Sunbury Growth Corridor

Strategic Transport Modelling for Sunbury South PSP (1074) & Lancefield Road PSP (1075)
Supplementary Modelling Report #2

Prepared by: GTA Consultants (VIC) Pty Ltd for Victorian Planning Authority

on 25/09/2020

Reference: V198070

Issue #: A

GTAconsultants

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Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	25/09/2020	Final	Reece Humphreys	Matthew Raisbeck	Reece Humphreys	

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1. INTRODUCTION

1.1. Overview

Amendment C243 makes changes to the Hume Planning Scheme to incorporate the final Sunbury South and Lancefield Road Infrastructure Contributions Plan (ICP). The Amendment seeks to incorporate a supplementary levy ICP which will be applied to the PSP's. Specifically, the Infrastructure items listed in the PSP include two new bridge crossings of the Jacksons Creek in Sunbury.

In October 2015, GTA Consultants prepared a report titled "Strategic Transport Modelling of the Sunbury and Diggers Rest Growth Corridor (Sunbury South PSP 1074 & Lancefield Road PSP 1075)". That report outlined the impacts of potential new road crossings of Jacksons Creek, with nine potential options for works to improve transport in the area.

Since the completion of the 2015 report, Sunbury has experienced recent transport investments including the electrification of the Sunbury Rail Line and upgrades of the Calder Freeway and Vineyard Road. In addition, there has been a number of changes to the forecast growth in the last five years. In particular, the 2015 assessment estimated that at full development of the two PSP's metropolitan Melbourne would have a population in the order of 6.46 million people. Recent forecasts provided from the Department of Planning now estimate Melbourne will reach a population of some eight million people in the same time period. This increase has the potential to impact on travel behaviour in Sunbury and specifically the two bridges.

As part of the preparation for the Amendment, on the 2nd September my firm was instructed to:

> *'Re-run and update the model based on current information and data, and prepare an updated report for release….'* Also noting that *'…you are not required to re-run all of the options that were considered in your original 2015 report. Rather, your updated report should be based upon the road network and PIP contained in the gazetted PSP*.'

A report documenting the findings of the updated data was circulated on 9th September 2020.

On the 11th of September my firm was further instructed to prepare an addendum report which updates the population figures in the modelling:

- *'in accordance with the PSPs for Sunbury South and Lancefield Road; and*
- *in accordance with the Council's current figures for Sunbury North and Sunbury West precincts.'*

1.2. Purpose of this report

The purpose of this report and modelling task is to advise relevant stakeholders on the outcomes of the modelling with the population figures that match the exhibited figures in the Sunbury South and Lancefield Road PSP's. It focuses on Option 5 which includes both bridges in the Lancefield Road PSP and Sunbury South PSP. The material presented in this report should be read in conjunction with the GTA Report dated 5th October 2015 and the addendum report dated 9th September 2020, utilising the same model structure and assumption changes outlined in these reports.

1.3. Definitions

DoT – Department of Transport (note that the functions of DoT were previously covered by DEDJTR, DTPLI, VicRoads, and PTV).

2. PROJECT CONTEXT

2.1. Transport Modelling Work Completed to Date

In October 2015, GTA Consultants prepared a report titled "Strategic Transport Modelling of the Sunbury and Diggers Rest Growth Corridor (Sunbury South PSP 1074 & Lancefield Road PSP 1075)". That report outlined the impacts of potential new road crossings of Jacksons Creek, with nine potential options for works to improve transport in the area. These are summarised in Table 2.1.

Table 2.1: Previously Identified Options to Improve Access to Sunbury Growth Corridor

Option	Creek Crossing in Sunbury South (PSP 1074)	Railway Station in PSP 1074 (Jacksons Hill Station)	Creek Crossing in Lancefield Road (PSP 1075)	Railway Station in PSP 1075 (Raes Road Station)	Additional Connection to Calder Highway south of PSP 1074	Outer Metropolitan Ring Road (OMR)
1	✓	✓	✓	✓		Includes OMR
2	✓	✓		✓		Includes OMR
3			✓	✓		Includes OMR
4				✓		Includes OMR
5	✓	✓	✓	✓	✓	Includes OMR
6	✓	✓	✓	✓	✓	No OMR
7	✓	✓		✓	✓	No OMR
8			✓	✓	✓	No OMR
9				✓	✓	No OMR

Note: OMR = Outer Metropolitan Ring Road

The options assessed as part of the 2015 report were undertaken for an interim (2031 @ 75%) and ultimate (2046 @ 100%) development of the PSPs of Lancefield Road, Sunbury South, Sunbury North, Diggers Rest and Sunbury West.

In February 2017, GTA Consultants prepared a report titled "Sunbury Growth Corridor – DCP Modelling Supplementary Report[1]". The purpose of the report and the modelling task was to assess the impact of 25% of the potential future development of PSPs 1074 and 1075 (5000 lots in Sunbury South and Lancefield Road PSPs), and the impact on Sunbury Road and the Sunbury Town Centre for the initial stages of development.

Four options for mitigating works were identified and tested to determine the most effective way to accommodate the initial stages of development, while best maintaining the functionality of the road network.

The report concluded that the introduction of the southern Jacksons Creek crossing provides reductions in peak hour traffic flows through the Sunbury Town Centre, as it is an attractive alternative for traffic accessing the Calder Freeway.

The Supplementary Modelling Report circulated on 9th September 2020 assessed the Sunbury Growth Corridor with a population for metropolitan Melbourne of around eight million people.

[1] GTA Consultants, Sunbury Growth Corridor DCP Modelling Supplementary Report dated 2 February 2017

The report found that the *'changes to the projections for metropolitan Melbourne have a marginal impact on the travel patterns for Sunbury at full development, indicating a robust model that is suitable to inform discussions as part of Infrastructure Contributions.'*

2.2. Site Context

The Sunbury South and Lancefield Road Precinct Structure Plans (PSP 1074 & 1075) are located in the Sunbury-Diggers Rest Growth Corridor in Melbourne's northwest. Both Sunbury South and Lancefield Road are located in the City of Hume and will ultimately form part of an expansion of Sunbury, along with the Sunbury North, Sunbury West and Diggers Rest PSPs.

The location of the Sunbury and Diggers Rest Growth Corridor in its local context are illustrated in in Figure 2.1.

