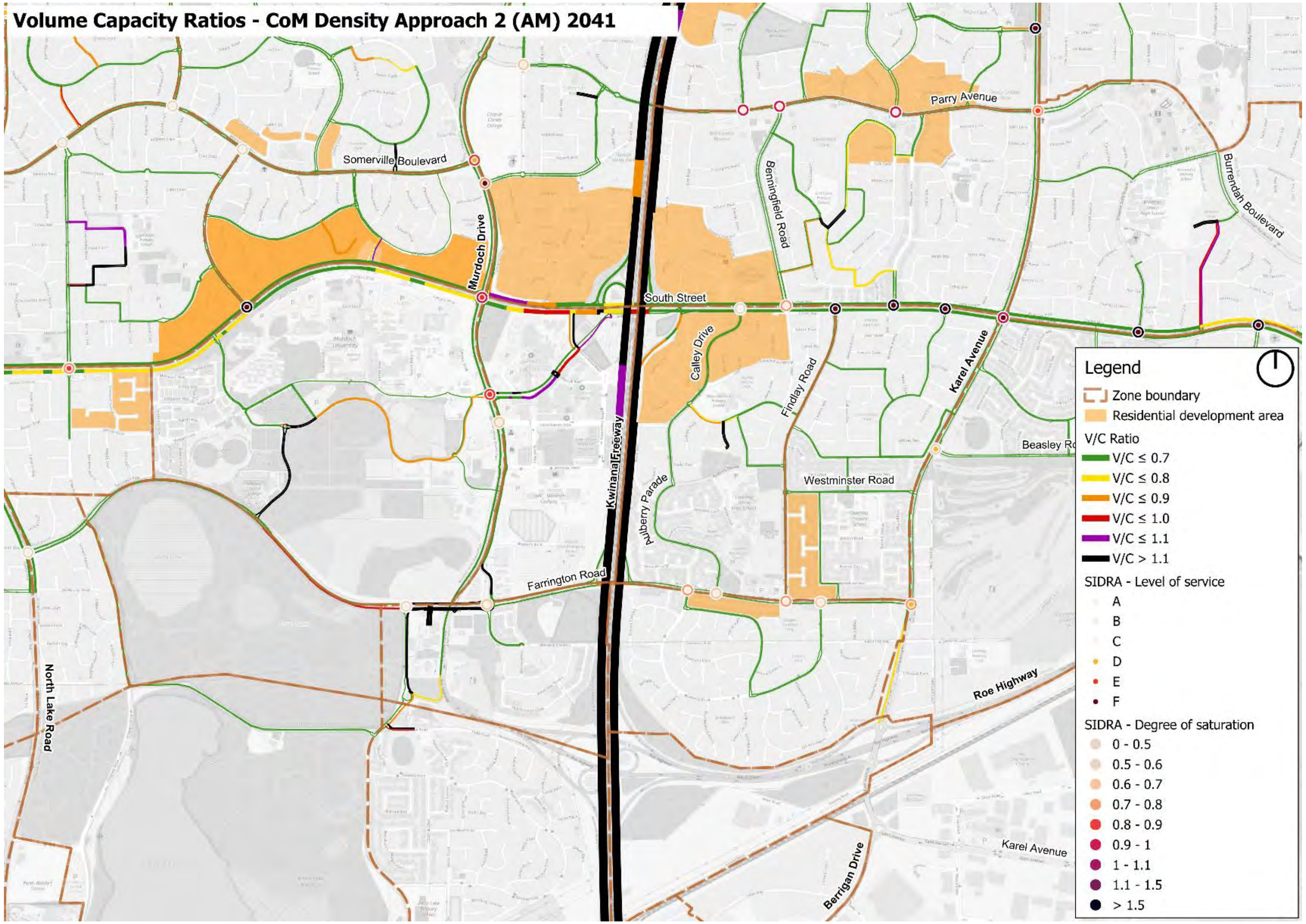


Figure C.35 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 AM (“CoM Density Approach 2”) (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

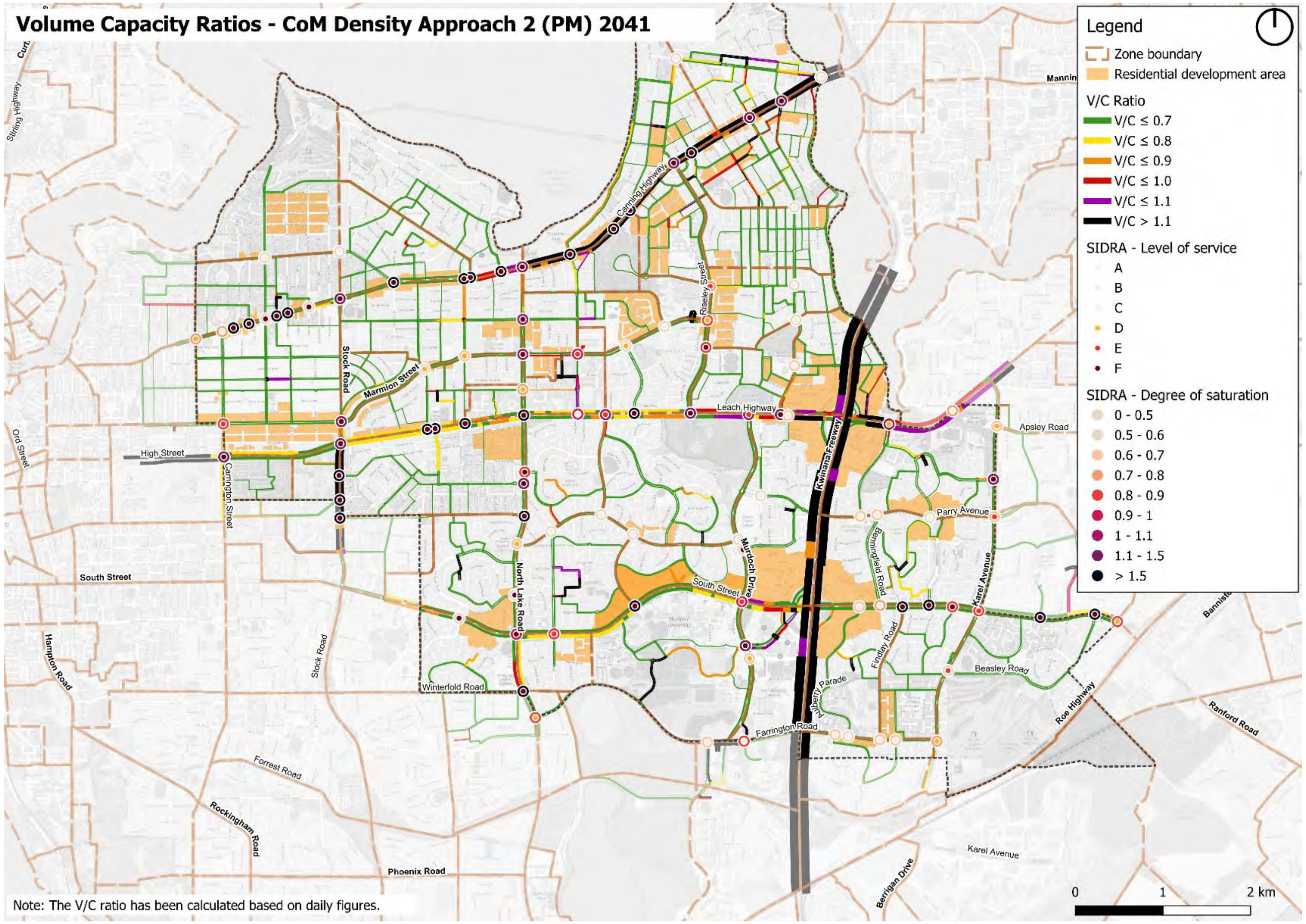


Figure C.36 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 PM ("CoM Density Approach 2")

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

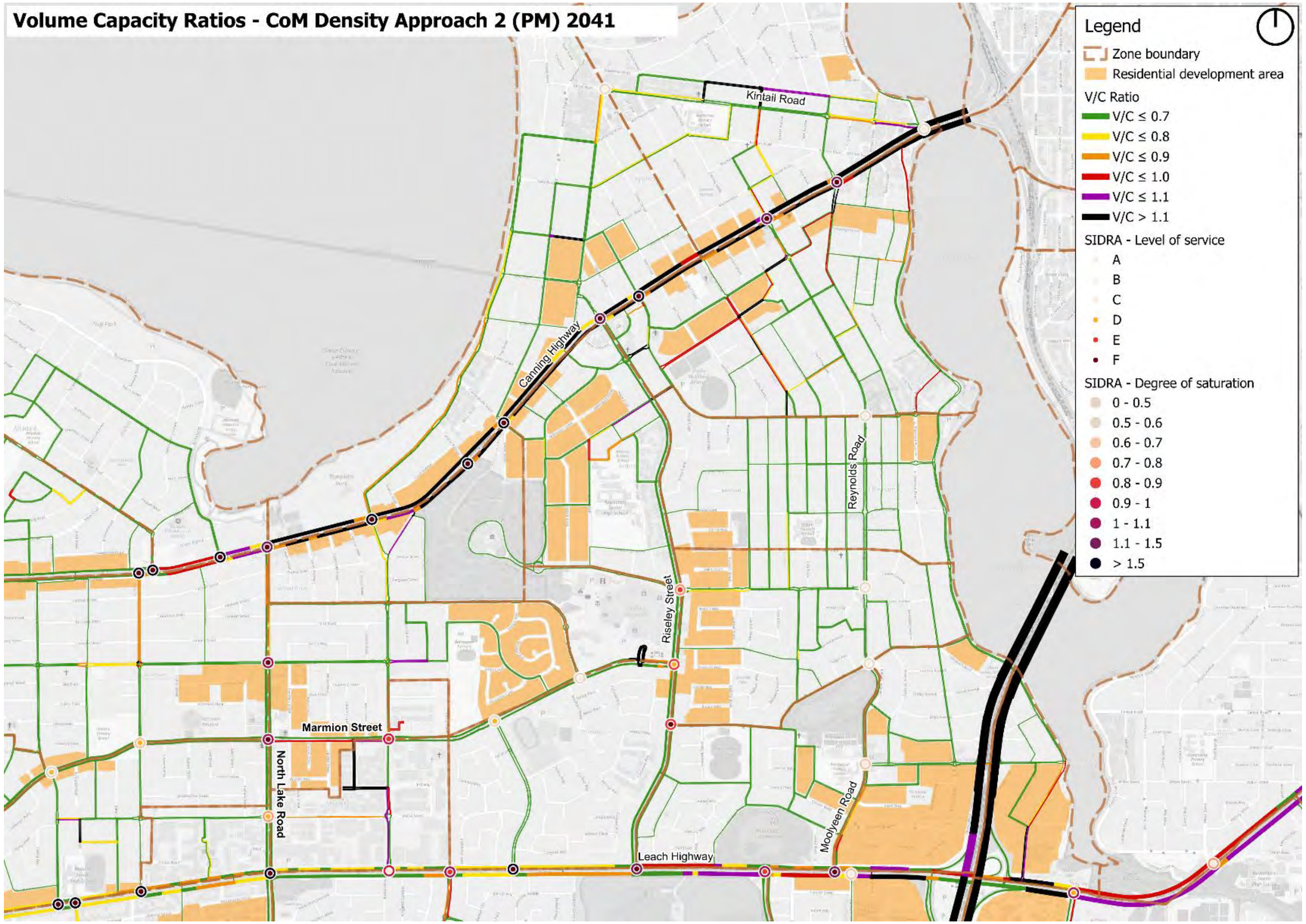


Figure C.37 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 PM ("CoM Density Approach 2") (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

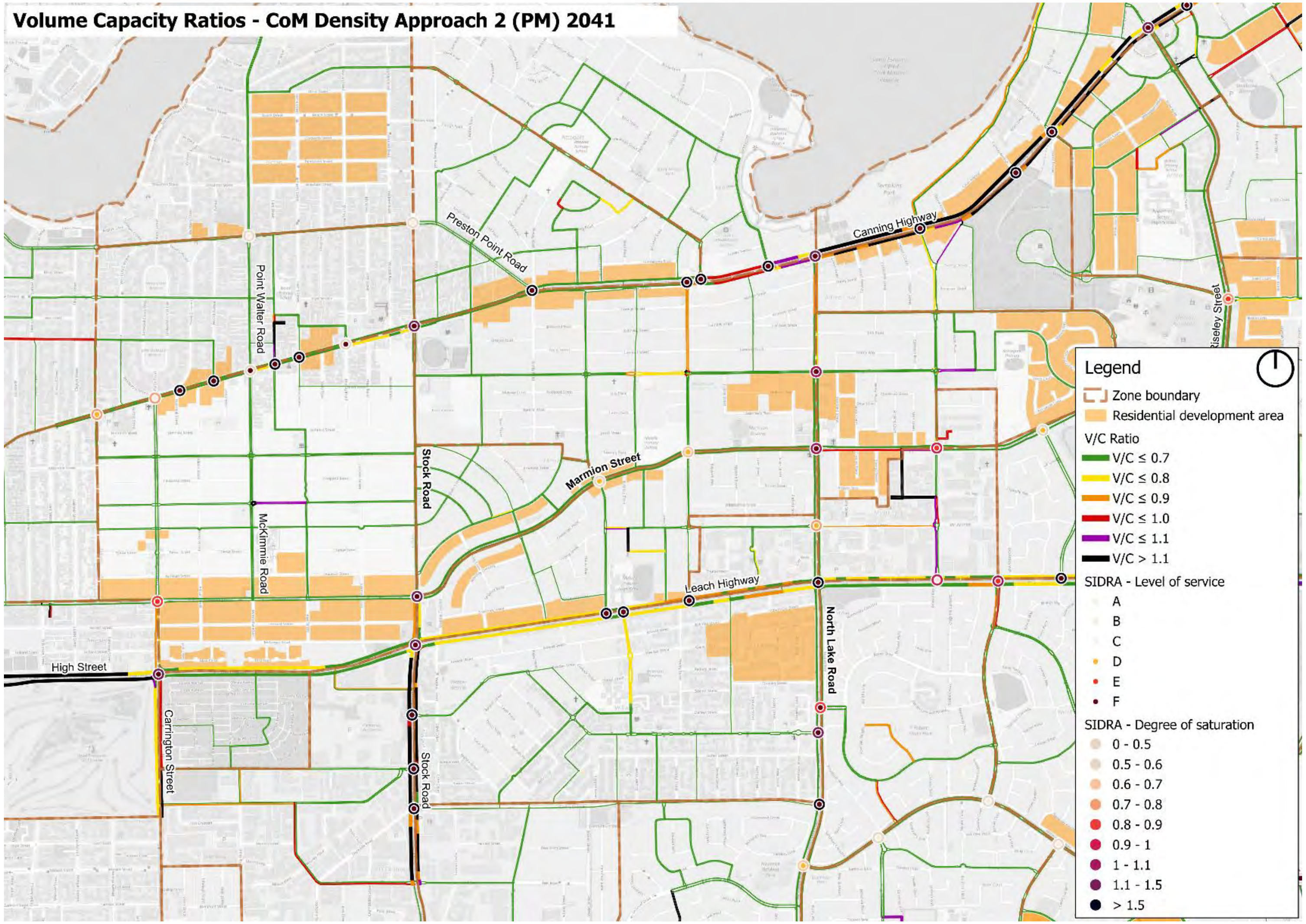


Figure C.38 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 PM (“CoM Density Approach 2”) (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

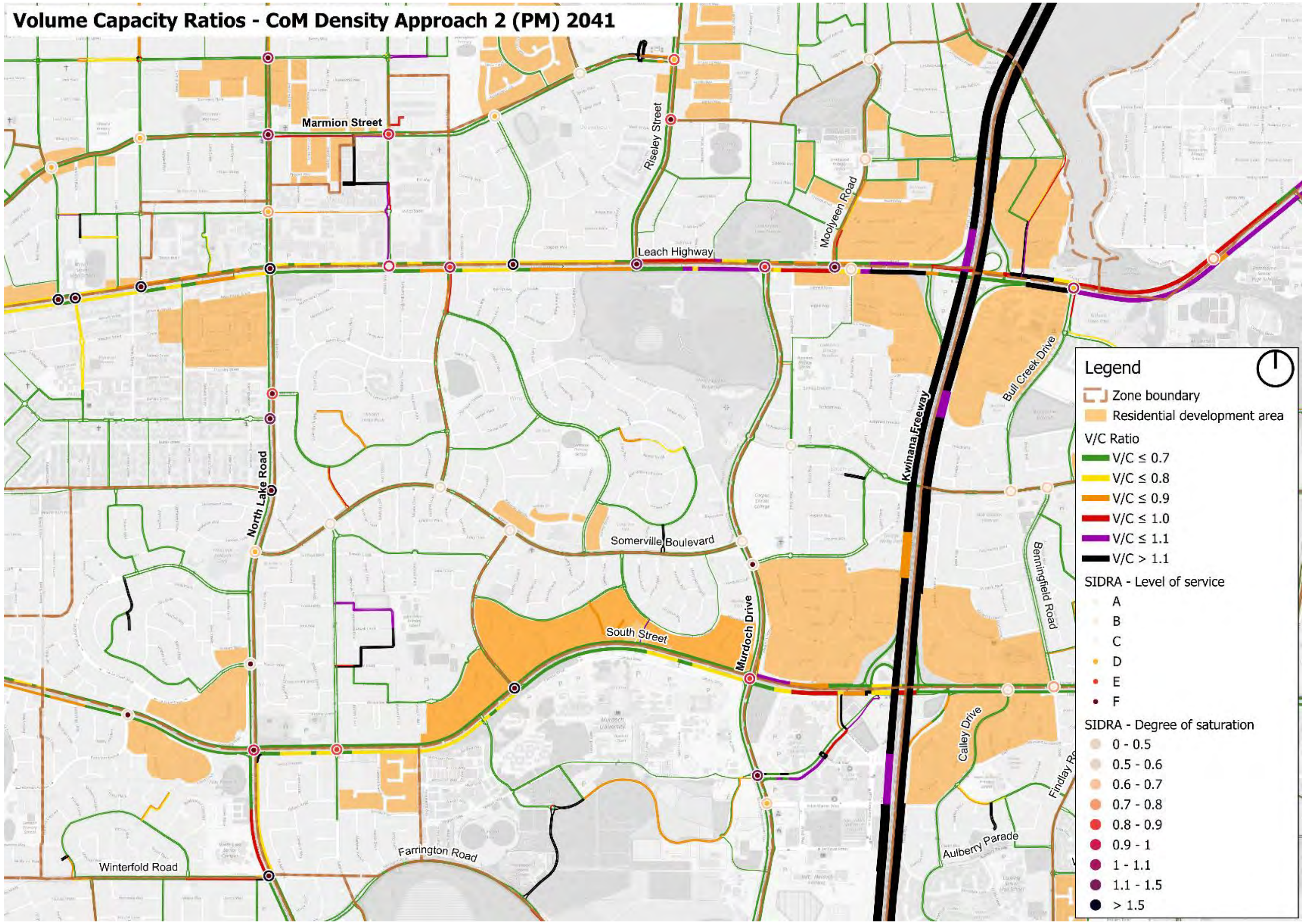


Figure C.39 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 PM ("CoM Density Approach 2") (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

