

Assessment of all transport modes and place making within Blackwood District Centre and Greater Blackwood, South Australia
Independent Draft Discussion Paper 2019



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The City of Mitcham and the Department of Planning, Transport and Infrastructure (DPTI) provided data used in this study, but do not endorse any of the findings or conclusions which are entirely the author's.

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i. Executive Summary

Blackwood District Centre and Greater Blackwood is an important key suburban village which forms part of the Mitcham Hills district located approximately 13km to the south east of the City of Adelaide.

A current focus by the City of Mitcham is the Development of a Draft Structure Plan for Blackwood District Centre. Combined with the redevelopment of the Blackwood Roundabout, this brings the issue of transport within the district and greater surrounding area to the forefront.

This Draft Discussion Paper aims to take a holistic look at all relevant travel modes traversing both the District Centre, and the Greater Blackwood area, in order to provide a greater insight to the community for further determination, consideration and consultation.

A comprehensive look at all the relevant strategic transport planning frameworks, together with analysis of all current modes are considered. Four Options are then put forward.

This paper forms part of the first stage of the Discussion Paper Process as part of this Independent Study. Stage 2 will involve updating this document to release a Final Discussion Paper as a result of a three month community consultation period with key stakeholders and groups. Once the Final Report is released it will be fully accessible to all members of the Blackwood and Greater Blackwood community.

Copies of this Paper and subsequent additions to it (i.e. The Final Discussion Paper) will be made available via the following web address: <https://ndatters.wordpress.com/assessment-of-movement-within-blackwood-district-center-and-greater-blackwood-south-australia/>.

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1. Introduction

Blackwood District Centre and Greater Blackwood (Figures 1 and 1A) is a key suburban village and district which forms the main part of the Mitcham Hills. It is located about 13km to the South East of the City of Adelaide. It includes the suburbs of Blackwood, Glenalta, Hawthorndene, Eden Hills, Coromandel Valley and Craighburn Farm.

The future of Blackwood, its history, heritage and importance is currently being considered further by local business, community groups, the council (City of Mitcham) and its residents (Bond 2018). Key local community groups include the Blackwood Business Network (BBN), Blackwood Action Group (BAG), the Blackwood and Belair District Association and Sam Duluk MP, State Member for Waite.

The current redevelopment of the Blackwood roundabout, in addition to other plans by Mitcham Council for a new Community Hub, is putting a spotlight on transport within the area. This discussion paper seeks to broaden the knowledge and understanding of all transport modes within the area in order to provide wider knowledge of the implications of transport in relation to any future redevelopment proposals that may eventuate for the area. A view to achieve place making opportunities for the Blackwood District Centre is a key aim of this paper. Placemaking is defined in the Focus Box below.

Focus Box – What is Placemaking, and its relationship with Transport?

Placemaking, can be defined as creating a destination and *‘discovering the needs and aspirations of those who live, work and play in a particular place and creating a common vision for it’* (Renewal SA 2019).

A destination is thereby defined as a place that people may wish to visit that encompasses any individual or a combined number of activities, amenities or uses. From essential activities that may include a workplace, through to non essential tourism opportunities or exploring historical/cultural sites to shopping and other recreational pursuits. An excellent accessible area is required to facilitate whatever activity or amenity suit people’s needs and/or desires.

Thereby, a transport system and plan or strategy must be integrated and inclusive in order to enable any given use or activity and/or amenity to be linked from a person or organisation’s residence, for instance. This includes taking a holistic view of all modes of transport and being inclusive of both public and private modes/means.

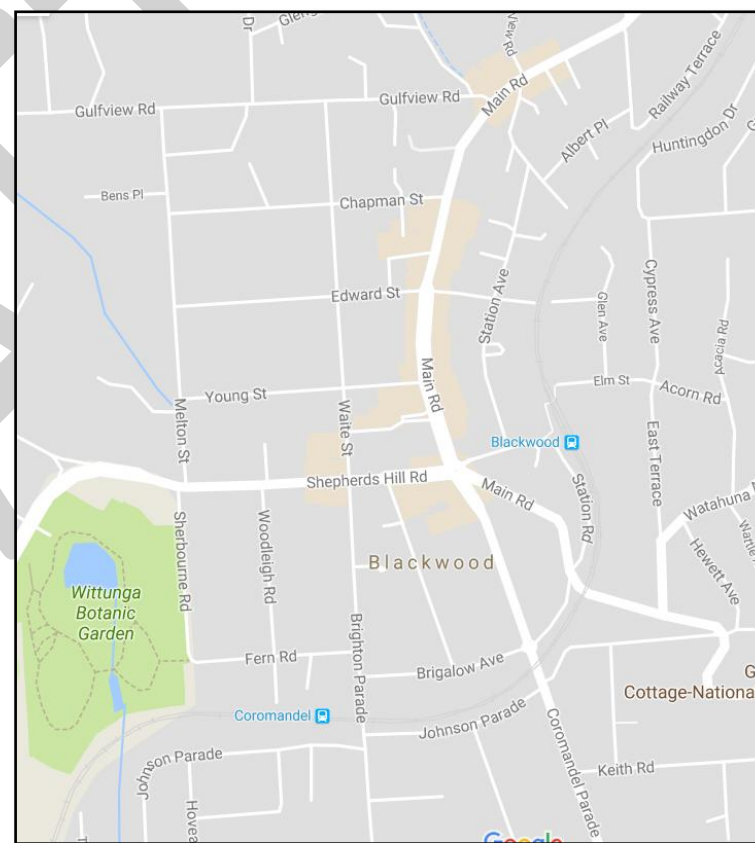
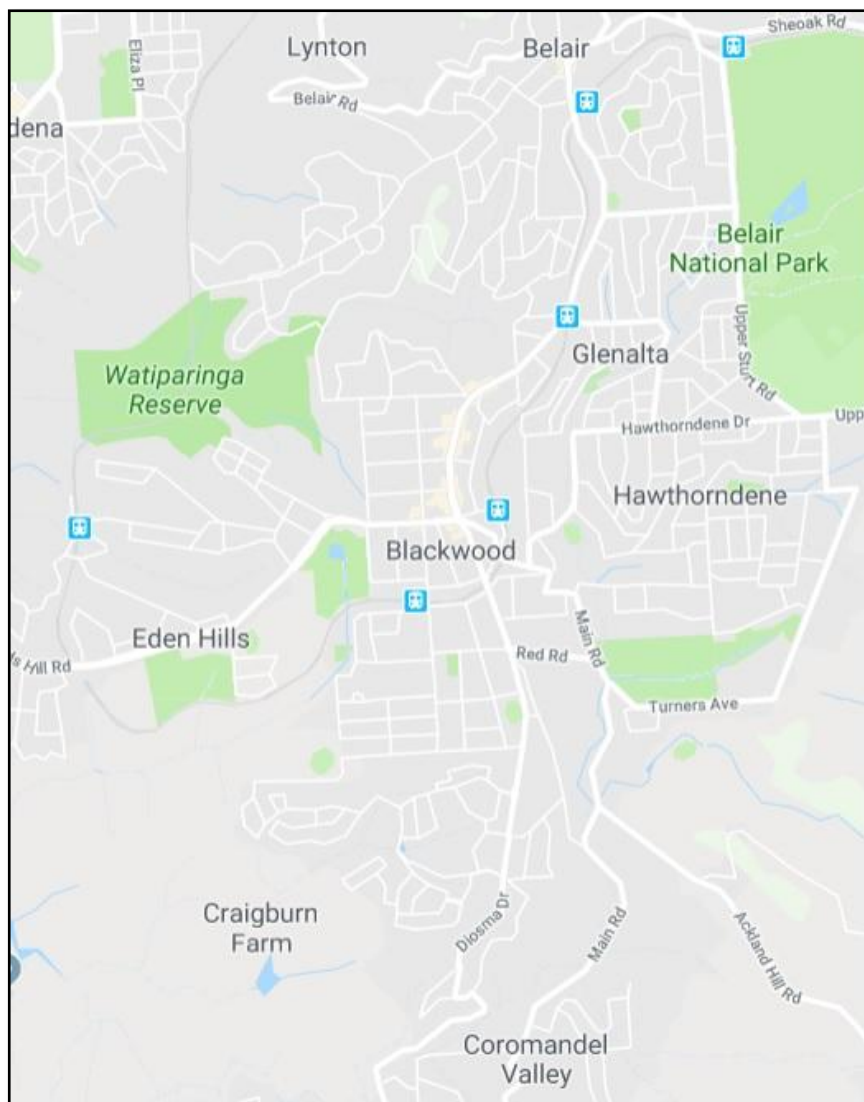


Figure 1 and 1A: Greater Blackwood & Blackwood District Centre
Source: Google Maps 2018

2. Key Goals and Objectives

Three key goals are identified in relation to achieving a better Greater Blackwood and Blackwood District Centre for this report.

These include:

Goal 1. Increasing sense of place

Goal 2. Reducing the impact of traffic

Goal 3. Managing fire risk

The following objectives are identified as being central to new transport improvements within Greater Blackwood and Blackwood District Centre as a means of achieving the above goals

Objective 1. Investigate the integration of automobile, cycling, walking, public transport and other emerging transport modes within the Blackwood District Centre, and propose options and new ideas for improvements

Objective 2. Investigate how active transport (including cycling and walking) may be able to be improved within Blackwood District Centre to create opportunities for placemaking.

Objective 3. Investigate and propose options for the possibility for construction of a new Blackwood Road Bypass. This includes:

Objective 3A. Evaluating the option of a potential new road link and route analysis between Shepherds Hill Road and Craighburn Farm.

Objective 3B. If both of these are built, what impact would this have in creating further facilitation and usage of Blackwood and Coromandel Railway Stations with consideration and regard for the current Blackwood roundabout upgrade.

The following matrix outlines how each of the objectives interacts with each goal.

	Goal 1	Goal 2	Goal 3
Objective 1			
Objective 2			
Objective 3A			
Objective 3B			

3. Methodology

This Draft Discussion Paper and study was devised using a variety of different media and technology, together with a range of important and general analytical, and research techniques which can be considered appropriate and useful in order to achieve the desired and relevant outcomes for the study. These included:

1. Maps analysis (definition of project area), including Google Maps and Google Earth)
2. Photographic analysis (personal and Google streetview)
3. Consideration of strategic context and current transport plans (including Blackwood roundabout upgrade, 2015 Road Management Plan, the Integrated Transport and Land Use Plan and, 30 Year Plan for Greater Adelaide 2017 Update)
4. Analysis of historical traffic data and forecasts for key roads
5. Population profile and forecasts

7. Economic, Social and Environmental SWOT Analysis
8. Analysis of Public Transport data

4. Strategic Context

Major overarching planning and transport related documents that need to be taken into consideration when considering future transport needs include:

- * The 30 Year Plan for Greater Adelaide 2017 Update
- * Planning Reform Discussion Paper – Integrated Movement Systems 2018
- * Draft Spatial Vision from the City of Mitcham 2018
- * The Integrated Transport and Land Use Plan 2015
- * 2015 Road Management Plan concerning Main Road from Belair to the Blackwood roundabout.
- * City of Mitcham Development Plan, Consolidated 20th Feb 2018

The following summary analyses key statements and information contained in each of these plans.

4.1 30 Year Plan for Greater Adelaide 2017 Update

The 30 Year Plan for Greater Adelaide lists the following policy objectives which can be identified as either directly or indirectly relevant to Greater Blackwood and the Blackwood District Centre in relation to Transport and are listed on p.86 of the 2017 update. The Table below identifies each Objective and its relevance to Blackwood.