Figure 2.1: Sunbury and Diggers Rest Growth Corridor

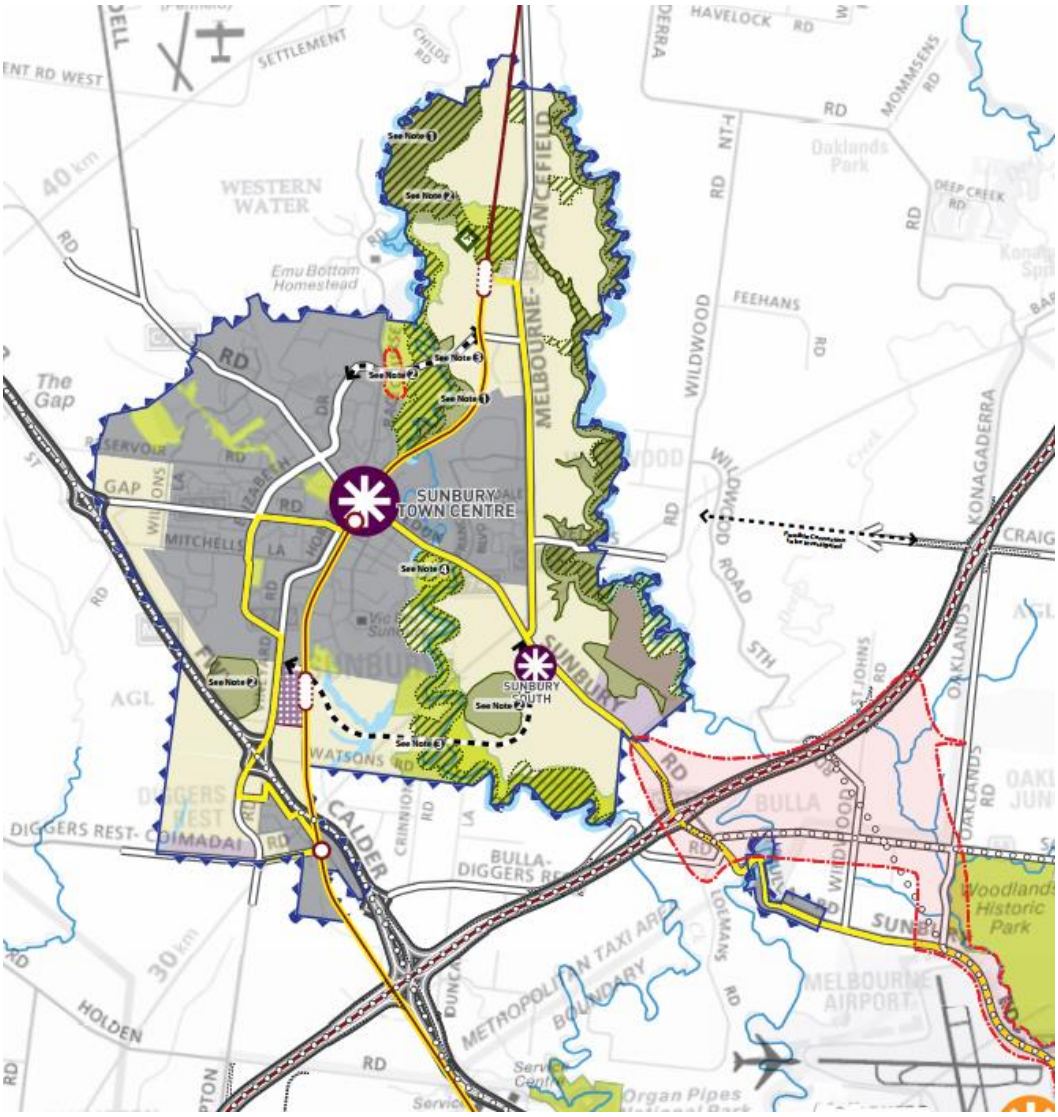
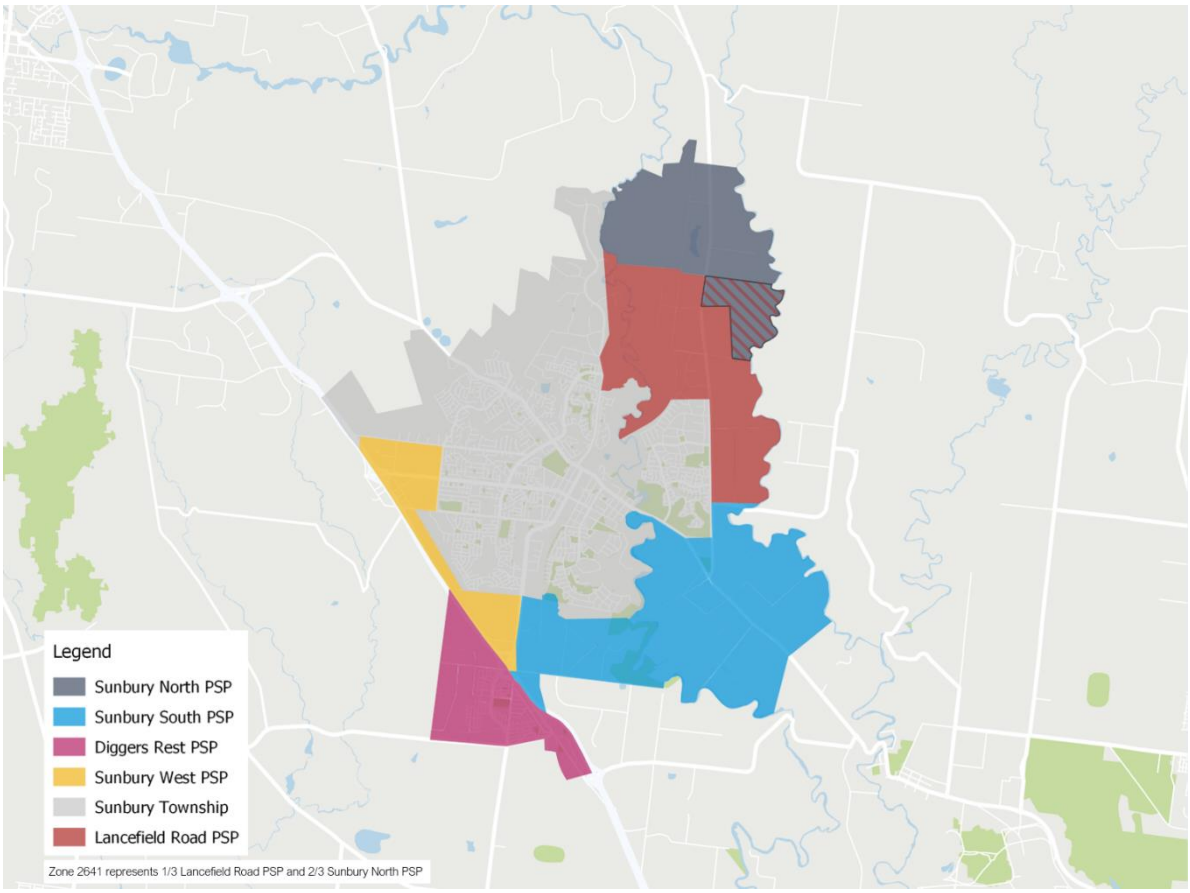


Figure 2.2 on the following page has also been prepared to show the location of the two PSP's in the context of Sunbury, as well as the location of Sunbury West and Sunbury North PSP's which yet to be gazetted.

Figure 2.2: Sunbury Growth Corridor



Jacksons Creek plays an important role within Sunbury not only in a transport sense but the inability to provide connectivity between existing and future communities within the Corridor. Two bridges crossing Jacksons Creek have been gazetted in the Hume Planning Scheme, one in the Sunbury South PSP and one located in the Lancefield Road PSP.

2.3. Transport Modelling - VITM Reference Case

All modelling in the growth area relies upon the information provided in the Victorian Integrated Transport Model (VITM) Reference Case as a starting point for analysis. The VITM Reference Case includes a list of transport projects and policies together with a set of land uses for a given year. It is important to note that the inclusion of projects in future year networks in the Reference Case does not imply there is any commitment from the Government or the Department of Transport (DoT) to undertake these projects. DoT advises that the projects within the Reference Case represent a reasonable estimate of investment in the future network for the purposes of modelling demand in the transport system.

The land use (population, employment and enrolment) forecasts within VITM align with the Victoria in Future (VIF) population projections produced by the Department of Environment, Land, Water and Planning (DELWP), both in terms of the level and distribution of growth. While established land use development trends are relied upon in these forecasts, a degree of policy shift is also captured, along with planned land release, renewal sites and infrastructure projects.

The transport modelling completed in 2015 was underpinned by land use projections from DELWP that were prepared in 2012.

The Reference Case is owned and controlled by DoT and is provided to GTA for use under a license agreement.

2.4. Additional Modelling Information

Reference is made to the request for further information to the Panel dated 16th of September 2020 from lawyers Best Hooper and as directed from the Panel on the 21st of September 2020.

As stated earlier, VITM is under a license agreement with the DoT and it is unable to be provided by GTA. Notwithstanding, we are able to provide clarification on the details of the request for information on the model elements which have been itemised in Table 2.2.