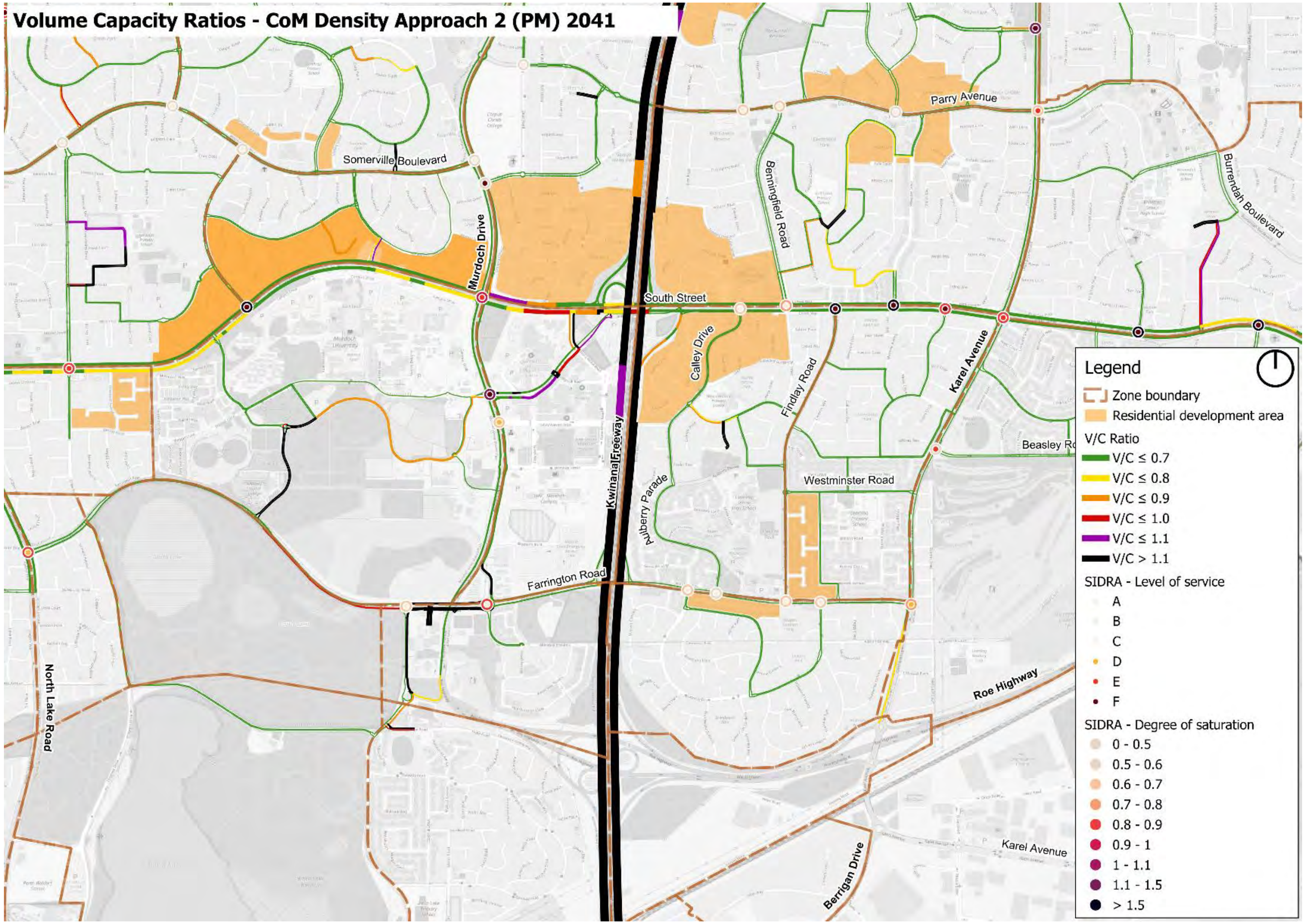


Figure C.40 Existing network volume-capacity ratios and intersection performance– 2041 scenario 2 PM (“CoM Density Approach 2”) (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

C5 2051 baseline

This section summarises the peak hour network congestion, indicated by volume-capacity ratios on road corridors and intersection performance, from the traffic assignment model and SIDRA intersection modelling, respectively, for the 2051 baseline. These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

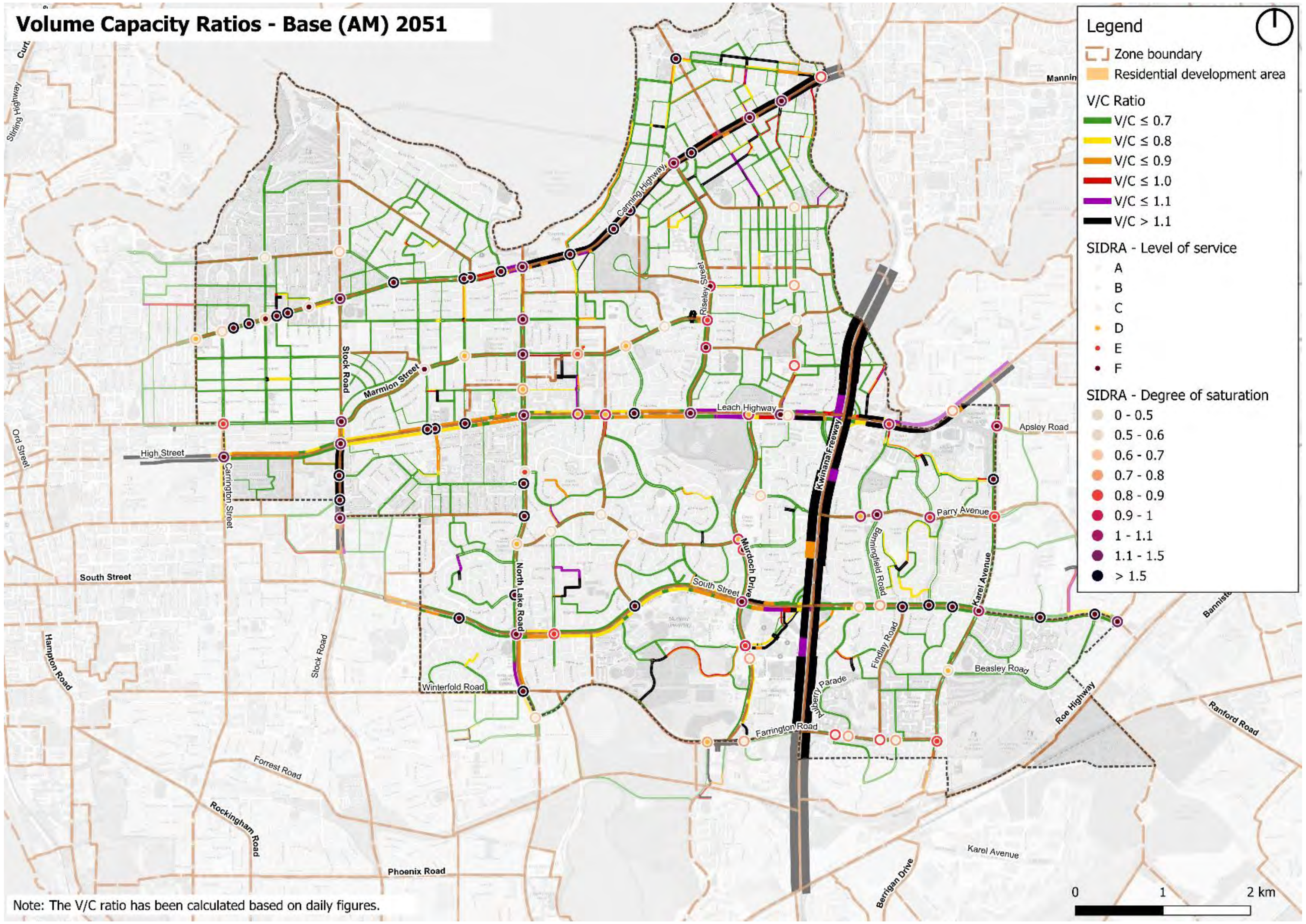


Figure C.41 Existing network volume-capacity ratios and intersection performance– 2051 Base AM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

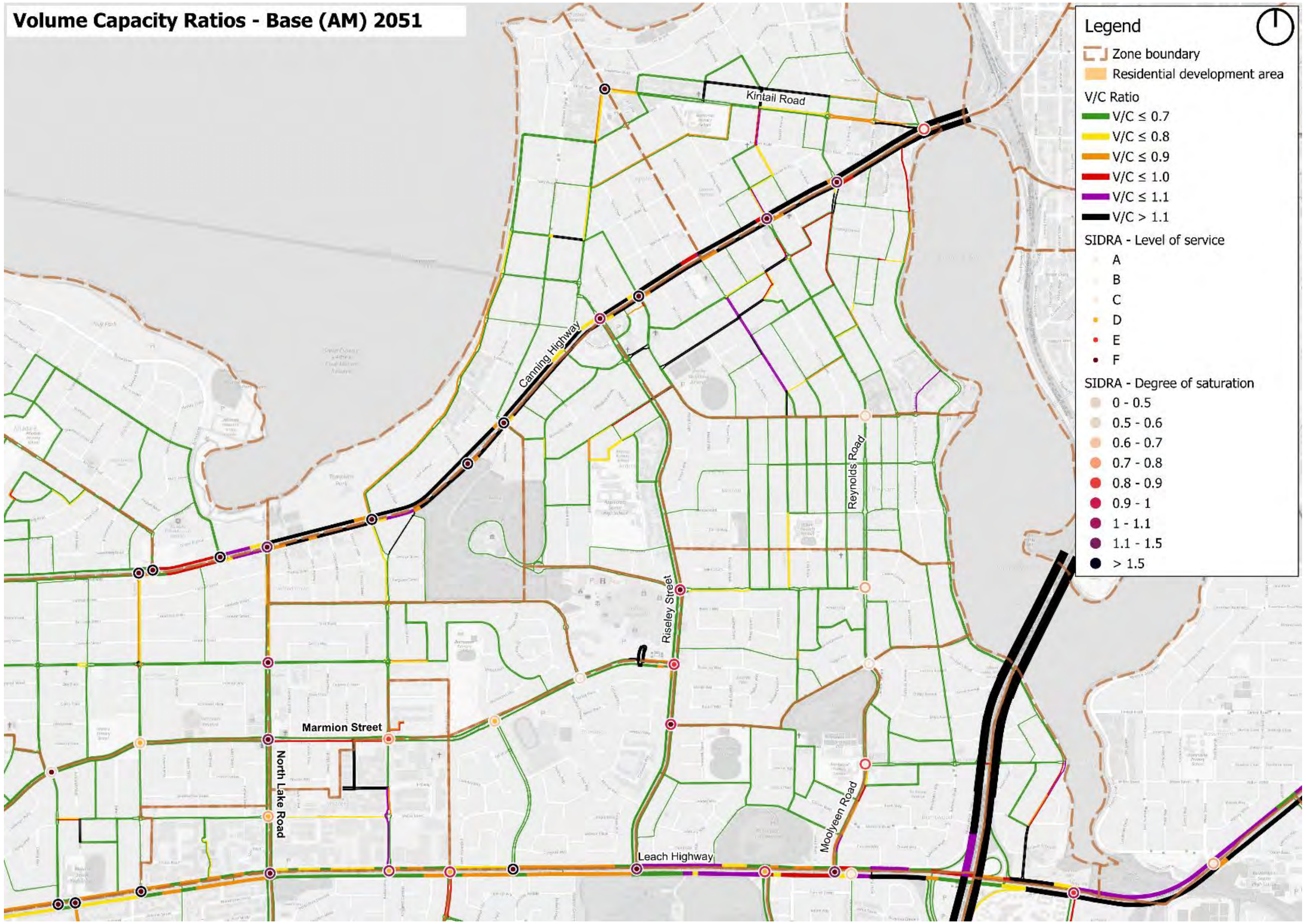


Figure C.42 Existing network volume-capacity ratios and intersection performance– 2051 Base AM (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

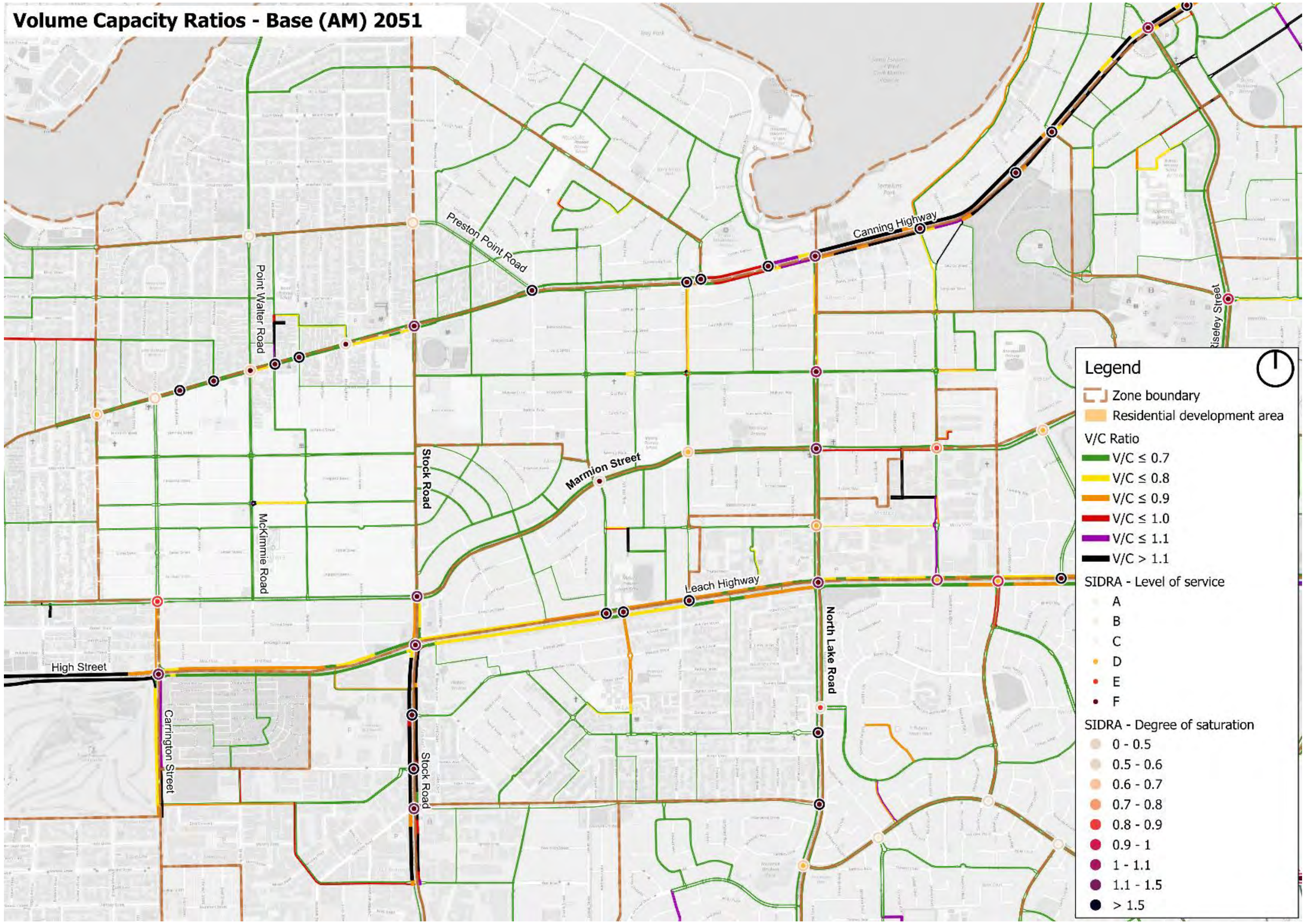


Figure C.43 Existing network volume-capacity ratios and intersection performance– 2051 Base AM (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