<u>Policy Objective</u>	<u>How to achieve for Blackwood/ Greater Blackwood</u>
<i>P74. Ensure development does not adversely impact the transport function of freight and/or major traffic routes and maintains access to markets.</i>	Residential Development near Belair Railway line or Main Rd/Shepherds Hill Road should be minimised or designed appropriately to manage noise issues.
<i>P75. Increase the number of neighbourhoods, main streets and activity centres where place is given greater priority than vehicle movement by adopting a 'link and place' approach.</i>	Main Road around Blackwood District Centre should become a people hub easily linked by a number of different transport modes and opportunities. Reference: Blackwood Centre Draft Structure Plan.
<i>P76. Improve the amenity and safety of public transport stops, stations and interchanges by improving their connections to adjacent development and encouraging mixed-use development and housing diversity in close proximity</i>	Upgraded security, surveillance and access of Blackwood, Coromandel and Eden Hills Railway Stations. Wayfinding strategy for walking and bus stop opportunities linking Blackwood District Centre to stations. New development around railway stations.
<i>P78. Improve, prioritise and extend walking and cycling infrastructure by providing safe, universally accessible and convenient connections to activity centres, open space and public transport.</i>	A high level of footpath and bike lane amenity around Blackwood District Centre. This then extends out and links towards railway stations and along main roads or dedicated paths/infrastructure linking these

	together.
<p>P79. <i>Encourage car share schemes and public electric car charge points in transit corridors, activity centres and higher density neighbourhoods through incentives.</i></p>	<p>Provide opportunities for car pooling services, electric cars and EV charging stations in Blackwood District Centre and surrounding suburbs.</p>
<p>P80. <i>Reduce car parking requirements in mixed-use areas near high frequency public transit services to encourage the use of alternative transport modes.</i></p>	<p>Move carparking underground. Creating defined entry and exits points to new carpark. Encouraging higher levels of public transport use connecting Blackwood District Centre. May require review regarding current Council car parking requirements.</p>



Link



Place

Figure 2: The Link and Place Strategy as depicted by the 30 Year Plan
Source: 30 Year Plan for Greater Adelaide Update 2017

4.2 Integrated Movement Systems – State Planning Commission Policy Discussion Paper 2018

On 6th August 2018, The State Planning Commission released a discussion paper to complement and inform the Planning Reform process entitled “Integrated Movement Systems”.

Understanding the effects and implications of transport will assist in better designing the new Planning and Development Code and other related reforms. Key desired outcomes include:

- Delivering land use outcomes and transport systems that complement each other.
- Achieving optimal land use and development outcomes with regard to the role and function of all transport modes.
- Providing for an interface between land uses and transport corridors which improves the function of both.

The Paper then also states: “*Achieving these outcomes requires a planning system that encourages and enables appropriate development in locations serviced by a variety of quality transport options and facilities supported by an ongoing commitment to transport investment*”.

The paper also references the Link and Place Strategy, as outlined above in relation to the 30 Year Plan.

4.3. Department of Planning, Transport and Infrastructure (DPTI) Road Management Plan (RMP) Edition 2, 2015:

The 2nd Edition of the Road Management Plan (RMP) 2015, is the update to the original Road Management Plan, released in 2006, and covers Main Road between Belair and Shepherd's Hill Road and Shepherds Hill Road between Main Road to Seymour Street.

A number of upgrades in relation to the Plan have been delivered and include:

- Speed limit reduced to 50km/h
- New bicycle lanes and upgraded bicycle infrastructure
- A new pedestrian crossing near Russell Street
- Various road safety treatments and intersection upgrades
- Public transport infrastructure upgrades, including re-sleepering of the entire Belair passenger rail line, and complete upgrades of Coromandel and Eden Hills Train stations.

However, in relation to a possible Blackwood Road bypass proposal, feedback between Mitcham Council and DPTI on page 142 of the RMP includes the following exchange:

Council stated: Increasing traffic from Craighburn Farm and beyond will continue to put pressure on the existing streets. Consideration should be given to planning a future bypass road linking this area to Shepherd's Hill Road via Northcote Road.

DPTI Response: At this stage DPTI considers an alternative exit to Shepherds Hill Road from, or bypass of, the Craighburn Farm area to be a local access issue for Council to consider. DPTI does not therefore currently have any plans for such projects.

The plan goes on to promote a number of further upgrades to the corridor, of which the Blackwood Roundabout upgrade realignment is a key recommendation.

4.4. State Government Transport Planning Proposals

4.4.1 Integrated Transport and Land Use Plan (ITLUP) 2015

This plan sets out State Government policy and priorities in relation to all transport within South Australia. Specifically, in relation to the Greater Blackwood Area, and Blackwood District Centre:

- Blackwood is classified within the Middle Adelaide Area of the ITLUP.
- Other sites along transit corridors traversing the Middle Adelaide Area will be developed to encourage greater public transport use and stimulate medium density, mixed-use development to support a more compact Greater Adelaide.
- Long term electrification of Belair Line will support a CBD underground train link proposal.
- Blackwood roundabout upgrade
- Access for cyclists across the middle suburbs will be enhanced by ongoing extensions and upgrades to the Bikedirect and Greenways networks. This will enable better access to employment and services in the inner city and CBD.
- Cyclists and walkers will also enjoy more convenient access to public transport hubs via people-friendly street networks that improve the amenity of surrounding residential areas and facilitate the development of well-connected, accessible and walkable local places.

- Re-structure bus services to feed into the Belair train line, and improve bus service frequencies
- Blackwood is identified as a key location for rollout of individual behaviour change programs that include Travelsmart type proposals.

4.4.2 GlobeLink Proposal – Marshall Liberal Government Proposal

The new Marshall Liberal Government has now begun the first steps towards developing its GlobeLink Plan.

GlobeLink will be a new rail and road corridor bypass to the east of the Adelaide Hills that will be mainly used by heavy freight vehicles and trains.

In comparison the Integrated Transport and Land Use Plan 2015 argues that alternative heavy vehicle road routes already exist that bypass Adelaide. Data also suggests that Adelaide is an important destination for freight. A plan such as GlobeLink would incur longer running distances and could thereby be uneconomic.

In contrast, various capacity constraints (including tunnels, steep gradients and tight curves) exist on the Adelaide Hills and Belair train line corridor due to the single track and limited passing loops. If freight is to be thereby eliminated from the Adelaide Hills Corridor, this has the potential to open up the AdelaideMetro Belair train service and corridor to create a number of potential opportunities for both the Blackwood District Centre and Greater Blackwood Area, to become better serviced by public transport. It is also noted however, that careful planning is needed to meet the need for more park and ride capacity due to the unique topography of the Belair train line that winds through the hills.

4.4.3 Craighburn Farm Bypass Road Study (Mitcham Hills Road Corridor Strategy)

The new Marshall Liberal Government has fully funded a \$16.5 million Mitcham Hills Road Corridor strategy over the next 4 years to 2022. This includes a feasibility study into a Road Bypass at Craighburn Farm.

The author cites that a new road could be built to the west of Craighburn Farm and run mildly parallel with both Shepherds Hill Road and Black Road (Figure 3). It could connect with Flagstaff Road and Main South Road. A western road however would need to negotiate the Sturt Gorge potentially raising the cost. Although, a Northcote Road extension from Shepherds Hills Road to the South with a link to Black Road via York Drive is highly feasible (Figure 3A). Traffic impact improvement however is highly questionable, although such a road would provide an alternative for traffic not requiring to go through Blackwood.

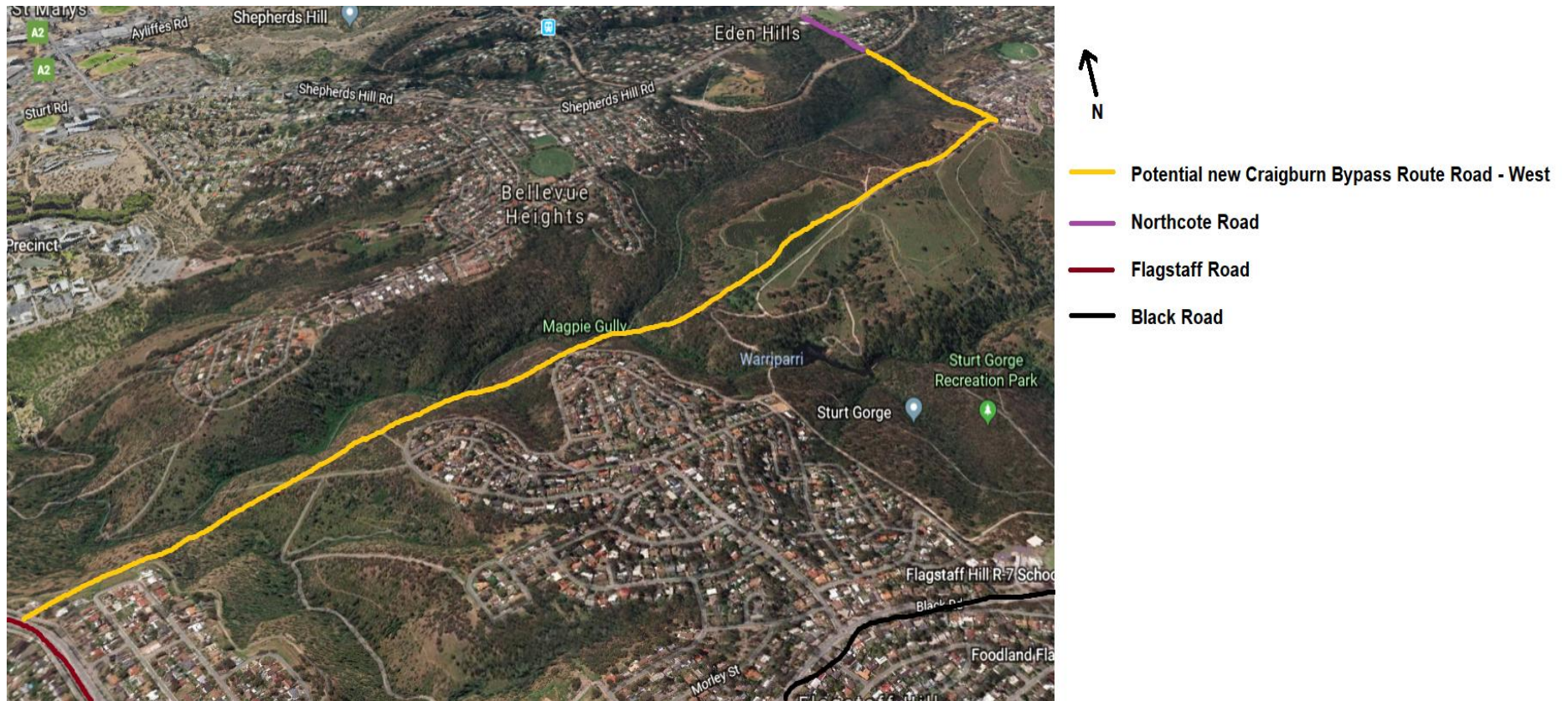


Figure 3: Potential suggested Craigburn Bypass route proposal by Author – West Route
Source: Google Earth