Table 2.2: VITM Model Input Clarification

Model Element	Model as exhibited in 2015	2020 Updated Model
Model Version	VITM2012_V120110 GAA NGC	VITM2012_V120110 GAA NGC
Cube Version Used	Cube 6.1	Cube 6.4
Land Use Files Used	The land use forecasts for 2046 were based on VIF11. The land use for Sunbury Growth Corridor are detailed in the GTA report dated 05/10/2015.	2046 Sunbury Demographics SALUP19 (VIF18 projections adopted for MSD) as detailed in this report.
GIS zoning system adopted	Refer to the structure detailed in the GTA report dated 05/10/2015.	Refer to the structure detailed in the GTA report dated 05/10/2015.
Highway script files	As per the DoT version VITM2012	As per the DoT version VITM2012
Highway Assignment files	As per the DoT standard file	As per the DoT standard file
- Input network file	As per the DoT version VITM2012, with modifications outlined in the detail in the GTA report dated 05/10/2015.	As per the DoT version VITM2012, with modifications outlined in the detail in the GTA report dated 05/10/2015.
- Input demand matrices	As per the DoT version VITM2012, with modifications outlined in the detail in the GTA report dated 05/10/2015.	As per the DoT version VITM2012, with modifications outlined in the detail in this report.
- Input Toll File	As per the DoT version VITM2012 Toll File 2008 z2912	As per the DoT version VITM2012 Toll File 2008 z2912
- Input turn penalty file	As per the DoT version VITM2012, with modifications outlined in the detail in the GTA report dated 05/10/2015.	As per the DoT version VITM2012, with modifications outlined in the detail in the GTA report dated 05/10/2015.
- Input speedflow curves	As per DoT version VITM2012 newSpeedFlow_v5 - SA.csv	As per DoT version VITM2012 newSpeedFlow_v5 - SA.csv
- Input VoT file	As per the DoT version VITM2012	As per the DoT version VITM2012
- Output print files	As per DoT standard reporting file structure	As per DoT standard reporting file structure
- Output network files	As per the DoT version VITM2012	As per the DoT version VITM2012

2.5. List of Previous Reports

The Best Hooper letter dated 16th of September 2020 also requested a list of completed reports that have been prepared by GTA for the Sunbury Growth Corridor. The completed reports are listed as follows:

1. "Jacksons Creek Road Crossings, Options Assessment & Development" prepared by GTA Consultants, Reference 14M1881000, dated 16 October 2014
2. "Sunbury & Diggers Rest Growth Corridor – Strategic Model Calibration and Validation Modelling" prepared by GTA Consultants, Reference 15M1526000, dated July 2015
3. "Strategic Transport Modelling of the Sunbury & Diggers Rest Growth Corridor (Sunbury South PSP 1074 & Lancefield Road PSP 1075)" prepared by GTA Consultants, Reference 15M1526000, dated October 2015
4. "Sunbury Growth Corridor DCP Modelling Supplementary Report" prepared by GTA Consultants, Reference 16M1998000, dated February 2017
5. "Amendments C207 and C208 Hume Planning Scheme Panel Hearing" prepared by GTA Consultants, Reference V133670, dated August 2017

3. MODEL UPDATES

3.1. Introduction

Since the completion of the October 2015 report, the land use projections for Metropolitan Melbourne and Victoria have undertaken significant change. Victoria has grown by a million people between 2011 and 2019 and is expected to grow by a further million by 2026. The increased population forecast for Melbourne will have an impact on the level and the movement of traffic.

In this regard, the modelling work has been updated to understand the impact to traffic movement in Sunbury as a result of these changes. Updating the land use (population and employment forecasts) for the areas outside of the Sunbury Growth Corridor have the potential to impact travel patterns within and through the Sunbury South and Lancefield Road Precinct Structure Plans (PSP 1074 & 1075). The Supplementary Modelling Report circulated on 9th September 2020 assessed the Sunbury Growth Corridor with a population for metropolitan Melbourne of around eight million people.

Supplementary Report #2 (this report) has been undertaken for a design year of 2046 which assumes full development (sometimes referred to as the ultimate development) of the two PSP's and the supporting transport networks, with the specific details set out in the following sections. More specifically, the land use inputs for the two PSP's have been updated to reflect the exhibited information for the Lancefield Road and Sunbury South PSP's as well as updated information for Sunbury North and Sunbury West to align with policy. It should be noted that at the time of the October 2015 report, 2046 was the furthest future projection of land use, and is representative of a full build out rather than a specific year.

3.2. Land Use Inputs – Metropolitan Melbourne

The population, households, employment and enrolments for the Melbourne Statistical Division are outlined in the Supplementary Report dated 9th September 2020, and have been reproduced in Table 3.1.

Table 3.1: Land Use Inputs for Melbourne Statistical Division

Model	Population (People)	Household (Dwelling)	Employment (No. of Jobs)	Enrolment (No. of Students)
VIF 2018	8,132,000	3,145,000	4,285,000	2,208,000

3.3. Land Use Inputs – Sunbury Growth Corridor

The land use forecasts for the Sunbury Growth Corridor have been updated to reflect the exhibited land use estimates outlined in the PSP documentation as well as current policy for Metropolitan Melbourne, specifically, Plan Melbourne. The assumptions used for determining the land use for the Sunbury Growth Corridor are summarised as follows:

1. The residential and employment inputs for Sunbury South and Lancefield Road are as per the PSP document dated June 2018, (Amended November 2019).
2. The location of schools for Sunbury South and Lancefield Road are as per the PSP dated June 2018, (Amended November 2019) and the Department of Education and Training (DET) advice to the VPA which are 450-475 students per primary school and 1,100 students per secondary school.

3. Lancefield Road is assumed to have a tertiary educational facility of 8,000 enrolments which represents the TAFE within the PSP and is consistent with the October 2015 modelling.
4. For Sunbury North PSP and Sunbury West PSP a residential yield of 20 lots per hectare of Net Developable Area (NDA) and 3.1 residents per dwelling have been applied which is consistent with Plan Melbourne's Policy 2.2.5. The NDA's have been provided by the VPA.
5. The Sunbury North PSP town centre employment forecasts were based on the same employment to population ratio for Lancefield Rd PSP. This includes home based business and jobs associated educational facilities as per the rate assumption in the Lancefield Rd PSP dated June 2018, (Amended November 2019).
6. Enrolments for Sunbury North PSP and Sunbury West PSP have been assumed based on DET advice to VPA of approximately 1 Primary school per 3,000 dwellings and 1 secondary school per 10,000 dwellings, with 450-475 students per primary school and 1,100 students per secondary school.
7. The residential, enrolment and employment numbers for Sunbury Township are as per the October 2015 modelling. It is noted that this is similar to the small area forecasts based on VIF2018 for year 2051.
8. The Sunbury West PSP employment forecasts were based on the small area forecasts within VIF2018 for the year 2051 (i.e. representing the ultimate development of Sunbury).

Based on the assumptions outlined above, the land use inputs for the particular precincts within the Sunbury Growth Corridor are summarised in Table 3.2.

Table 3.2 Land Use Projections in the Sunbury Area - 2046

Area	Population (People)	Household (Dwelling)	Employment (No. of Jobs)	Enrolment (No. of Students)
Revised Land Uses				
Sunbury Township	45,915	17,518	9,939	8,002
Sunbury South PSP	32,100	11,470	4,570	2,488
Lancefield Road PSP	22,000	7,965	1,672	11,588
Sunbury West PSP	11,585	3,737	280	463
Sunbury North PSP	26,315	8,489	1,520	925
Total	**137,915**	**49,179**	**17,981**	**23,465**
Previous Land Uses				
Sunbury Township	*45,915*	*17,518*	*9,939*	*8,002*
Sunbury South PSP	*29,370*	*10,490*	*4,113*	*2,853*
Lancefield Road PSP	*21,580*	*7,707*	*1,664*	*11,502*
Sunbury West PSP	*7,155*	*2,650*	*350*	*450*
Sunbury North PSP	*17,373*	*6,205*	*552*	*451*
Previous Total	***121,394***	***44,569***	***16,618***	***23,258***
Difference	**16,521**	**4,610**	**1,363**	**207**

When compared to the previous assumptions, the land use changes amount to an increase of 2,730 people in the Sunbury South PSP, 420 people in the Lancefield Road PSP, 8,942 people in the Sunbury North PSP

and 4,430 people in the Sunbury West PSP representing a total increase of 16,521 people. The population increase of 14% is higher than the overall employment (8%) increase and enrolment (1%) increase meaning that there will likely be a need for more residents to travel outside of Sunbury to access jobs and education.

