Workshop Overview

Welcome

Brief Project Background

Environmental Constraints

Flooding
Contamination
Ecology &
Heritage

Planning Constraints

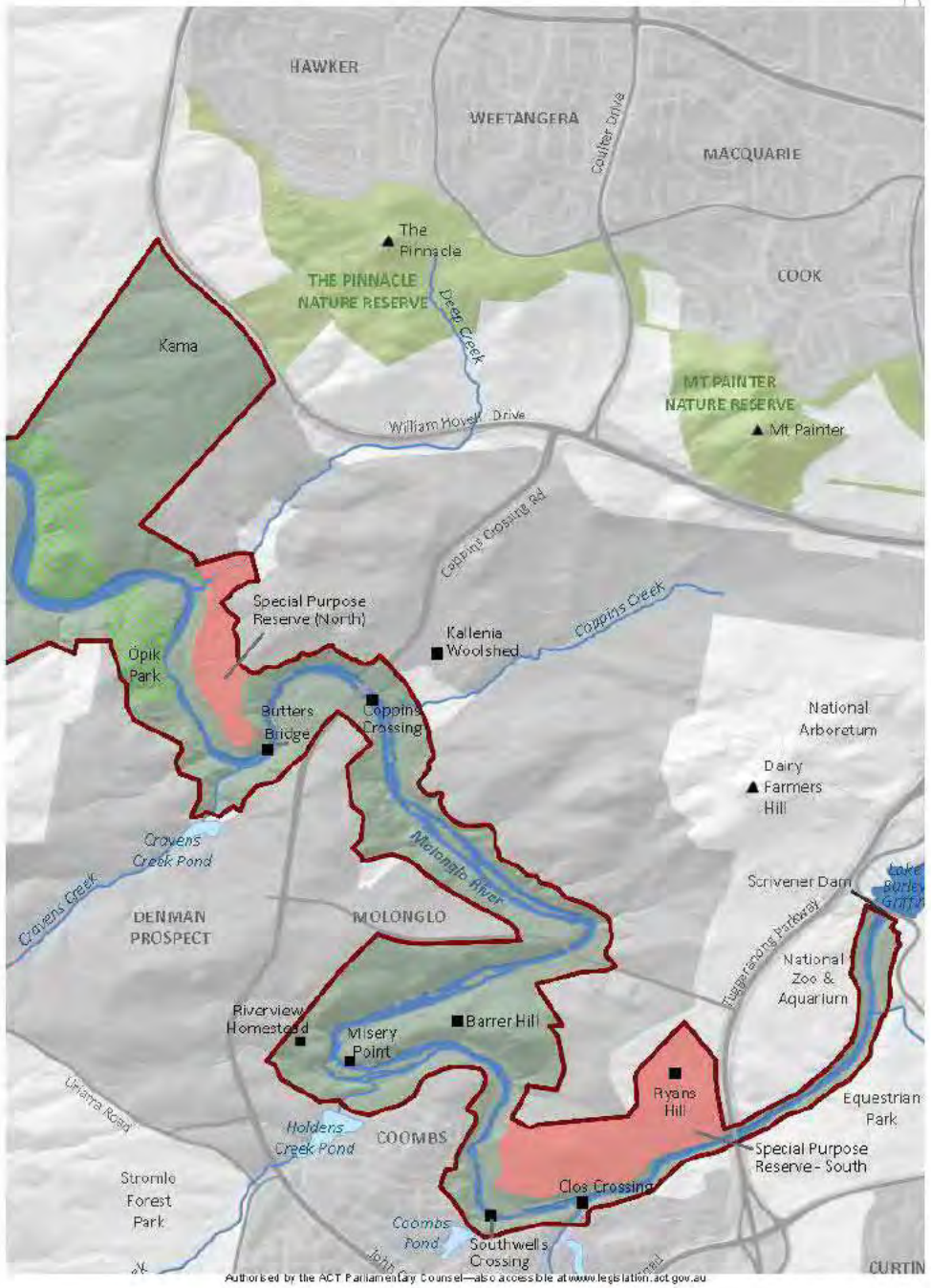
Zoning
Arboretum

Technical Constraints

Traffic
Geotechnical
Utilities

Next Steps

Final Questions



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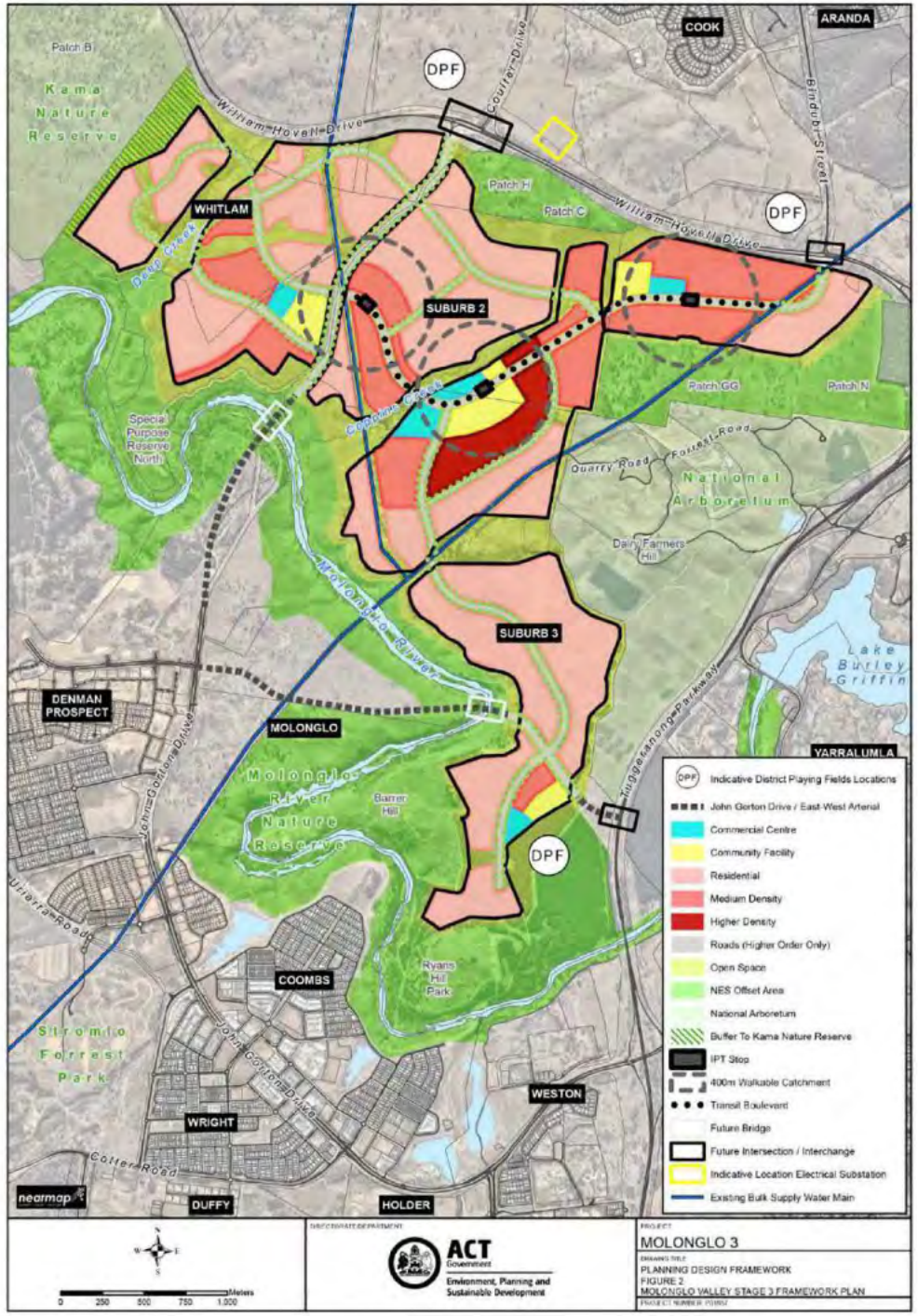

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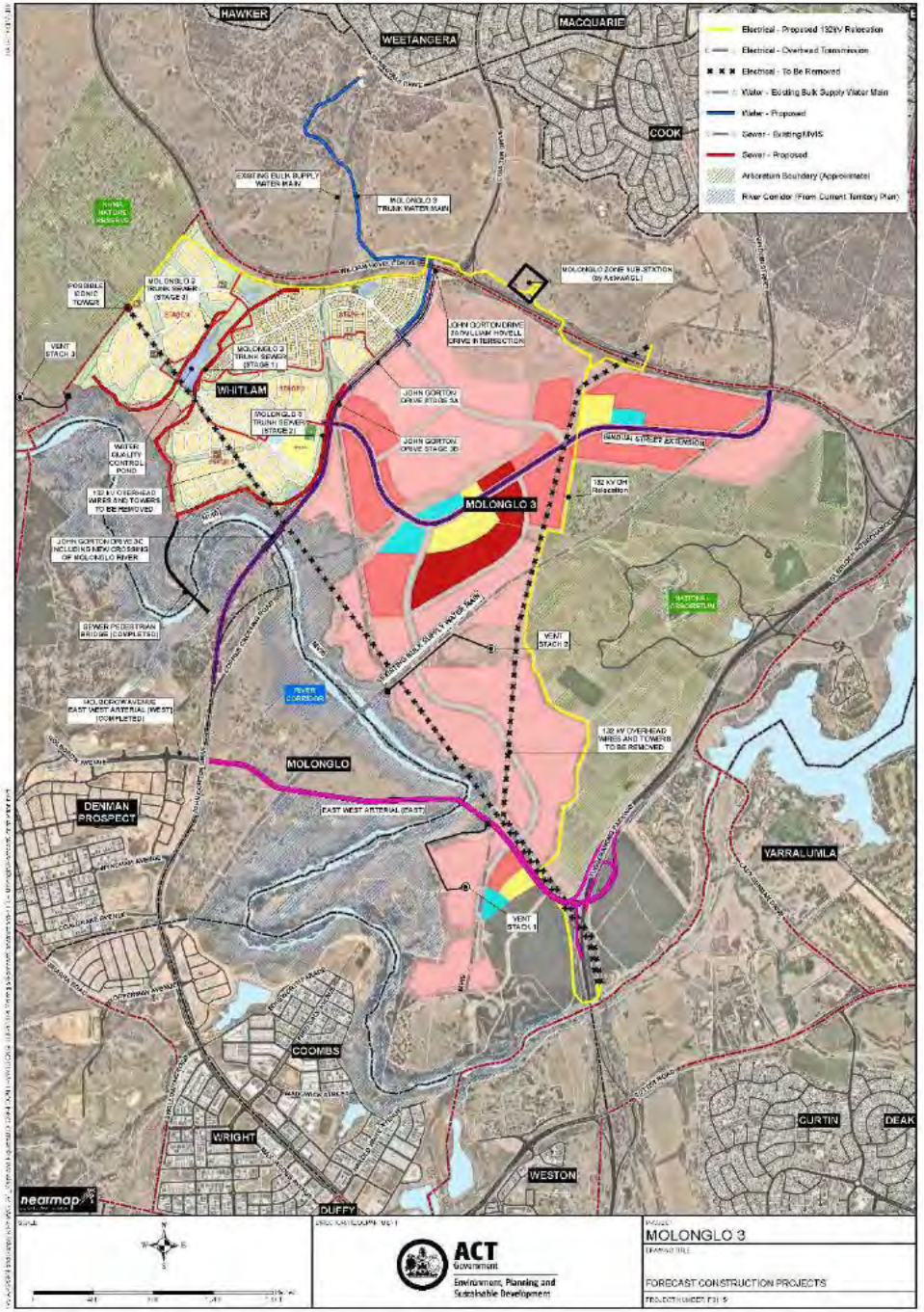

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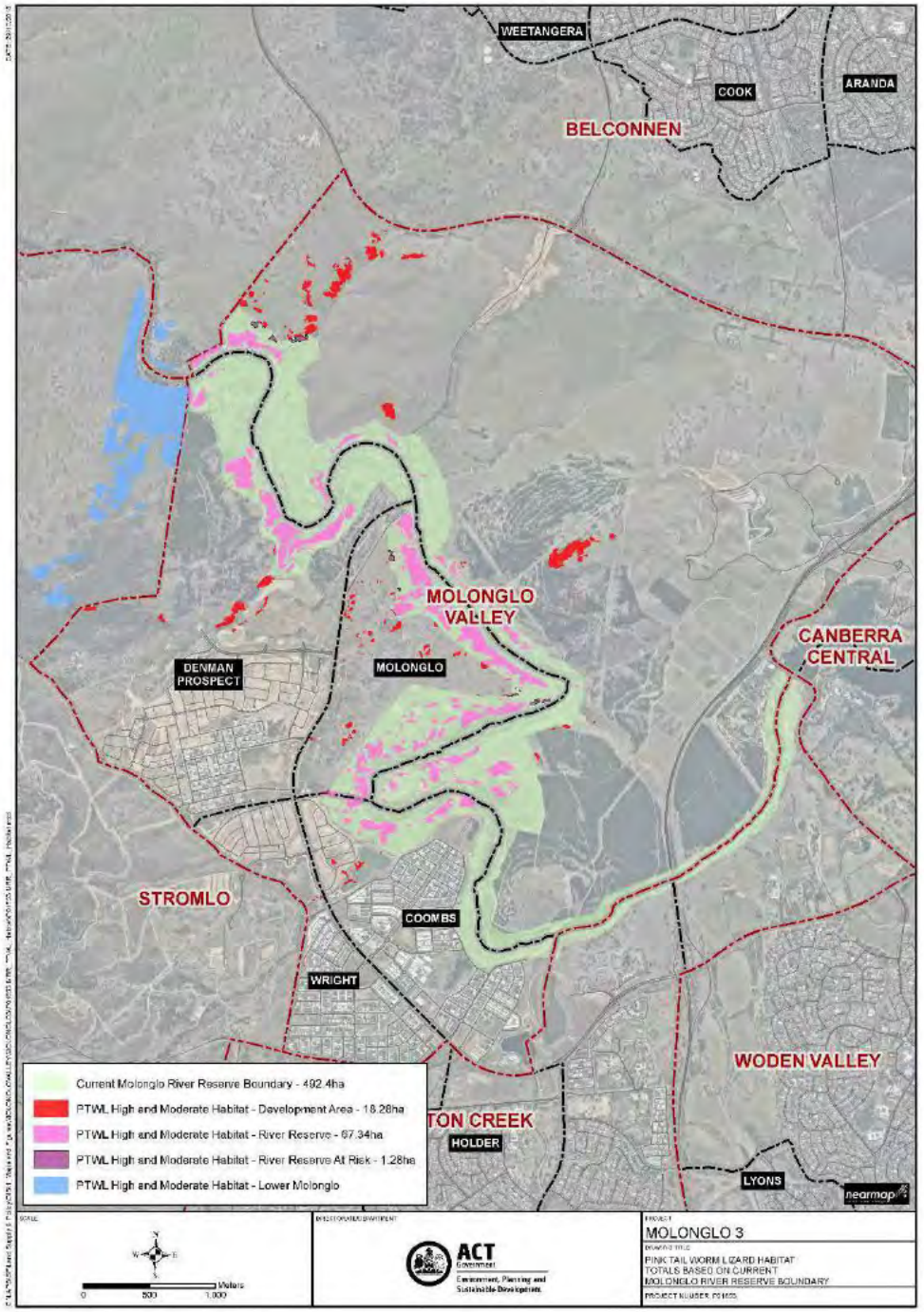