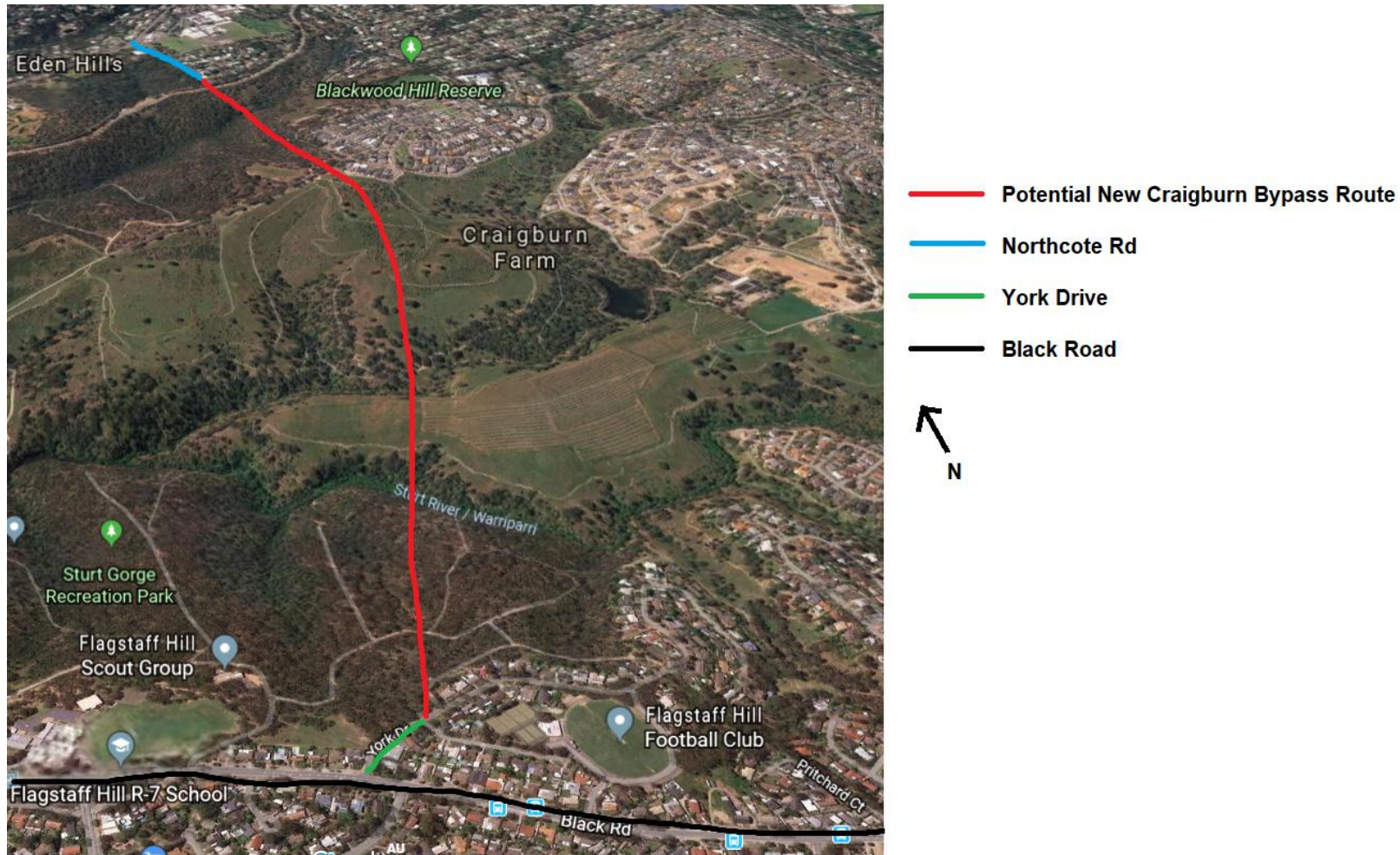


Figure 3A: Potential suggested Craigburn Bypass route proposal by Author – South Route
Source: Google Earth

4.5 City of Mitcham Draft Spatial Vision 2017

In relation to Blackwood, a range of transport options, improved amenity for pedestrians, and a walkable main street made vibrant at both day and night by attracting visitors and offering a diversity of housing choices are key outcomes arising from the 2017 City of Mitcham Draft Spatial Vision report. The Draft Spatial Vision outlines key precincts within the Council Area and details desired outcomes in relation to place making. Greater Blackwood and Blackwood District Centre is noted as Precinct 3 within the Plan.

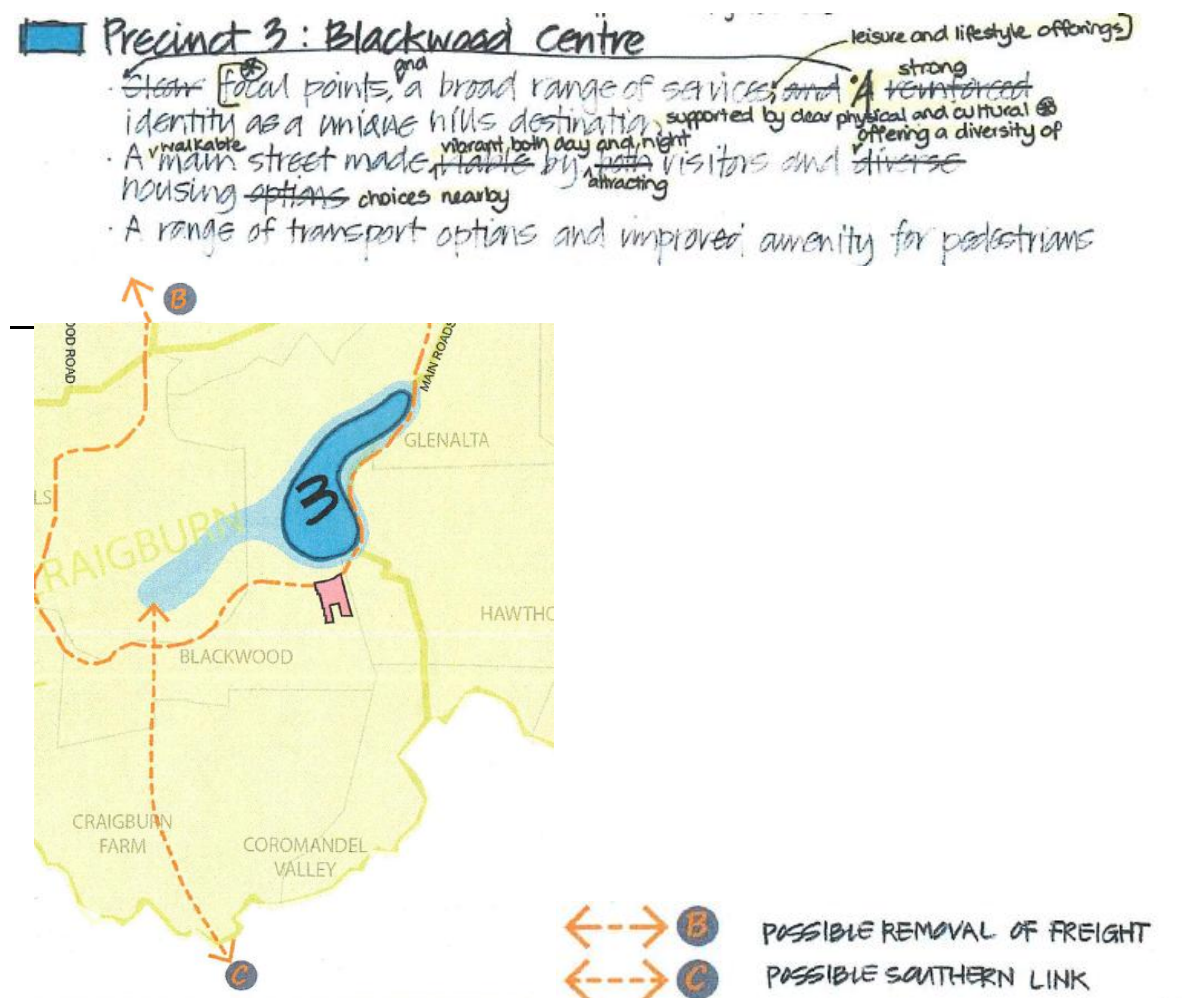


Figure 4: Excerpt from Mitcham Draft Spatial Vision 2017, regarding Blackwood District Centre and Greater Blackwood.
Source: City of Mitcham

4.6 City of Mitcham Development Plan consolidated 20th Feb 2018

Figure's 5 and 5A outlines the current zoning regime for Blackwood District Centre and Greater Blackwood, as set out in the City of Mitcham Development Plan.

The blue area is mainly a Commercial Zone fronting Main Road from as far north as Stirling Avenue through to Shepherds Hill Road and Coromandel Parade through to Murray Street and Brigalow Avenue. The zone also fronts Shepherds Hill Road west to Woodleigh Road.

A number of sub zones exist within the Blue area including:

- District Centre Zone (which includes Woolworths, Foodland and Coles Shopping Centres),
- Commercial Coromandel Parade Zone (Woolworths to Brigalow Avenue),
- Commercial Main Road Zone (Main Road North).

The surrounding pink area is mainly a Residential Zone, however this also includes a Blackwood Urban zone located behind the Commercial Zone on both sides, and near Glenalta Railway Station, north of Blackwood.

A Historical Residential Policy Area also exists on Adey Road, south of the Commercial Zone with access from Simla Parade off Coromandel Parade.

The Yellow areas are community facility areas (including schools but also Wittunga Botanic Garden).

Green Areas are Conservation Zones including the Hills Face Zone.

The new Planning, Development and Infrastructure Act 2016, which includes the new Planning and Design Code, as part of the State's Planning Reforms, aims to consolidate these various zones and policy areas into simpler and easier to understand zones. The reforms will also aim to encourage better development and streamline the approval process. This will aim to better achieve the envisaged Draft Spatial Vision outlined above. Consideration of transport and its effect on the reforms is discussed above in section 4.2.

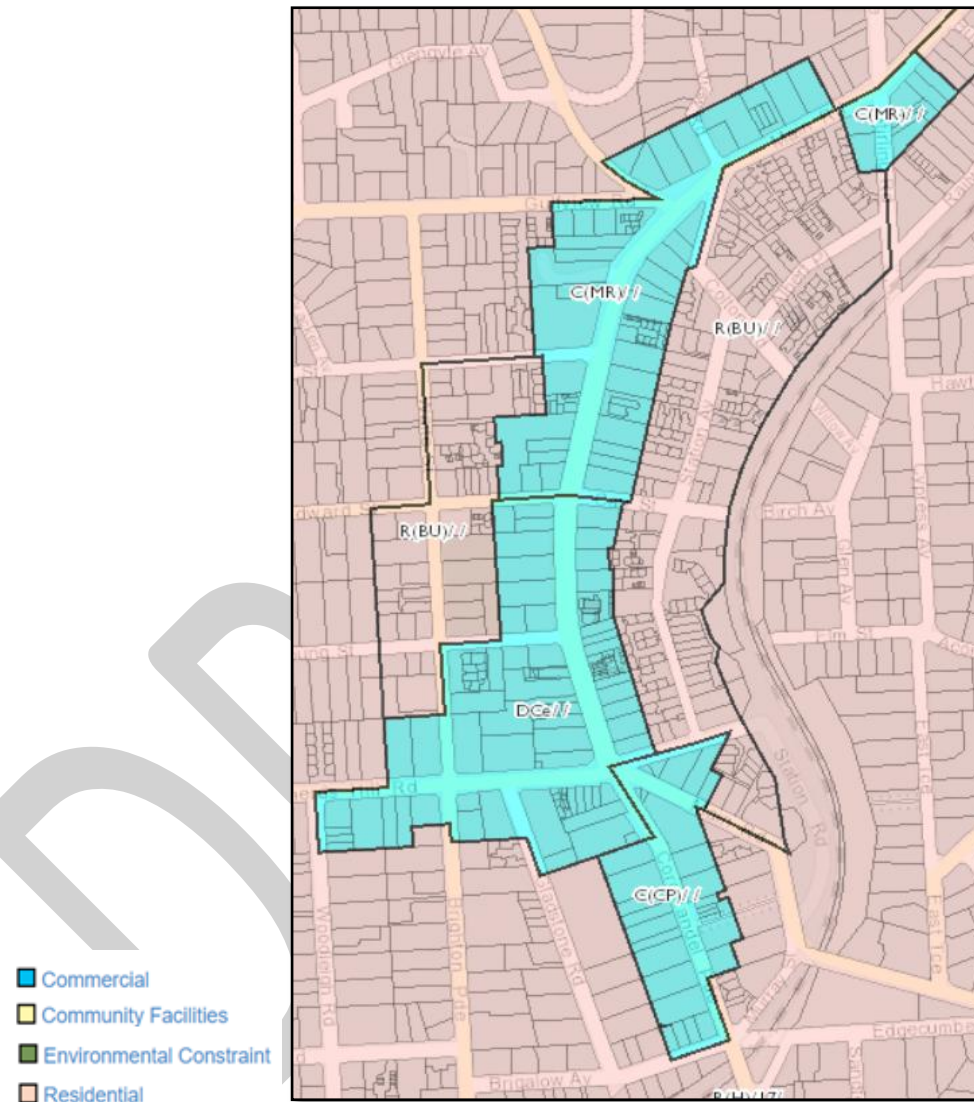


Figure 5A: Blackwood District Centre Zoning
Source: Location SA Map Viewer

5. Analysis:

5.1 Population and Transport Statistics (2016 Census data)

Based on the 2016 Census, in the Mitcham Hills Region (including the suburbs of: Blackwood, Craighburn Farm, Coromandel Valley (part), Eden Hills, Glenalta, Hawthorndene and Belair):

Total estimated resident population was 23,959 persons (30th June 2017) with a population density of 6.16 persons per hectare (pph).