3.4. Transport Networks

The transport networks used as part of the 2015 assessment have been unchanged and the updated modelling will focus only on the impact of the land use changes. This report documents Option 5 with the modelled networks provided in Appendix A.

4. RESULTS

4.1. Model Outputs

Model outputs for Option 5 have been extracted to assist in the understanding the performance of the network as a result of the land use changes outlined in Section 3 of this report. The following outputs are provided in the Appendices:

1. AM Peak (2-hours), PM Peak (2-hours) and Daily vehicle volume plots (Appendix B)
2. Volume to Capacity Plots for the AM and PM peak periods (Appendix C)

In addition, the seven key locations across the network that reported traffic volumes in the Addendum Report #1 (dated 9th September 202) have been compared this update (Addendum Report #2). A summary of the difference in volumes on particular links is summarised in Table 4.1.

Table 4.1: Daily Link Volumes for Option 5 - 2046 (two way combined)

No	Road Name	Addendum Report #1	Addendum Report #2	Difference	%
1	Sunbury Road between Evans Street and Francis Boulevard	35,800	35,300	-500	-1%
2	Jacksons Creek Crossing in Sunbury South PSP	11,300	12,300	1,000	9%
3	Jacksons Creek Crossing in Lancefield Road PSP	14,700	15,700	1,000	7%
4	Horne Street between Gap Road and Riddell Road	24,100	24,600	500	2%
5	Sunbury Road north of Bulla-Diggers Road	76,800	80,000	3,200	4%
6	Melbourne-Lancefield Road south of Gellies Road	40,800	44,300	3,500	9%
7	Vineyard Road north of interchange	52,200	53,900	1,700	3%

The updated modelling results show that the land use changes will increase volumes on all roads except for Sunbury Road in the Sunbury town centre which reduces by 500 vehicles (1%). Of note, the northern bridge is expected to increase by around 1,000 vehicles which is an increase of seven percent.

5. SUMMARY

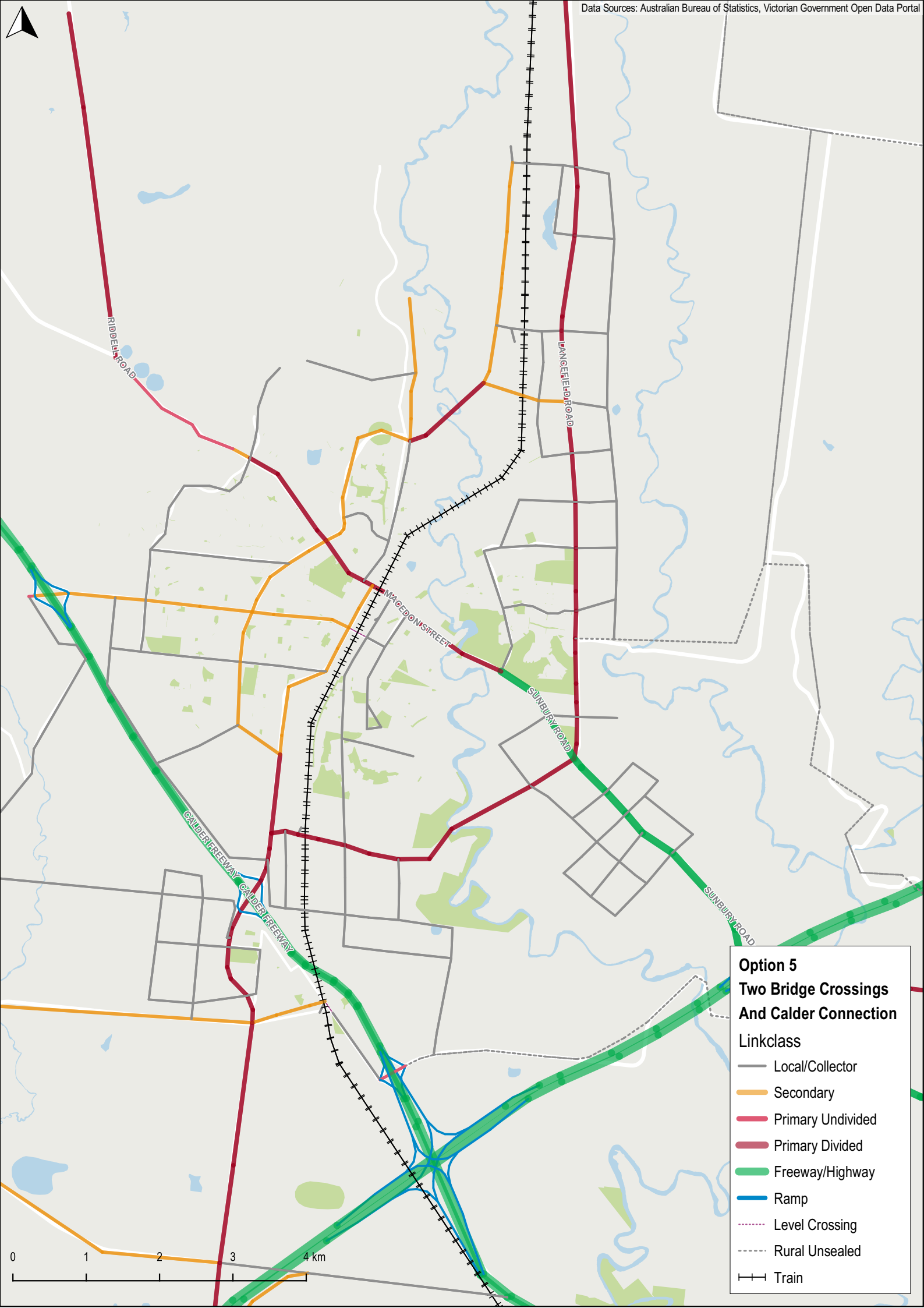
Transport modelling has been undertaken with an increase of some 16,500 people in the Sunbury Growth Corridor as well as a population for Melbourne that is reflective of the more recent forecasts. The modelling presented in this report was completed for Option 5 which showed the following:

1. land use forecasts for the Sunbury Growth Corridor have been updated based on current policy for Metropolitan Melbourne, specifically, Plan Melbourne
2. The population increase of 14% is higher than the 2015 modelling however the employment only increases by 8% and enrolment by 1%, meaning that there will likely be an increase in residents needing to travel further distances.
3. Most of the network will experience increases in traffic with the updated land use forecasts, with the northern bridge experiencing 15,700 vehicles per day representing an increase of 1,000 vehicles when compared to the 2015 assessment.
4. Increases on Lancefield Road (3,500 vehicles per day) and Sunbury Road (3,200 vehicles per day) are expected as a result of the updated land use forecasts when compared to the 2015 assessment.