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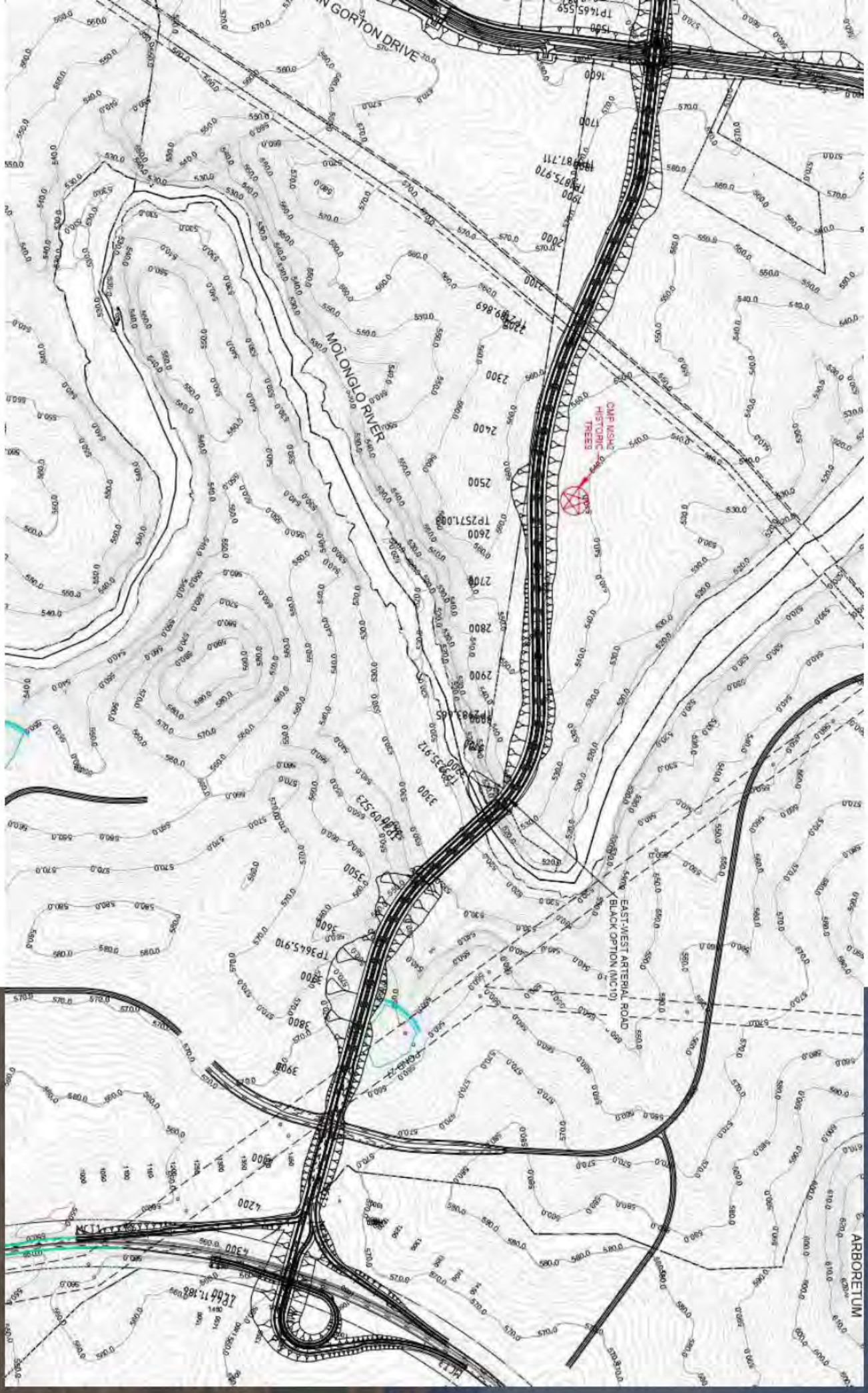

Previous Road Alignment

Mini-Q

SMEC

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1 Environmental Constraints

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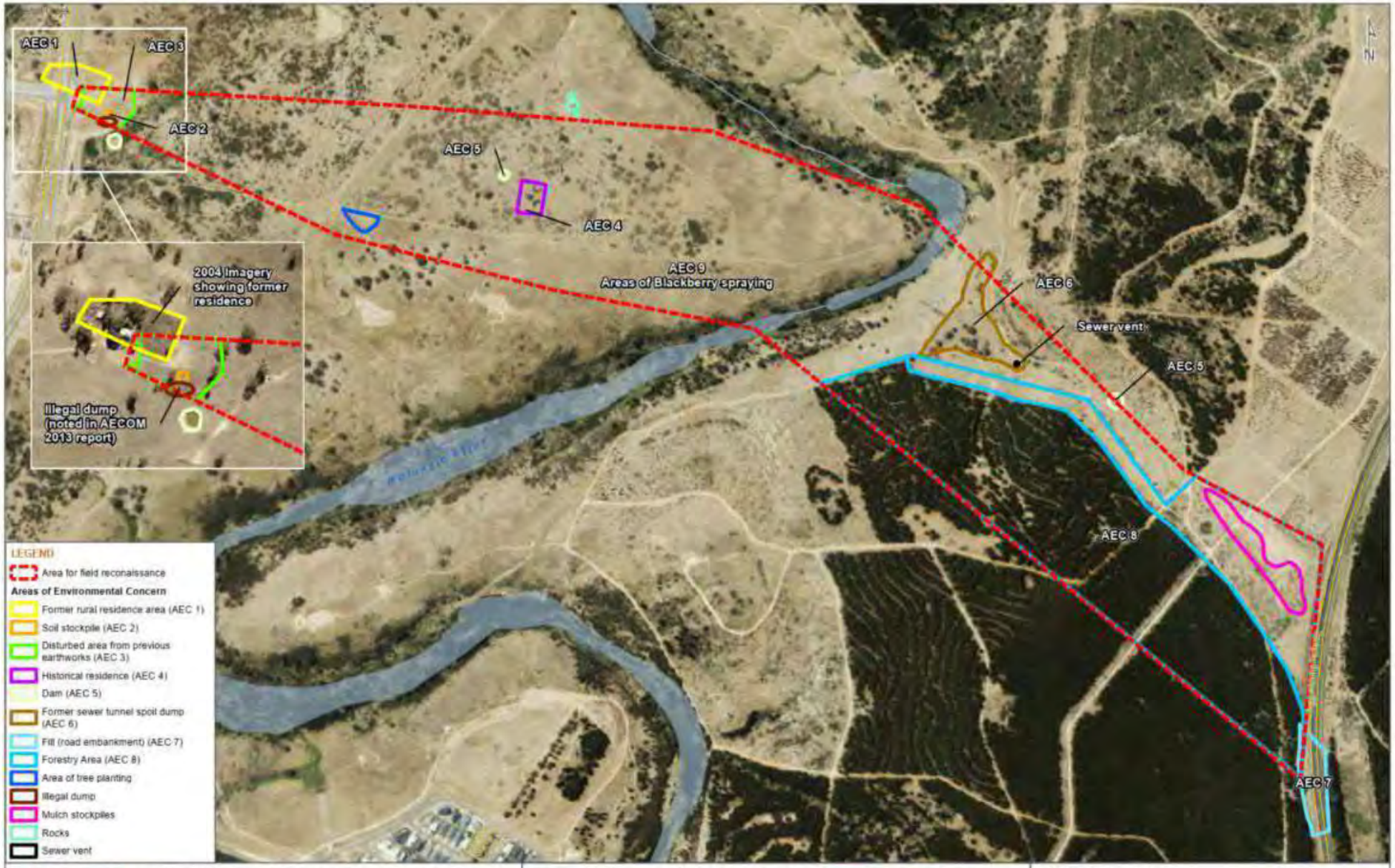
Flooding


LEGEND
1 Percent AEP Flood Extent
EWA Study Area
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGR
IGN, and the GIS User Community

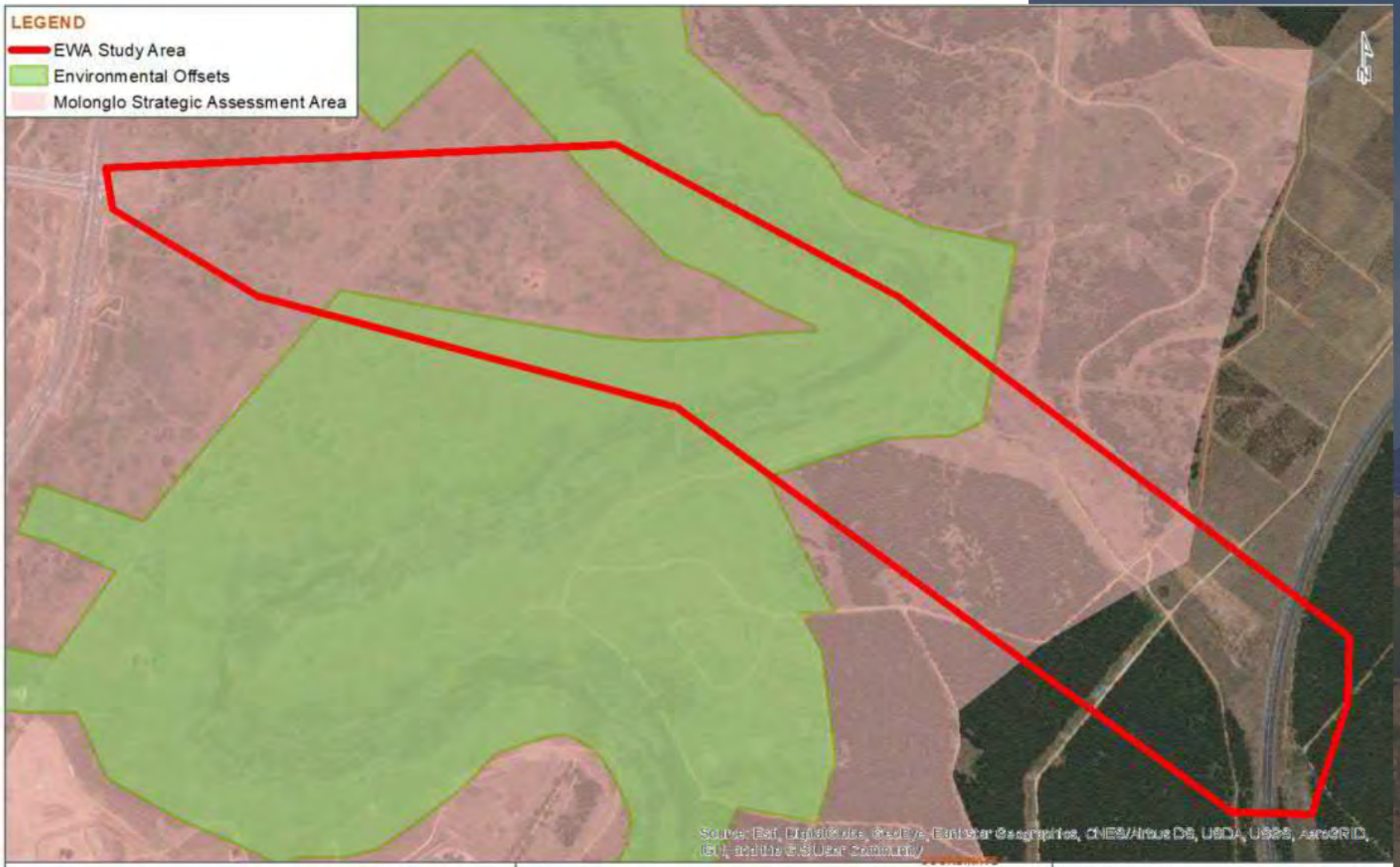
Contamination



Heritage


LEGEND
EWA Study Area
BIOSIS Heritage Sites
PAD 1
MV10
MV13
MV13
MV2
MV2
MV3
MV3
MVF10
MV4
MV4
MV5
MV5
MV7
MHS2
MHS2
MV8
MV8
MVF14
MV15
MV15
MVF16
MV14
MV18
MVF15
MVF18
MVF19
MV19
MV17
MV17
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Offsets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EWA Study Area
Environmental Offsets
Molonglo Strategic Assessment Area
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
FIG NO. 1
FIGURE TITLE Environmental Offsets and Strategic Assessment Area
DATE 17/03/2020
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PROJECT NO. 3002754
PROJECT TITLE Molonglo East West Arterial Feasiblity Study
SOURCES Roadnet©
World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN and the GIS User Community
CREATED BY S. Olsen
SMEC

Mini-Q

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2 Planning Constraints

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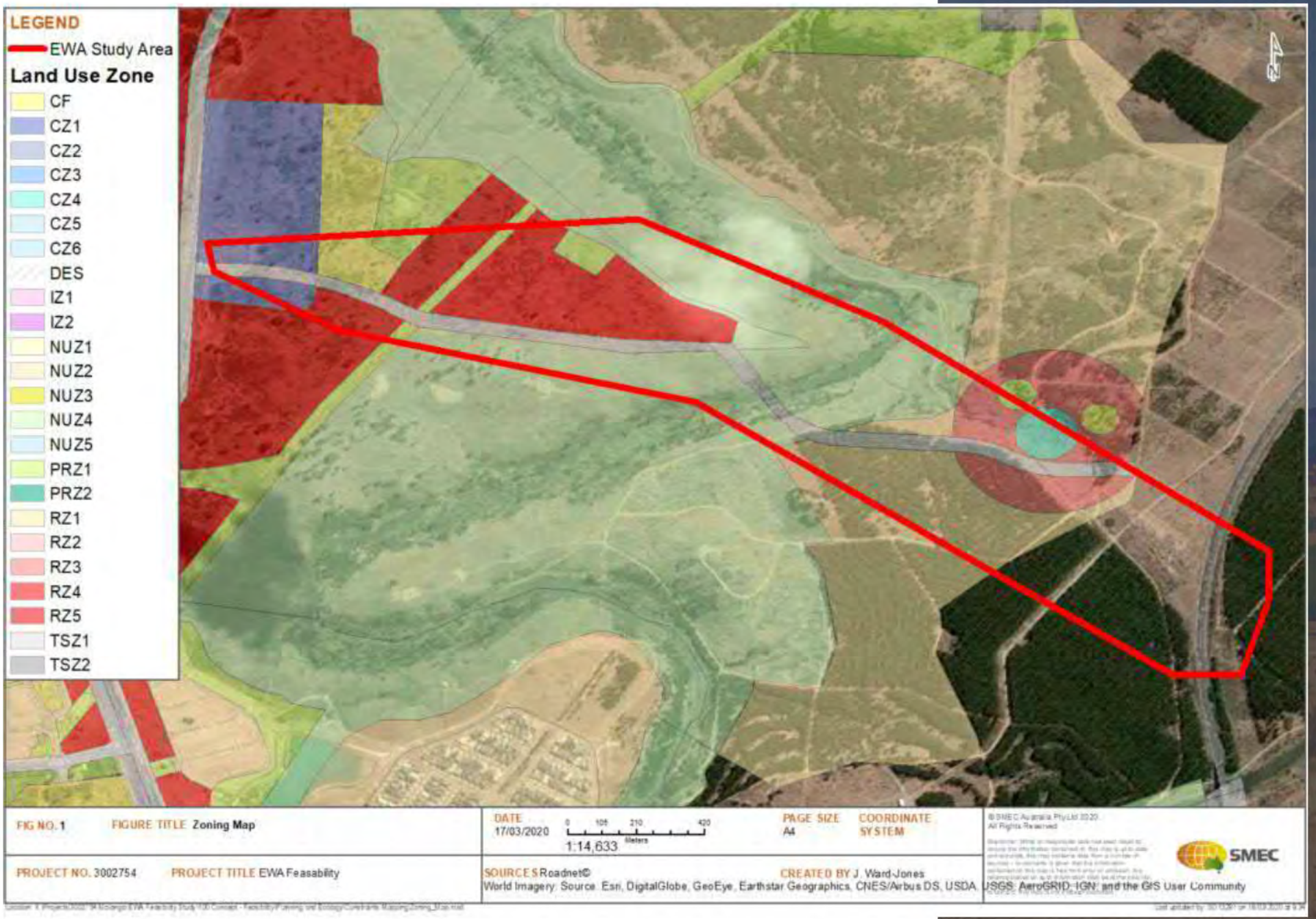
Zoning