Tables 1 and 1A below shows population and transport statistics for each suburb in the Greater Blackwood Area and compares these with the Greater Mitcham Hills, Adelaide, South Australia and Australia area data sets.

The Mitcham Hills does well compared with South Australia when considering the percentage of people taking public transport to work (8.3 percent to 6.9 percent). The number of people cycling to work is equal with the national average of 1.0 percent. Also, the percentage of people working in a home based business is higher than the national average (3.4% compared with 2.8%). The number of people walking to work is well below the national average (0.8% compared with 3.5%), suggesting the area is a truly commuter based zone given its location and distance from the City of Adelaide. Although, when comparing both Greater Adelaide and South Australia, car travel to work is on par or only slightly lower at 70.2% compared with 70.8%.

On the local level, Coromandel Valley and Craighburn Farm have the highest percentage of households with two or more cars (82.4 percent). This compares with Blackwood on 55.4 percent. Eden Hills and Blackwood have the highest percentage of people catching public transport to work (10.8% and 10.1%), closer to but still lower than the national average (11.4%). Overall those living within and closer to Blackwood District Centre, or the suburb of Blackwood display characteristics which are generally closer to the national average when compared with those suburbs within the Greater Blackwood area. However, Craighburn Farm and Coromandel Valley still have a higher proportion of people catching public transport than the State average at 7.4% compared with 6.9%. This suggests that the Adelaide Metro Belair Railway line is an important asset in which assists the community in providing alternative more sustainable transport options. There is room for much improvement if the Greater Blackwood Area is to achieve much higher rates of non car use.

	Mitcham Hills	Greater Adelaide	South Australia	Australia
Overall Population (Estimated Resident 2016)	23, 802	1, 282, 251	1,660,423	23, 401, 896
Travelled to work by Car %	70.2	70.8	70.8	66.1
Households with two or more cars %	65.9	50.4	51.2	51.1
Households without a car %	2.7	7.8	7.3	7.3
Travelled to work on Public Transport %	8.3	8.5	6.9	11.4
Cycled to work %	1.0	1.1	1.0	1.0
Walked to work %	0.8	2.1	2.7	3.5
Worked at home in a home based Business %	3.4	2.2	2.7	2.8

Table 1: Population and Transport Statistics – Mitcham Hills (Greater Blackwood)

Source: <https://profile.id.com.au/mitcham/home>

	<u>Blackwood</u>	<u>Belair</u>	<u>Bellevue Heights</u>	<u>Craigburn Farm -Coromandel Valley</u>	<u>Eden Hills</u>	<u>Glenalta</u>	<u>Hawthorndene</u>
Overall Population (Estimated Resident 2016)	4,078	4,290	2,570	3,568	2,888	1,868	3,312
Travelled to work by Car %	68.2	70.1	67.9	74.8	66.5	70.6	72.1
Households with two or more cars %	55.4	66.9	61.7	82.4	64.9	62.7	69.3
Households without a car %	6.0	1.8	3.0	0.0	3.3	2.0	1.3
Travelled to work on Public Transport %	10.1	6.9	7.2	7.4	10.8	7.6	7.6
Cycled to work %	1.1	1.3	1.3	0.4	0.7	1.5	1.1
Walked to work %	1.5	0.6	2.2	0.0	0.2	0.9	0.8
Worked at home in a home based Business %	3.2	4.2	2.6	2.6	4.9	2.6	3.2

Table 1A: Population and Transport statistics by suburb - Greater Blackwood Suburbs

Source: <https://profile.id.com.au/mitcham/home>

5.2 Automobile and Roads scenario (traffic data)

5.2.1 Current Scenario

An estimated 20 400 vehicles per day travel through Main Rd, Blackwood. Table 2 below outlines some more specific figures for local roads. This figure also indicates roads may be made less pleasant for pedestrians and people activity in relation to place making where the focus is on people.

Table 2: Local Roads, historical road volumes x vehicles per day (vpd).

<u>Road</u>	<u>2003/2004 vpd.</u>	<u>2015 vpd</u>	<u>% increase</u>
Gladstone Road- Between Shepherds Hill Road and Brigalow Avenue	3,041	3,190	4.90%
Brighton Parade- Between Shepherds Hill Road and Fern Road*	2,152	2,383	10.70%
Coromandel Parade- Between Blackwood Roundabout and Brigalow Avenue	10,530	11,136	5.70%
Waite Street- Between Shepherds Hill Road and Young Street	3,175	3,800	19.70%

*flat top humps were installed in Brighton Parade in 2017

Source: Mitcham Council 2018

Data obtained from DPTI takes in traffic numbers going through the Blackwood Roundabout from 2005 to 2017 in relation to the following roads:

Station Rd
Main Rd - South
Coromandel Parade
Shepherds Hill Road
Main Rd – North

Table 3: DPTI Annual Average Daily Traffic (AADT) – Blackwood Roads

<u>Road</u>	<u>2005 AADT</u>	<u>2017 AADT</u>	<u>% + or -</u>
Station Rd	950	800	-16%
Main Rd – Sth	13700	14500	5.80%
Coromandel Pde	11800	11300	-4.30%
Shepherds Hill Rd	17100	18000	5.20%
Main Rd - Nth	20500	20500	0.00%

Source: DPTI 2018 - Vehicle Turning Movement Survey 2005-2017

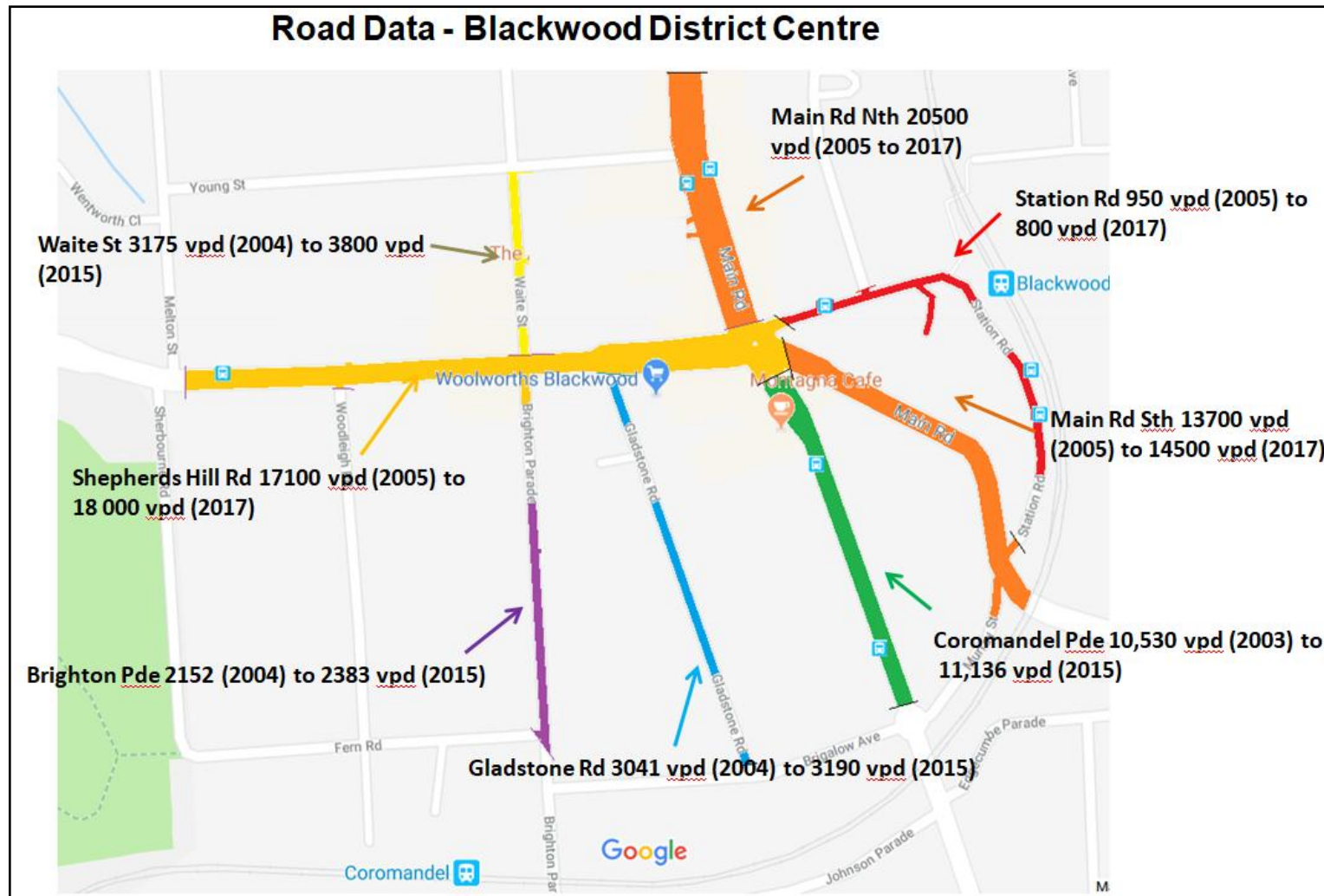


Figure 6: Blackwood District Centre Road Data
Source: DPTI and Mitcham Council

The roundabout data suggests little change in traffic volumes between the major roads traversing the roundabout between 2005 - 2017, however the council data does suggest significant increases in traffic volumes around the Blackwood shopping centre. A 2013 estimate for traffic volumes on Coromandel Parade south of Brigalow Ave connecting to Craighburn Farm was around 11 000 vpd (GTA Consultants).

Total general carparking capacity of the three major supermarket precincts (inc. Foodland, Coles and Woolworths) within Blackwood District Centre plus the Mitcham Council car park facility on Gladstone Road was estimated, upon a count done on Wednesday 13th June 2018, to be at 488 car parks. This includes only general off street carparks contained entirely within each of the shopping centre sites, and also excludes disability carparking facilities or other permit related or other carparks. Table 3 below gives the estimate counted for each site.

Table 4: Carparking Survey

<u>Carpark Precinct</u>	<u>Total No. of carparks</u>
Foodland	146
Coles	145
Woolworths	139
Gladstone Rd	58
Total	488

Source: N.Atterton 13/6/2018

5.2.2. Observations

It is important to note that while the above data suggests that improvements to roads and traffic flow may or may not be necessary, it could be argued that due to the nature of the road regime and alignment, the perception of increasing traffic is one that carves Blackwood up into islands of commercial and shopping services.

This means that traffic is travelling straight through the heart of the Blackwood District Centre. This is despite the fact that the Blackwood Roundabout is the focal point of Blackwood, and is what Blackwood is best known for. So, thereby connectedness is not so much an issue within Blackwood.

The Shopping District is within easy walking distance of both Blackwood and Coromandel Railway Stations. Given this, the idea of changing the road regime would thereby allow for the redevelopment of the Shopping Centre to take place. This will allow for the bulk of passing through traffic to be redirected away from Blackwood District Centre meaning other transport modes are able to be better promoted and for Blackwood to become a more inclusive place for people to meet, greet, collaborate, eat and share ideas. In the Author's opinion, this would then correspond more closely, with fostering Blackwood as a place, in a manner corresponding with the link and place concept in the 30 Year Plan 2017 Update.

The problem with Blackwood thereby is not increasing traffic (although perhaps some around the main shopping centre areas), but that there is almost no sense of actual place. It is instead somewhere people are either mainly passing through on their way to other places, or they are locals using the shopping centre for their weekly grocery shopping, because it is convenient for them to do so.

Other businesses or services have struggled in more recent times.

Blackwood however has a range of other attractors including historical sites, gardens and other natural amenities, in which make the area a desirable place to live, work, and play.

There are thereby many opportunities Blackwood can capitalise on.

However, it appears that the current road regime and sporadic nature of the shopping centre development potentially prevent these opportunities from being further realised.

5.3 **Cycling**

5.3.1. Current Scenario

It appears that Main Rd, Shepherds Hill Rd and Coromandel Pde are currently all well endowed with good cycling provision. Bike lockers are available for use at all the main railway stations (Eden Hills, Coromandel and Blackwood). The Belair to City Bikeway is connected to Blackwood District Centre via both Belair and Main Rds, and a Lynton Greenlink via Caroline Ave and Gloucester Ave in Belair. An off road sealed path also exists to the east of Blackwood near Hawthorndene.