A. TRANSPORT NETWORKS

A

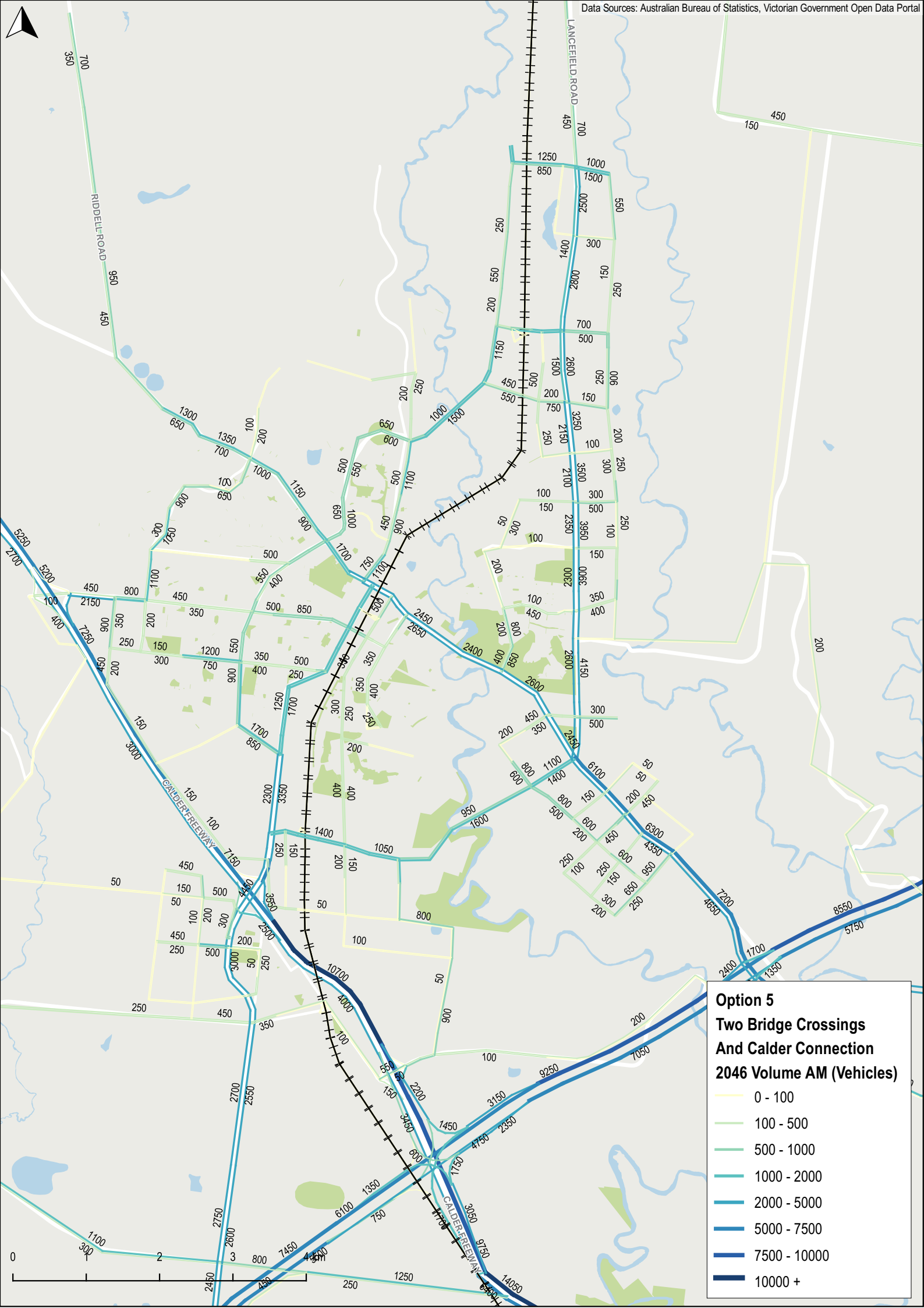

Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
RIDDELL ROAD
LANCEFIELD ROAD
MACEDON STREET
SUNBURY ROAD
CALDER FREEWAY
CALDER FREEWAY
SUNBURY ROAD
0
1
2
3
4 km
Option 5
Two Bridge Crossings
And Calder Connection
Number of Lanes
1
2
3
4
5

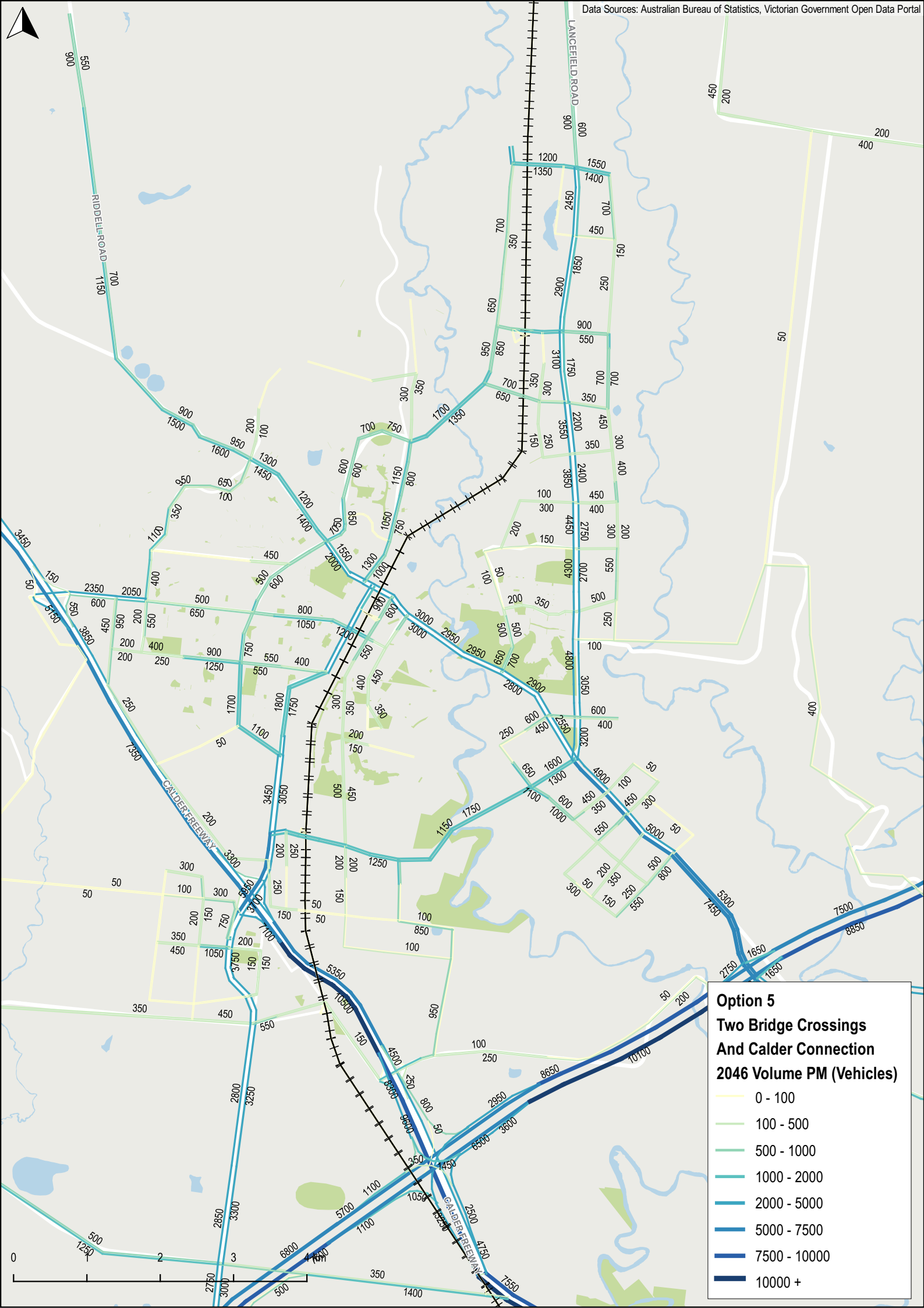

Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
RIDDELL ROAD
LANGEFIELD ROAD
MACEDON STREET
SUNBURY ROAD
CALDER FREEWAY
CALDER FREEWAY
SUNBURY ROAD
0
1
2
3
4 km
Option 5
Two Bridge Crossings
And Calder Connection
Linkclass
Local/Collector
Secondary
Primary Undivided
Primary Divided
Freeway/Highway
Ramp
Level Crossing
Rural Unsealed
Train


Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
RIDDELL ROAD
LANGFIELD ROAD
MACEDON STREET
SUNBURY ROAD
CALDER FREEWAY
CALDER FREEWAY
SUNBURY ROAD
0
1
2
3
4 km
Option 5
Two Bridge Crossings
And Calder Connection
Posted Speed
<40kmh
50kmh
60kmh
70kmh
80kmh
90kmh
100kmh
100kmh+