LEGEND
EWA Study Area
Land Use Zone
CF
CZ1
CZ2
CZ3
CZ4
CZ5
CZ6
DES
IZ1
IZ2
NUZ1
NUZ2
NUZ3
NUZ4
NUZ5
PRZ1
PRZ2
RZ1
RZ2
RZ3
RZ4
RZ5
TSZ1
TSZ2
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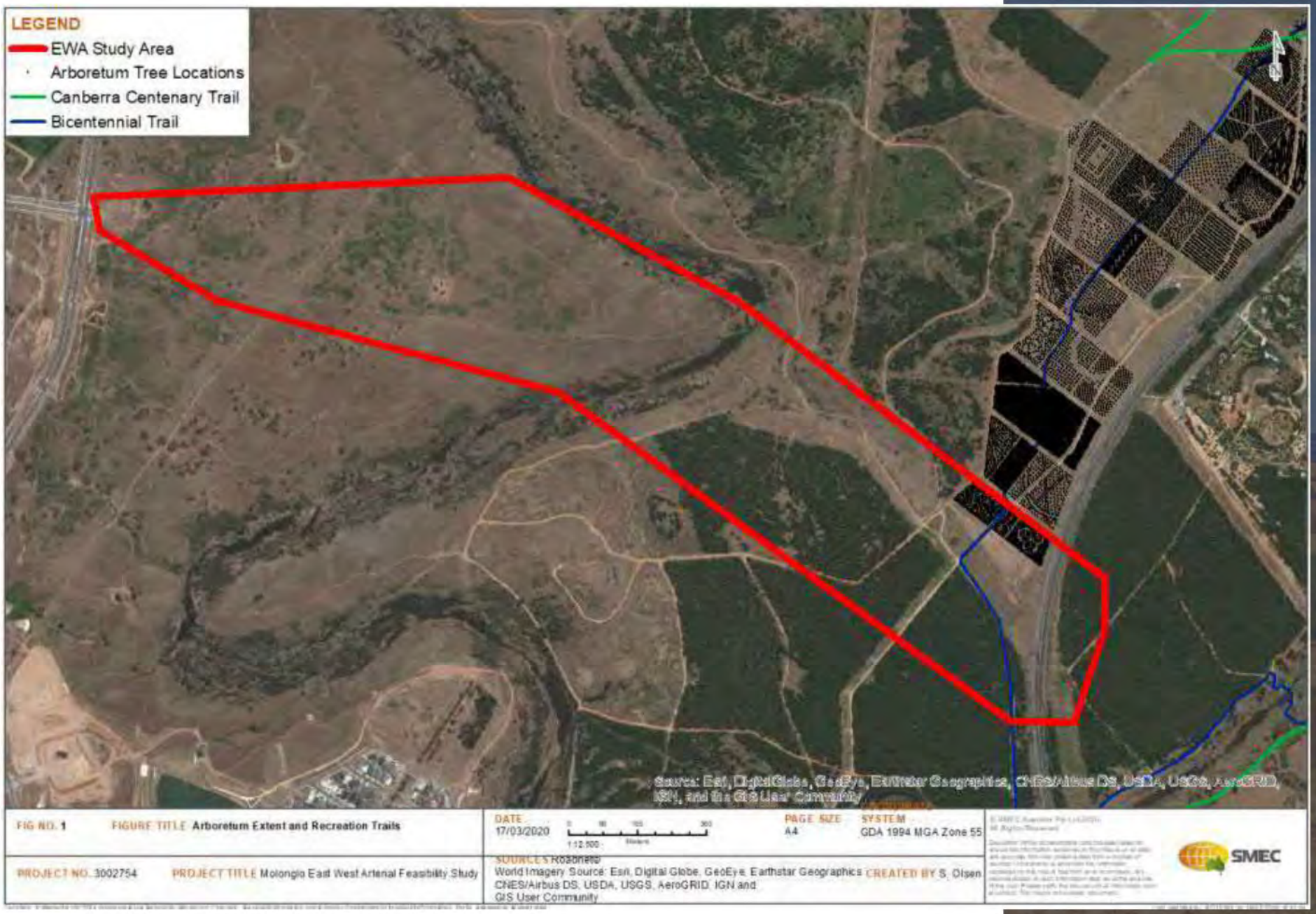
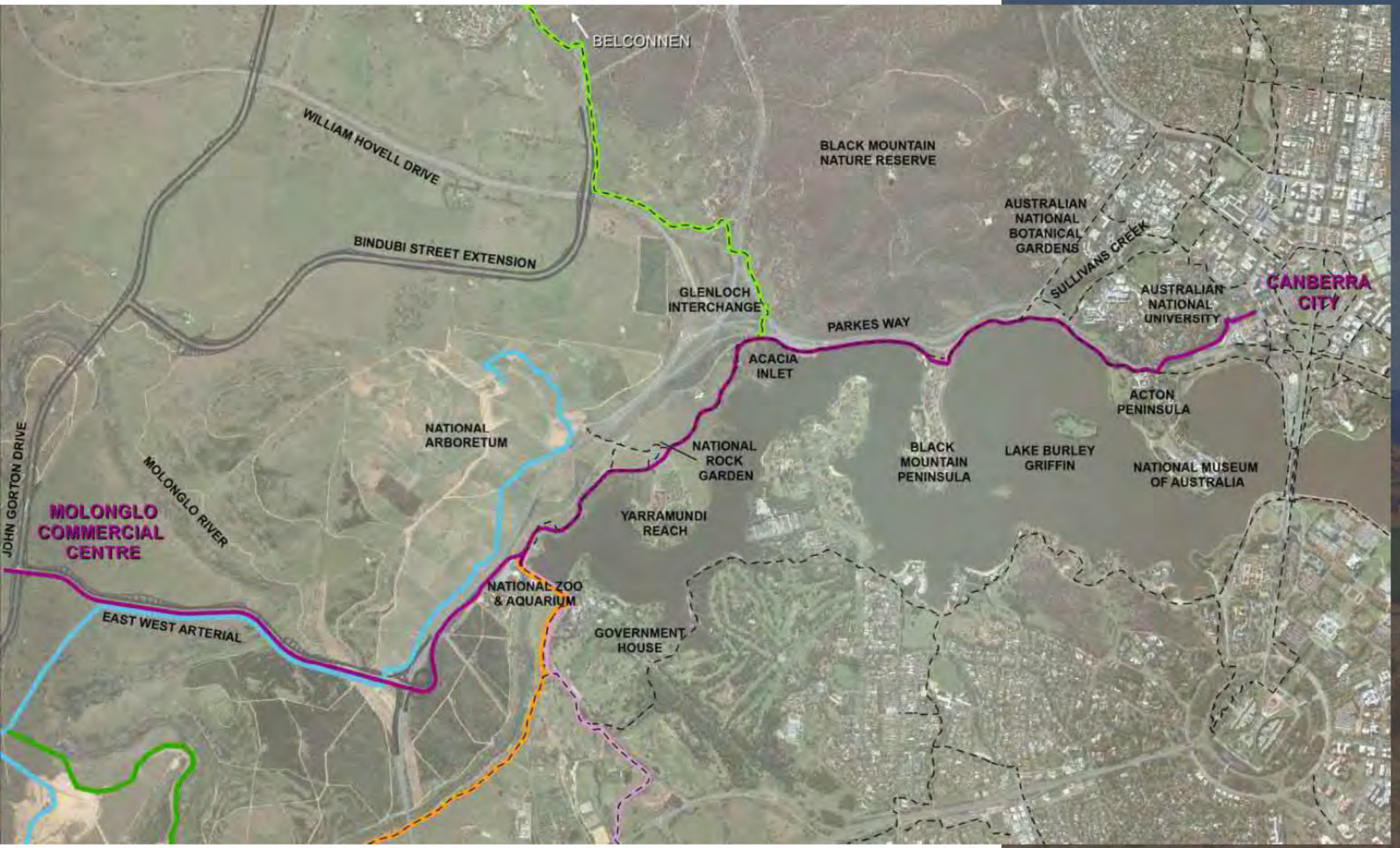
PAGE SIZE A4
COORDINATE SYSTEM
PROJECT NO. 3002754
PROJECT TITLE EWA Feasability
SOURCE S Roadnet©
CREATED BY J. Ward-Jones
World Imagery: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
SMEC

Arboretum & Recreation trails



Molonglo Valley to City Trunk Cycleway



Mini-Q

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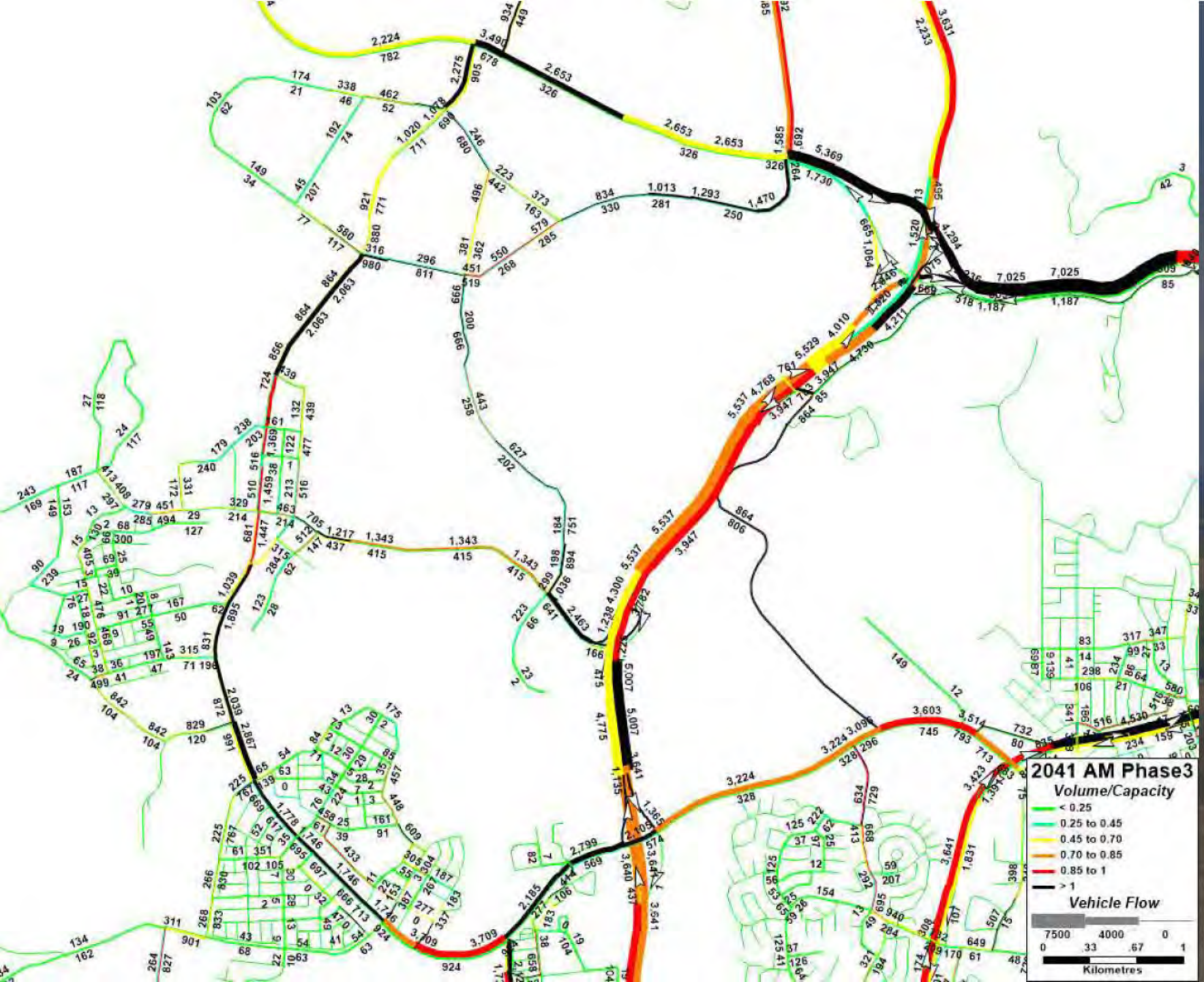
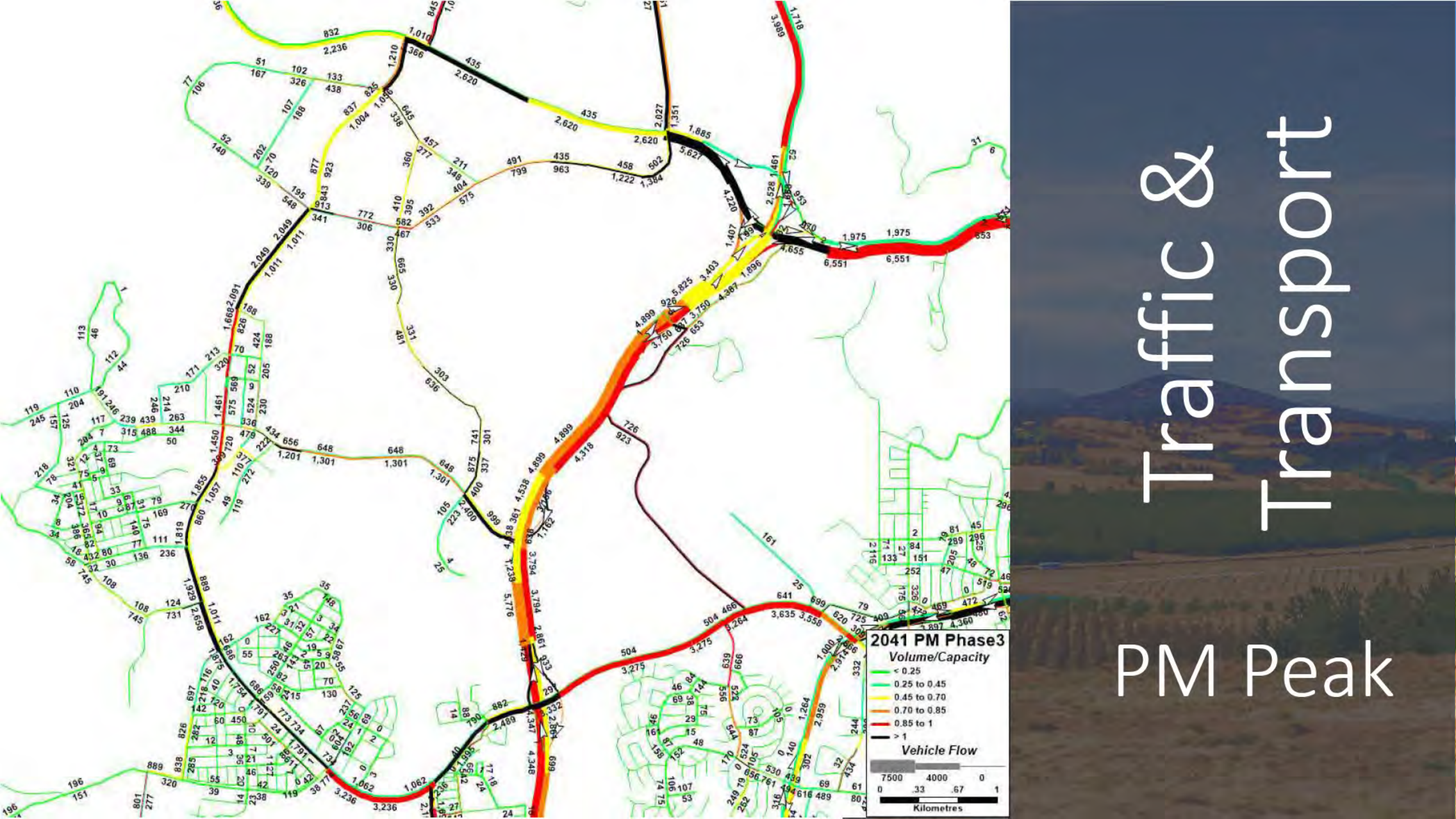


Traffic & Transport

AM Peak



Traffic & Transport

PM Peak

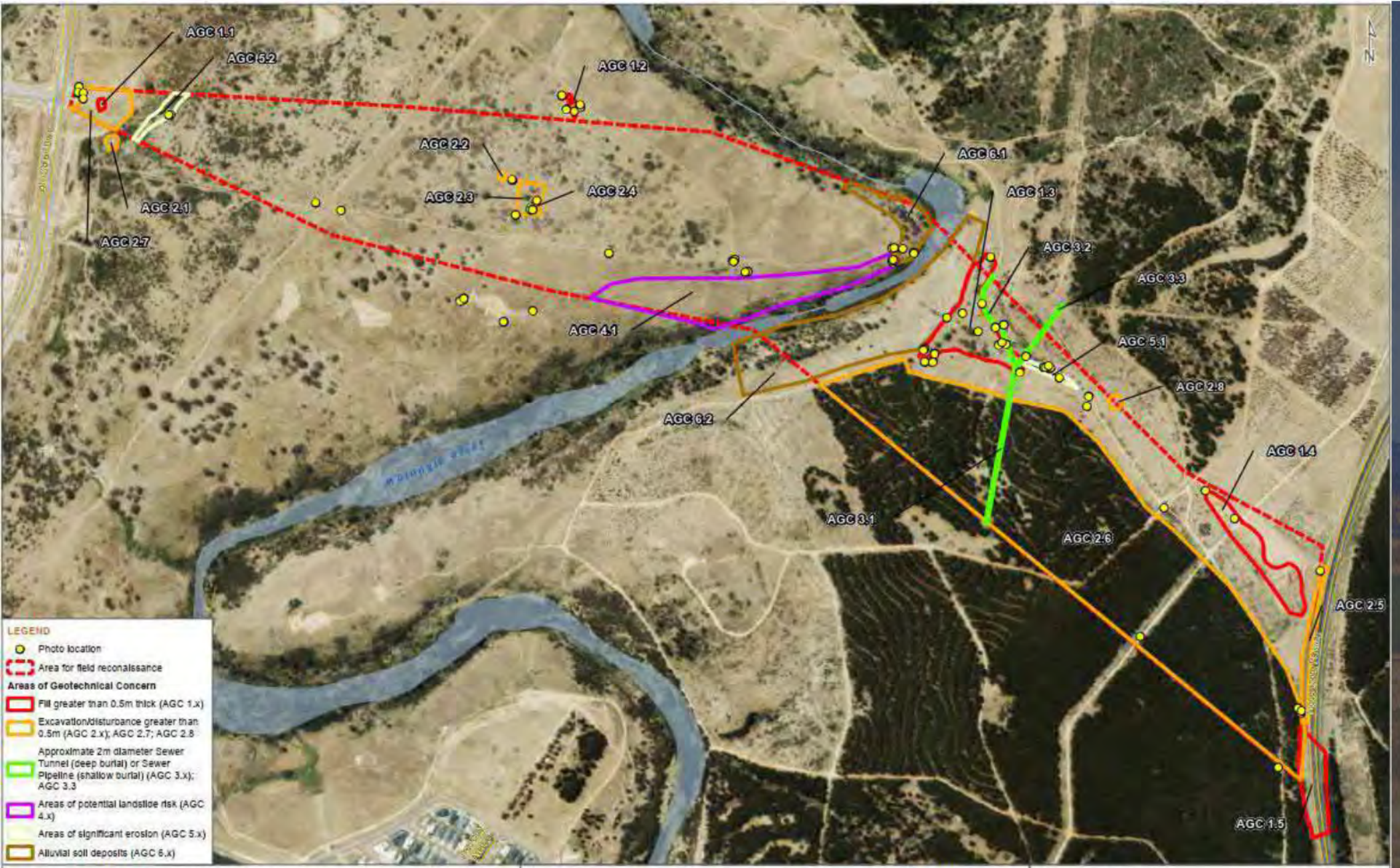


FIG NO. 2 FIGURE TITLE Areas of Geotechnical Concern (AGC)