The Map below (Figure 7) shows the main cycling routes through Greater Blackwood.

-  Main Road with Bicycle Lane
-  Main Road
-  Secondary Road
-  Secondary Road with Bicycle Lane
-  Off Road Sealed Path
-  Off Road Track

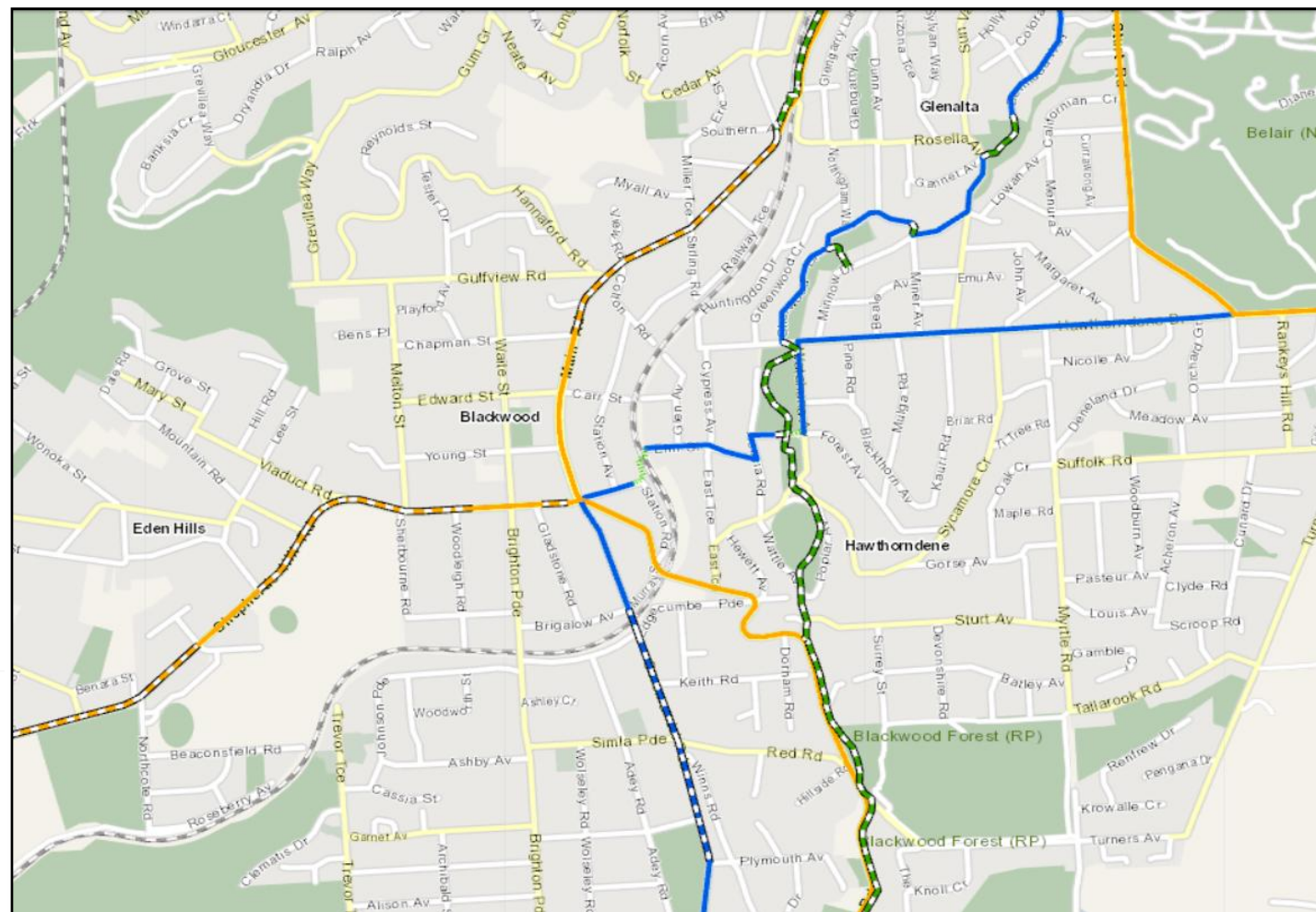


Figure 7: Main bicycle routes, Greater Blackwood
Source: Location SA Map Viewer

5.3.2. Observations

It is apparent that Bike Lanes do not exist through the main shopping centre precinct and near the roundabout. An upgrade of Brighton Parade and Waite Street would be needed to cater for cycling provision on these roads (see Figure 8A). A redeveloped Main Road as a main street precinct could allow for a shared use or multi modal use zone which would include Main Road encompassing the main district centre (including all three supermarkets) and new Community Hub. Together with a Way Finding Strategy, and the addition of a dedicated upgraded bike lane/path connecting with either or both Blackwood and Coromandel Stations, this would assist greatly in improving bike use within the area. What also appears to be a poor solitary bicycle park facility currently exists in a rather difficult to use place on a footpath next to Main Rd, Blackwood (See Figure 8).



Figure 8: Bicycle park facility, Main Rd Blackwood
Source: N Atterton

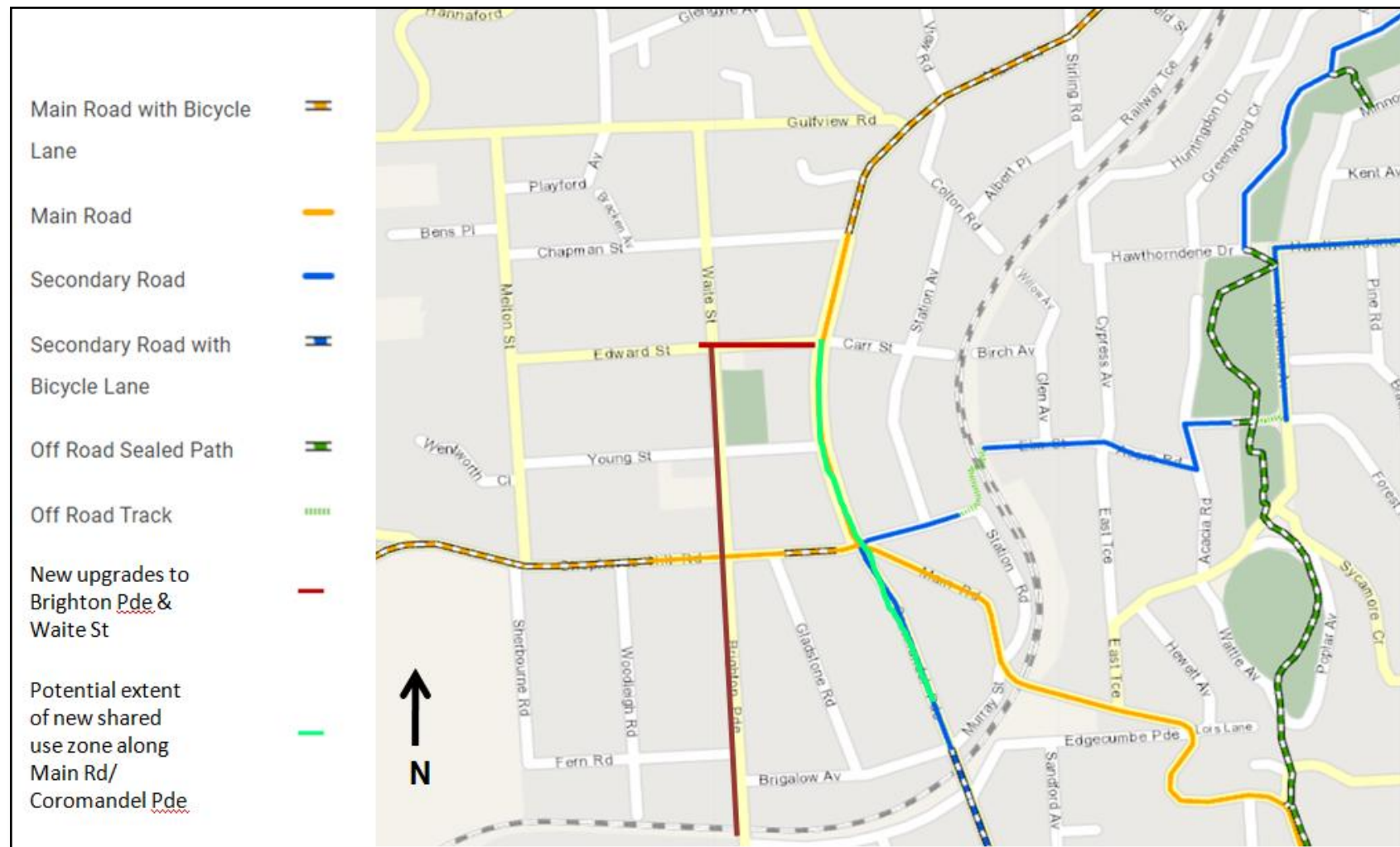


Figure 8A: Cycling Improvements, Blackwood District Centre
Source: Location SA Map Viewer

5.4. Walking

5.4.1 Current Scenario

Blackwood generally has good walking paths and infrastructure. Footpaths are quite numerous and present an undulating form connecting particularly between the railway stations and the shopping/commercial/district centre. The majority of the central part of the shopping/district centre precinct however is relatively flat. One main traffic light pedestrian crossing (also known as a Pedestrian Actuated Crossing) exists on Main Rd to access the Main District Centre services and amenities. A second crossing on Shepherds Hill Road connects the Foodland and Woolworths shopping Centres. The undulating nature of the area and footpaths may provide both positive and negative challenges to different demographics, individuals or groups for both access and health reasons.

Tourism and history is also catered for in the Blackwood Historical Walk. This takes in the area mainly to the direct south along Coromandel Parade and Adey Road in particular, and also includes both Blackwood and Coromandel Railway stations and part of Main Rd. Coromandel Station also offers a link to Wittunga Botanic Garden. Recent efforts by the Blackwood Action Group (BAG) now encourages those catching a train from either the city or Belair to alight at Coromandel Station to access the Garden through the automated station announcement on the train.

5.4.2. Observations

It appears that an inadequate pedestrian link between Woolworths Shopping Centre, Coromandel Parade, Main Rd and Blackwood Station exists. A kerb ramp with a little or no pedestrian refuge is installed to the South East of the current roundabout alignment (See Figure 9). It is also apparent that the redevelopment of the Blackwood Roundabout did not include any upgrade to this facility.

A Way Finding strategy (see Figure 9A) is also recommended to bind walking paths together via a network in order to orientate and link Blackwood Centre with railway stations and historical areas, thereby promoting tourism.



Figure 9: Pedestrian Crossing over Main Road SE of the current roundabout alignment
Source: N. Atterton



Figure 9A: Example of Way finding strategy, Gold Coast, Queensland
Source: N. Atterton

5.5. Public Transport

5.5.1. Bus – Current Scenario

The map below (Figure 10) shows current bus routes entering, approaching and exiting Blackwood. Blackwood Station is used as an interchange for the Belair Train Adelaide Metro service.

Although the number of bus routes achieves a high level of coverage, the role of the bus service is to supplement the Belair train service. This means service frequency is poor. In addition, topographical challenges make the area difficult to service. This report does not aim to make suggestions in relation to individual bus routes or the location of a particular bus stop; rather, it is concerned with the larger picture, in relation to the road network for the Greater Blackwood area.