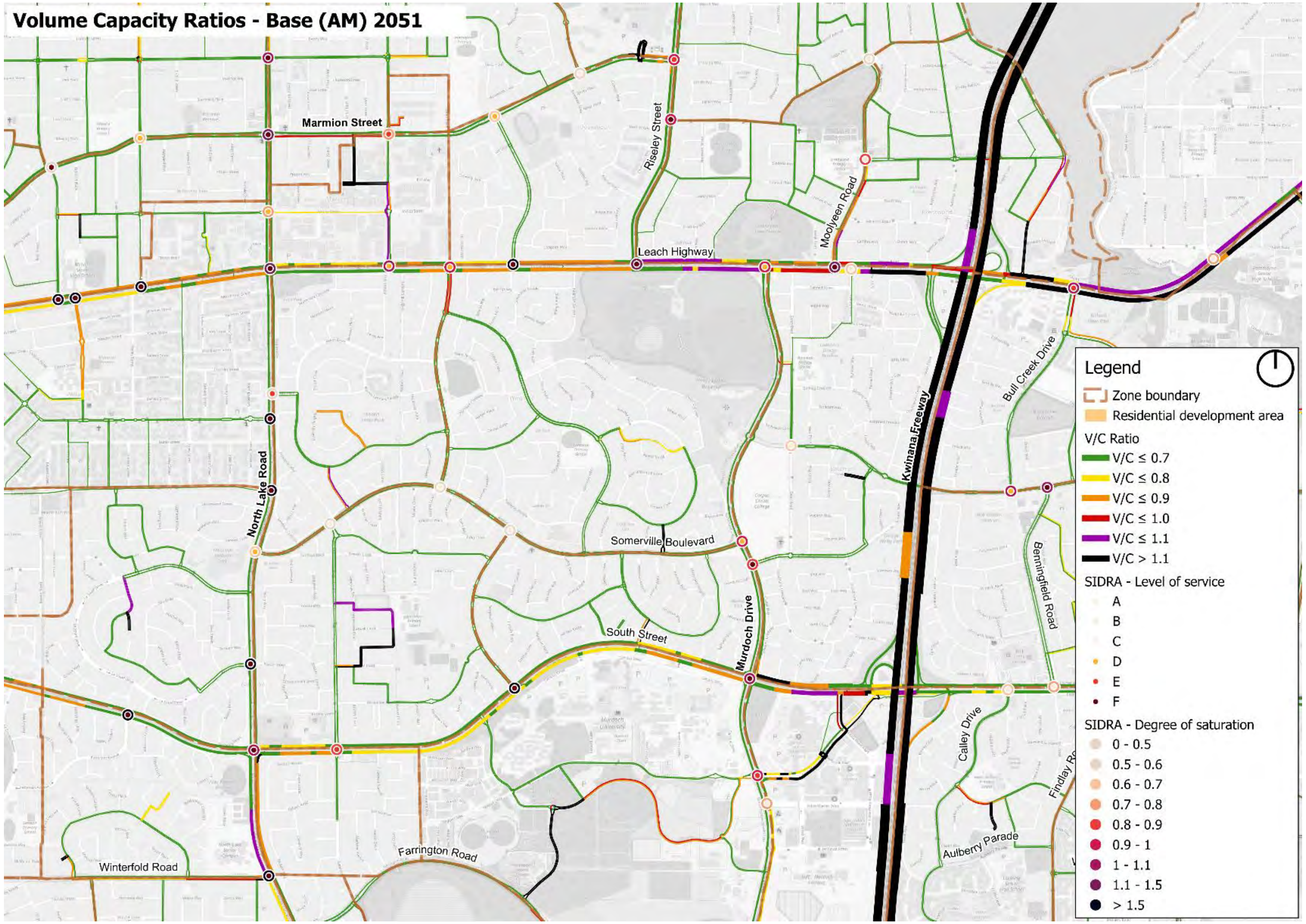


Figure C.44 Existing network volume-capacity ratios and intersection performance– 2051 Base AM (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

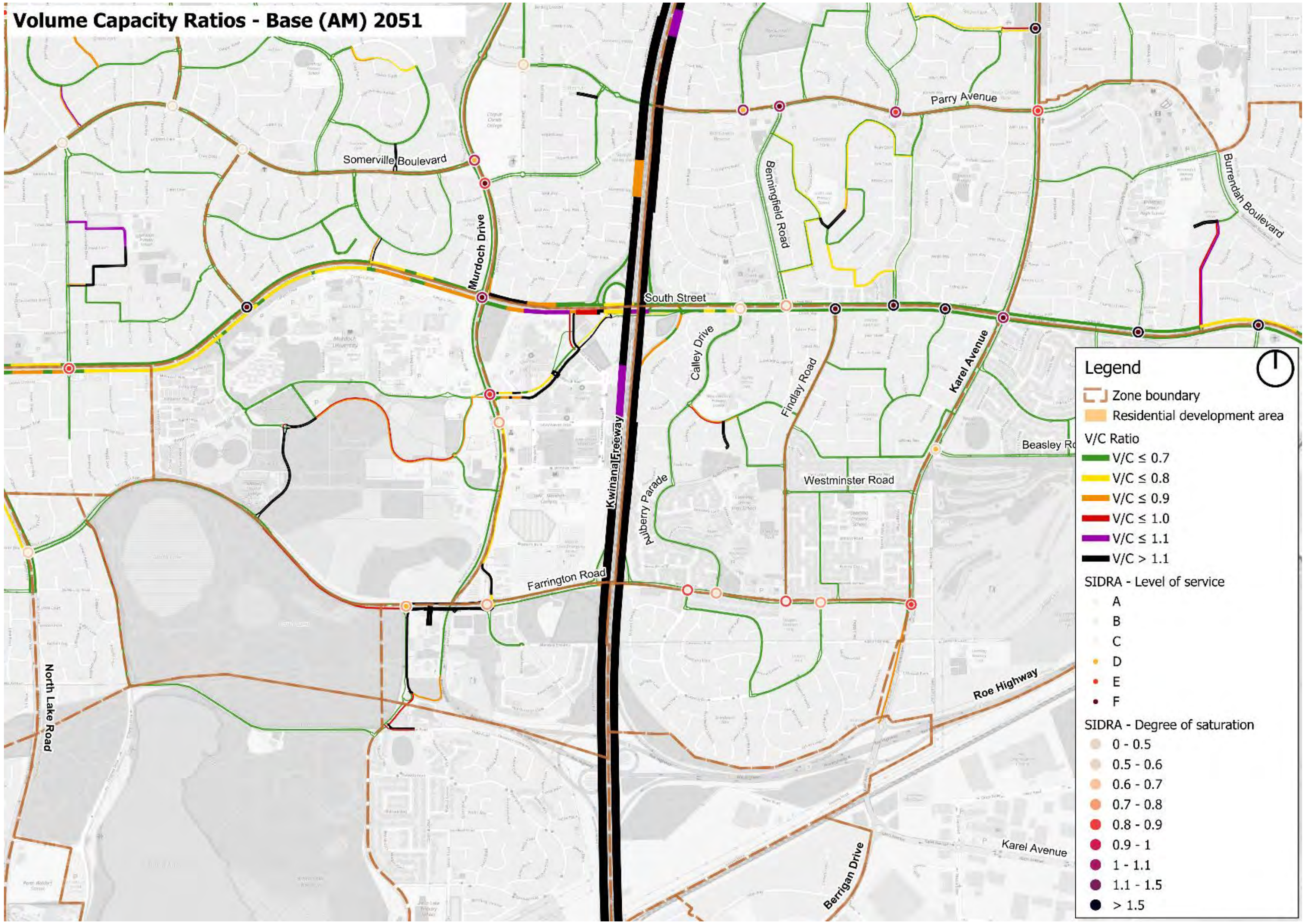


Figure C.45 Existing network volume-capacity ratios and intersection performance– 2051 Base AM (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

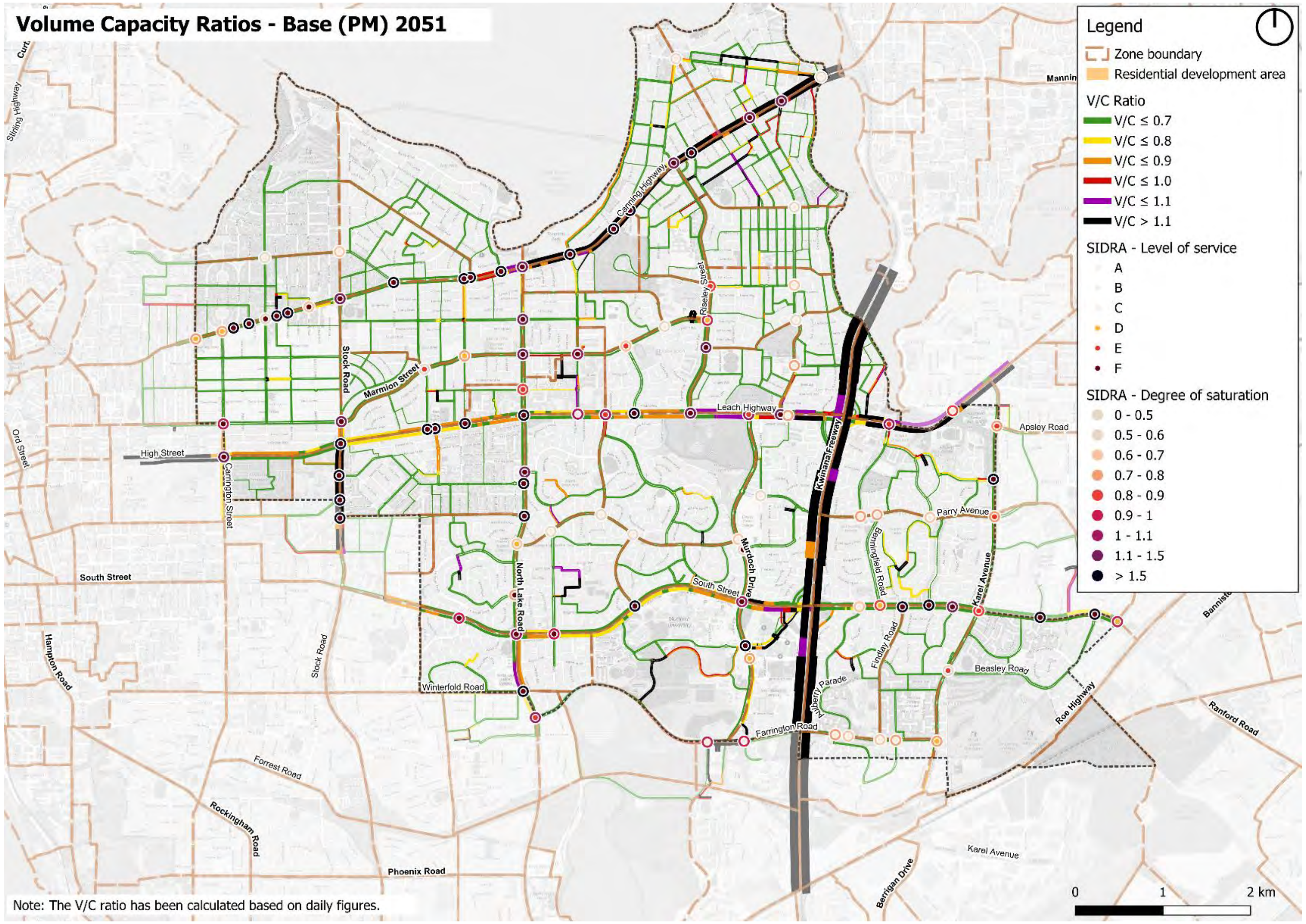


Figure C.46 Existing network volume-capacity ratios and intersection performance– 2051 Base PM

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

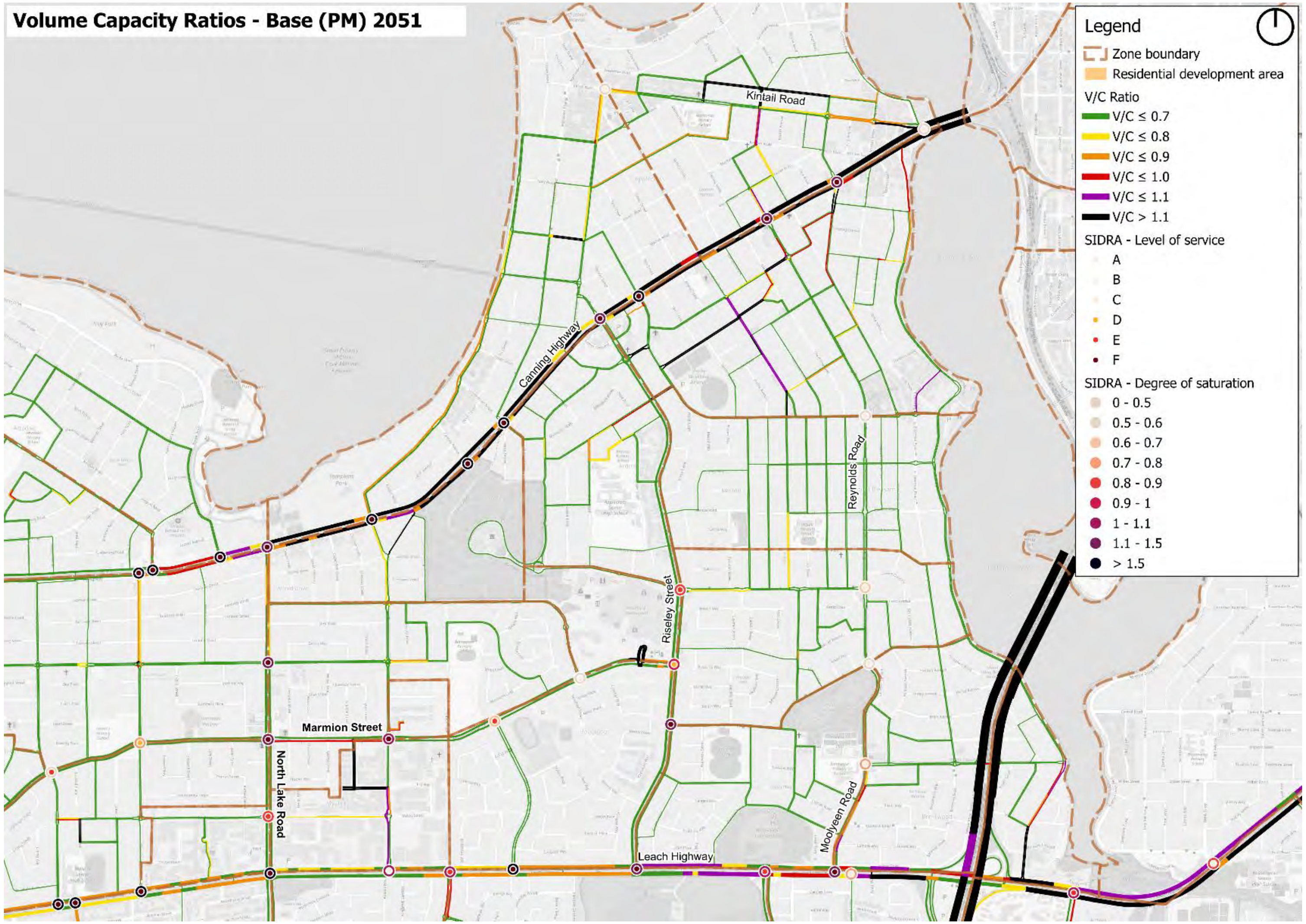


Figure C.47 Existing network volume-capacity ratios and intersection performance– 2051 Base PM (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

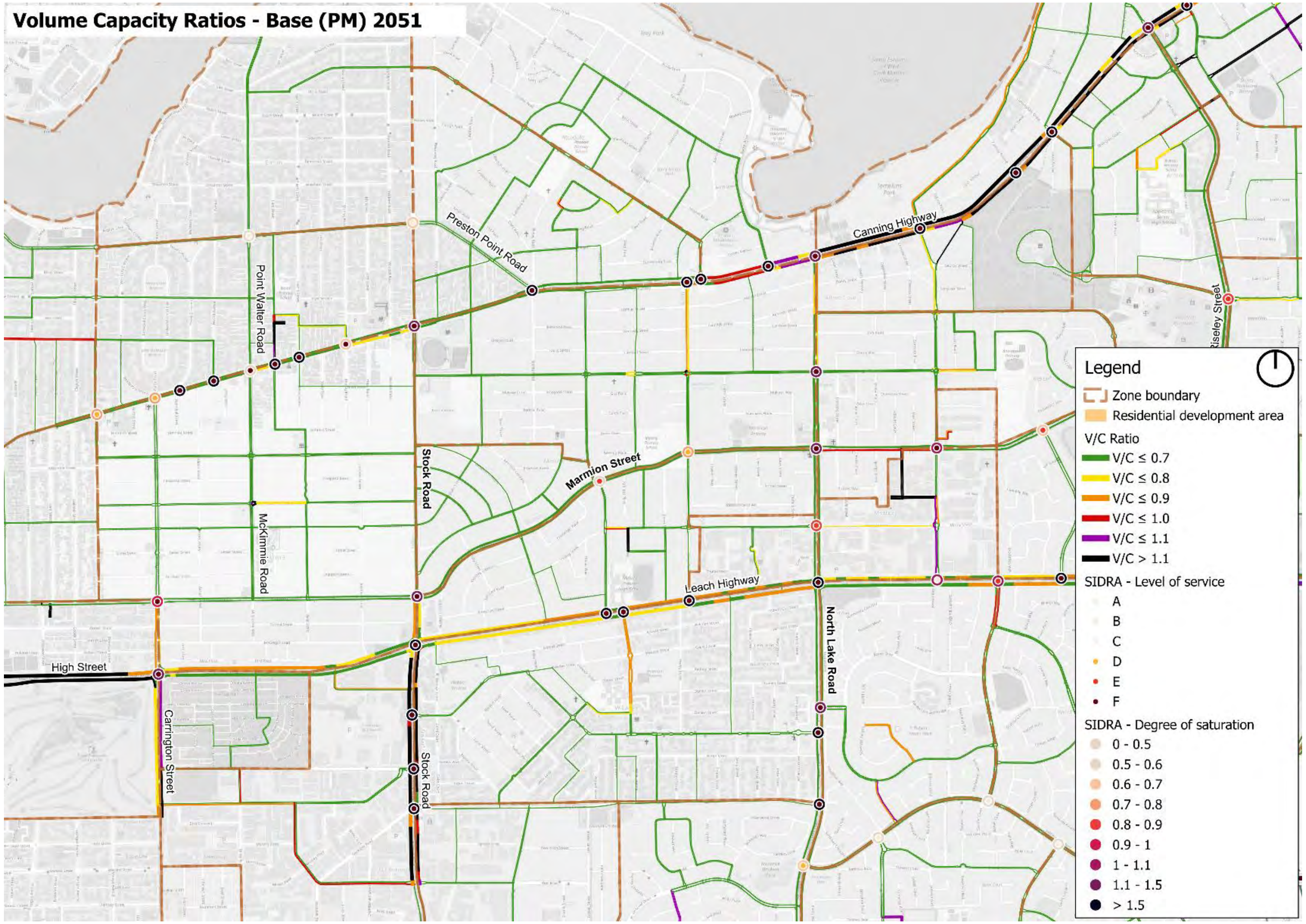


Figure C.48 Existing network volume-capacity ratios and intersection performance– 2051 Base PM (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