DATE 24/03/2020

0 50 100 200 300 Metres

1:7,000

PAGE SIZE A3

COORDINATE SYSTEM GDA 1994 MGA Zone 55

PROJECT NO. 3002754
CLIENT: ACT Government

PROJECT TITLE East West Arterial Feasibility Study, Assessment of Geotechnical Constraints

CREATED BY CS14989
REVIEWED BY SRM

SOURCES Roadnet MDS 2019, Metromap 2019

SMEC

Geotechnical

Utilities

FIG NO. 1	FIGURE TITLE EXISTING UTILITIES	DATE 19/03/2020	PAGE SIZE A4	COORDINATE SYSTEM GDA 1994 MGA Zone 55
PROJECT NO. 3002754	PROJECT TITLE Molonglo East West Arterial Feasibility Study	SOURCES Roadnet©, ACTmapi		CREATED BY S.Olsen

1:12,500 Meters

Mini-Q

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Next Steps

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Short Term

- Options analysis -> preferred option
- Gazettal of a road corridor
- Strategic design & costing of preferred option
- Economic analysis of project viability

Medium & Long Term

- PSP Design
- Environmental Assessment
- Business Case
- Development Application & Works Approval Lodgement
- Detailed Design
- Construction

EWA Delivery Staging

- Short term: Molonglo town centre access – <5 years
- Medium & Long Term: Staging will respond to land release and transport capacity needs

Questions & Close

Thank You!

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Appendix F Strategic Traffic Modelling Technical Note

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Memorandum

To:	**Ali Lashkari**
From:	
Date:	**19 November 2020**
No. Pages:	**39**
Reference:	**3002754 – Strategic Transport Modelling**

Subject: Technical Note: Strategic Transport Scenarios Modelling

Message:

SMEC has been commissioned by EPSDD to undertake a feasibility study of the proposed East-West Arterial (EWA), including strategic transport modelling of future road network and land use scenarios around Molonglo and the potential western edge development area. This technical note presents the input assumptions and modelling outputs for these scenarios.

The following road network scenarios have been modelled, with and without the western edge development:

- Do Nothing (without EWA)
- Base Model
- EWA Option 3
- EWA Option 4
- EWA Option 5

Conceptual alignments for Options 1 and 2 were developed but discounted for technical reasons and are not included in this modelling assessment. Also, Option 6 was developed after the options assessment and comparison process and is operationally the same as Option 3 but has slightly different road design parameters. CSTM results from Option 3 and Option 6 are expected to be identical, so only Option 3 is presented here.

Modelling Process

SMEC utilised the latest version of the CSTM, supplied to SMEC by TCCS in April 2020. This model was reviewed and some minor changes made in the Molonglo area. The East-West Arterial options were then coded into the CSTM in the 2041 AM and PM peak periods and run. The results were then compiled and used in the assessment of the options.

Updates to Existing Models

The models supplied to SMEC were reviewed, with a focus on the Molonglo area, and a number of minor issues were found. These issues were discussed with TCCS and EPSDD and it was agreed that the following model updates would be made to the models:

- Speed/Hierarchy on John Gorton Drive
- Speed/Hierarchy on EWA (east of John Gorton Drive)
- Number of lanes on EWA (west of John Gorton Drive)

These changes have been applied to the Do Nothing scenario and are replicated across all model scenarios. These minor changes are not expected to have any impact on the model calibration.

Scenarios

This project included strategic transport modelling using the CSTM of the 20 scenarios shown in Table 1. Note that Option 6 is functionally the same as Option 3 in terms of strategic modelling and has not been run as a separate scenario.

Table 1: Modelled Scenarios

Year	Road Network Option	Without Western Edge		With Western Edge	
		AM Peak	PM Peak	AM Peak	PM Peak
2041	Do Nothing	✓	✓	✓	✓
	Base	✓	✓	✓	✓
	Option 3	✓	✓	✓	✓
	Option 4	✓	✓	✓	✓
	Option 5	✓	✓	✓	✓
	Option 6	-	-	-	-

Road Network Options

Do Nothing

The Do Nothing models used for this assessment assume that the East-West Arterial is not constructed, but all other committed transport network upgrades are fully incorporated.

Base

The Base scenario includes the East-West Arterial alignment as developed in 2015 by Coleman Engineering Services. This alignment was based on the outcomes of earlier feasibility studies but the EWA-Tuggeranong Parkway interchange has been moved south to accommodate the expanded footprint of the Arboretum. The interchange is a trumpet-style interchange providing full access between EWA and Tuggeranong Parkway.

Option 3

The western part of the Option 3 alignment crosses the Molonglo River valley on the southern side of the tip of the peninsula. To the east, the EWA Tuggeranong Parkway interchange is similar to the Base scenario and provides free flow ramps for all movements, with the southbound entry ramp being a minimum radius loop ramp. Being relatively close to the Cotter Road interchange, Option 3 provides minimal weave distances (approximately 400-450m) between the interchanges.

The Option 3 arrangement will require a new Tuggeranong Parkway bridge crossing of the Molonglo River. The existing Molonglo river bridge would be reconfigured to accommodate three southbound mainline Parkway lanes. The new bridge would consist of three northbound Parkway lanes.

The Option 3 layout is shown in Figure 1.

Figure 1: Option 3 Road Layout

Option 4

Option 4 has the EWA alignment cross the Molonglo River slightly north of the Option 3 crossing point and is the northernmost of the three alignment options.

To the east, Option 4 has a substantially different approach to the interface with the Tuggeranong Parkway compared to other options. In Option 4, the EWA interchange and Cotter Rd interchange to the south are not treated as discrete interchanges, but rather are linked by a Connector-Distributer (CD) road arrangement. This CD approach means that the south facing EWA interchange ramps do not directly link onto the Tuggeranong Parkway, but rather route through the Cotter Rd interchange.

Whilst this arrangement has potential safety benefits, three of the four ramps are not free flow and are subject to signal control (two sets of signals in the case of the southbound entry ramp). Also, the two phase signalised intersection between the two southbound ramps is at a high skew and will likely require refinement if further developed.

The CD arrangement will require a new Tuggeranong Parkway bridge crossing of the Molonglo River. The existing Molonglo river bridge would be reconfigured to accommodate two southbound mainline Parkway lanes plus a segregated single lane southbound CD road. The new bridge would consist of three northbound lanes plus a segregated northbound single lane CD road. This new Option 4 Tuggeranong Parkway bridge would be larger than required in other options.

The Option 4 layout is shown in Figure 2.

Figure 2: Option 4 Road Layout

Option 5

Option 5 has the southernmost river crossing of the assessed options, providing the shortest path across the designated woodlands on the Molonglo River peninsula.

To the east, the EWA Tuggeranong Parkway interchange is a tight diamond layout with two signalised intersections for the ramp terminals. Being relatively close to the Cotter Rd interchange, Option 3 provides minimal weave distances (approximately 400-450m) between the interchanges.

As with Option 3, Option 5 would require a new Tuggeranong Parkway bridge crossing of the Molonglo River. The existing Molonglo river bridge would be reconfigured to accommodate three southbound mainline Parkway lanes. The new bridge would consist of three northbound Parkway lanes.

The Option 5 layout is shown in Figure 3.

Figure 3: Option 5 Road Layout

Land Use Scenarios

Without Western Edge

The CSTM without the Western Edge development uses the base land use assumptions in the default CSTM 2041 AM and PM peak scenarios. No changes were made to land use in any of the road network scenarios tested.

With Western Edge

The western edge development includes the following land use located to the west of Molonglo:

- 25,000 population

- 1,500 employment (one group centre and six local centres)
- 14,000m² retail space (one group centre and six local centres)
- 3,600 school enrolments (six schools)

In the western edge scenarios, the EWA is extended further west to provide a second access point, along with Uriarra Road, to the western edge development. Both EWA and Uriarra Road are modelled as arterial roads with two lanes each way. Figure 4 shows the road layout extending through the Western Edge area.

Figure 4: 2041 Road Network - With Western Edge

Model Results

The model results of each scenario, including the Base, are discussed below along with the flow diagrams and flow difference diagrams. The flow difference diagrams show the difference in flows between a specific scenario and the corresponding Base scenario, with green indicating a decrease and red an increase in traffic flow. The "Without Western Edge" differences show the traffic volume differences between the Do Nothing (without East-West Arterial) and the option scenario. The "With Western Edge" differences show the traffic volume difference for each of the network scenarios if the Western Edge area is developed.

2041 (Without Western Edge)

A summary of the aggregated outputs of the 2041 scenarios in the AM and PM peak periods without the western edge development are presented in Table 2 and Table 3, respectively. These model outputs are for the whole model and not just for the Molonglo area.

Construction of any East-West Arterial option leads to a reduction in most of the measured travel statistics in the 2041 AM peak. The proportional reduction in car VHT is much larger than the reduction in car VKT, which indicates a more direct network with higher travel speeds. Total public transport trips decrease slightly in all EWA scenarios with HBW mode share decreasing by 0.2%. Car VHT across all of Canberra decreases by 9-11% after construction of the EWA, which indicates the

importance of the link for efficient network operation. Note that the VHT is based on midblock congestion-delay functions, which can return extremely high delays in highly congested networks.

Of the options assessed, Option 3 has the lowest VHT but not the lowest VKT. This indicates that Option 3 will have the highest average car speed, which shows the best network performance, albeit with small differences between options.

Table 2: Aggregated Output Summary of the 2041 AM Peak Scenarios (without Western Edge)

Output	Do Nothing	Base		Option 3		Option 4		Option 5	
Person Trips	209,600	209,600		209,600		209,600		209,600	
PT Trips	24,315	24,095		24,095		24,092		24,083	
Car Trips	143,736	143,800		143,800		143,784		143,790	
HBW PT Trips	13,277	13,082		13,082		13,080		13,073	
HBW PT %	15.8	15.6		15.6		15.6		15.6	
Car VKT	1,812,995	1,804,272		1,802,462		1,802,213		1,801,620	
Car VHT	71,877	65,520	-9%	63,911	-11%	64,562	-10%	64,078	-11%
Car Average Speed (km/h)	25.2	27.5	+9%	28.2	+12%	27.9	+11%	28.1	+12%

In the 2041 PM peak period, there is a similar impact, with reductions in most of the travel statistics assessed. Again, VKT and VHT both decrease, indicating an improvement in both network connectivity and operation. There is a very slight decrease (approximately 0.4%) in public transport patronage. Again, there are small differences between average speeds, with Option 4 the highest, followed by Option 3.

Table 3: Aggregated Output Summary of the 2041 PM Peak Scenarios (Without Western Edge)

Output	Do Nothing	Base		Option 3		Option 4		Option 5	
Person Trips	191,119	191,119		191,119		191,119		191,119	
PT Trips	18,903	18,832		18,832		18,849		18,824	
Car Trips	142,305	142,351		142,351		142,338		142,356	
HBW PT Trips	14,576	14,523		14,523		14,533		14,517	
HBW PT %	15.0	14.9		14.9		14.9		14.9	
Car VKT	1,758,676	1,747,320		1,746,823		1,745,159		1,747,030	
Car VHT	57,110	51,833	-9%	51,494	-10%	51,388	-10%	51,736	-9%
Car Average Speed (km/h)	30.8	33.7	+9%	33.9	+10%	34.0	+10%	33.8	+10%

Do Nothing

Figure 5 and Figure 6 show the 2041 AM and PM Do Nothing (without East-West Arterial) flow and V/C respectively. In general, many key roads in the area are operating at or near capacity, and high volumes on some minor roads indicates that there may be rat-running occurring.

Observations of the 2041 AM Base model, shown in Figure 5, include:

- All roads out of Molonglo operate over capacity.
- William Hovell Drive eastbound, west of John Gorton Drive, operates well below capacity
- William Hovell Drive eastbound, east of John Gorton Drive, and Parkes Way generally operate at or over capacity.
- Belconnen Way and Barry Drive eastbound, from Kingsford Smith Drive to Clunies Ross Street operate at or over capacity.
- Tuggeranong Parkway generally operates well northbound but close to capacity in the southbound direction.
- Much of John Gorton Drive and Bindubi Street Extension operate at or above capacity.
- High traffic volumes on local roads in Macquarie, Cook and Aranda indicate rat-running.

In the 2041 PM Base model, shown in Figure 6, the following are noted:

- All roads into Molonglo operate over capacity.
- William Hovell Drive westbound, west of John Gorton Drive, operates well below capacity
- William Hovell Drive westbound, east of John Gorton Drive, and Parkes Way generally operate at or over capacity.
- Belconnen Way and Barry Drive westbound, from Clunies Ross Street to Kingsford Smith Drive operate at or over capacity.
- Tuggeranong Parkway generally operates well but is close to capacity south of Cotter Road.
- Much of John Gorton Drive and Bindubi Street Extension operate at or above capacity.
- High traffic volumes on local roads in Macquarie and Cook indicate rat-running.