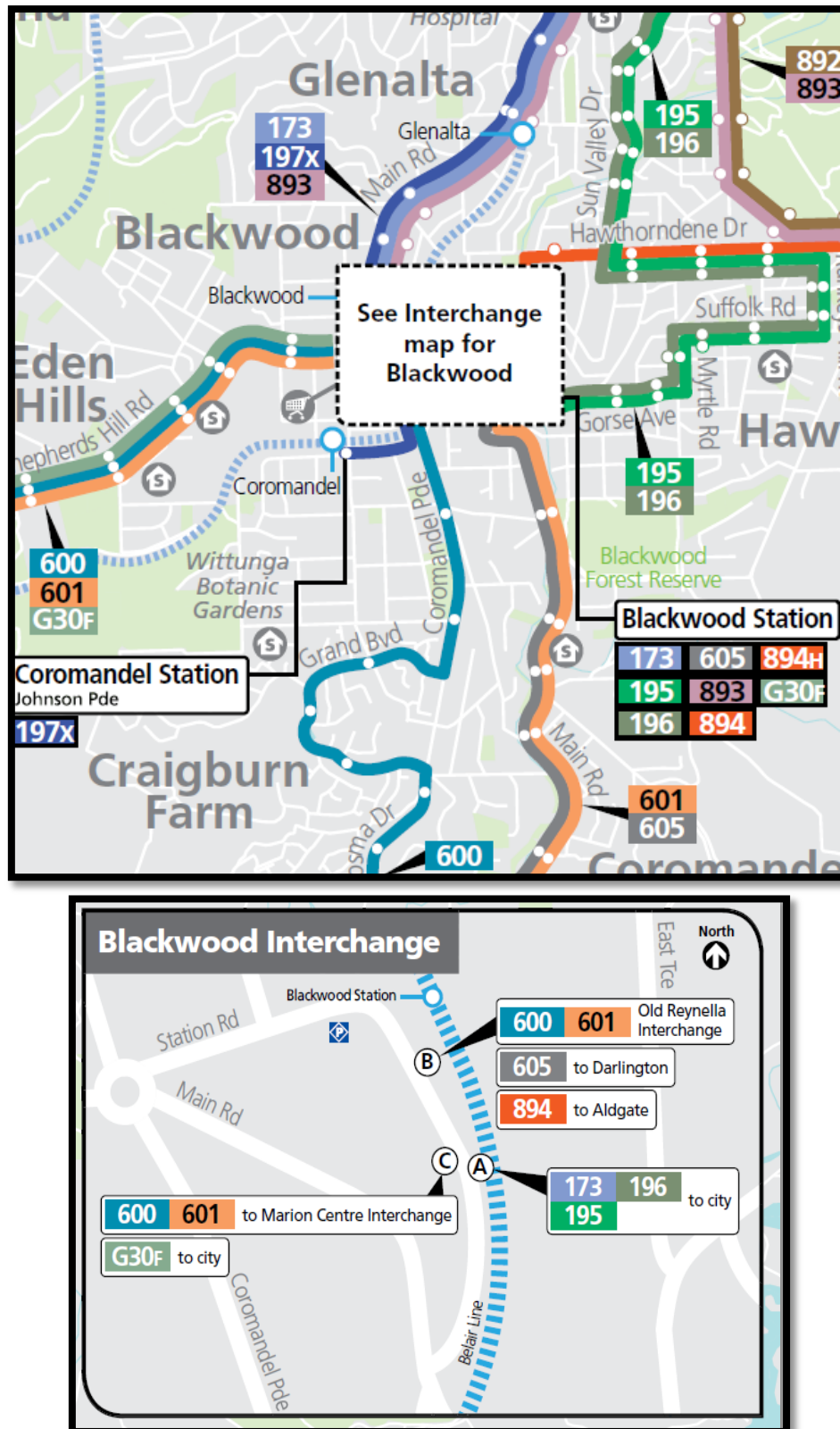


Figure 10: Current Bus Service Map – Greater Blackwood, Blackwood District Centre, and Blackwood Station Interchange

Source: AdelaideMetro 2018

5.5.2. Bus – Observations

Shepherds Hill Road could be used as a high frequency corridor to connect with Flinders University, Tonsley and Marion precincts. A new trackless sensed tram bus type (Chinese model) could run a rapid transit service linking Flinders University and new Flinders Station via Shepherds Hill Road and Marion.

Current bus services would need to be reanalysed in relation to the construction of potential new road and rail developments. The new South Australian Public Transport Authority (SAPTA), depending on its brief, would be able to provide further analysis of such ideas/proposals.



Figure 11: China Tram Bus (self driving version)

Source: <https://www.popularmechanics.com/technology/infrastructure/a26782/china-built-a-self-driving-something/>

5.5.3. Rail – Current Scenario



Figure 12: Blackwood Railway Station

Source: N Atterton

The Adelaide Metro Belair Line railway corridor operates on a separate broad gauge track (the original gauge) as part of the Adelaide – Melbourne national freight line rail corridor. Adelaide Metro offers a two train per hour frequency service during weekdays in both directions with four trains per hour during morning and afternoon peak periods on weekdays. A two train per hour service operates after 6.00pm on weekdays in both directions, and all day on weekends and public holidays in both directions.

Four stations are contained within the Greater Blackwood area and these include Eden Hills, Coromandel, Blackwood and Glenalta.

(Patronage – Data from DPTI to still be provided through FOI Request)

5.5.4. Rail – Observations

The removal of the freight line, under the State Government's GlobeLink Plan creates opportunity for higher frequency, double track service and electrification. The current regime could change to 3 trains per hour for the main line across a 7 day period with retention of 4 trains per hour during peak period

A new spur line could be considered to link Craighburn farm from Eden Hills Crossing Loop (See Figure 11b). A new station could also be constructed for Bellevue Heights at Eden Hills Crossing Loop.

Section 6 explores different options surrounding this, and related potential road proposals.

In relation to the two main Railway Stations traversing Blackwood District Centre:

Coromandel Station therefore would provide for access to:

- Wittunga Botanic Garden,
- An Historical Walking Tour near the Adey Road area,
- A new Blackwood Plaza and District Centre via a new carpark on Gladstone Rd which would offer a 5 min, 500m walk back to Coromandel Station

Blackwood Station (if its current position were to remain) would provide access to:

- Blackwood Plaza/Centre via Station Rd.
- A potential new transit style medium density housing development opportunity on Station Avenue that would meet bushfire regulations

Realignment of the train line underground could also be considered with a newly developed Blackwood Centre (See Figure 13). If an underground train line were constructed, it would thereby be important for the original Blackwood Station to be heritage protected and appropriate tourism provision provided for and promoted. Treatment in relation to any new road development/elevated structure in relation to the current site would be of utmost importance to the community.

5.6. Emerging transport modes (effects of car sharing, electric vehicle charging stations, community buses, ride share schemes)

5.6.1 Current Scenario

Ridesharing services and electronic applications including Uber operate on demand, and are accessed via a Smartphone from any location with a reliable phone network connection.

No electric vehicle charging stations are currently known to exist within the Blackwood District Centre or Greater Blackwood Area.

5.6.2 Observations

Future integration of all transport modes through Smartphone App technology, that may include subscription ticketing would overall have a very positive impact on Blackwood. This would allow people access to the best mode to meet their needs when a requirement for travel is needed. This is also known as Mobility as a Service (MaAS) (Place 2018).

In the future, driverless cars or vehicles, which may also include more personalised air service related transport or vehicles, may have a very substantial or less than substantial but still relatively unknown impact on Blackwood and the Greater Blackwood Area. The key focus in regards to this report is the current ground transport regime and thereby possible improvements that can be investigated in a more timely sense.

6. Options for Discussion

Taking the above current scenarios and observations into account, the following are options in relation to infrastructure improvements. These potentially may correlate with other ideas currently being promoted by key stakeholders mentioned earlier in this paper, but not reflect or promote any agenda or opinion of any stakeholder. Objectives 3, 3A and 3B are tackled here. Objectives 1 and 2 have been highlighted and qualified in the previous sections above.

It may also be taken that any suggestions, particularly relating to active transport (i.e. cycling and walking, as discussed above) and emerging transport modes, can also be incorporated into the various options below.

The following Options 1 - 3 propose major changes to the transport regime, and how transport currently functions/operates within Greater Blackwood and Blackwood District Centre. It is not within the scope of this report to provide any details regarding costings. It is envisaged these proposals would be of high to very high monetary cost in terms of Government and community consideration, but may, upon a more holistic consideration of environmental and social costs, be offset.

The Options thereby are:

Option 1: Elevated Bypass Roadway (using trainline corridor) with new trainline spur to Craighburn farm and station and new Bellevue Heights Station

Option 2. New Road tunnels and underground train line realignment

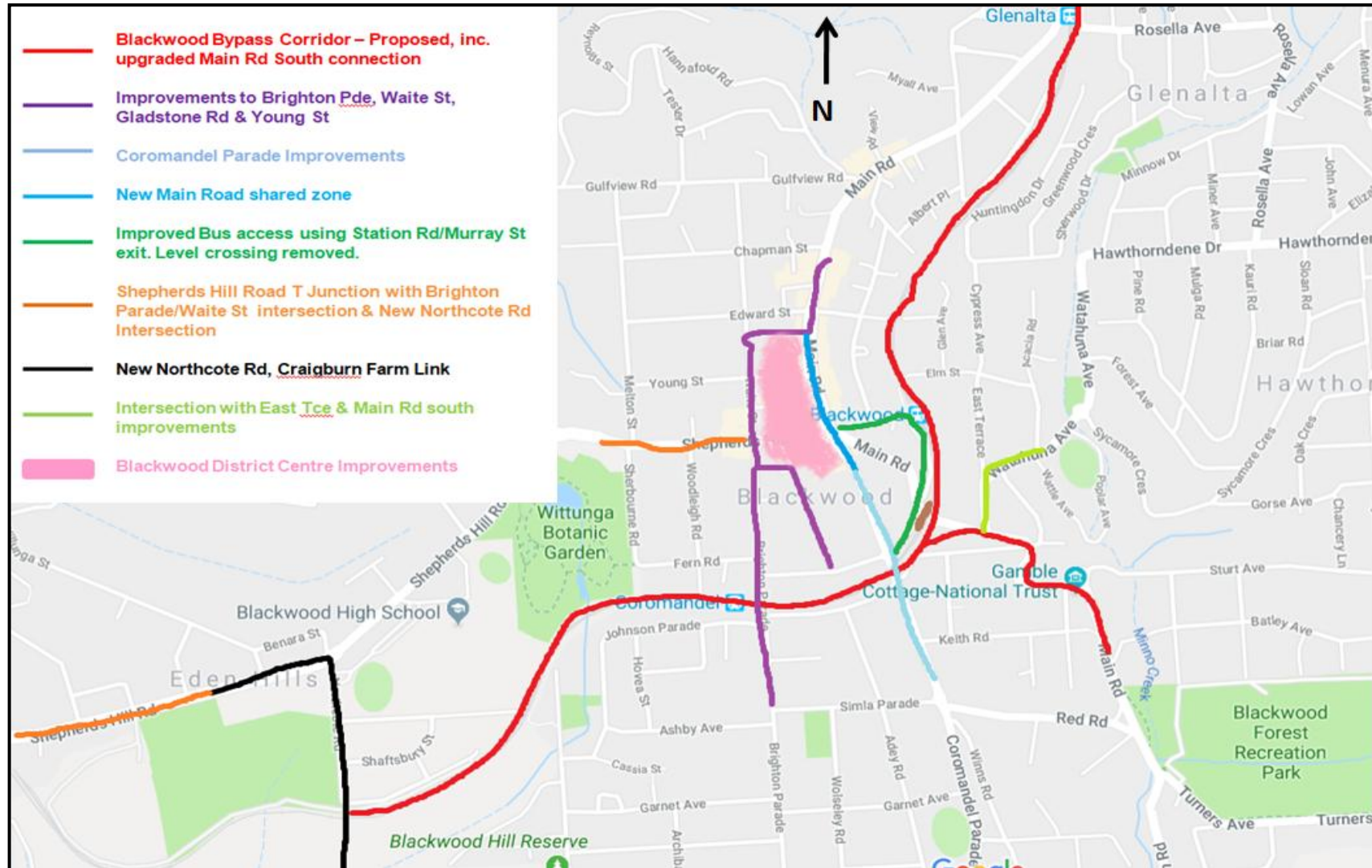
Option 3: Underground trainline tunnel realignment, with new underground Blackwood Station underneath shopping centre, new bypass road in current train corridor.

Option 4: Mitcham Hills Road Corridor Strategy (including current identified Road Management Plan improvements & Craighburn Bypass Study.