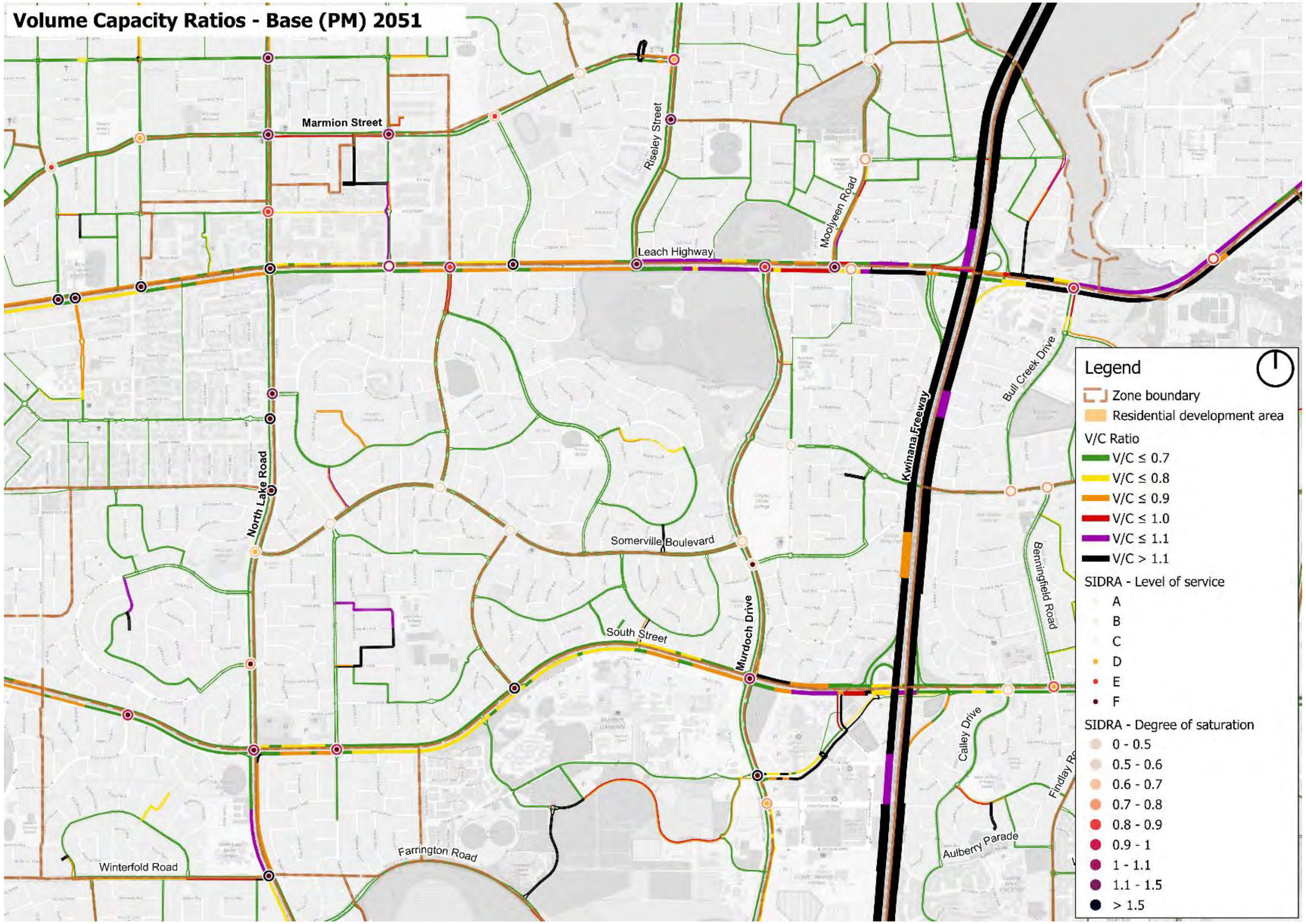


Figure C.49 Existing network volume-capacity ratios and intersection performance– 2051 Base PM (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

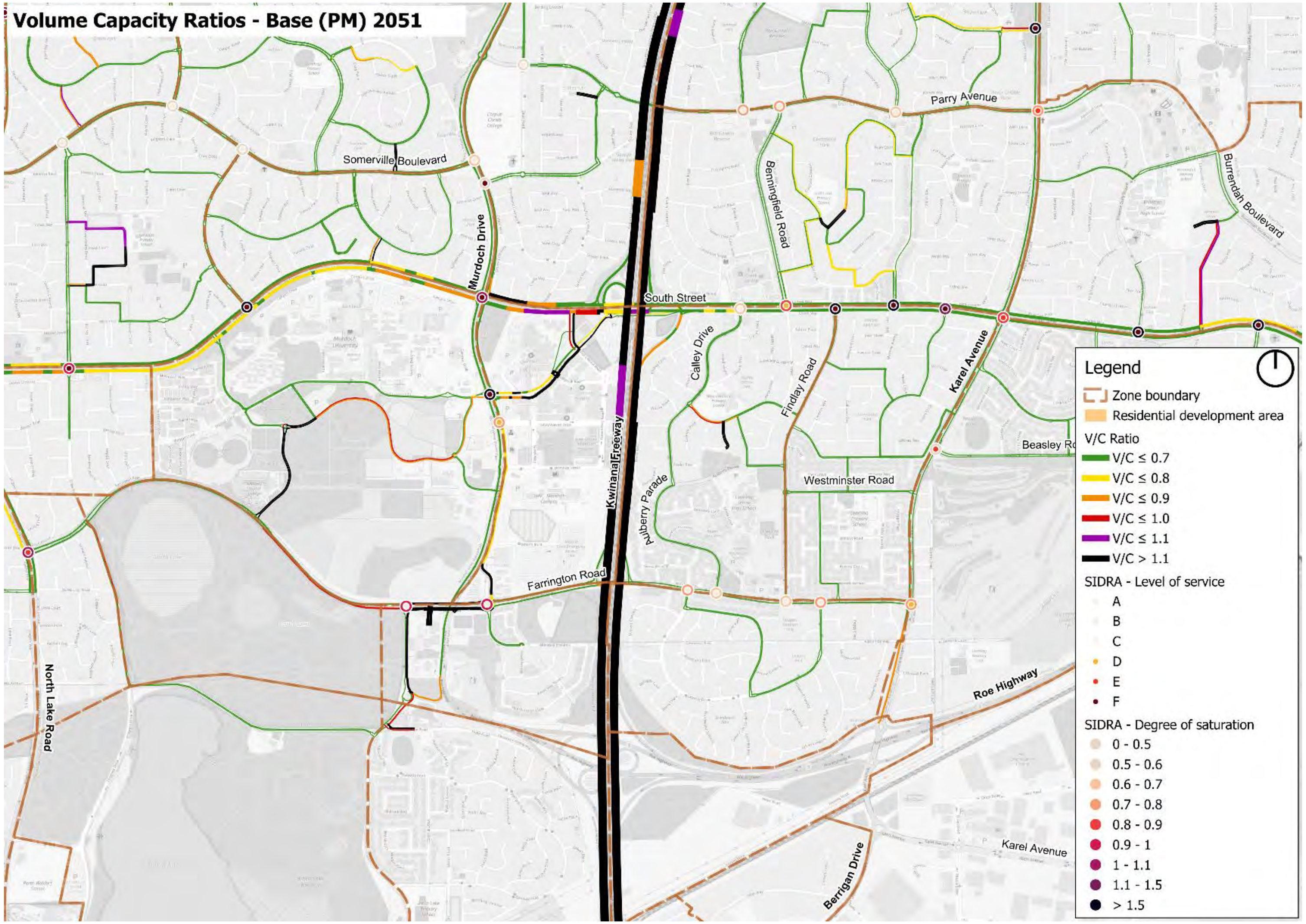


Figure C.50 Existing network volume-capacity ratios and intersection performance– 2051 Base PM (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

C6 2051 scenario 1 (“CoM Density Approach 1”)

This section summarises the peak hour network congestion, indicated by volume-capacity ratios on road corridors and intersection performance, from the traffic assignment model and SIDRA intersection modelling, respectively, for the 2051 scenario 1 (“CoM Density Approach 1”). These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

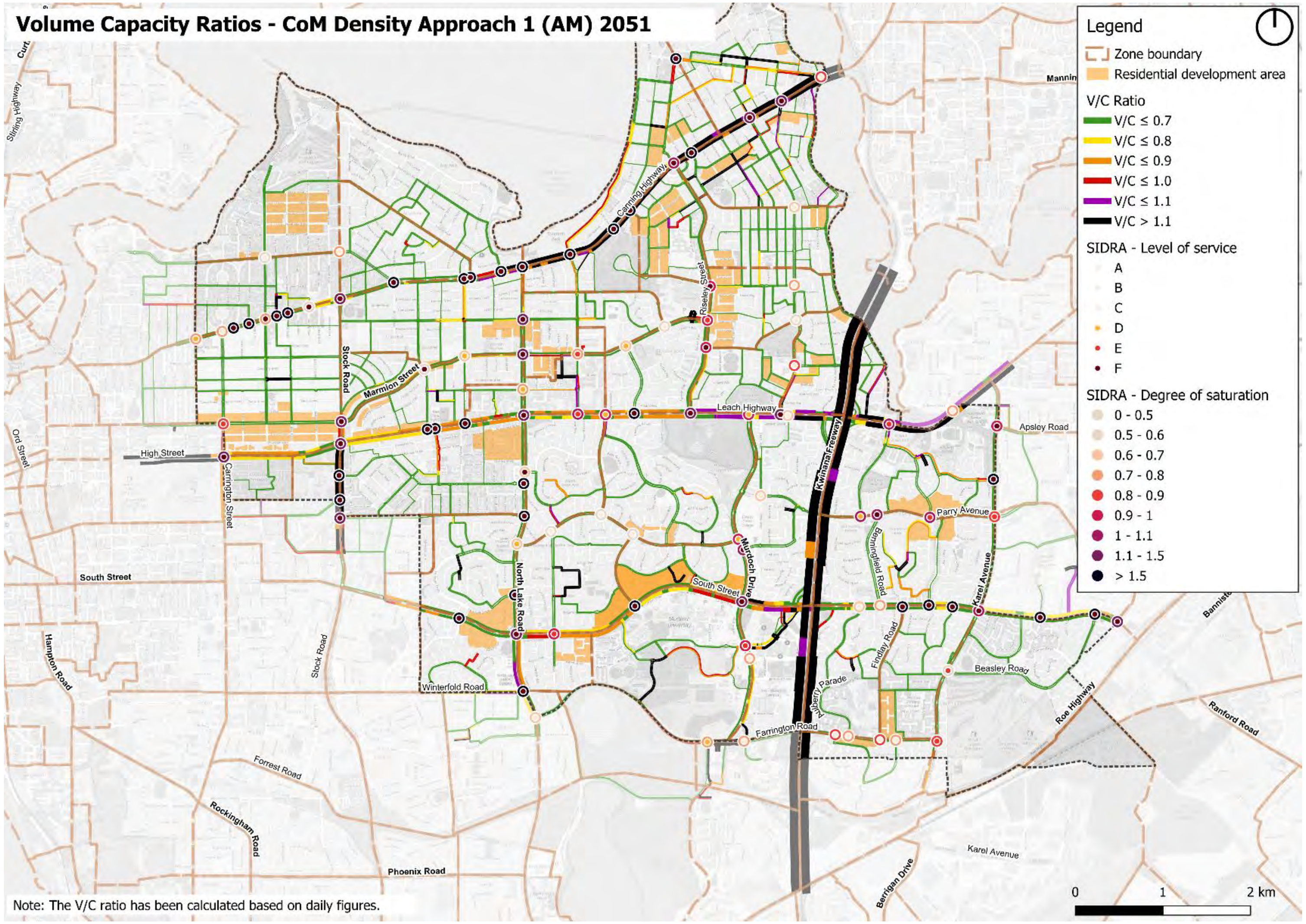


Figure C.51 Existing network volume-capacity ratios and intersection performance– 2051 scenario 1 AM ("CoM Density Approach 1")

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

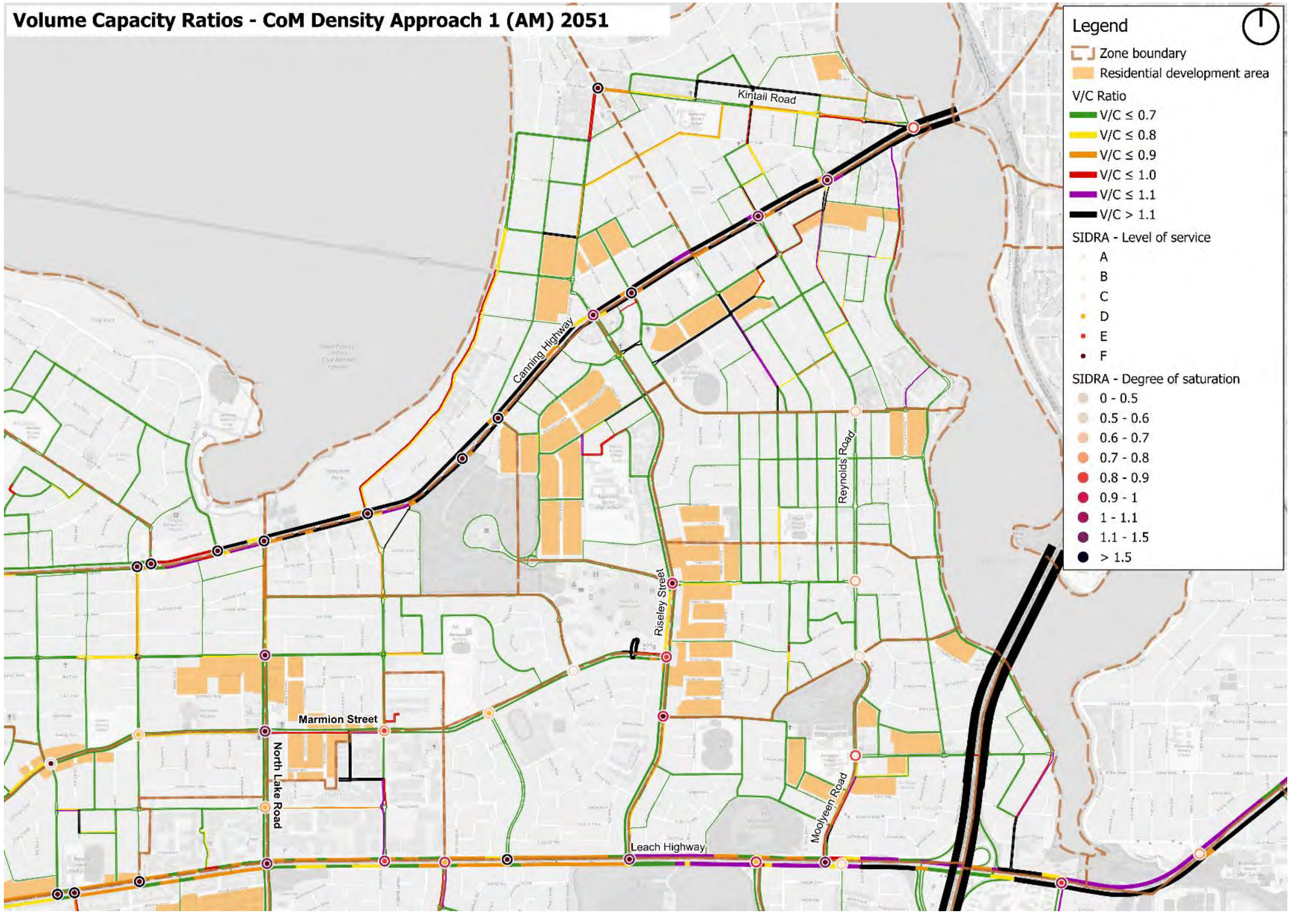


Figure C.52 Existing network volume-capacity ratios and intersection performance– 2051 scenario 1 AM (“CoM Density Approach 1”) (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