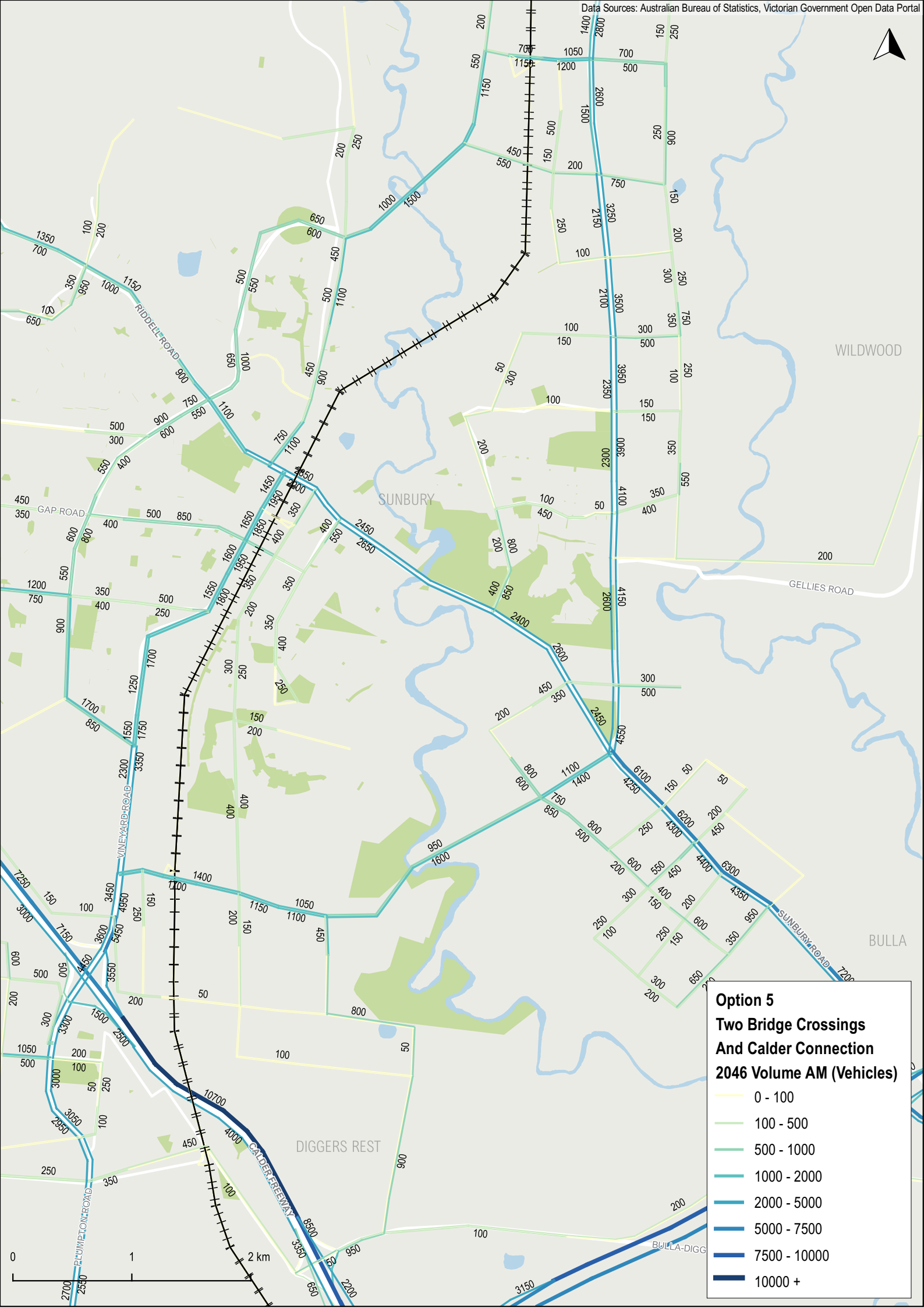
B.VOLUME PLOTS

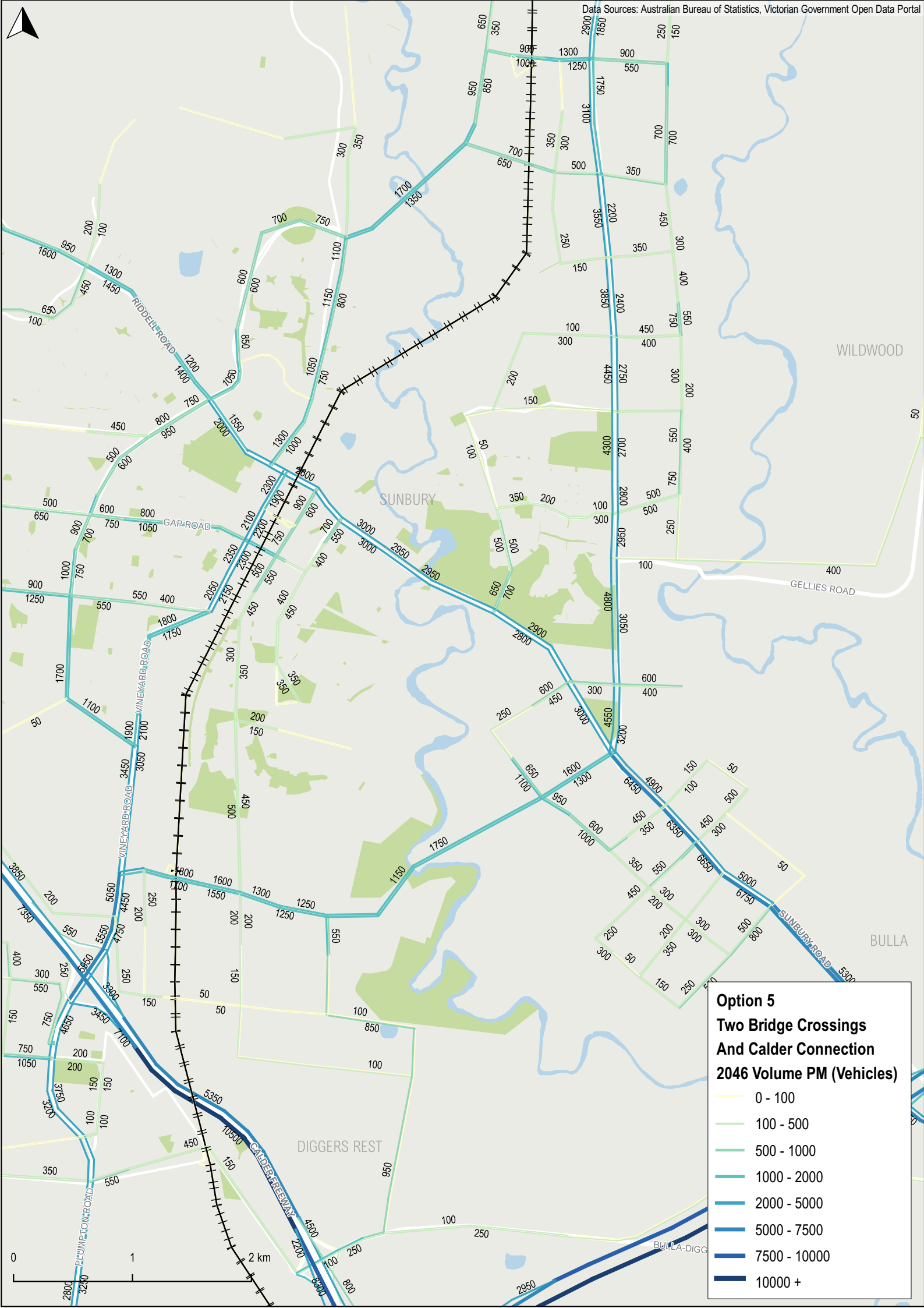
B

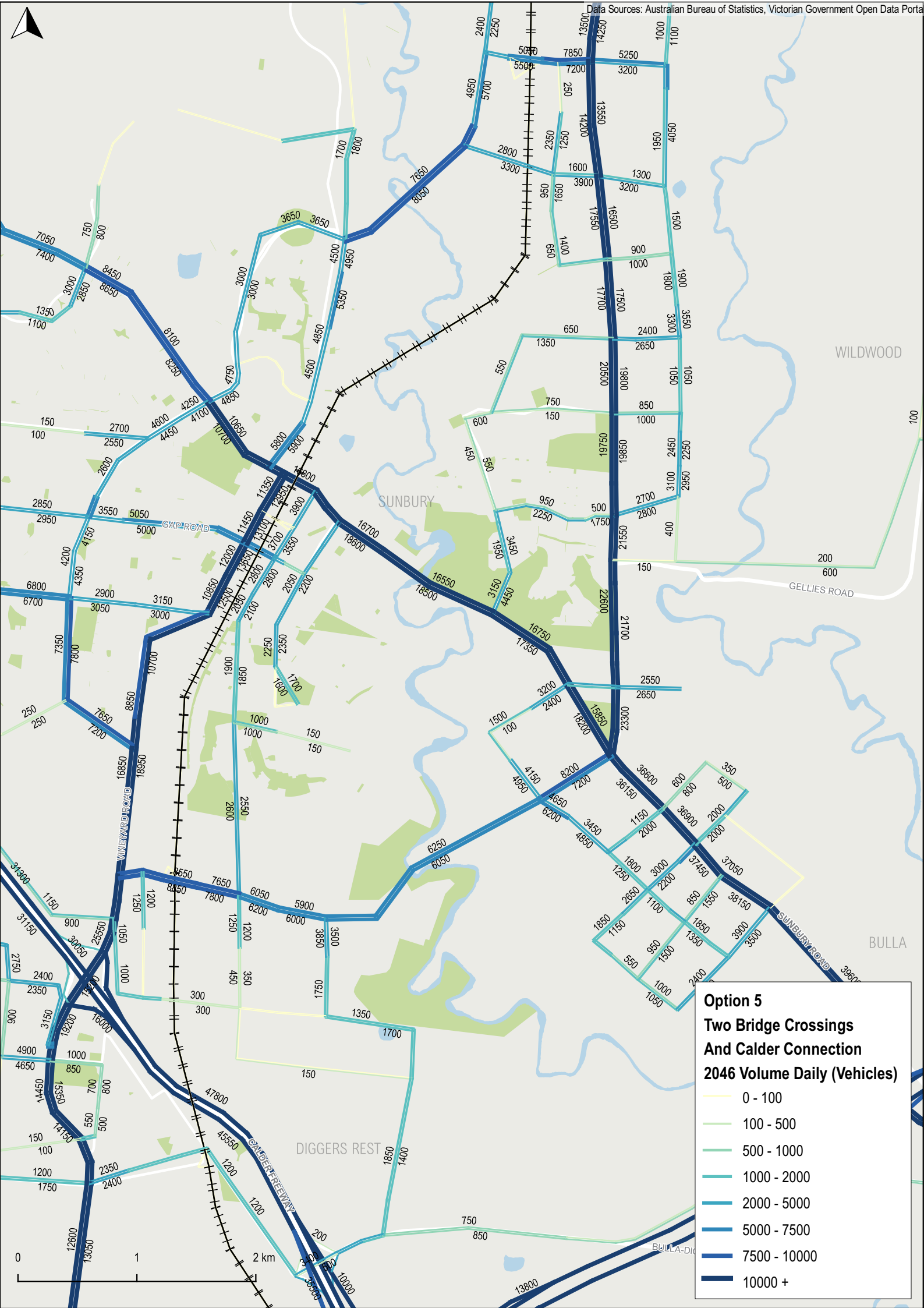

Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
RIDDELL ROAD
LANCEFIELD ROAD
CALDER FREEWAY
CALDER FREEWAY
Option 5
Two Bridge Crossings
And Calder Connection
2046 Volume AM (Vehicles)
0 - 100
100 - 500
500 - 1000
1000 - 2000
2000 - 5000
5000 - 7500
7500 - 10000
10000 +
0
1
2
3
km


Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
RIDDELL ROAD
LANGEFIELD ROAD
CALDER FREEWAY
CALDER FREEWAY
Option 5
Two Bridge Crossings
And Calder Connection
2046 Volume PM (Vehicles)
0 - 100
100 - 500
500 - 1000
1000 - 2000
2000 - 5000
5000 - 7500
7500 - 10000
10000 +
0
1
2
3


Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
RIDDELL ROAD
SUNBURY ROAD
Option 5
Two Bridge Crossings
And Calder Connection
2046 Volume Daily (Vehicles)
0 - 100
100 - 500
500 - 1000
1000 - 2000
2000 - 5000
5000 - 7500
7500 - 10000
10000 +
0
1
2
3
4 km

