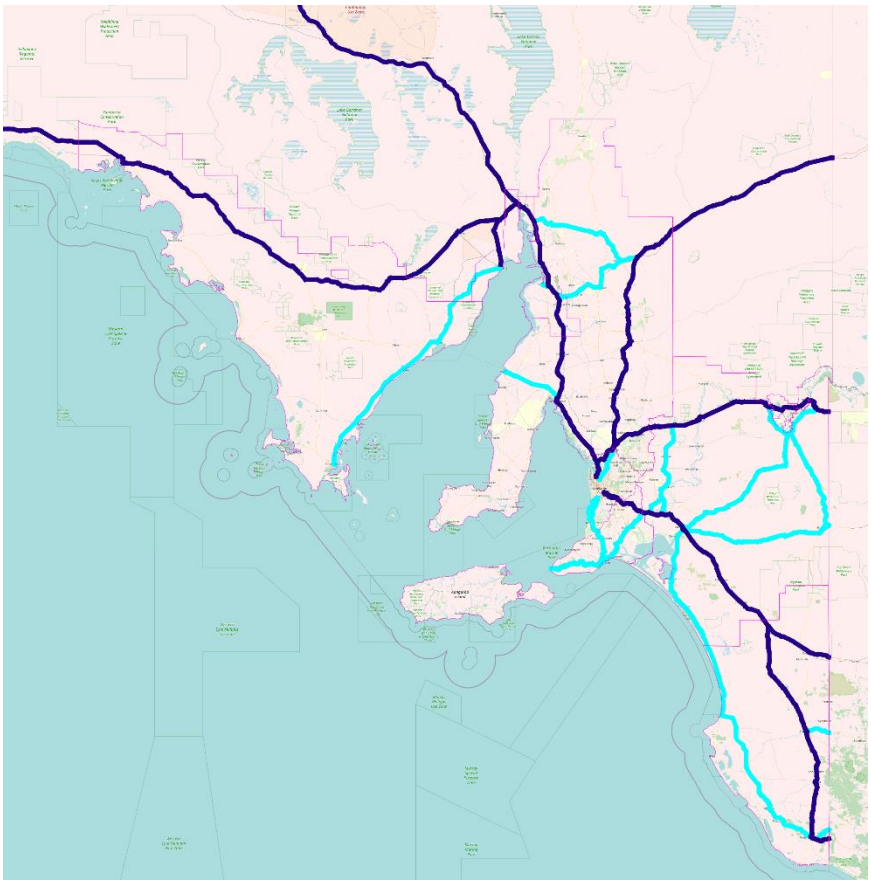
Legatus Group (for SAROC)

SA REGIONAL ROAD PRIORITY PROJECT

Final Report



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1.0 BACKGROUND AND PROJECT PURPOSE

In January 2022 Legatus Group, on behalf of the SA Regional Organisation of Councils (SAROC), engaged HDS Australia to undertake a state-wide regional road mapping activity, including preparation of an associated report on regional road priorities, which would be based upon regional routes defined within the current regional transport plans published by each Regional Local Government Association (Regional LGA).