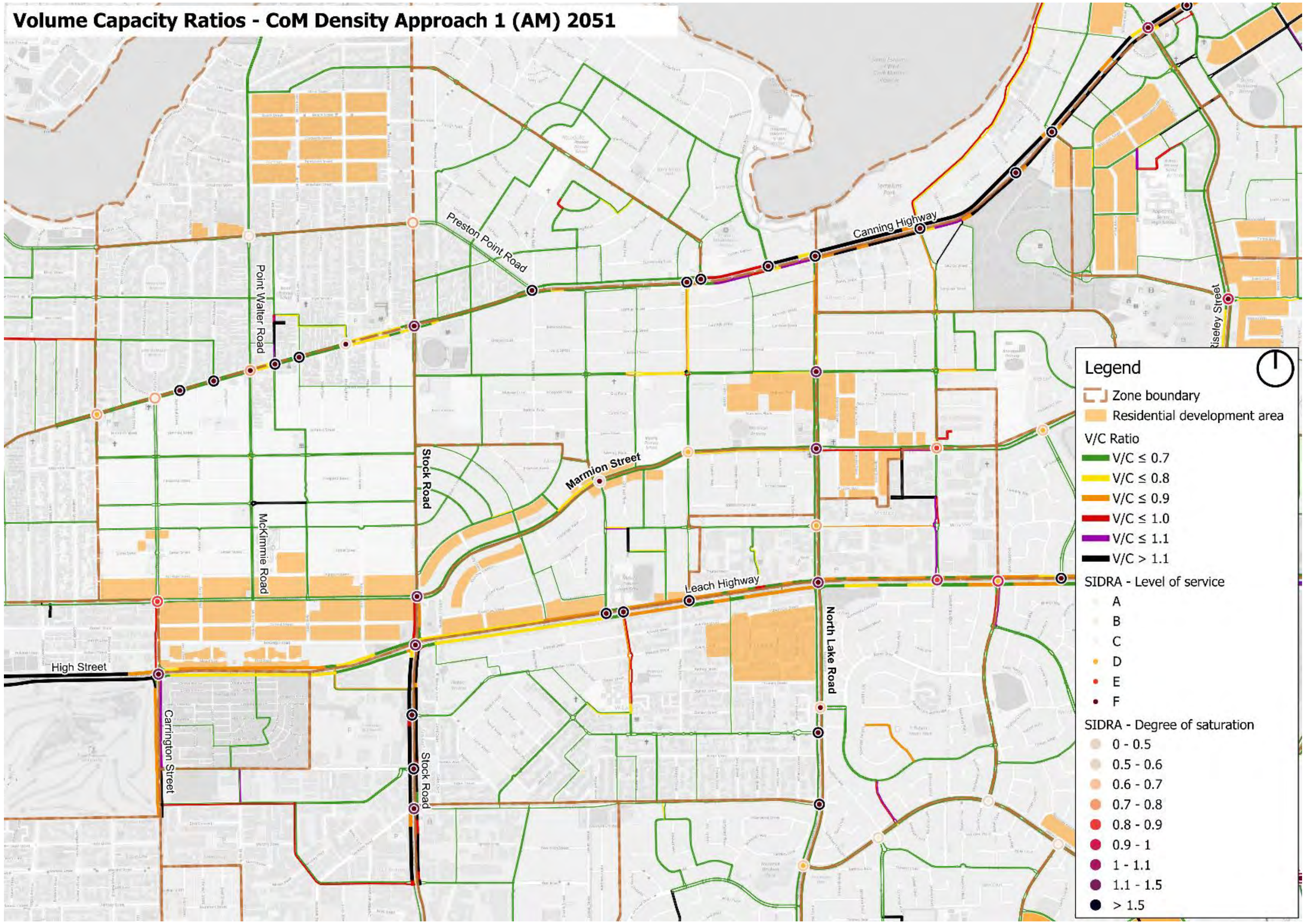


Figure C.53 Existing network volume-capacity ratios and intersection performance– 2051 scenario 1 AM ("CoM Density Approach 1") (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

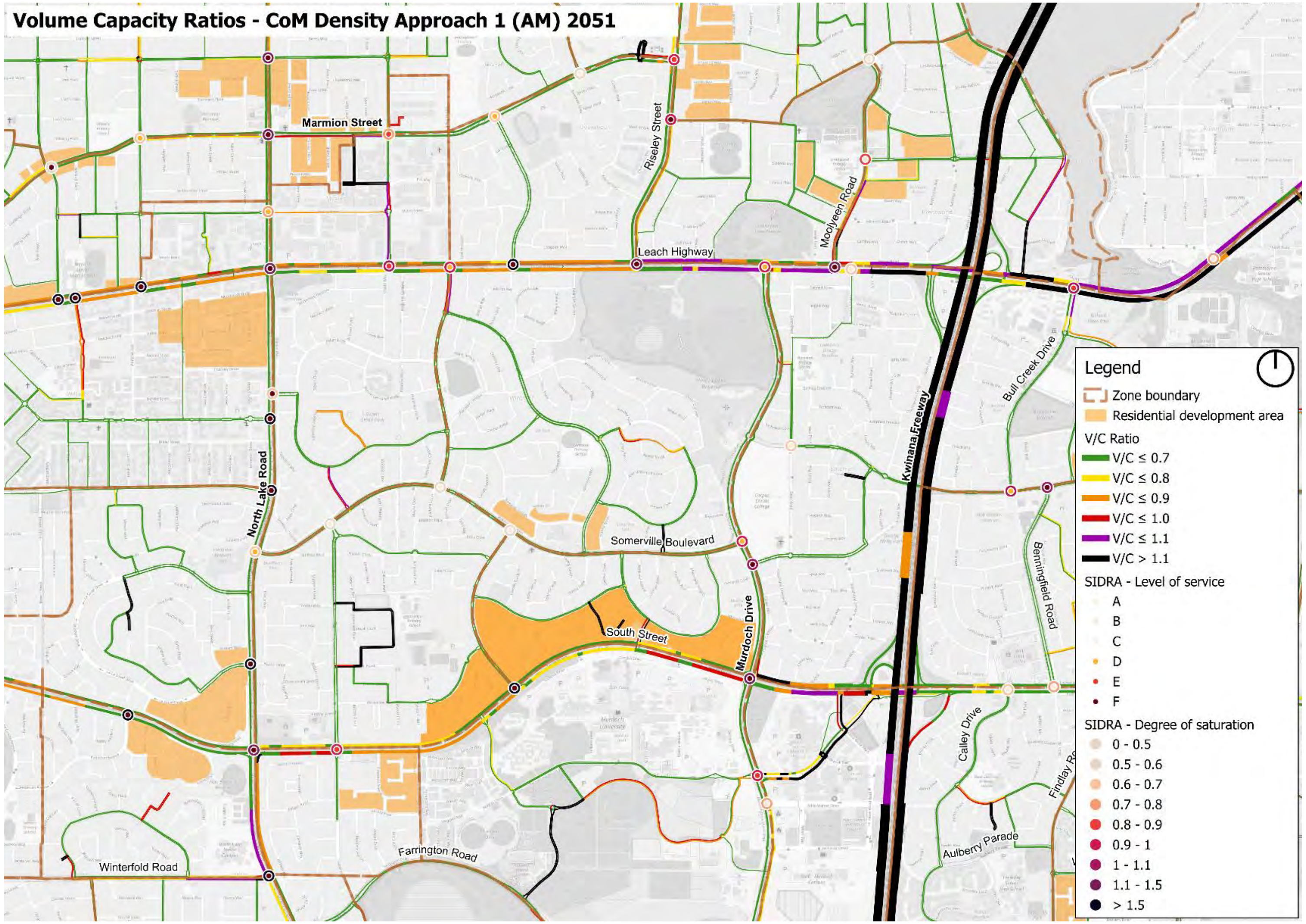


Figure C.54 Existing network volume-capacity ratios and intersection performance– 2051 scenario 1 AM ("CoM Density Approach 1") (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

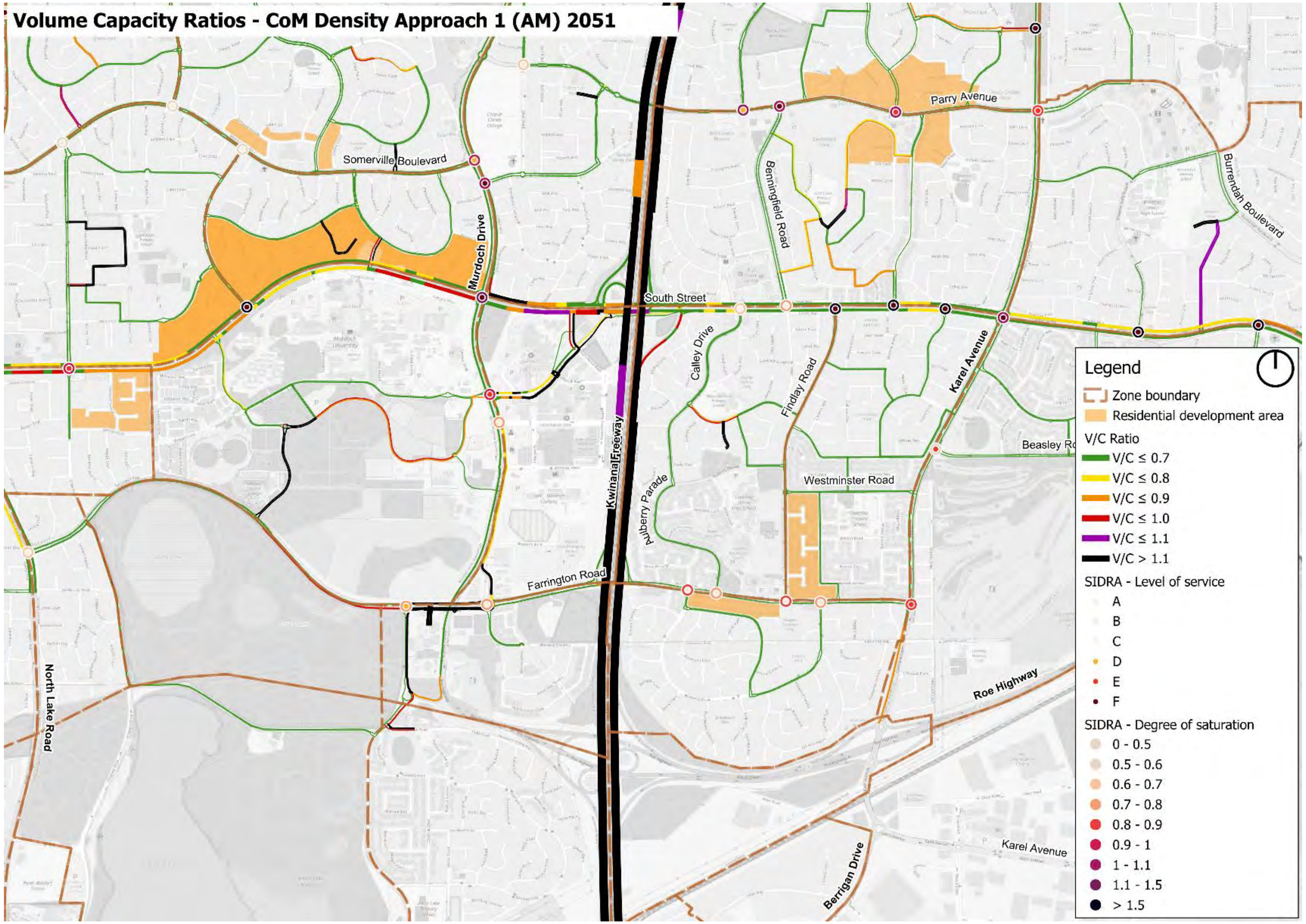


Figure C.55 Existing network volume-capacity ratios and intersection performance– 2051 scenario 1 AM (“CoM Density Approach 1”) (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

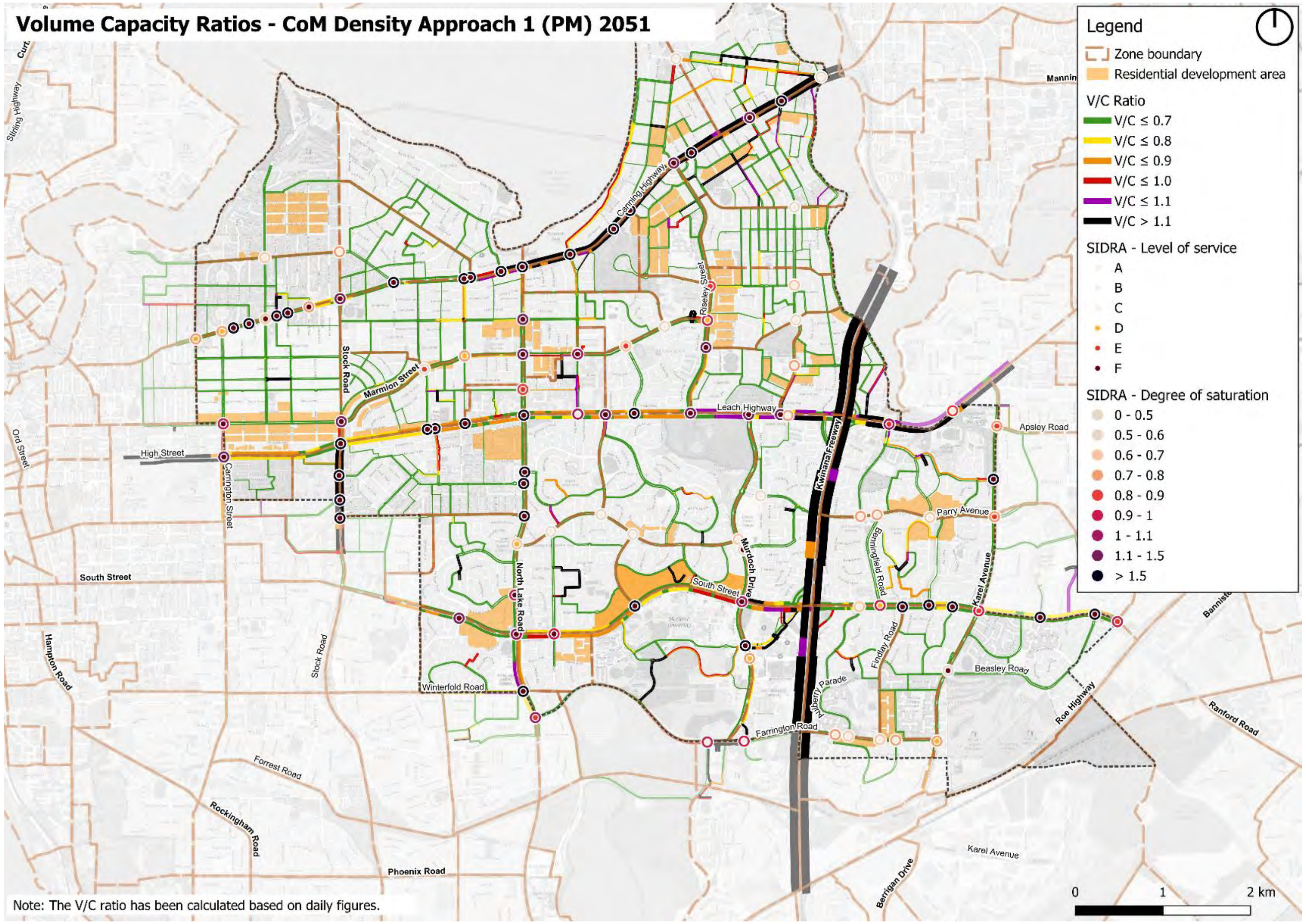


Figure C.56 Existing network volume-capacity ratios and intersection performance– 2051 scenario 1 PM ("CoM Density Approach 1")

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

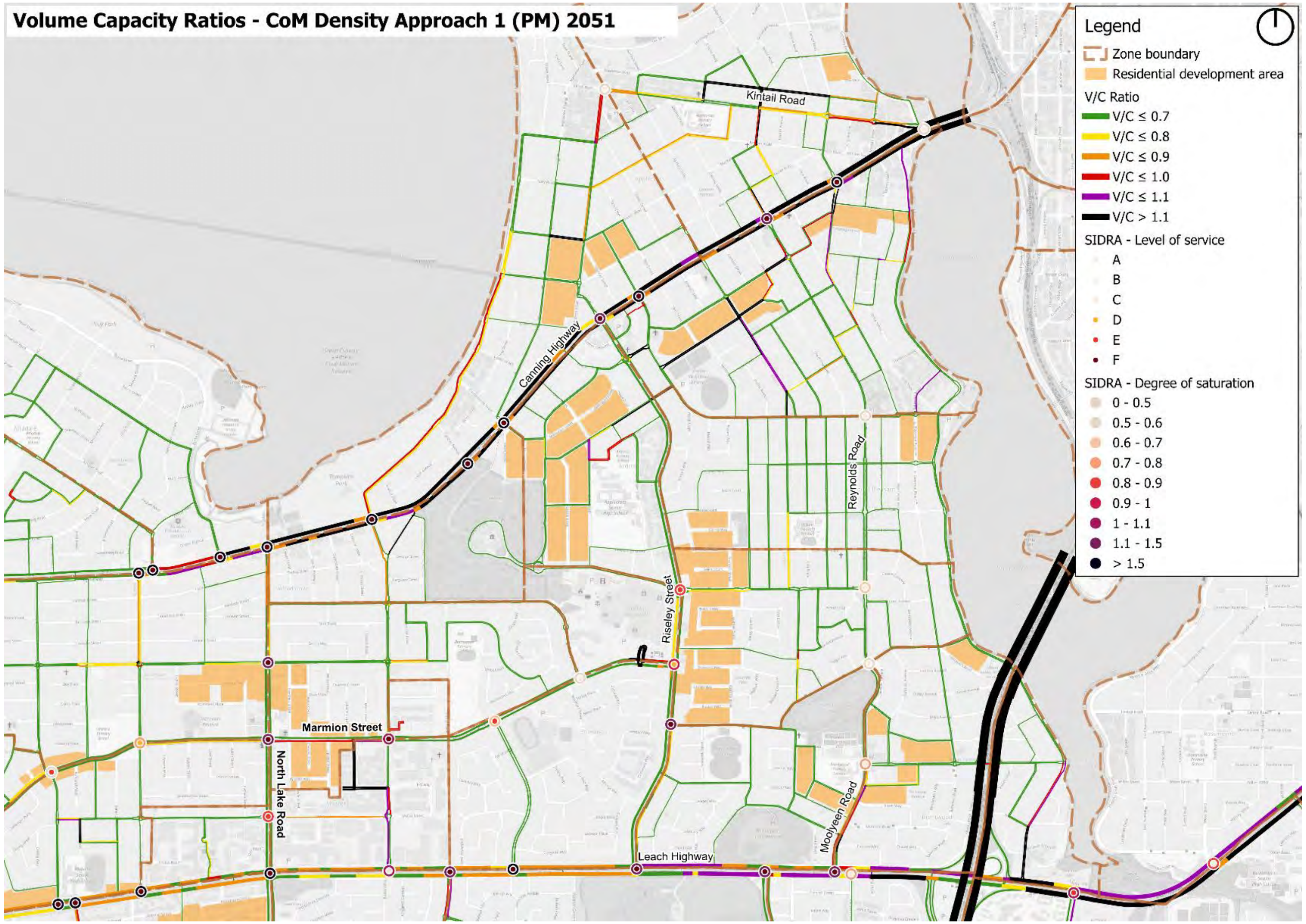


Figure C.57 Existing network volume-capacity ratios and intersection performance– 2051 scenario 1 PM ("CoM Density Approach 1") (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