6.1. Option 1: Elevated Bypass Roadway (using trainline corridor) with new trainline spur to Craighburn farm and station and new Bellevue Heights Station

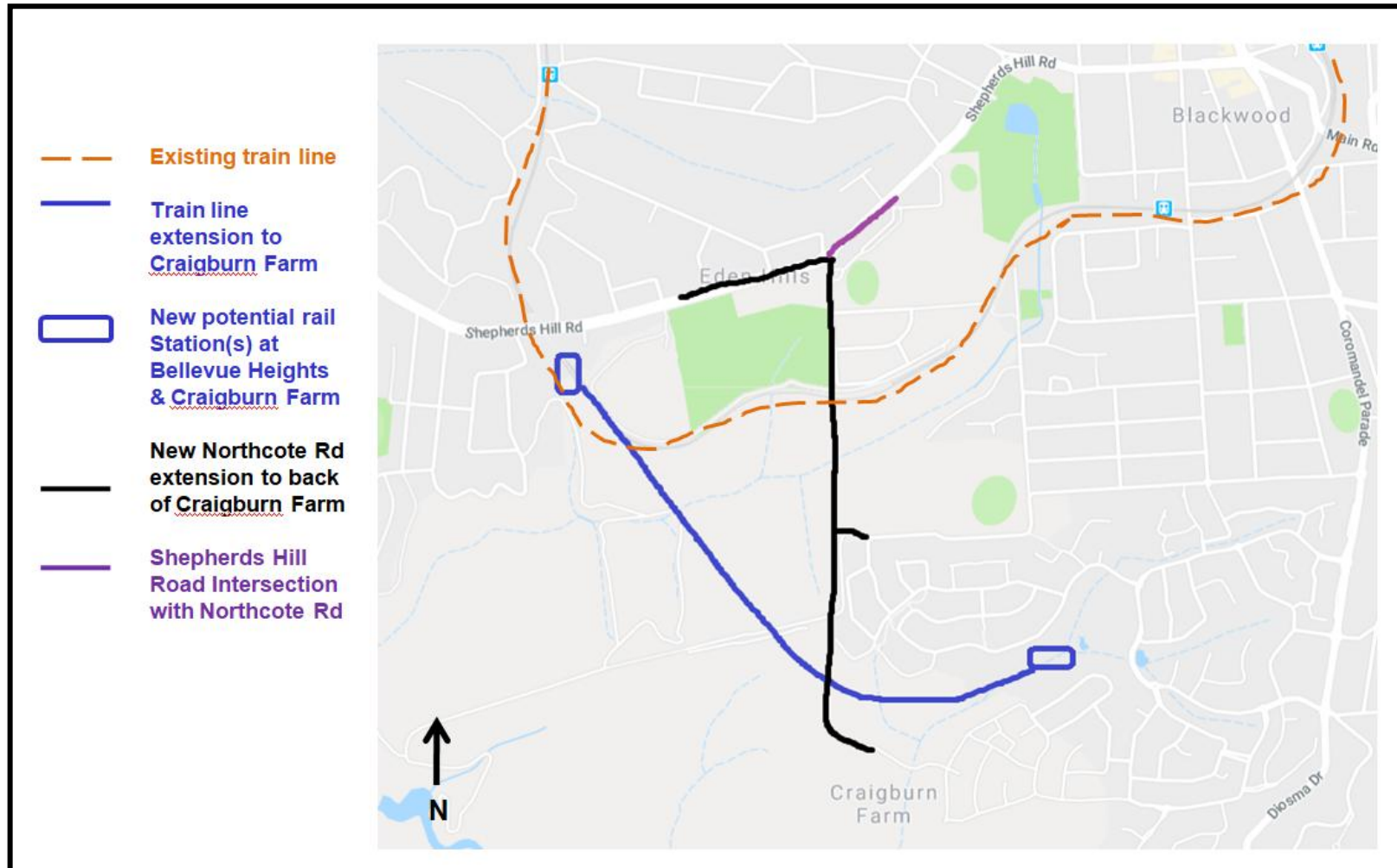
- Figure 13A shows the construction of a new elevated roadway following the rail corridor back around to Glenalta station to reconnect with Main Road. This would create new connections with Brighton and Coromandel Parade's as well as Main Road with East Terrace. Four lane construction is recommended for the new elevated roadway. This would also enable for three level crossings to be effectively removed at Main Rd, Coromandel Parade and Main Road north near Glenalta station. Main Road could also be closed from the Roundabout at the current crossing near Murray Street. This would allow for improved bus access to Blackwood Station from a new Murray Street/Station Road exit in relation to the new elevated roadway.
- Figure 13B shows an extension of Northcote Road providing alternative access to Craighburn Farm from Shepherds Hill Road. Four lane construction recommended.
- Figure 13B also shows extension of the rail line into Craighburn Farm via a small spur which could include the construction of a new station at Bellevue Heights as part of the existing line, and a new terminus station at Craighburn Farm.
- The intersection of Brighton Parade, Shepherds Hill Road and Waite Street could become a T intersection (Figure 13A) on the western side. On the eastern side Coromandel Parade, Main Road (Blackwood Roundabout) and Station Road would be cut off from Shepherds Hill Road. This could create a new walkable plaza area where Coles, Woolworths and Foodland could be redeveloped into a new Blackwood District Centre redevelopment, fully connected as one block of land, and not in effect divided by major roads as currently occurs. Young St could then be realigned northwards or abolished altogether forming the northern part of the new Blackwood District Centre. This would create the opportunity for the development of a new Library, Community Centre, 3 Supermarkets, bars, cinema/auditorium all together as one walkable centre, as proposed and suggested by the Blackwood Business Network.
- A new multilevel carpark on the corner of Brighton Parade and Gladstone road realignment could also be constructed. This would provide walking access to Coromandel Station. All other carparking could be constructed underground with access from Waite Street for the northern part of the new District Centre, and in the south via Gladstone Rd with access from Brighton Pde (current Woolworths western entry) and Coromandel Parade (current Woolworths eastern entry). Gladstone Rd would be realigned to connect with Brighton Parade.
- Main Road then becomes a shared multi modal space between cars, pedestrians and cyclists (similar to Bank St, Adelaide, See Figure 13C.). Speed limit could be lowered to a suggested 20km/hr between Coromandel Parade, Station Road and Young Street. 1 lane each way.

Figure 13A. Option 1: Elevated Bypass Roadway (using trainline corridor), Northcote Road extension and new trainline spur to Craighburn farm and station and new Bellevue Heights Station (See Figure 13B)



Source: Created using Google Maps

Figure 13B. Option 1: Elevated Bypass Roadway (using trainline corridor) (See Figure 13A), Northcote Road extension with new trainline spur to Craighburn farm and station and new Bellevue Heights Station



Source: Created using Google Maps



Figure 13C: Bank Street, Adelaide as an example of a shared multi modal streetscape
Source: N Atterton

Option 1 – Benefits

Overall a North/South traffic flow around the new Blackwood District Centre is created as opposed to the current radial flow created by the roundabout emanating from the roundabout. East - west flow is diverted to the South of Blackwood and then around via the new elevated roadway using the existing train line corridor

Thereby, the removal of roads from the centre part of Blackwood enables this centre part to become a new joined up walkable centre. Opportunities for retail and business floorspace in a walkable/shared public realm are also increased thereby facilitating place making. A second major vehicle access to Craighburn Farm is also provided, thereby lessening traffic demand in and near to Blackwood centre.

Option 1 - Disadvantages

The visual presence of elevated roadway above the train line would impact nearby residential and heavily natural landscaped areas. Whilst careful attention to design, siting, materials, colours and landscaping might mitigate some of the visual impact, this would need closer consideration.

Any introduction of bypass roadway/train infrastructure to Craighburn Farm would go through the Sturt Gorge Recreation Park zone potentially impacting areas of native vegetation, biodiversity and the natural landscape environment, together with cultural heritage impacts. Careful consideration of these impacts in relation to the development assessment process would be required.

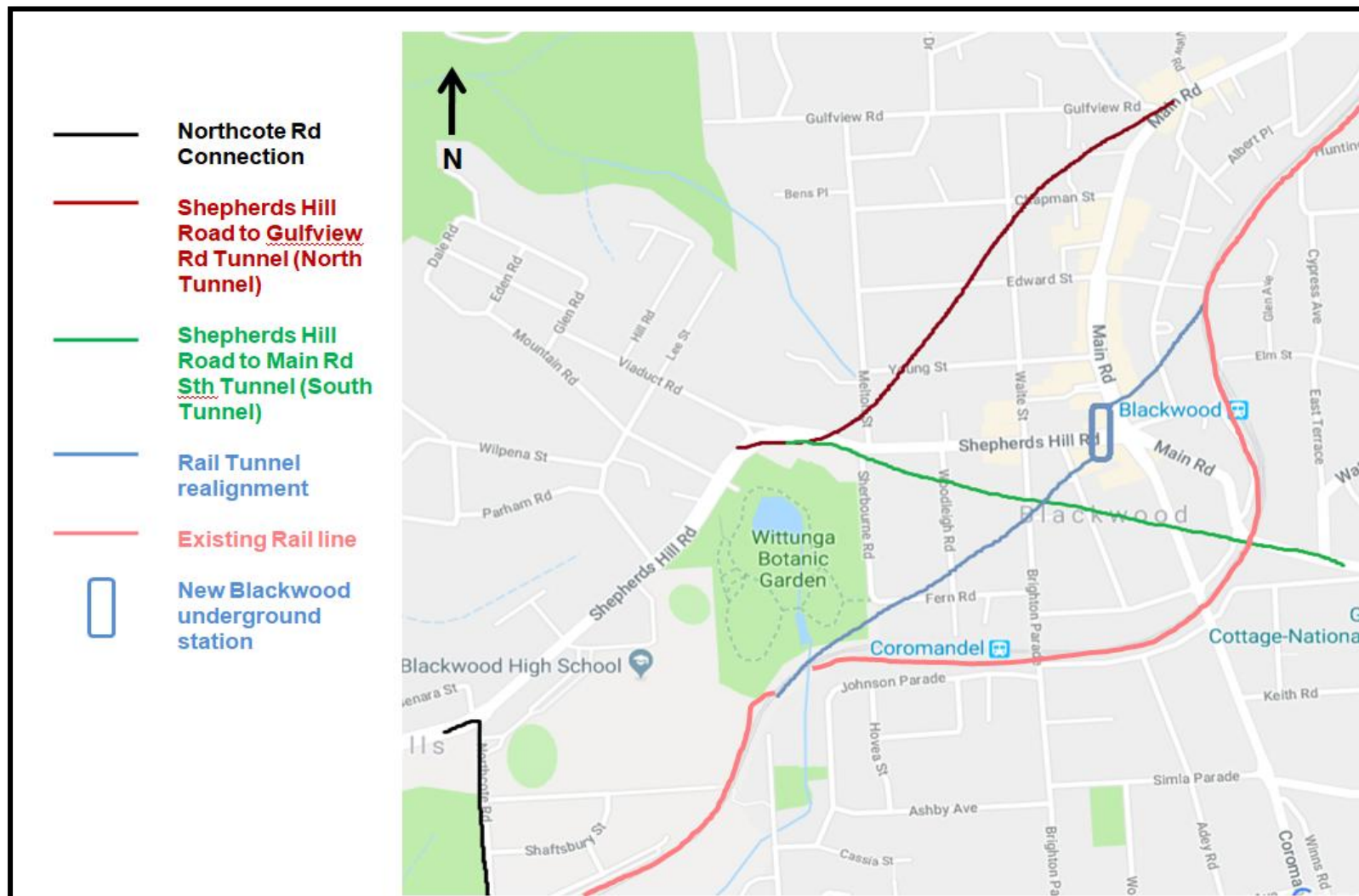
Whilst enabling a greater concentration of retail and business in the consolidated Blackwood Centre would be an advantage, this would need to be considered against the risk of increased land values pricing out opportunities for entrepreneurs and small-scale retailers to commence.

6.2. Option 2: New Road tunnels and underground train line realignment

Option 2 (Figure 14) centres around the construction of two main tunnels.