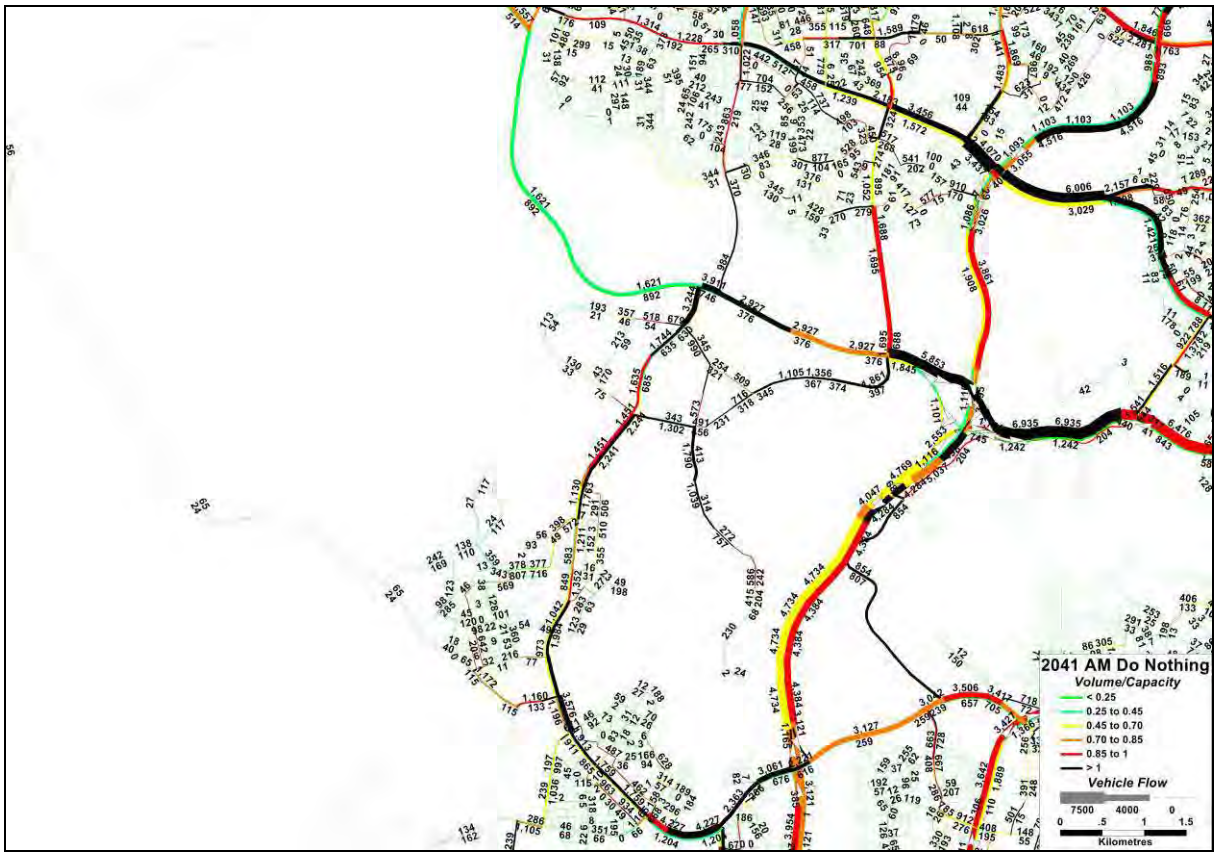

Figure 5: 2041 AM Do Nothing Flow and V/C

Figure 6: 2041 PM Do Nothing Flow and V/C

Base Case

Figure 7 and Figure 9 show the 2041 AM and PM Base Case (2015 Coleman Engineering design) flow and V/C respectively while Figure 8 and Figure 10 show the differences between the Do Nothing and Base Case scenarios in 2041 AM and PM peaks respectively. The construction of the East-West Arterial has a substantial impact on traffic volumes across the network in the Molonglo area, with a smaller impact across parts of the surrounding arterial road network.

Observations of the 2041 AM Base Case model include:

- All roads out of Molonglo operate over capacity.
- William Hovell Drive eastbound, west of John Gorton Drive, has spare capacity
- William Hovell Drive eastbound, east of John Gorton Drive, and Parkes Way generally operate at or over capacity.
- Belconnen Way and Barry Drive eastbound, from Kingsford Smith Drive to Clunies Ross Street operate at or over capacity.
- Tuggeranong Parkway generally operates close to capacity in both directions. Southbound between EWA and Cotter Road operates over capacity.
- Much of John Gorton Drive and Bindubi Street Extension operate at or above capacity.
- East-West Arterial operates with limited spare capacity between the town centre and Molonglo 3 Distributor road and above capacity around the Tuggeranong Parkway interchange.
- Construction of the EWA reduces traffic on nearly all roads in Molonglo, William Hovell Drive (between Coulter Drive and Bindubi Street), Bindubi Street and Belconnen Way. Traffic increases on Tuggeranong Parkway, William Hovell Drive (west of Coulter Drive), Gungahlin Drive, Parkes Way and Cotter Road (east of Tuggeranong Parkway). Traffic also decreases on a number of local roads in Hawker, Weetangera, Macquarie, Cook and Aranda, indicating better arterial capacity and less rat-running.

In 2041 PM Base Case, the following observations have been made:

- All roads into Molonglo operate over capacity.
- William Hovell Drive westbound, west of John Gorton Drive, operates below capacity.
- William Hovell Drive westbound, east of John Gorton Drive, and Parkes Way generally operate at or over capacity.
- Belconnen Way and Barry Drive westbound, from Clunies Ross Street to Kingsford Smith Drive operate at or over capacity.
- Tuggeranong Parkway generally operates well but is close to capacity south of Cotter Road.
- Much of John Gorton Drive and Bindubi Street Extension operate at or above capacity.
- As in the AM peak, construction of the EWA reduces traffic on nearly all roads in Molonglo, William Hovell Drive (between Coulter Drive and Bindubi Street), Bindubi Street and Belconnen Way. Traffic increases on Tuggeranong Parkway, William Hovell Drive (west of Coulter Drive), Gungahlin Drive, Parkes Way and Cotter Road (east of Tuggeranong Parkway). Traffic also decreases on a number of local roads in Hawker, Weetangera, Macquarie, Cook and Aranda, indicating better arterial capacity and less rat-running.

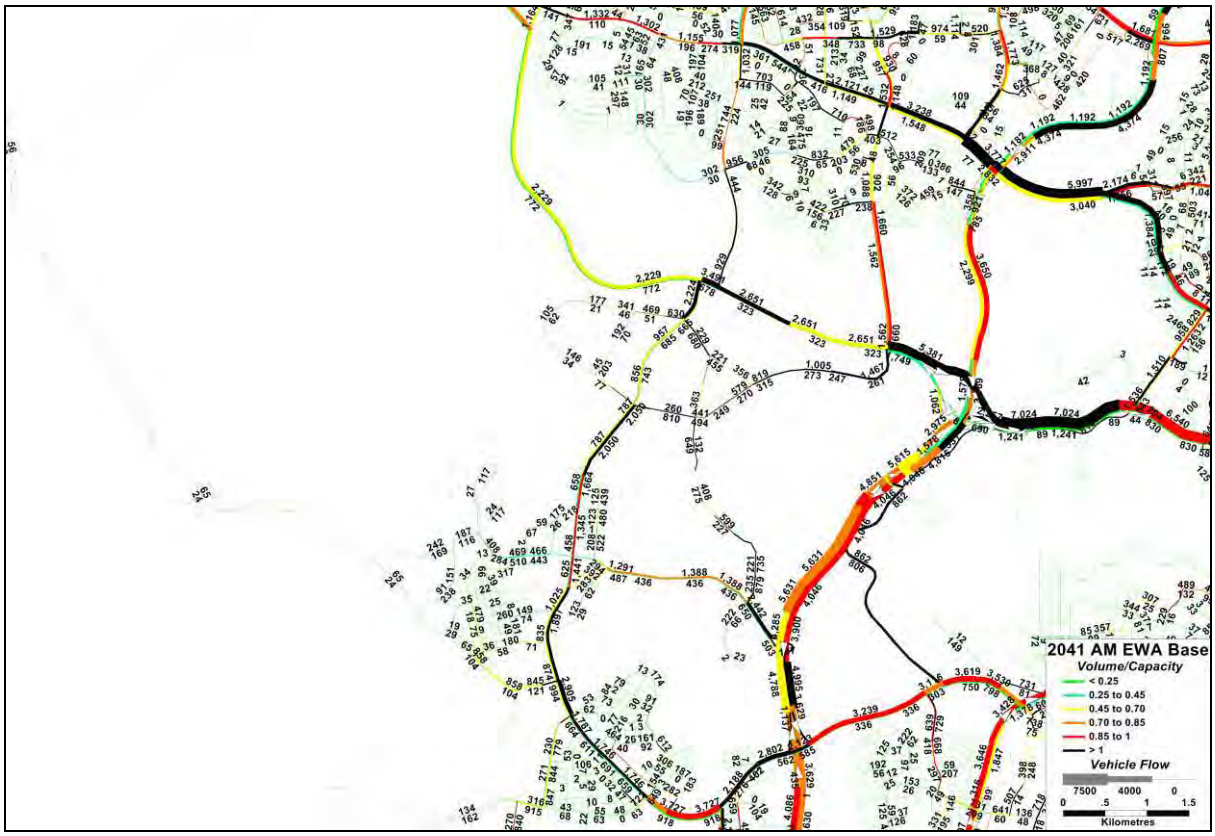

Figure 7: 2041 AM Base Case Flow and V/C

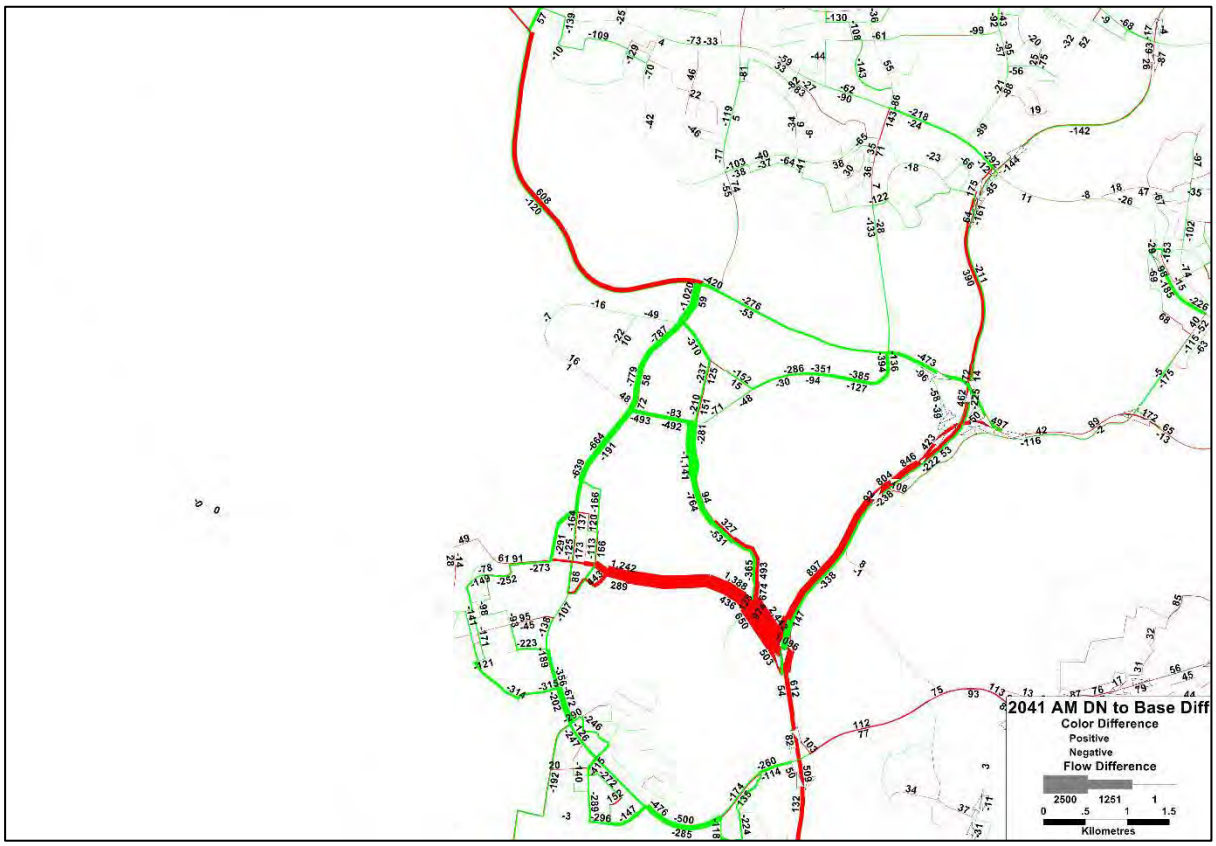

Figure 8: 2041 AM Do Nothing to Base Case Difference

Figure 9: 2041 PM Base Case Flow and V/C

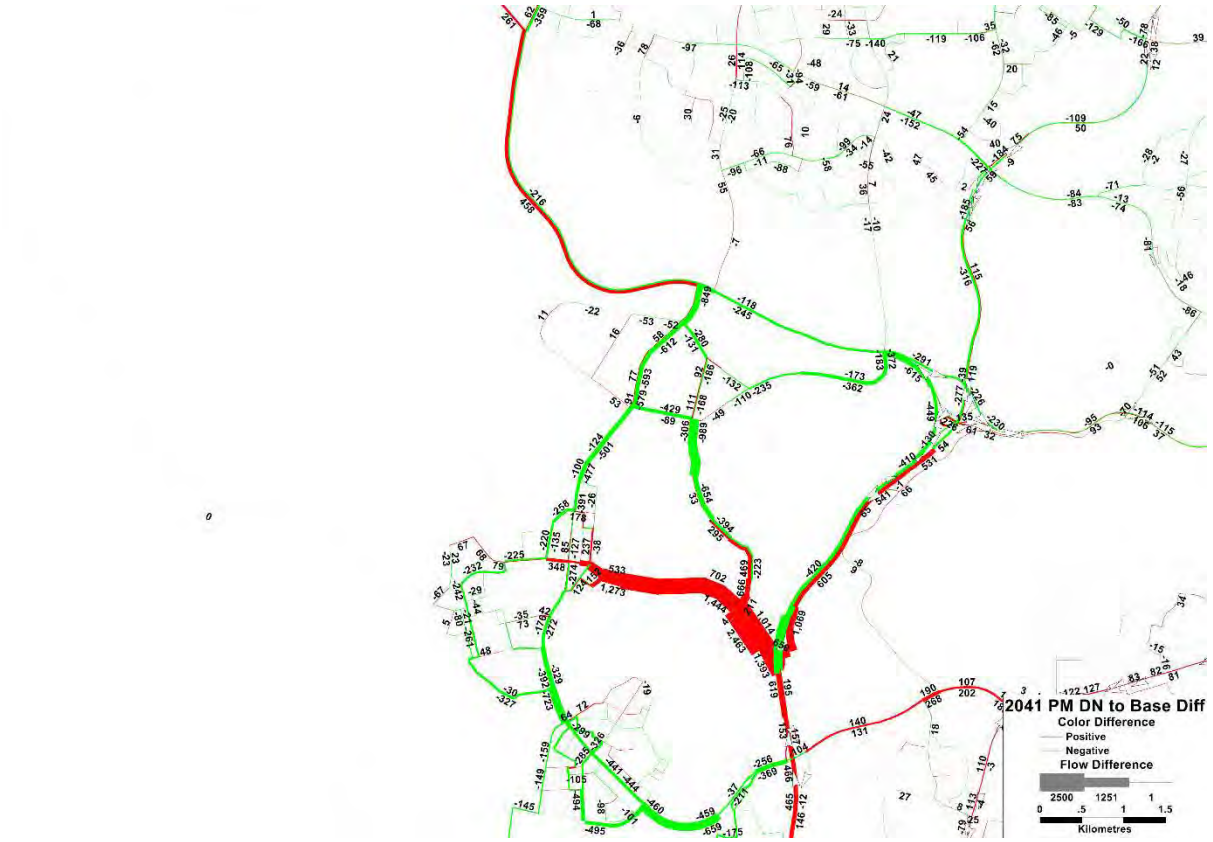

Figure 10: 2041 PM Do Nothing to Base Case Flow Difference

Option 3

Figure 11 and Figure 13 show the 2041 AM and PM Option 3 flow and V/C respectively while Figure 12 and Figure 14 show the differences between the Do Nothing and Option 3 scenarios in 2041 AM and PM peaks respectively. The construction of the East-West Arterial has a substantial impact on traffic volumes across the network in the Molonglo area, with a smaller impact across parts of the surrounding arterial road network.

Observations of the 2041 AM Option 3 model include:

- All roads out of Molonglo operate over capacity.
- William Hovell Drive eastbound, west of John Gorton Drive, has spare capacity
- William Hovell Drive eastbound, east of John Gorton Drive, and Parkes Way generally operate at or over capacity.
- Belconnen Way and Barry Drive eastbound, from Kingsford Smith Drive to Clunies Ross Street operate at or over capacity.
- Tuggeranong Parkway generally operates close to capacity in both directions. Southbound between EWA and Cotter Road operates over capacity.
- Much of John Gorton Drive and Bindubi Street Extension operate at or above capacity.
- East-West Arterial operates at or near capacity between the town centre and the Tuggeranong Parkway interchange.
- Construction of the EWA reduces traffic on nearly all roads in Molonglo, William Hovell Drive (between Coulter Drive and Bindubi Street), Bindubi Street and Belconnen Way. Traffic increases on Tuggeranong Parkway, William Hovell Drive (west of Coulter Drive), Gungahlin Drive, Parkes Way and Cotter Road (east of Tuggeranong Parkway). Traffic also decreases on a number of local roads in Hawker, Weetangera, Macquarie, Cook and Aranda, indicating better arterial capacity and less rat-running.