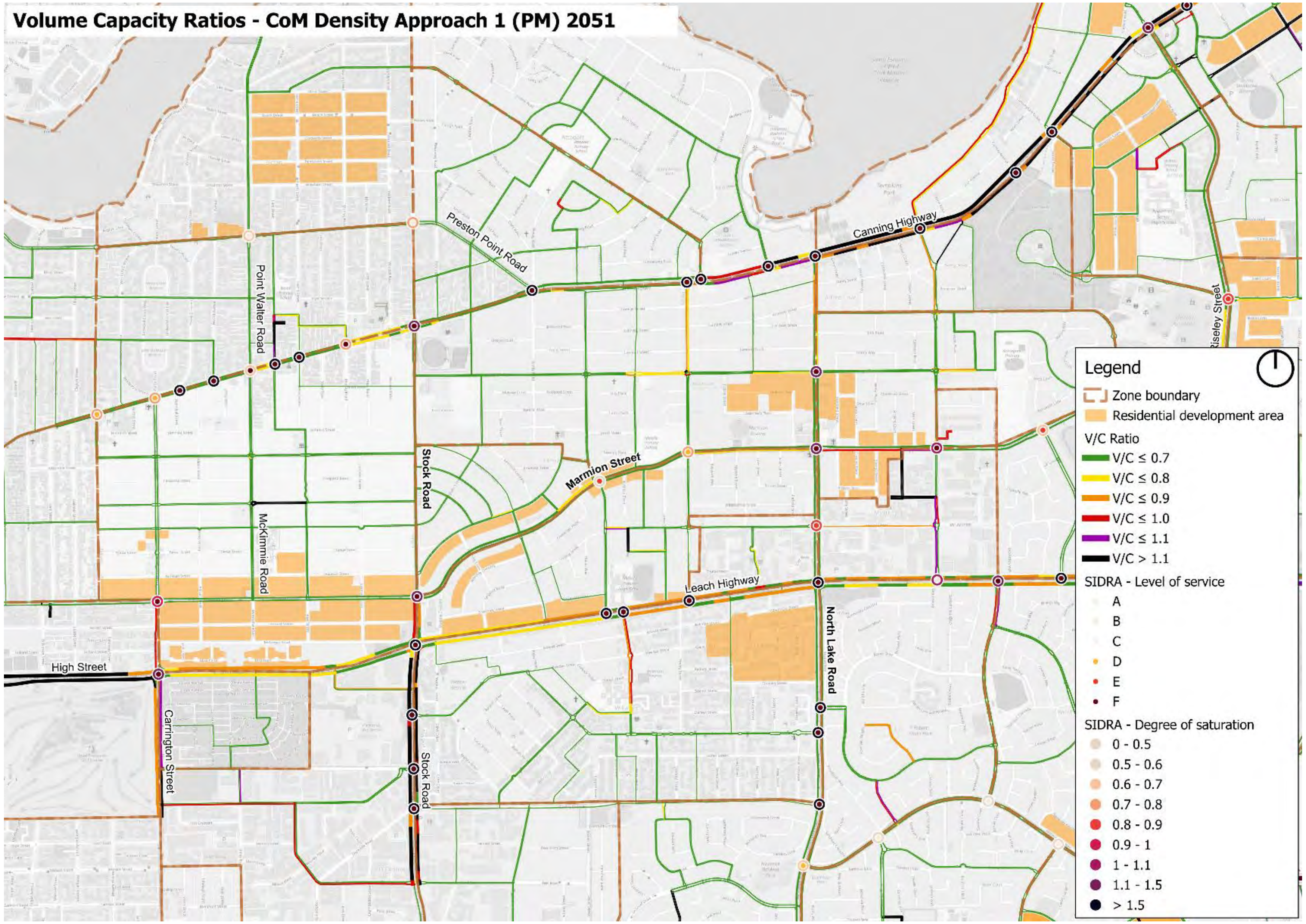


Figure C.58 Existing network volume-capacity ratios and intersection performance– 2051 scenario 1 PM ("CoM Density Approach 1") (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

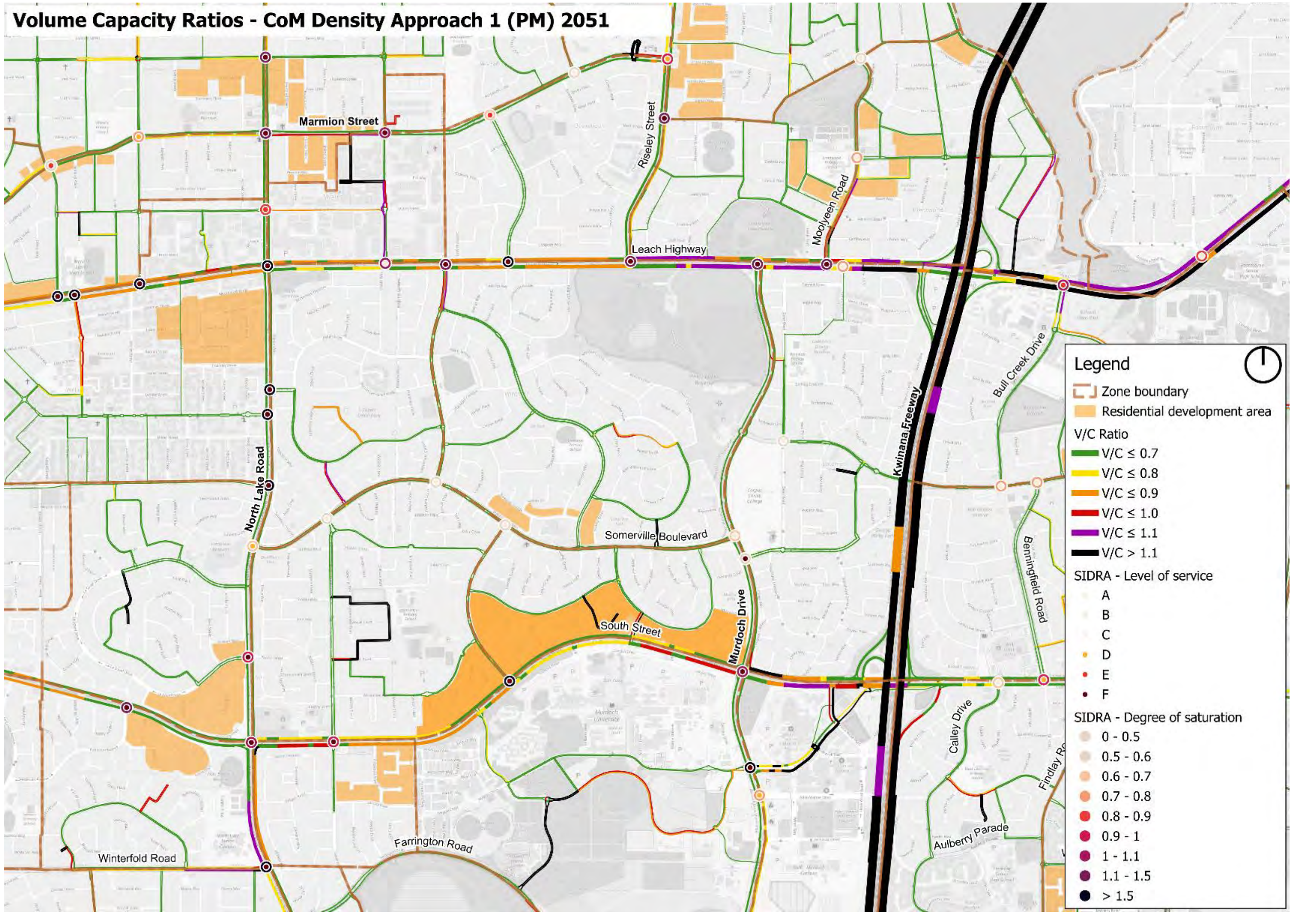


Figure C.59 Existing network volume-capacity ratios and intersection performance– 2041 scenario 1 PM ("CoM Density Approach 1") (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

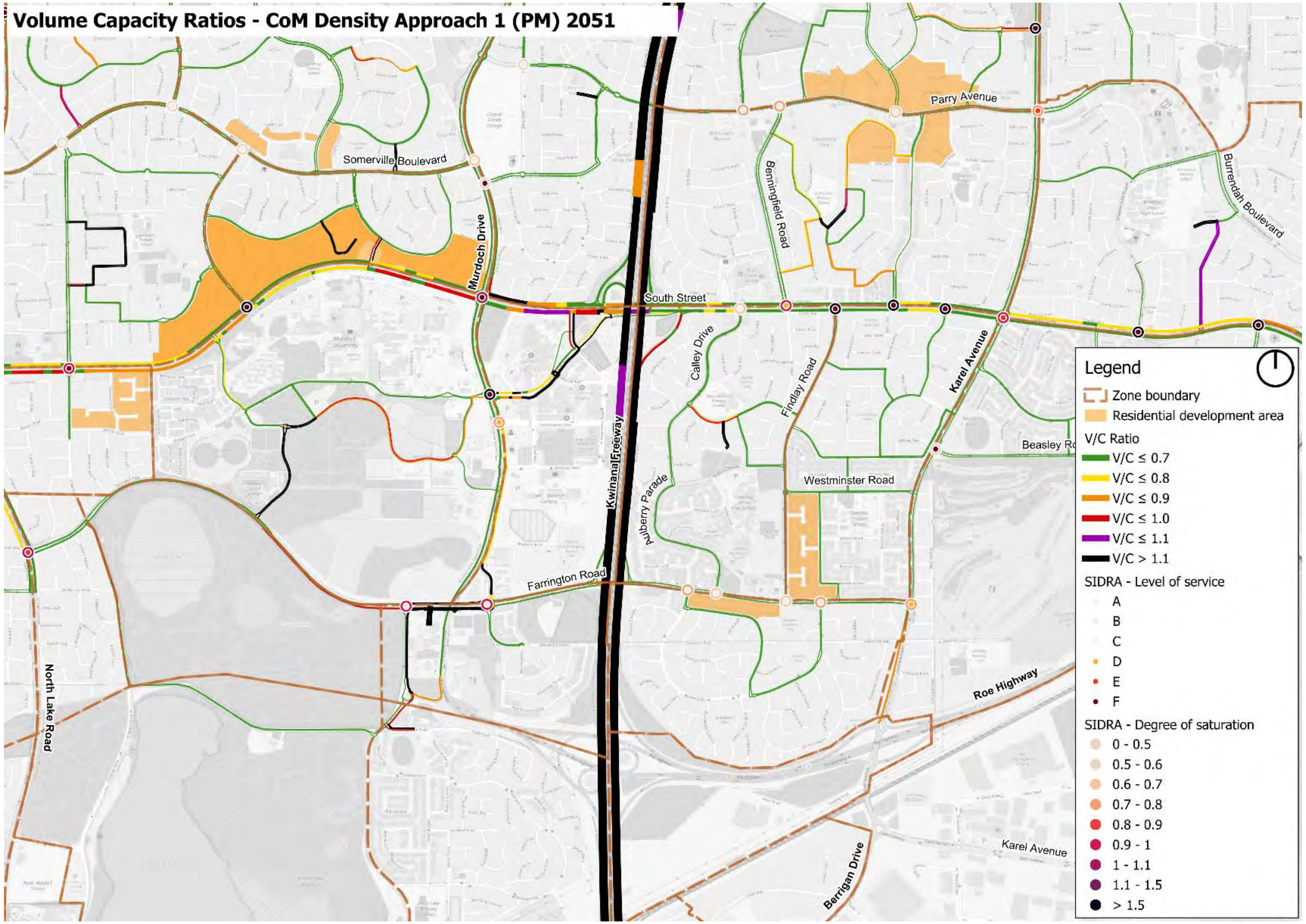


Figure C.60 Existing network volume-capacity ratios and intersection performance– 2051 scenario 1 PM (“CoM Density Approach 1”) (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

C7 2051 scenario 2 (“CoM Density Approach 2”)

This section summarises the peak hour network congestion, indicated by volume-capacity ratios on road corridors and intersection performance, from the traffic assignment model and SIDRA intersection modelling, respectively, for the 2051 scenario 2 (“CoM Density Approach 2”). These network flows are estimated peak hour flows, factored from a daily demand model. The indicated flows can be interpreted as the busiest peak hour flows (AM or PM).

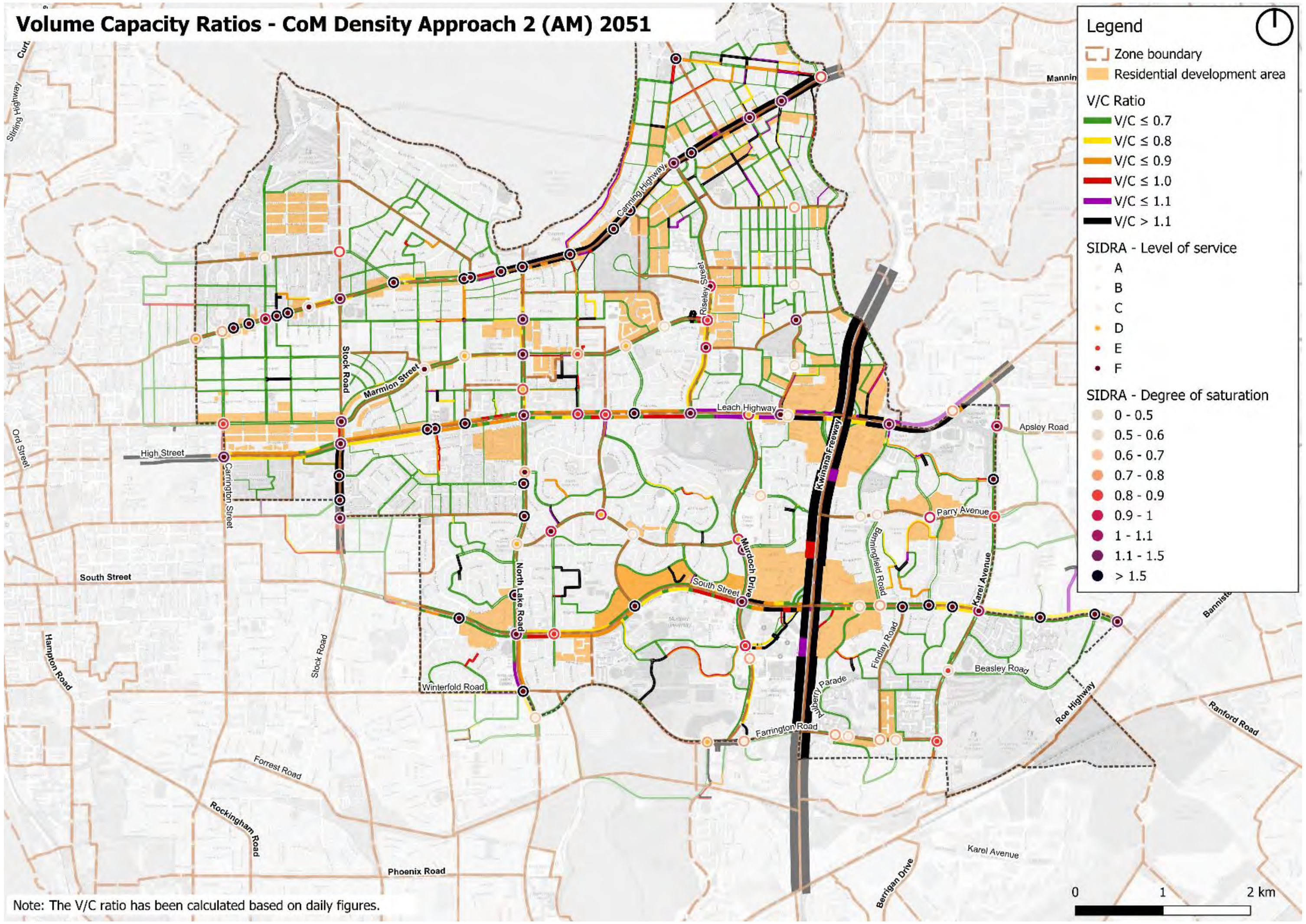


Figure C.61 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 AM ("CoM Density Approach 2")