- A road tunnel northwards (red line on map) would link Shepherds Hill Road and Main Rd North near Gulfview Rd
- A road tunnel southwards (green line on map) would link Main Rd and Shepherds Hill Road near Melton St through to East Tce.
- A smaller rail tunnel (blue line on map) could also be constructed, but this would cause the complete removal of Coromandel Station. The rail tunnel would veer off the current alignment near Wittunga Botanic Garden, include a new underground Blackwood Station with direct access to the District Centre, and then rejoin the current alignment to the North of the current Blackwood Station.

Figure 14: Option 2. New road tunnels and underground train line realignment



Source: Created using Google Maps and MS Paint

Option 2 – Benefits

Opens up the heart of Blackwood for retail/business/walking etc (similar to 1). As heart of Blackwood would have less traffic, but still some traffic, the streets through the heart could be 'calmed'

If the Shepherds to Gulfview traffic tunnel and an under blackwood train tunnel were to be constructed, then there would probably be less traffic demand at grade thereby Brighton/Coro Pdes should experience freer traffic movement

Option 2 - Disadvantages

- It would be envisaged that linking with other roads would be problematic. There would also be limited opportunity to connect with either Brighton or Coromandel Parade and thereby Blackwood District Centre. Construction of on/off tunnel exit ramps for these roads would need to be considered.

- This option also provides little opportunity for the local road regime surrounding Blackwood District Centre to be amended to better cater for active and public transport links, compared with Option 1. While many of the other improvements mentioned in Option 1 could still occur, the overall effectiveness of this option, without Brighton and/or Coromandel Pde connections to Blackwood District Centre, creating a north-south traffic flow, remains debateable.

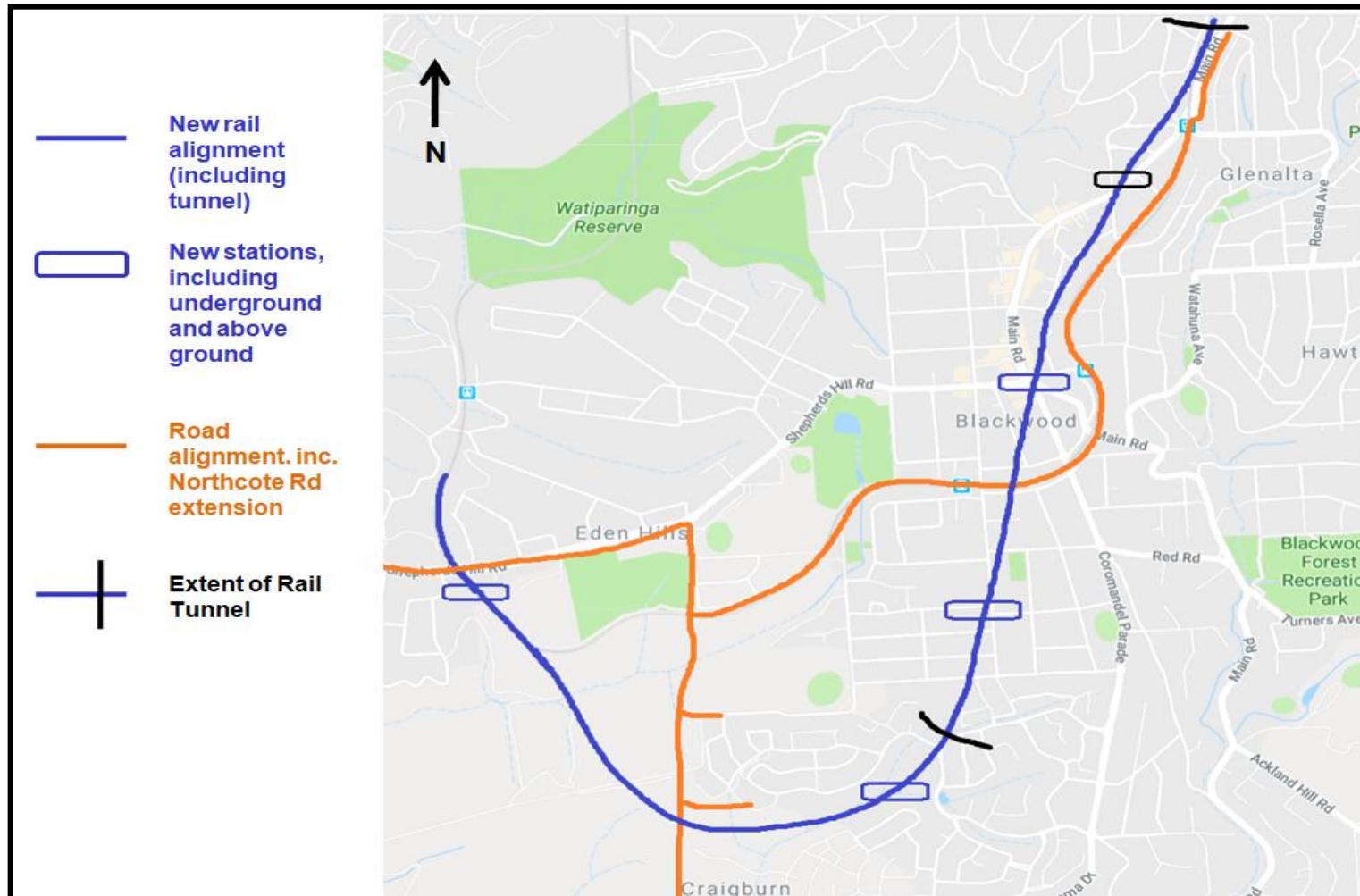
- Potential high cost in which may not produce good outcomes when all transport modes are considered.

6.3. Option 3: Underground train line tunnel realignment, with new underground Blackwood Station underneath shopping centre, new bypass road in current train corridor.

- Combining new stations at Bellevue Heights and Craighburn Farm (Figure 15), a new rail tunnel could be constructed to include 3 replacement stations for Blackwood, Coromandel and Glenalta (with current Standard Gauge Freight Rail line or after the Globelink proposal has been constructed). Stations could easily keep current names. Track would rejoin current Belair alignment near current Glenalta crossing.

- This would enable for the current rail alignment to become a new exclusive road link bypassing Blackwood as in Option 1, linking with Northcote Rd, its extension into Craighburn Farm, and Shepherds Hill Road. Construction of elevated road would thereby not be required. Entry and exit to Blackwood via Coromandel Parade and Brighton Parade would form part of this option. Johnson Parade could act as a potential interchange road or ramp, or a new ramp built to connect with Coromandel Parade at current grade level. This would also provide a grade separation opportunity in relation to Main Road.

Figure 15: Option 3: Underground trainline tunnel realignment, with new underground Blackwood Station underneath shopping centre, new bypass road in current train corridor.



Source: Created using Google Maps and MS Paint

Option 3 – Benefits

- Strengthens the use of rail and encourages cycling and walking modes in heart of Blackwood District Centre
- Removes level crossings
- Connects Craigburn Farm best to Blackwood, by both Road and Rail
- May significantly increase public transport use
- Aligns well with Council and State Strategic Planning goals
- Huge potential to create Blackwood as a Hub
- Potential for tunnel to become a last resort fire refuge, if able to be closed during a bushfire

Option 3 - Disadvantages

- Tunnel potentially cost prohibitive
- Major disruptions to rail services during construction of tunnel and new stations
- Construction probably unable to begin whilst Freight Line exists.
- Some freight may still use Hills Rail Corridor but GlobeLink proposal designed to eliminate this entirely. If current freight line were to remain it would require large works/modifications to the rail tunnel bridge under Shepherds hill road and rail passing loop in relation to current freight line, although complete removal of freight (Globelink), would make this Option feasible.

6.4. Option 4: Mitcham Hills Road Corridor Strategy (including current identified Road Management Plan improvements & Craighburn Farm Bypass Study)

What will become now known as the Mitcham Hills Road Corridor strategy will include both a Craighburn Farm Bypass Study together with all the improvements identified within the Road Management Plan.

Section 4.3.3 has identified potential new road routes which could be constructed directly into and out of Craighburn Farm, in which do not impinge on the Blackwood District Centre, along with providing a potential bypass of Blackwood District Centre in relation to Craighburn Farm.

The current Blackwood Roundabout upgrade will ease congestion. In addition, extra services have recently been added to the Belair Railway line. Bus services could also be increased and reviewed.

Section 5.6 raises the issue around alternative transport modes. These are more likely to compliment current infrastructure and service provision as well as being complimentary to the construction of any new road routes to and from Craighburn Farm. This is due to the focus on end of mile services, or mobility within a new Blackwood District Centre, which may help connect to public transport services or the main railway stations.

Option 4 – Benefits

A New Craighburn Farm Bypass Road would create an option for traffic to Bypass Blackwood through either a Western or Southern Route. This would help with reducing traffic within Blackwood. This may mean that better utilisation of Blackwood's walkability could be harnessed without the need for more expensive proposals in regards to either rail or road tunnels. The Globelink Proposal would also enable for a dual broad gauge track for Adelaide Metro rail services to be restored in regards to the current rail corridor.

Implementing improvements identified in regard to the Road Management Plan and Mitcham Hills Road Corridor Strategy would serve as being sufficient.

It would be envisaged that construction of a southern route from Craighburn Farm (Figure 4) would be easier due to less impact on the Sturt Gorge Recreation Park, along with the terrain being less topographically challenging

In relation to Blackwood District Centre, another main argument that can be made is that traffic numbers are not increasing for Blackwood and that costs of new projects are thereby unjustified and/or uneconomic. Planning arguments surrounding placemaking are unable to be justified against building costs.

It could also be considered that the idea that Blackwood has 'no sense of place' is nonsense planning jargon. Blackwood is a place and there is no need for change to the status quo.

There is also potential to propose a new commercial development within Craighburn Farm. This would take pressure off Blackwood and its road system, combined with in particular, a new southern road route.

Option 4 - Disadvantages

-Figure 3 outlines a possible new Western route road traversing the Sturt Gorge and subsequent recreation reserve. The impact of constructing a new road on the southern ridge of the Gorge would be subject to the relevant new planning provisions and Planning Code in relation to construction of major roads as per the PDI Act 2016, along with any other conditions or provisions in which the Department for Environment and Water and National Parks SA may seek to impose on such development. The Country Fire Service (CFS) would also need to provide feedback in relation to the potential risks and benefits of bushfire in construction of such a road.

-Non consideration however of Options 1-3 could suggest missed opportunities where future redevelopment of the rail corridor for instance, may provide benefits that may not be able to be currently identified.

7. Placemaking opportunities in Blackwood, achieving key goals and syncing with proposed Draft Structure Plan for Blackwood Centre by Mitcham Council

The suggested changes to the transport regime identified above in section 6 would enable Blackwood to become a well connected Hub and gateway to the Adelaide Hills. A place in itself, where public and active transport modes become one of the key transport choices for the local community. Options 1 to 3 may be pursued further by the community, the City of Mitcham, DPTI, The State Government and all other relevant stakeholders, or after further consultation, a variation of these options.

The current proposed Blackwood Draft Structure Plan, by Mitcham Council, at time of writing has now been released for public consultation. It would appear that many of the ideas discussed above in the previous sections of this report correspond well in relation to the Draft Structure Plan, and are complementary to it.

Blackwood has the potential to be transformed into a place where people come to visit, rather than perhaps only pass through at the Roundabout.

Although, considering the disadvantages of Options 1-3 and the advantages of the current strategy – Option 4, having little to no effect on the Sturt Gorge Recreation Park would mean that minimal impact on the local environment would be achieved. In addition, any fire that may start within the Park, or on a fire ban and severe or higher rating day could redirect traffic through Blackwood if a Western route were to be constructed. Overall a southern route would provide connection between both Black Road and Shepherds Hill Road which could be considered desirable.

8. Conclusion

With a view to the future of Blackwood, this discussion paper has enabled an investigation into the current status of all transport modes within both Blackwood District Centre and Greater Blackwood at a strategic planning level.

It has aimed to suggest new and improved transport options in which the local Blackwood community can consider in order to progress the redevelopment of Blackwood District Centre.

Through this process ideas shall not be immediately dismissed by the community as they arise. It gives the local community an opportunity to become better informed in relation to transport issues, in order to achieve a sense of ownership by all relevant stakeholders and individuals within the Blackwood Community. This way leadership is a collective process where the community is able to decide the best options for the future.

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10. Appendices:

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