In 2041 PM Option 3, the following observations have been made:

- All roads into Molonglo operate over capacity.
- William Hovell Drive westbound, west of John Gorton Drive, operates with some spare capacity.
- William Hovell Drive westbound, east of John Gorton Drive, and Parkes Way generally operate at or over capacity.
- Belconnen Way and Barry Drive westbound, from Clunies Ross Street to Kingsford Smith Drive operate near or at capacity.
- Tuggeranong Parkway operates with mixed performance and is over capacity around the Cotter Road interchange.
- Much of John Gorton Drive and Bindubi Street Extension operate at or above capacity.
- As in the AM peak, construction of the EWA reduces traffic on nearly all roads in Molonglo, William Hovell Drive (between Coulter Drive and Bindubi Street), Bindubi Street, Gungahlin Drive northbound and Belconnen Way. Traffic increases on Tuggeranong Parkway, William Hovell Drive (west of Coulter Drive), Gungahlin Drive southbound, Parkes Way and Cotter Road (east of Tuggeranong Parkway). Traffic also decreases on a number of local roads in Macquarie and Cook, indicating better arterial capacity and less rat-running.

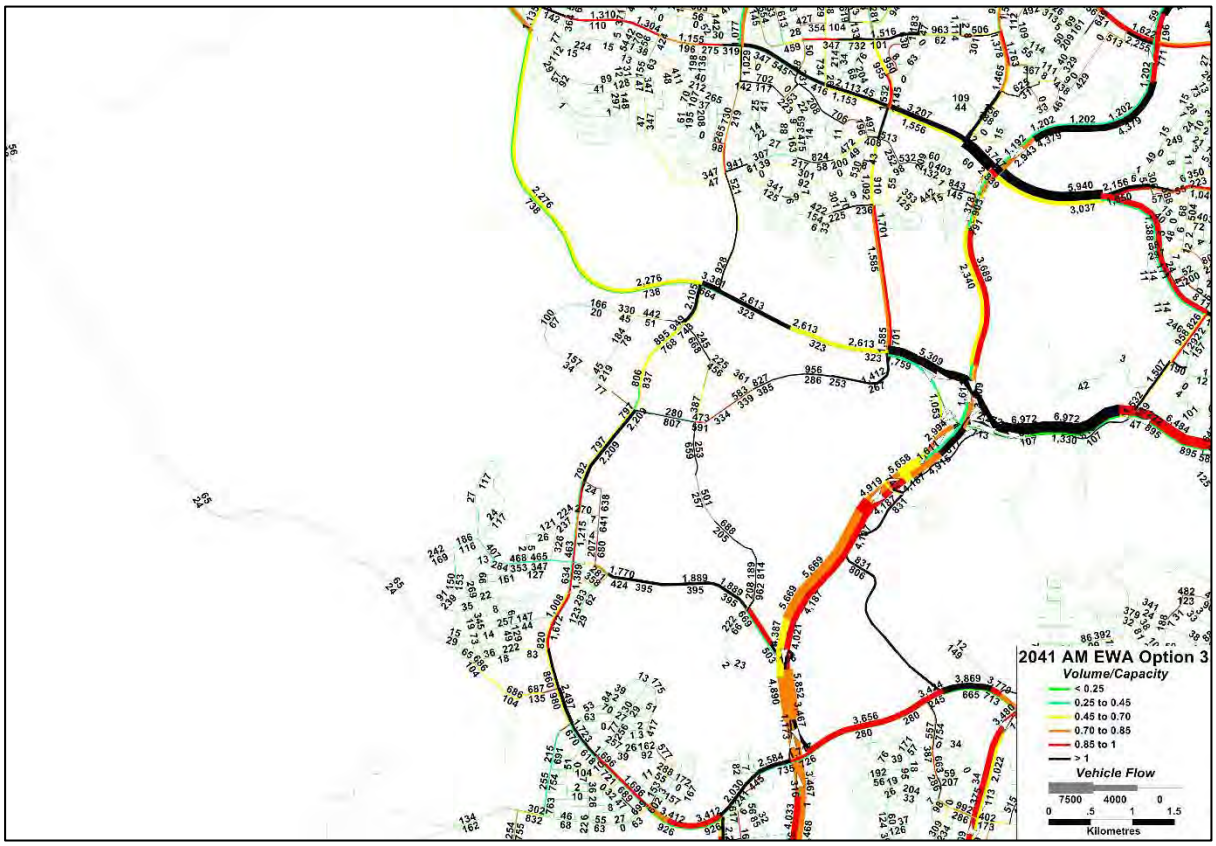

Figure 11: 2041 AM Option 3 Flow and V/C

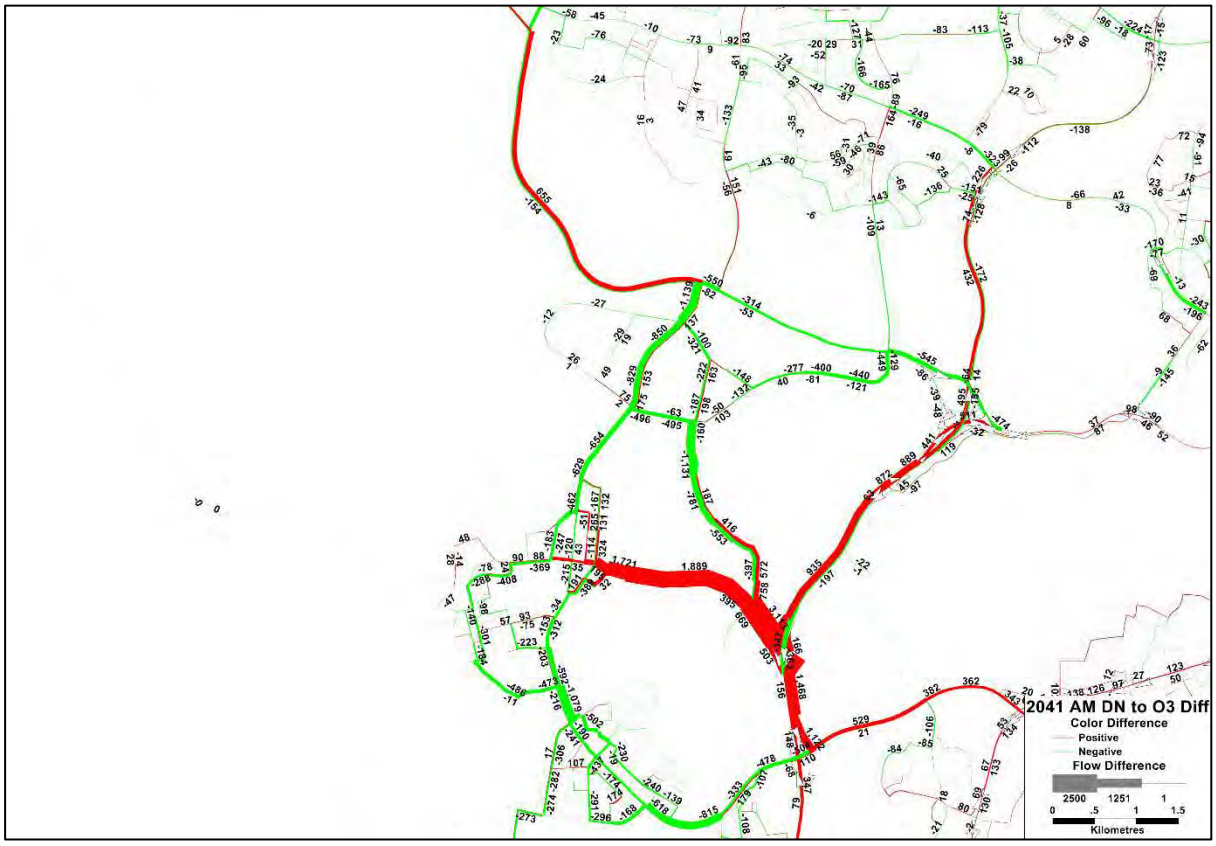

Figure 12: 2041 AM Do Nothing to Option 3 Difference

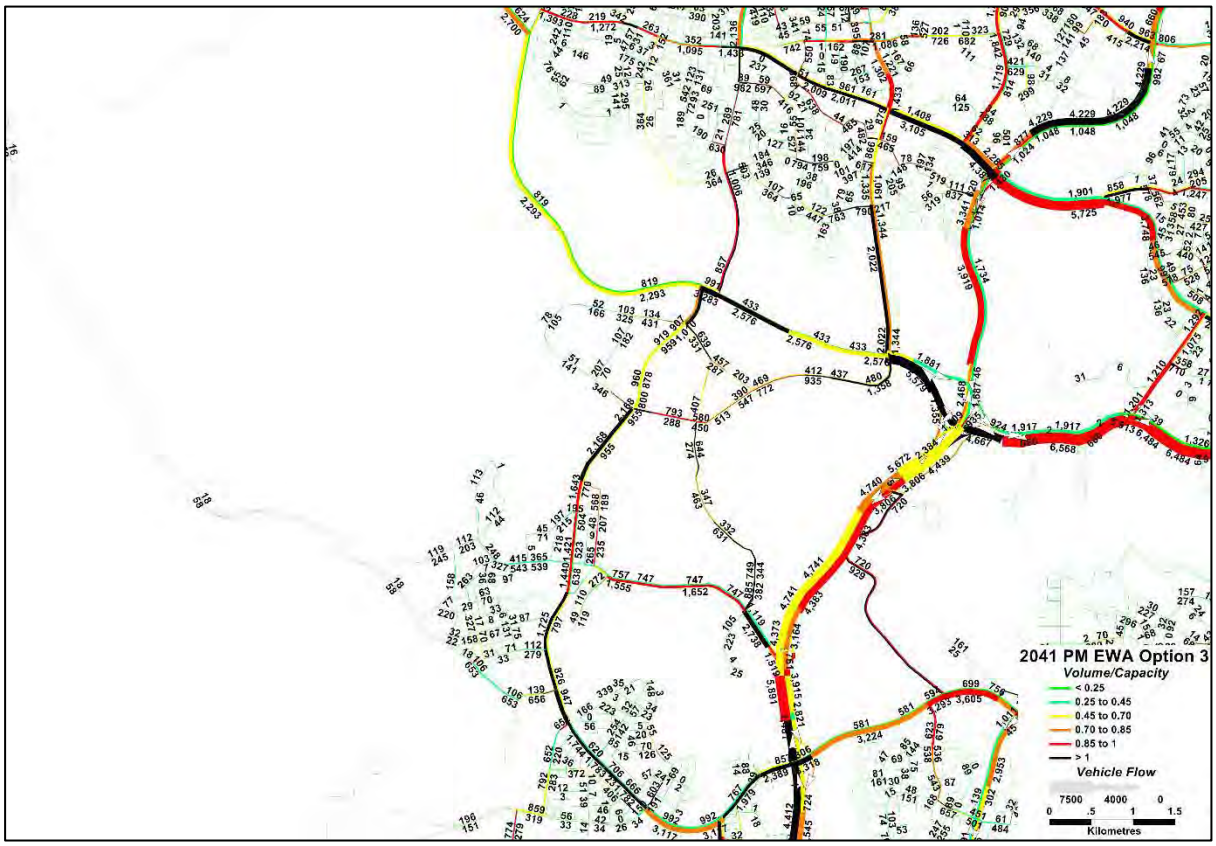

Figure 13: 2041 PM Option 3 Flow and V/C

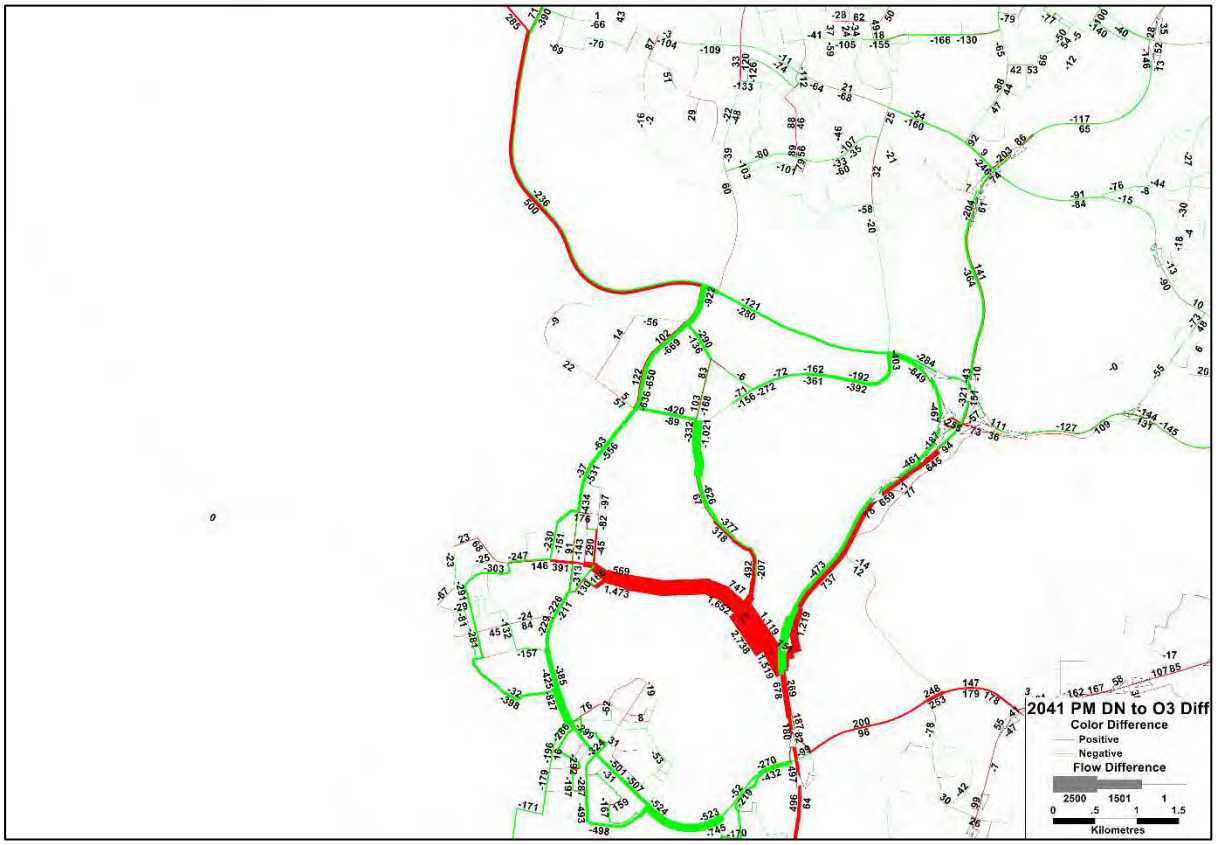

Figure 14: 2041 PM Do Nothing to Option 3 Flow Difference

Option 4

Figure 15 and Figure 17 show the 2041 AM and PM Option 4 flow and V/C respectively while Figure 16 and Figure 18 show the differences between the Do Nothing and Option 4 scenarios in 2041 AM and PM peaks respectively. The construction of the East-West Arterial has a substantial impact on traffic volumes across the network in the Molonglo area, with a smaller impact across parts of the surrounding arterial road network.

Observations of the 2041 AM Option 4 model include:

- All roads out of Molonglo operate over capacity.
- William Hovell Drive eastbound, west of John Gorton Drive, has some spare capacity
- William Hovell Drive eastbound (east of John Gorton Drive) and Parkes Way generally operate at or over capacity.
- Belconnen Way and Barry Drive eastbound, from Kingsford Smith Drive to Clunies Ross Street operate at or over capacity.
- Tuggeranong Parkway generally operates close to capacity in both directions. Southbound between EWA and Cotter Road operates over capacity. The northern ramps at Cotter Road operate over capacity due to the CD road arrangement.
- Some sections of John Gorton Drive and Bindubi Street Extension operate at or above capacity.
- East-West Arterial operates with limited spare capacity between the town centre and Molonglo 3 Distributor road and above capacity around the Tuggeranong Parkway interchange.
- Construction of the EWA reduces traffic on nearly all roads in Molonglo, William Hovell Drive (between Coulter Drive and Bindubi Street), Bindubi Street and Belconnen Way. Traffic increases on Tuggeranong Parkway, William Hovell Drive (west of Coulter Drive), Gungahlin Drive, Parkes Way and Cotter Road (east of Tuggeranong Parkway). Traffic also decreases on a number of local roads in Hawker, Weetangera, Macquarie, Cook and Aranda, indicating better arterial capacity and less rat-running.

In 2041 PM Option 4, the following observations have been made:

- All roads into Molonglo operate over capacity.
- William Hovell Drive westbound, west of John Gorton Drive, operates below capacity.
- William Hovell Drive westbound (east of John Gorton Drive) and Parkes Way generally operate at or over capacity.
- Belconnen Way and Barry Drive westbound, from Clunies Ross Street to Kingsford Smith Drive generally operate at or over capacity.
- Tuggeranong Parkway generally operates well but is over capacity north of the EWA interchange.
- Much of John Gorton Drive and sections of Bindubi Street Extension operate at or above capacity.
- As in the AM peak, construction of the EWA reduces traffic on nearly all roads in Molonglo, William Hovell Drive (between Coulter Drive and Bindubi Street), Bindubi Street and Belconnen Way. Traffic increases on Tuggeranong Parkway, William Hovell Drive (west of Coulter Drive), Gungahlin Drive (southbound), Parkes Way and Cotter Road (east of Tuggeranong Parkway). Traffic also decreases on a number of local roads in Macquarie and Cook, indicating better arterial capacity and less rat-running.