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

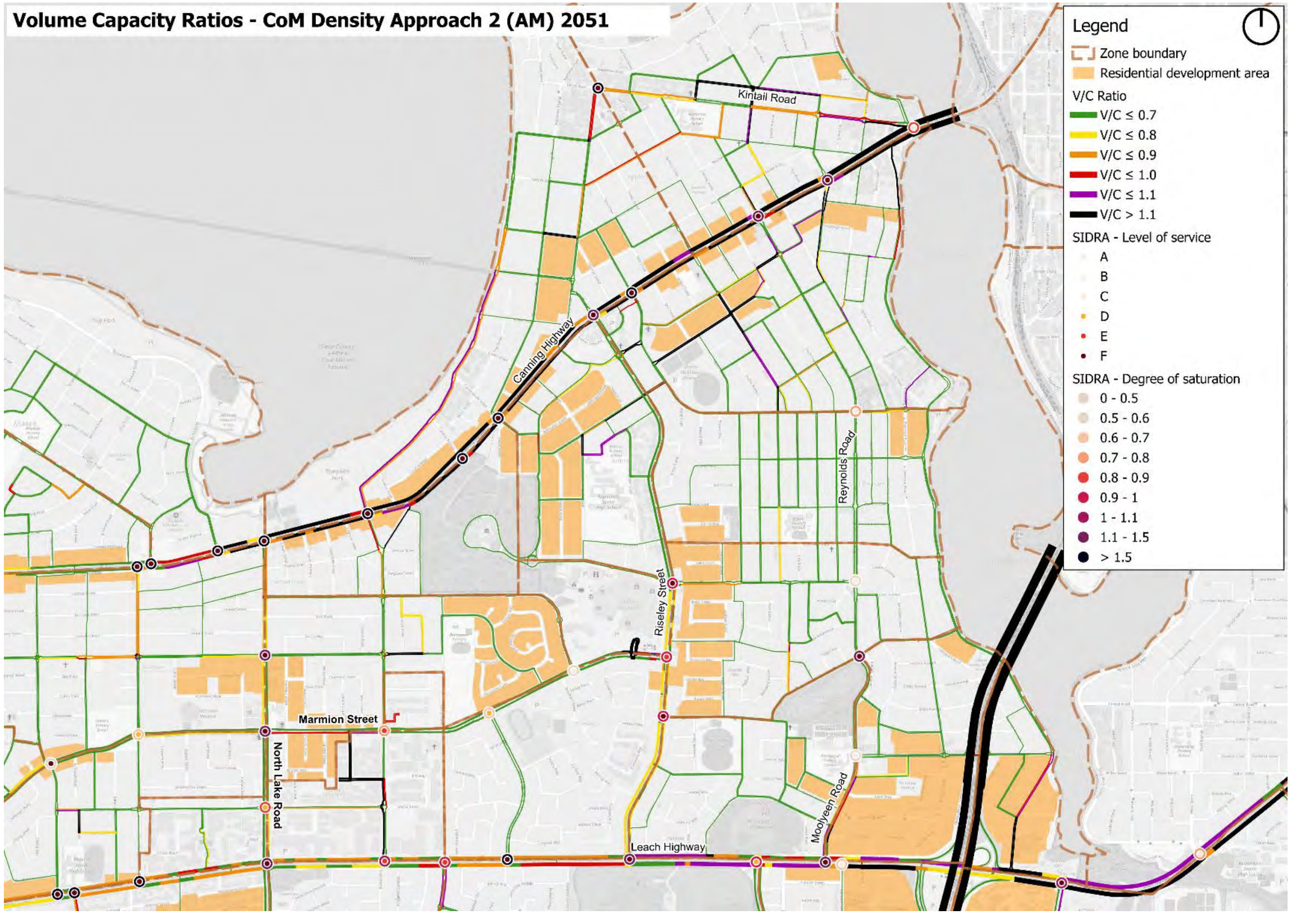


Figure C.62 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 AM ("CoM Density Approach 2") (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

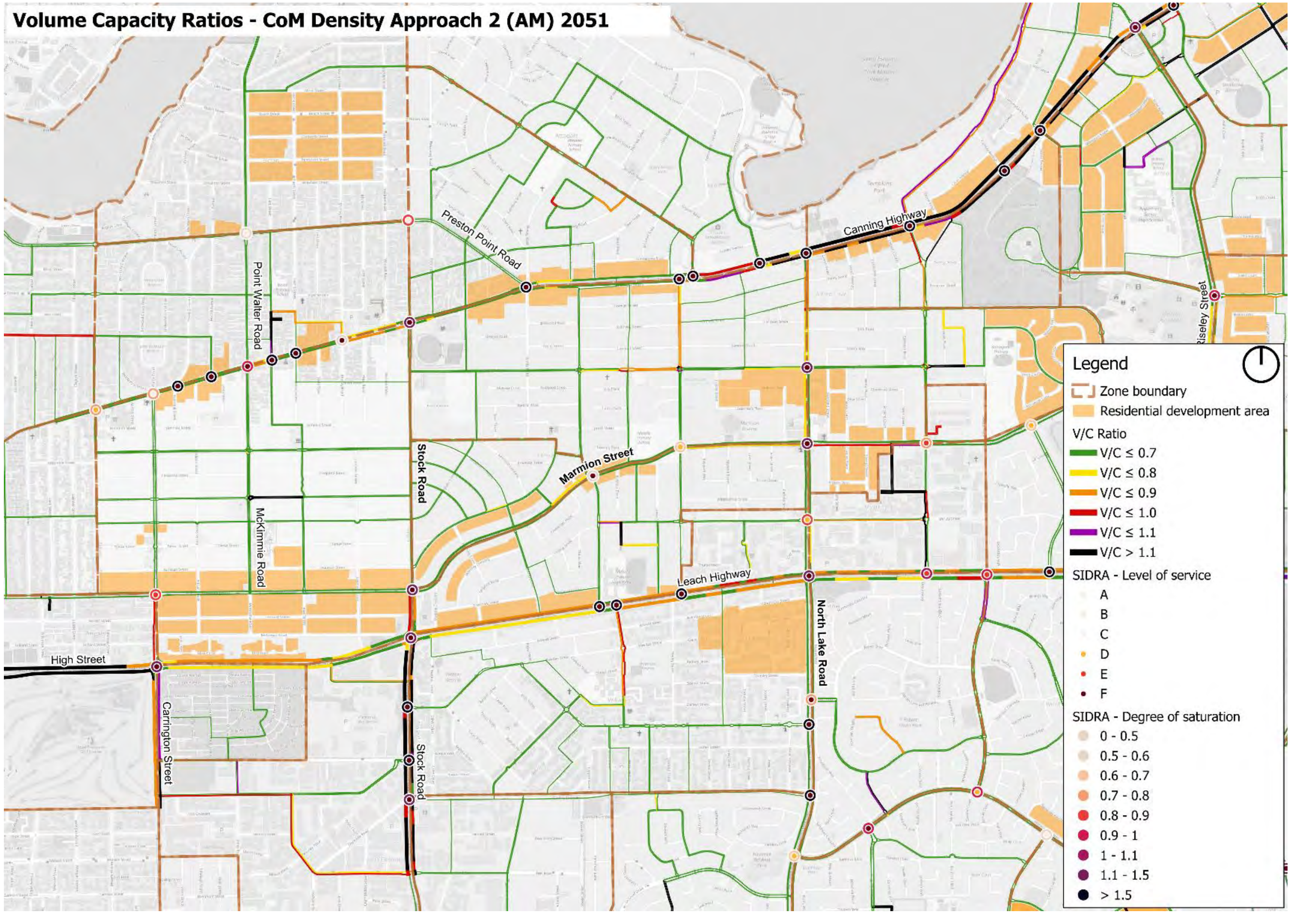


Figure C.63 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 AM ("CoM Density Approach 2") (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

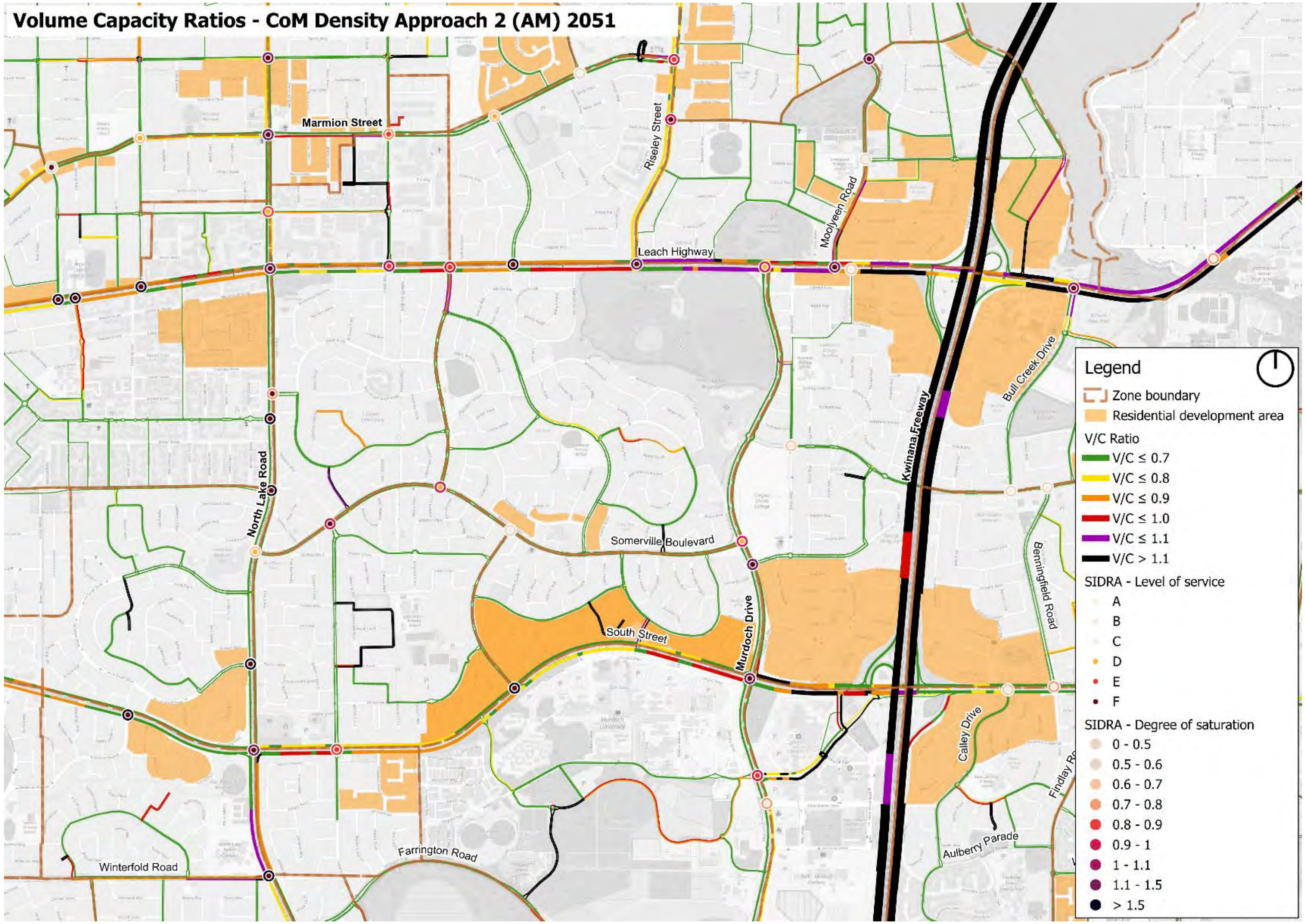


Figure C.64 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 AM ("CoM Density Approach 2") (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

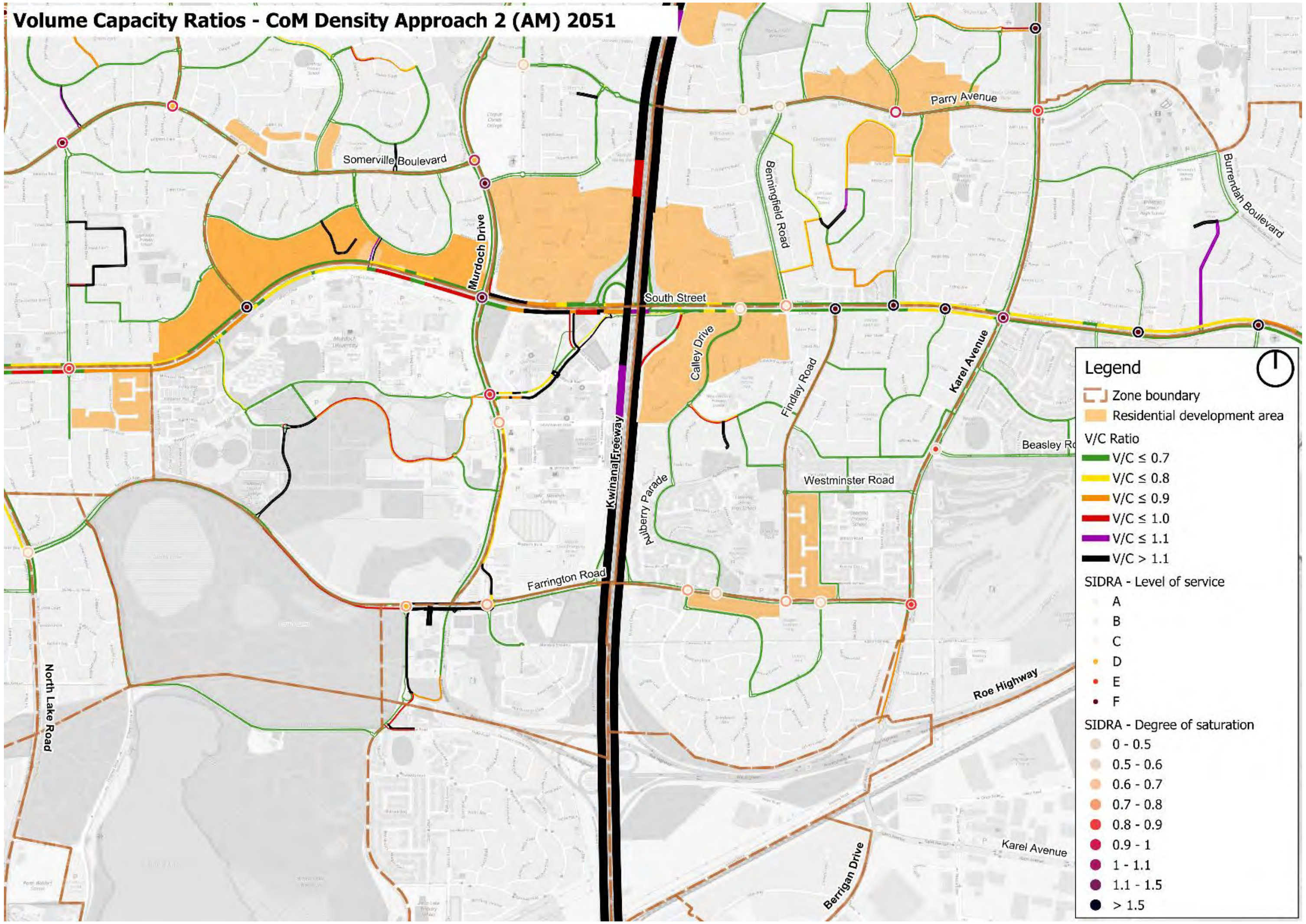


Figure C.65 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 AM (“CoM Density Approach 2”) (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

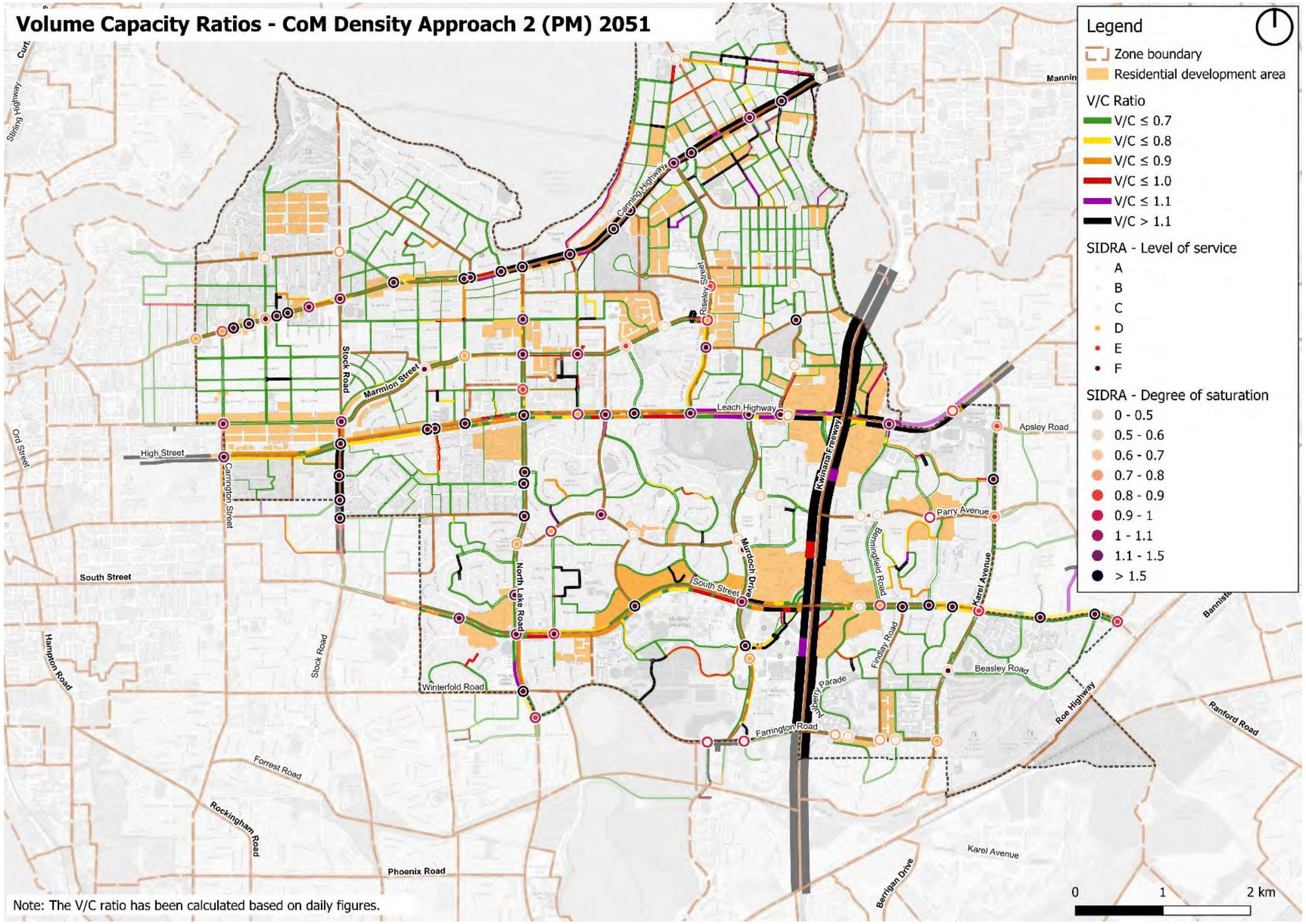


Figure C.66 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 PM (“CoM Density Approach 2”)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