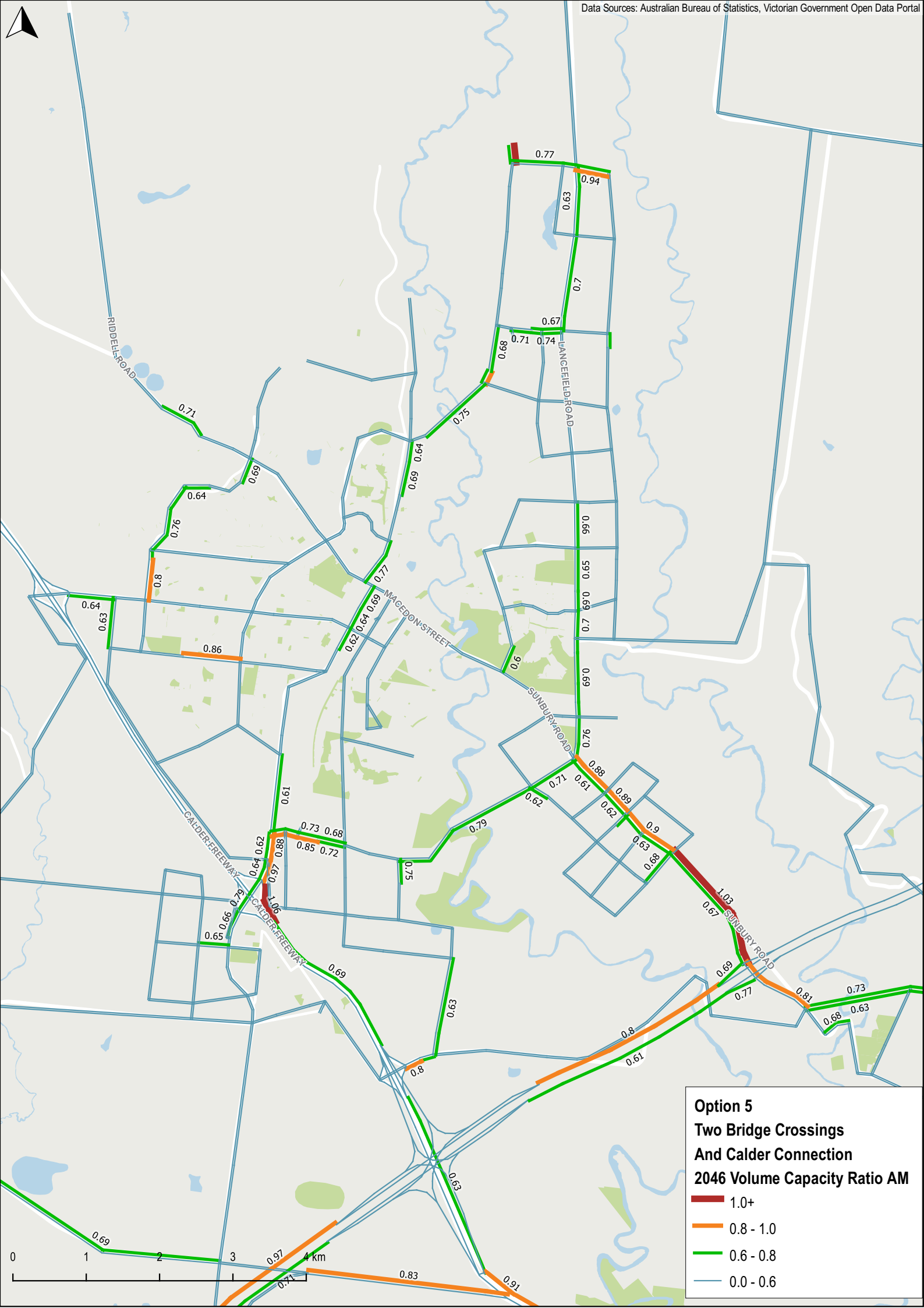

Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
WILDWOOD
SUNBURY
BULLA
DIGGERS REST
GAP ROAD
RIDDELL ROAD
VINEYARD ROAD
GELLIES ROAD
SUNBURY ROAD
CALDER FREEWAY
PLUMPTON ROAD
BULLA-DIGG
0
1
2 km
Option 5
Two Bridge Crossings
And Calder Connection
2046 Volume AM (Vehicles)
0 - 100
100 - 500
500 - 1000
1000 - 2000
2000 - 5000
5000 - 7500
7500 - 10000
10000 +

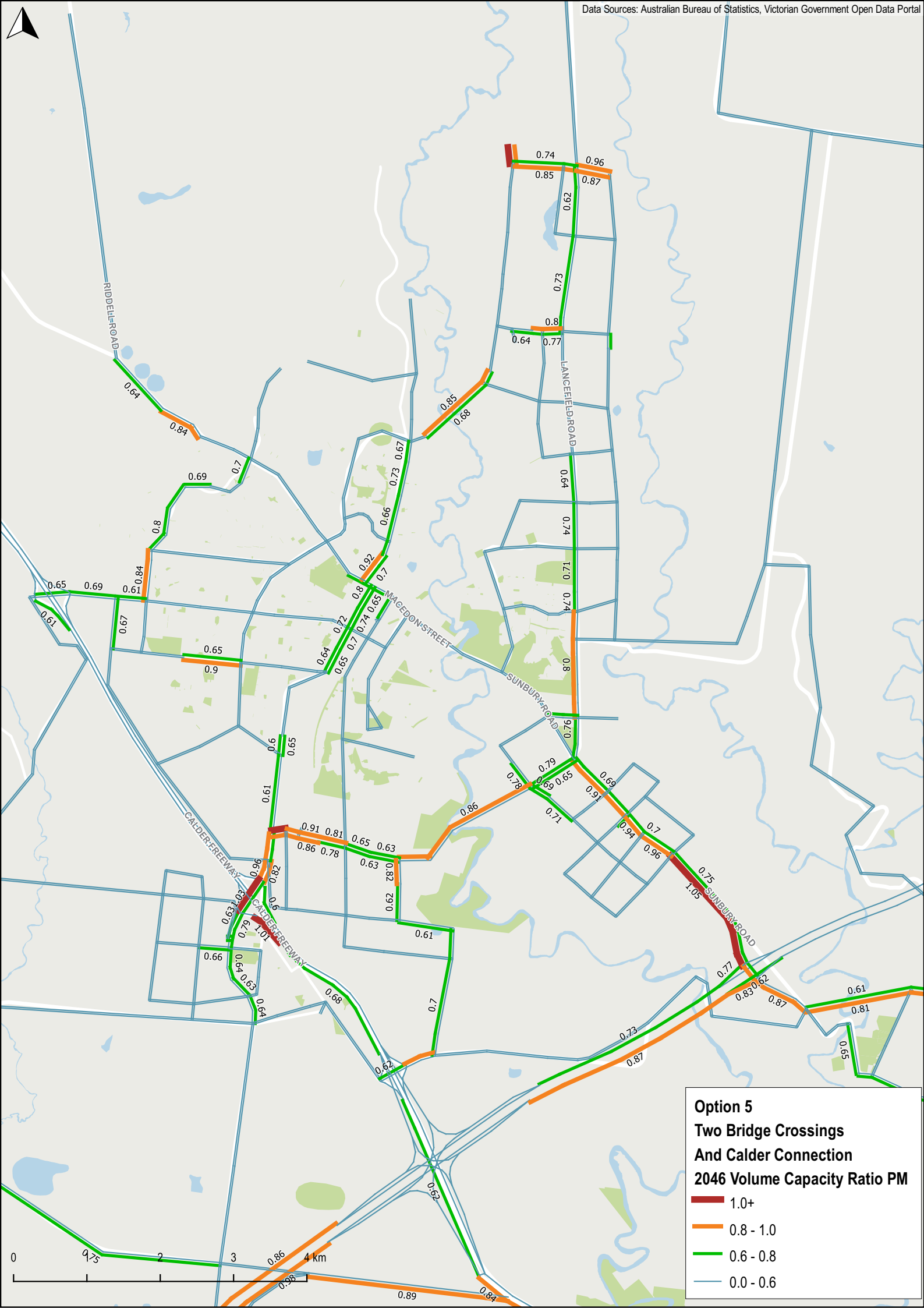

Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
SUNBURY
WILDWOOD
BULLA
DIGGERS REST
RIDDELL ROAD
GAP ROAD
VINEYARD ROAD
GELLIES ROAD
SUNBURY ROAD
CALDER FREEWAY
PLUMPTON ROAD
BULLA-DIGG
0
1
2 km
Option 5
Two Bridge Crossings
And Calder Connection
2046 Volume PM (Vehicles)
0 - 100
100 - 500
500 - 1000
1000 - 2000
2000 - 5000
5000 - 7500
7500 - 10000
10000 +


Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Porta
WILDWOOD
SUNBURY
DIGGERS REST
BULLA
GAP ROAD
GELLIES ROAD
VINEYARD ROAD
SUNBURY ROAD
CALDER FREEWAY
0
1
2 km
Option 5
Two Bridge Crossings
And Calder Connection
2046 Volume Daily (Vehicles)
0 - 100
100 - 500
500 - 1000
1000 - 2000
2000 - 5000
5000 - 7500
7500 - 10000
10000 +

C. VOLUME TO CAPACITY PLOTS

C


Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
RIDDELL ROAD
LANCEFIELD ROAD
MACEDON STREET
SUNBURY ROAD
CALDER FREEWAY
0 1 2 3 4 km
Option 5
Two Bridge Crossings
And Calder Connection
2046 Volume Capacity Ratio AM
1.0+
0.8 - 1.0
0.6 - 0.8
0.0 - 0.6


Data Sources: Australian Bureau of Statistics, Victorian Government Open Data Portal
RIDDELL ROAD
LANGFIELD ROAD
MAGEDON STREET
SUNBURY ROAD
CALDER FREEWAY
0.74
0.96
0.85
0.87
0.92
0.73
0.8
0.64
0.77
0.85
0.68
0.64
0.84
0.7
0.69
0.8
0.84
0.65
0.69
0.61
0.67
0.65
0.9
0.67
0.73
0.66
0.92
0.7
0.8
0.65
0.72
0.74
0.7
0.64
0.65
0.74
0.71
0.74
0.8
0.6
0.65
0.61
0.79
0.78
0.69
0.65
0.69
0.91
0.71
0.86
0.91
0.81
0.65
0.63
0.86
0.78
0.63
0.82
0.62
0.96
0.82
0.6
0.63
1.03
0.79
1.01
0.61
0.66
0.94
0.63
0.64
0.68
0.7
0.62
0.94
0.96
0.7
0.75
1.05
0.77
0.83
0.62
0.87
0.61
0.81
0.73
0.87
0.65
0.62
0.86
0.98
0.89
0.84
0
0.75
2
3
4 km
Option 5
Two Bridge Crossings
And Calder Connection
2046 Volume Capacity Ratio PM
1.0+
0.8 - 1.0
0.6 - 0.8
0.0 - 0.6

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