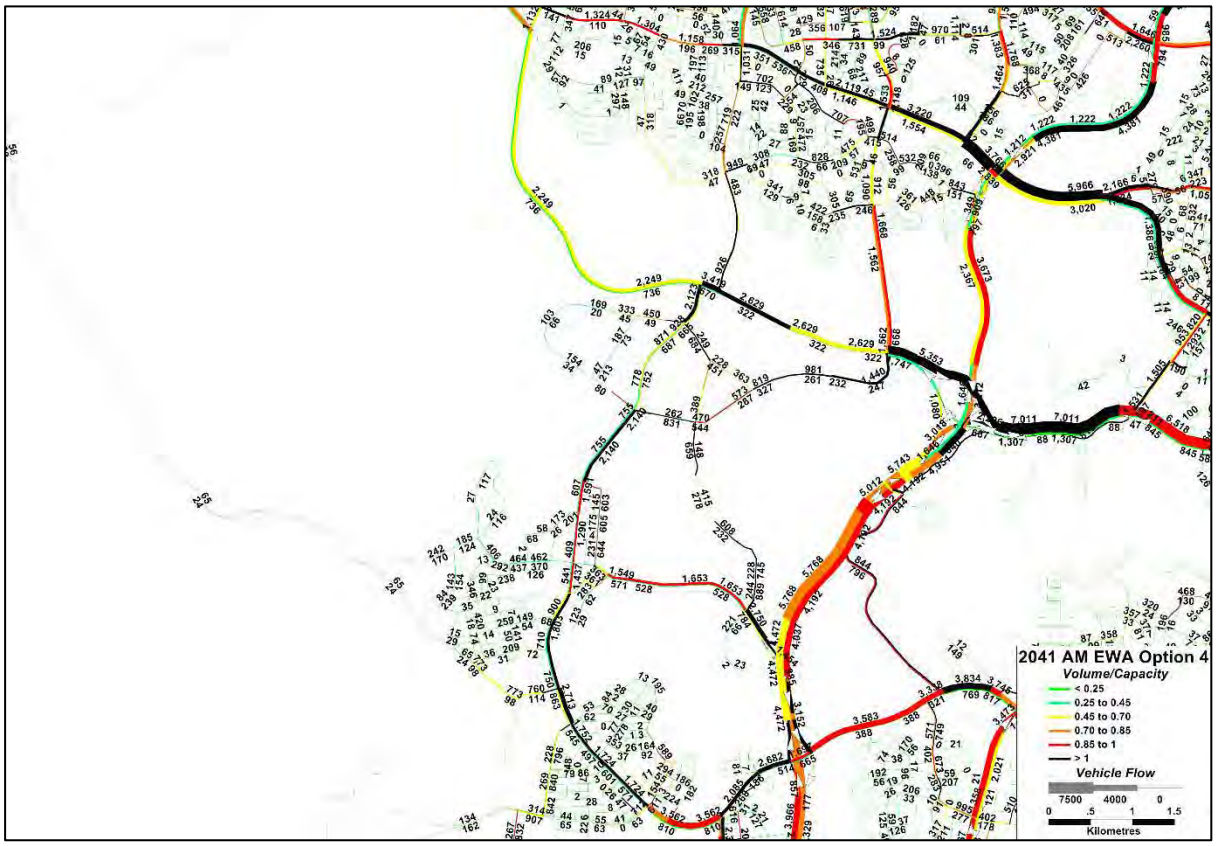

Figure 15: 2041 AM Option 4 Flow and V/C

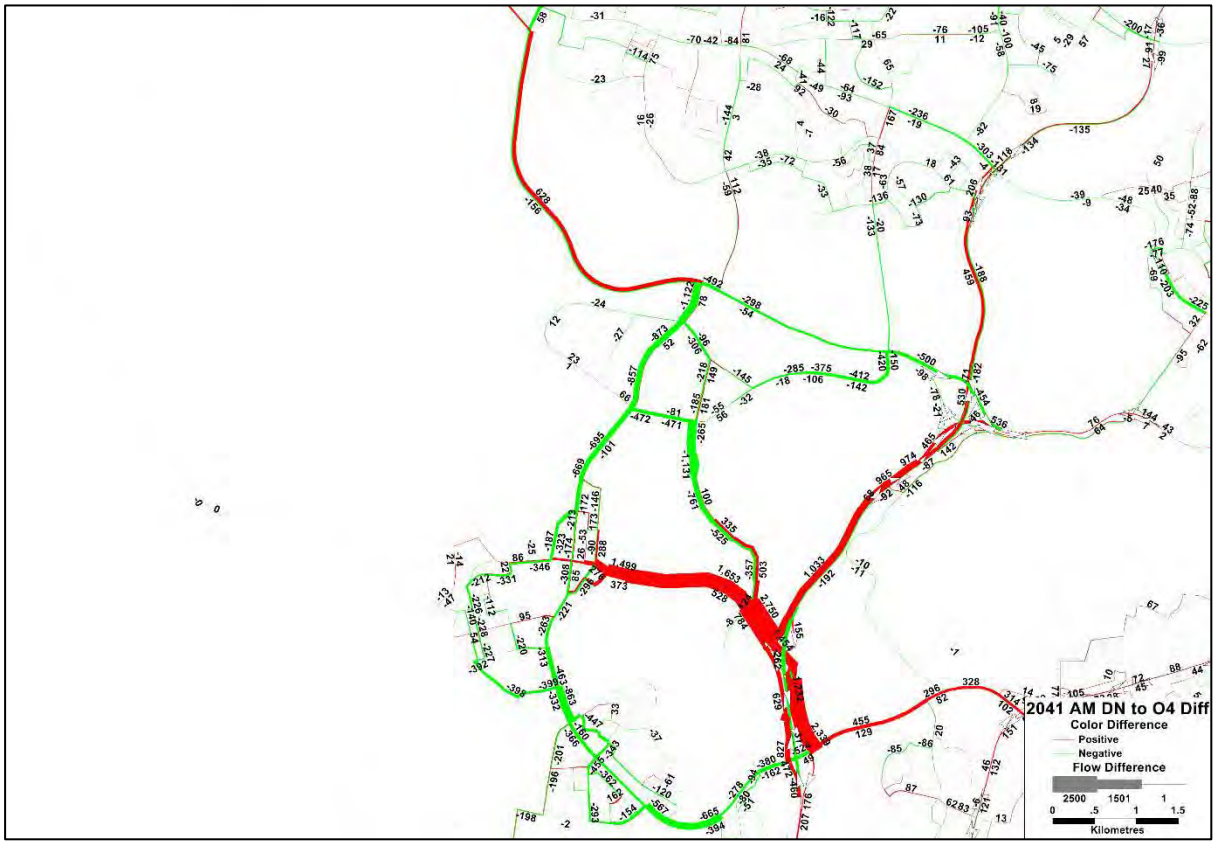

Figure 16: 2041 AM Do Nothing to Option 4 Difference

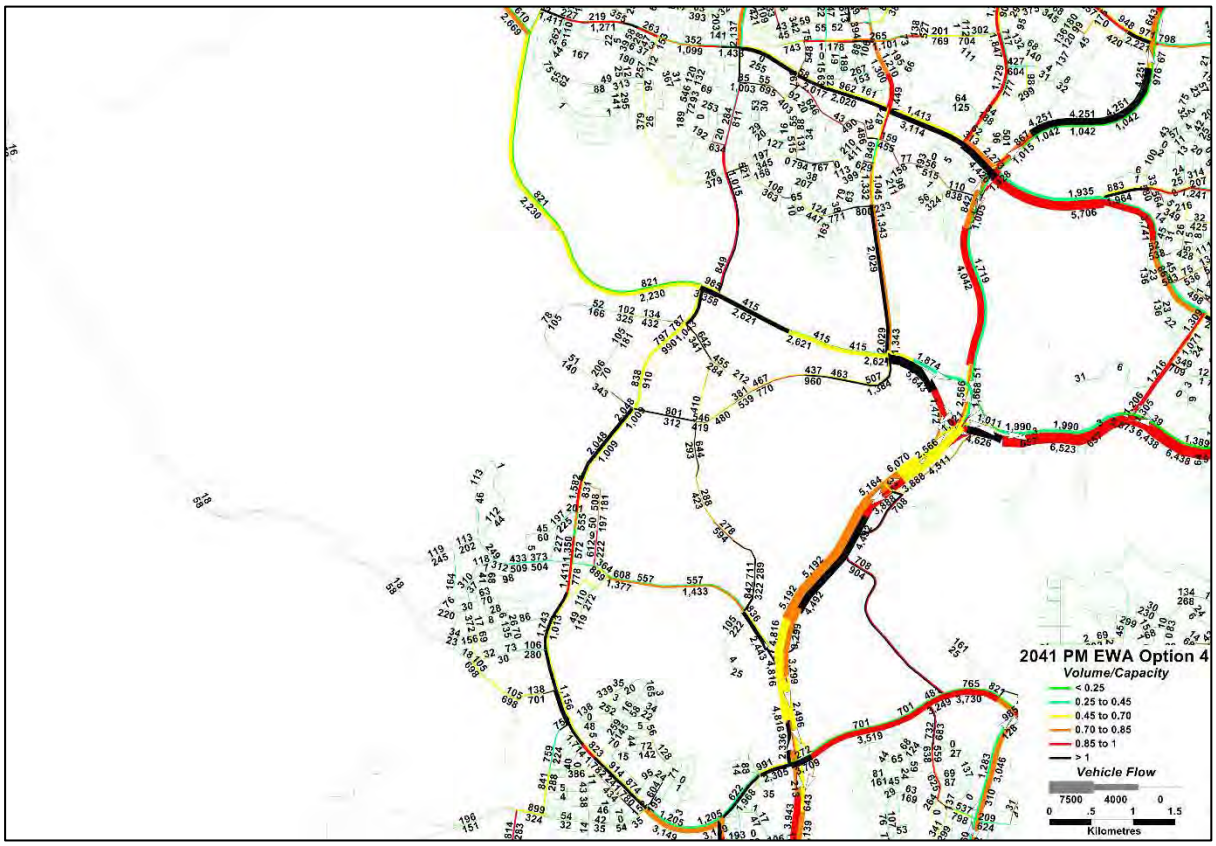

Figure 17: 2041 PM Option 4 Flow and V/C

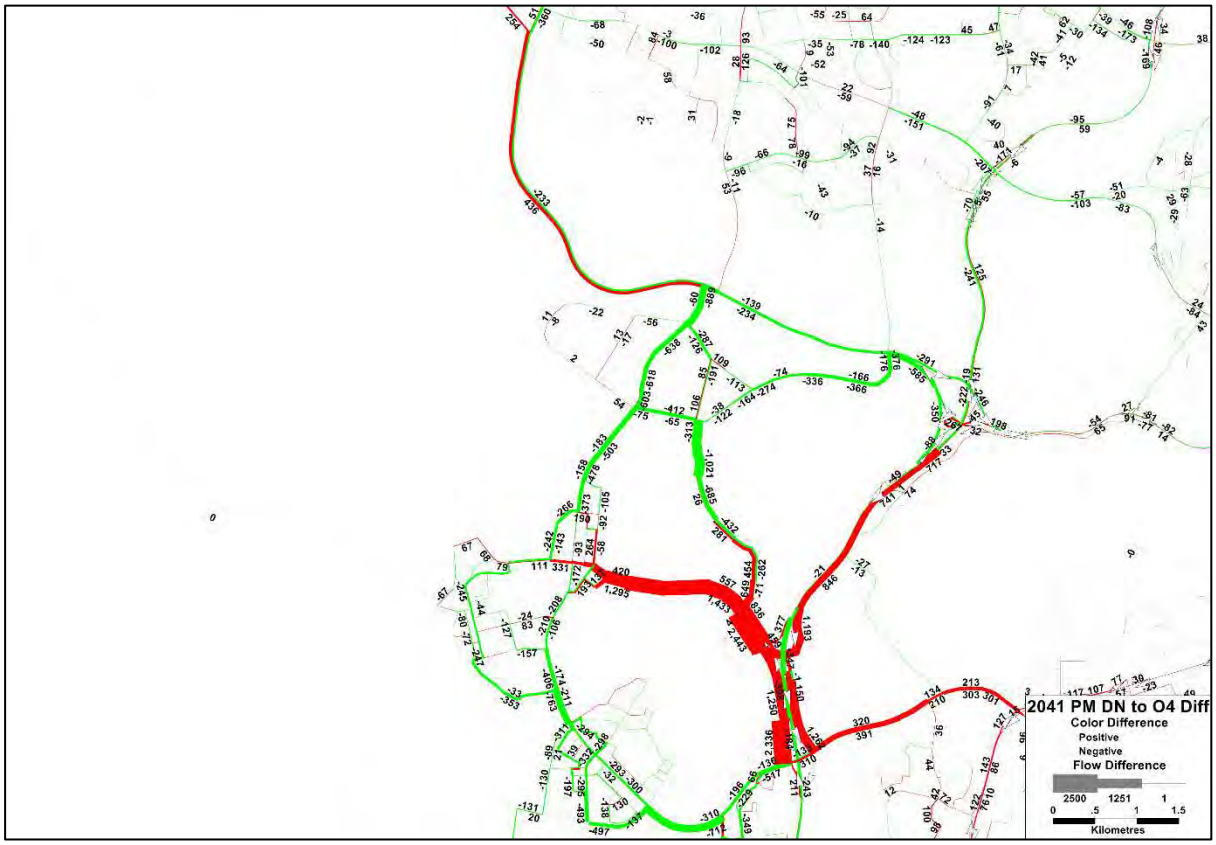

Figure 18: 2041 PM Do Nothing to Option 4 Flow Difference

Option 5

Figure 19 and Figure 21 show the 2041 AM and PM Option 5 flow and V/C respectively while Figure 20 and Figure 22 show the differences between the Do Nothing and Option 5 scenarios in 2041 AM and PM peaks respectively. The construction of the East-West Arterial has a substantial impact on traffic volumes across the network in the Molonglo area, with a smaller impact across parts of the surrounding arterial road network.

Observations of the 2041 AM Option 5 model include:

- All roads out of Molonglo operate over capacity.
- William Hovell Drive eastbound, west of John Gorton Drive, has spare capacity
- William Hovell Drive eastbound, east of John Gorton Drive, and Parkes Way generally operate at or over capacity.
- Belconnen Way and Barry Drive eastbound, from Kingsford Smith Drive to Clunies Ross Street operate at or over capacity.
- Tuggeranong Parkway generally operates close to capacity in both directions. Southbound around Lakeside Interchange operates over capacity.
- Much of John Gorton Drive and Bindubi Street Extension operate at or above capacity.
- East-West Arterial operates over capacity between the town centre and the Tuggeranong Parkway interchange.
- Construction of the EWA reduces traffic on nearly all roads in Molonglo, William Hovell Drive (between Coulter Drive and Bindubi Street), Bindubi Street and Belconnen Way. Traffic increases on Tuggeranong Parkway, William Hovell Drive (west of Coulter Drive), Gungahlin Drive (northbound) and Cotter Road (east of Tuggeranong Parkway). Traffic also decreases on a number of local roads in Macquarie, Cook and Aranda, indicating better arterial capacity and less rat-running.

In 2041 PM Option 5, the following observations have been made:

- All roads into Molonglo operate over capacity.
- William Hovell Drive westbound, west of John Gorton Drive, operates below capacity.
- William Hovell Drive westbound, east of John Gorton Drive, and Parkes Way generally operate near or at capacity.
- Belconnen Way and Barry Drive westbound, from Clunies Ross Street to Kingsford Smith Drive operate at or over capacity.
- Tuggeranong Parkway generally operates well with some sections close to capacity.
- Much of John Gorton Drive and Bindubi Street Extension operate at or above capacity.
- As in the AM peak, construction of the EWA reduces traffic on nearly all roads in Molonglo, William Hovell Drive (between Coulter Drive and Bindubi Street), Bindubi Street, Gungahlin Drive (northbound) and Belconnen Way. Traffic increases on Tuggeranong Parkway, William Hovell Drive (west of Coulter Drive), Gungahlin Drive (southbound) and Cotter Road (east of Tuggeranong Parkway). Traffic also decreases on a number of local roads in Macquarie and Cook, indicating better arterial capacity and less rat-running.