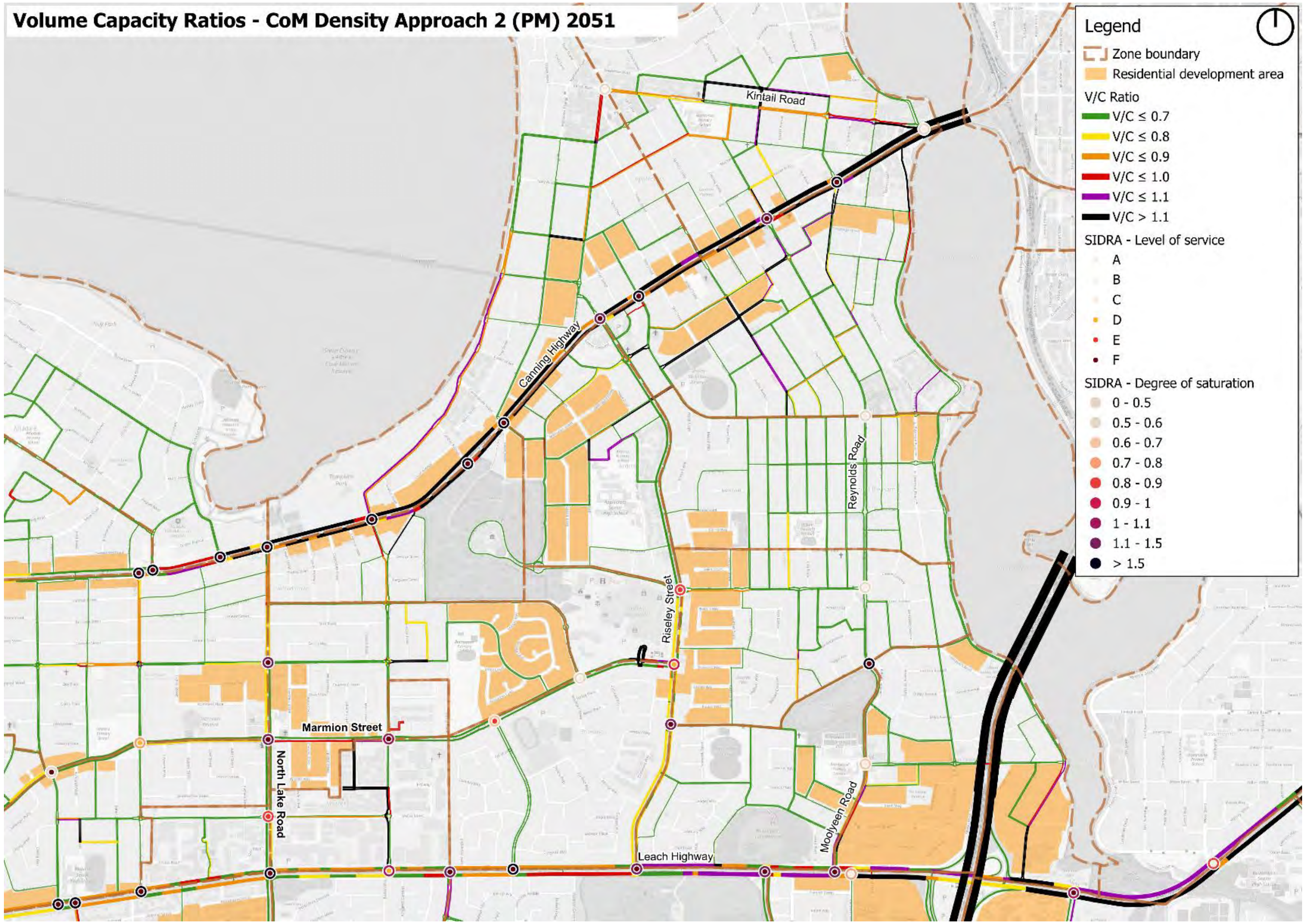


Figure C.67 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 PM (“CoM Density Approach 2”) (zoomed, Canning Highway)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

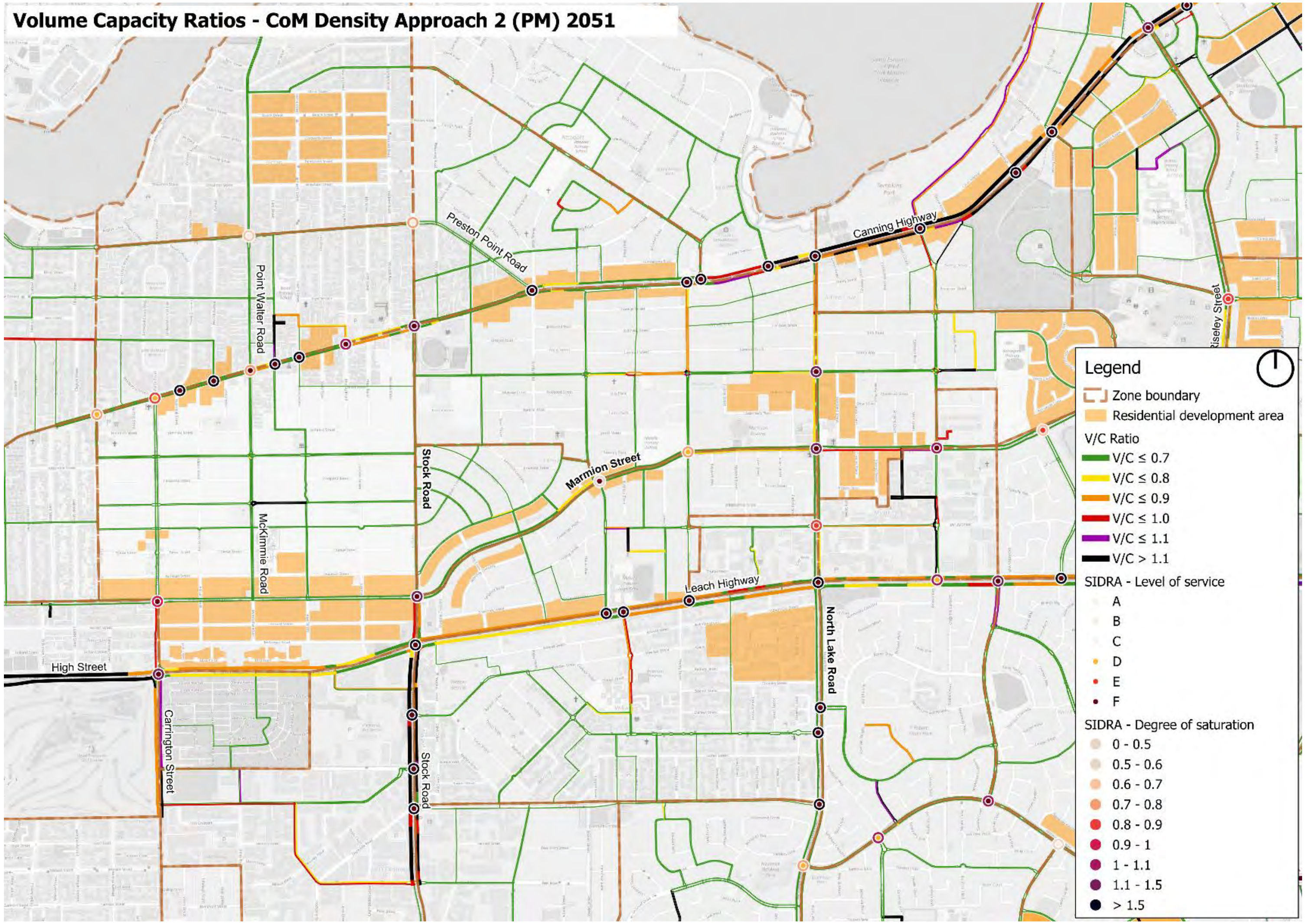


Figure C.68 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 PM ("CoM Density Approach 2") (zoomed, Stock Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

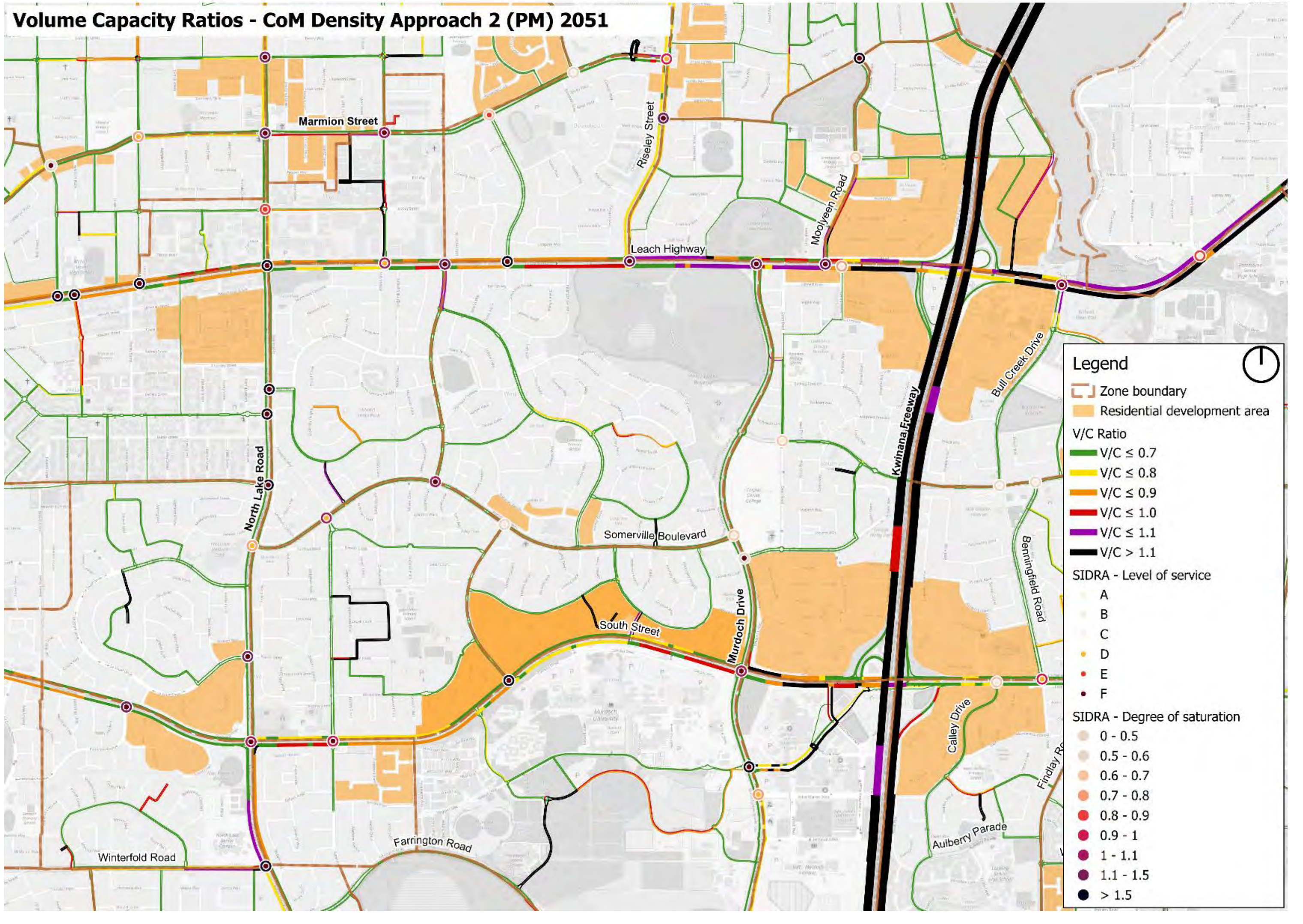


Figure C.69 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 PM (“CoM Density Approach 2”) (zoomed, Leach Highway and South Street)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)

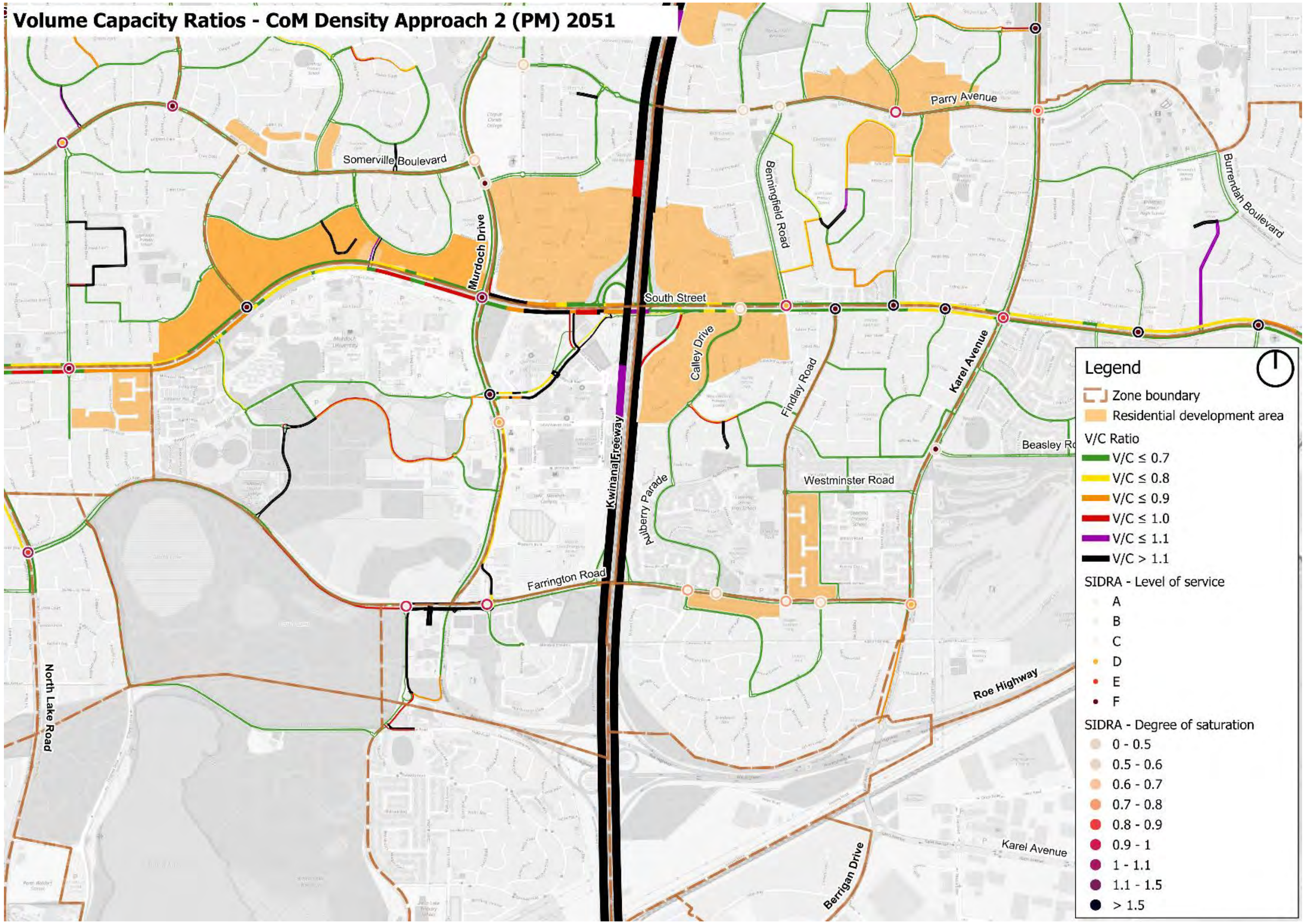


Figure C.70 Existing network volume-capacity ratios and intersection performance– 2051 scenario 2 PM ("CoM Density Approach 2") (zoomed, Farrington Road)

Notes These volume-capacity ratios are based on estimated peak hour flows, factored from a daily demand model. The indicated ratios can be interpreted as the busiest peak hour flows (AM or PM)