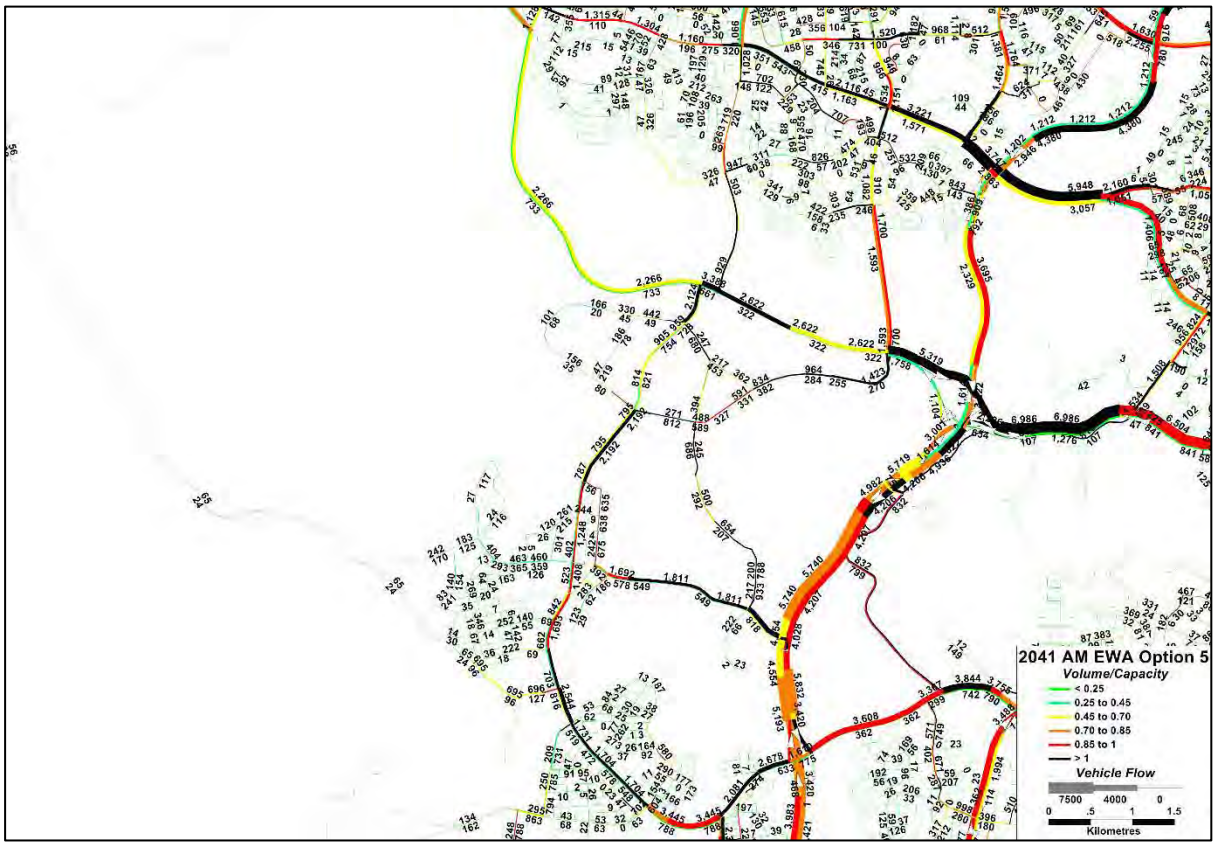

Figure 19: 2041 AM Option 5 Flow and V/C

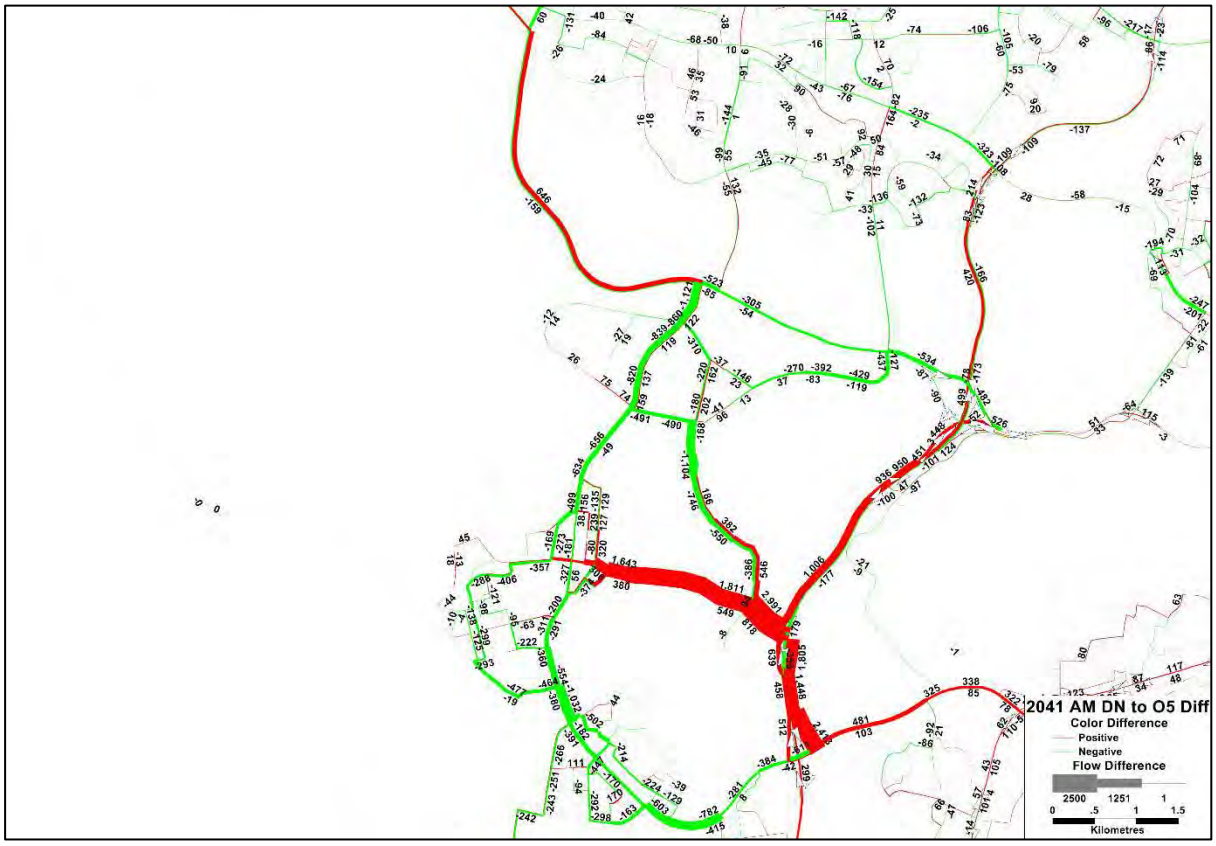

Figure 20: 2041 AM Do Nothing to Option 5 Difference

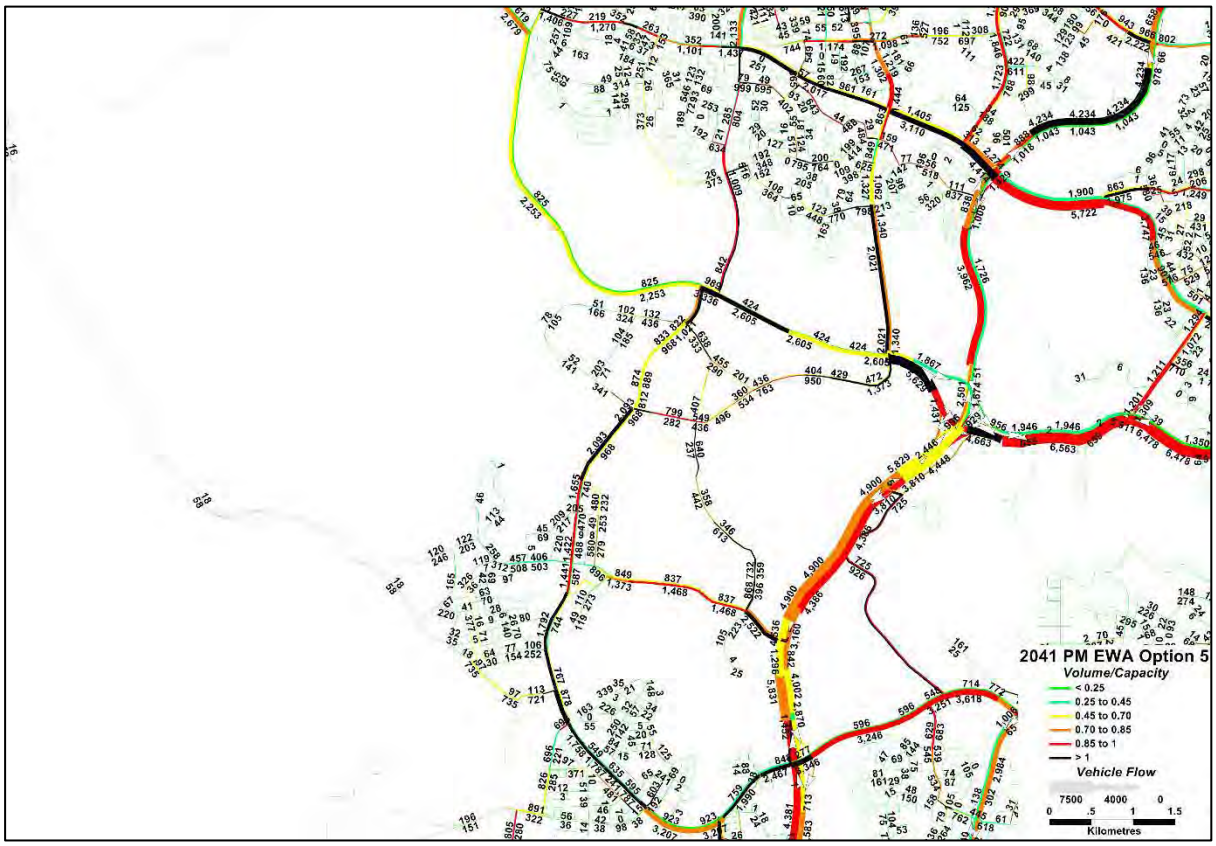

Figure 21: 2041 PM Option 5 Flow and V/C

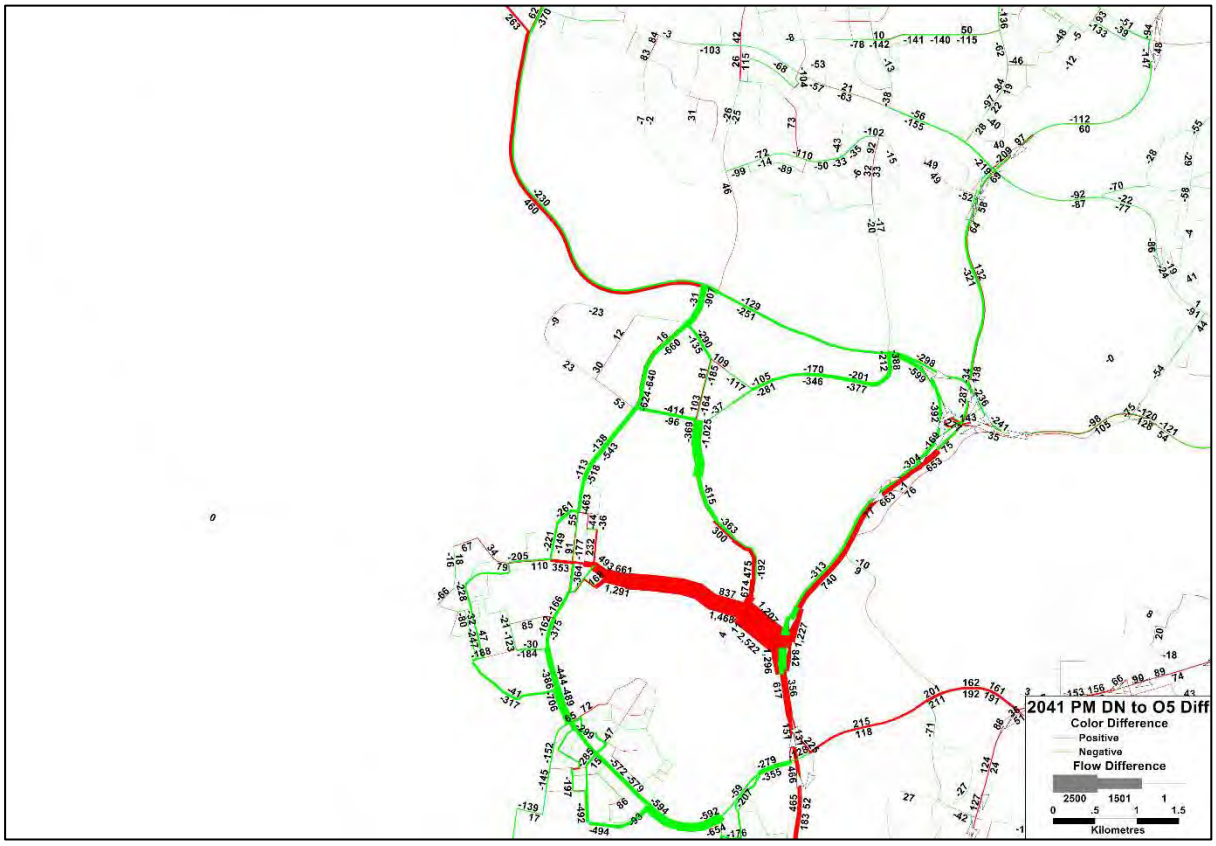

Figure 22: 2041 PM Do Nothing to Option 5 Flow Difference

2041 (With Western Edge)

A summary of the aggregated outputs of the 2041 scenarios in the AM and PM peak periods with the western edge development are presented in Table 4 and Table 5, respectively. These model outputs are for the whole model and not just for the Molonglo area.

Similar to the earlier results, if the western edge is developed, the construction of the EWA leads to a substantial reduction in VKT and VHT, indicating that the network operates more efficiently. There is a negligible impact on public transport, likely due to the scenario only including increases in Huntly land use while public transport services have not been extended to the new developments, resulting in most of the trips to and from the Western Edge being taken by car.

In the 2041 AM peak, shown in Table 4, Option 3 shows the lowest VHT but not the lowest VKT. This indicates that Option 3 appears to have the most capacity and the traffic operating speed is the highest of the options assessed in this project. All options show substantial reductions in operating speed when compared to the same network scenarios without the Western Edge development.

Table 4: Aggregated Output Summary of the 2041 AM Peak Scenarios (with Western Edge)

Output	Do Nothing	Base		Option 3		Option 4		Option 5	
Person Trips	218,225	218,225		218,225		218,225		218,225	
PT Trips	24,833	24,776		24,775		24,770		24,765	
Car Trips	149,816	149,680		149,679		149,657		149,656	
HBW PT Trips	13,526	13,494		13,493		13,489		13,487	
HBW PT %	15.5	15.4		15.4		15.4		15.4	
Car VKT	1,920,712	1,904,249		1,900,448		1,899,266		1,899,467	
Car VHT	91,326	80,055	-12%	77,860	-15%	78,209	-14%	78,003	-15%
Car Average Speed (km/h)	21.0	23.8	+13%	24.4	+16%	24.3	+16%	24.4	+16%

In the 2041 PM peak, shown in Table 5, Option 4 has the highest average speed, followed by Option 3. All EWA options have substantially higher speeds than the Do Nothing case but all are lower than the same network scenarios without the Western Edge development.

Table 5: Aggregated Output Summary of the 2041 PM Peak Scenarios (With Western Edge)

Output	Do Nothing	Base	Option 3	Option 4	Option 5
Person Trips	197,497	197,497	197,497	197,497	197,497
PT Trips	18,962	18,888	18,888	18,884	18,878
Car Trips	147,110	147,147	147,146	147,139	147,152
HBW PT Trips	14,620	14,563	14,563	14,561	14,556
HBW PT %	14.5	14.5	14.5	14.5	14.5
Car VKT	1,843,395	1,829,297	1,827,650	1,826,628	1,827,797

Output	Do Nothing	Base		Option 3		Option 4		Option 5	
Car VHT	68,072	59,883	-12%	59,326	-13%	58,575	-14%	59,823	-12%
Car Average Speed (km/h)	27.1	30.5	+13%	30.8	+14%	31.2	+15%	30.6	+13%