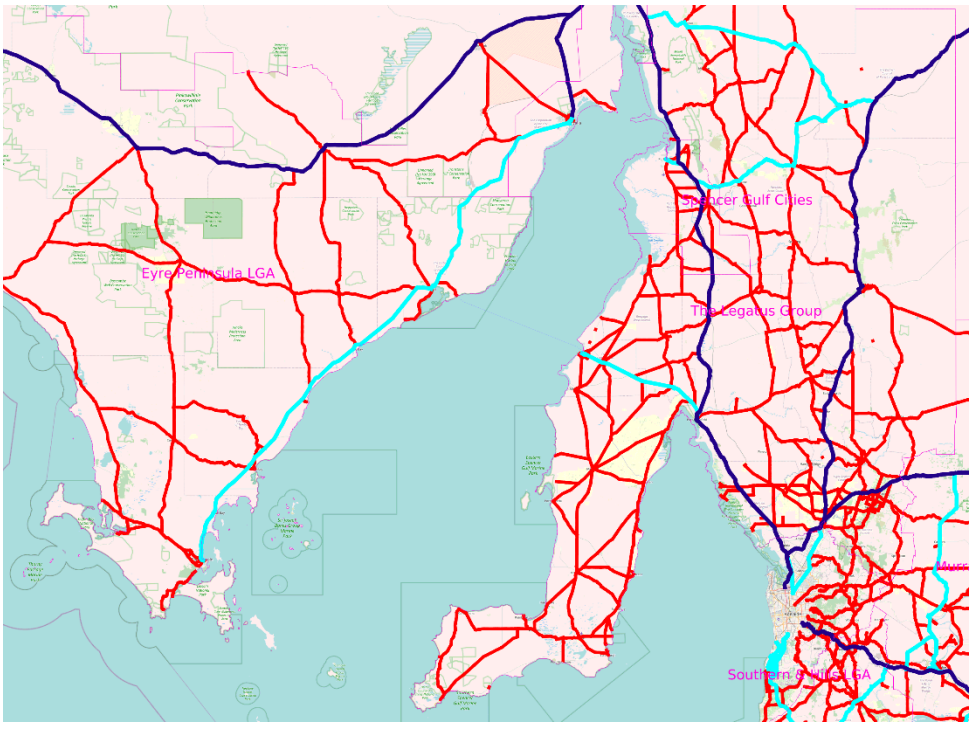
Outcomes from the project have been designed to assist with developing funding proposals via the Special Local Roads Program (SLRP), Heavy Vehicle Safety and Productivity Program (HVSPP), the Better Regions Fund, the Regional Black Spot Fund and/or a specific infrastructure approach to State and Federal Governments. It is also intended that project outcomes will assist with lobbying for equity in funding to Regional Councils.

Regional local roads and their mapping and priorities is a key focus area for SAROC as the organisation continues to coordinate with Regional LGAs and look to enable a cross regional approach to support funding applications to State and Federal Government based on an agreed priority list.

Regional LGAs have developed their own network of regionally significant roads that identify road priorities. These are used to assist in funding applications usually by individual councils but on occasions jointly across council boundaries, including the SLRP administered by the Local Government Association of South Australia (LGASA). Regional LGAs acknowledge that a state-wide approach which identifies the linkages beyond regional boundaries and establishes a state-wide priority list will allow for increased discussions with industry and a more coordinated approach to seeking funding support from State and Federal Governments.

A Working Group, comprising representatives from the LGASA Secretariat, SAROC and Regional LGA Executive Officers, was formed to provide advice on the project and review deliverables. Simon Millcock, CEO of the Legatus Group, was client representative for the project.

John Olson, Managing Director and Principal Consultant for Road Transport Planning at HDS Australia, was the Project Manager, assisted by Senior Engineer Tim Viner Smith, Principal Designer Herman Zhou and Graduate Engineer Alex John.



2.0 METHODOLOGY

Activities undertaken as part of the project are detailed below.

2.1 Stage 1 – Project Initialisation, Online Discussion

The first stage of the project included project initialisation, followed by an online meeting of the Working Group, held on 4 February 2022. The meeting's purpose was to discuss the project methodology and expected outcomes, with a particular focus on reaching agreement on the road hierarchy framework and software platform that the mapping system would subsequently be based upon.

During the meeting, attendees received a demonstration of the "Regional Road Hierarchy" maps and associated report previously developed by HDS Australia for the Murraylands & Riverland LGA (MRLGA). The Working Group agreed as follows:

1. The MRLGA Regional Road Hierarchy would be adopted as the basis for establishing state-wide regional road priorities. This includes all definitions contained within Table 1 – Road Classifications (Revised December 2020), as per Section3 of the MRLGA Regional Road Hierarchy report.

2. The latest version of the publicly available road segment database supplied by the Department for Infrastructure and Transport (DIT) would be used as the graphical basis for developing all regional route maps. In particular, the PersistentID attribute which uniquely identifies each road segment in the DIT database would become the basis for all data generated for SAROC and the Regional LGAs. This ensures that the SAROC database remains consistent with DIT roads data available through the SA Government's "Location SA Viewer".

3. The DIT "State Maintained Roads" dataset displayed via Location SA Viewer would be used to initially define the classification of all DIT managed roads throughout the state. DIT roads may then be upgraded in classification if they meet a higher criteria as defined in the MRLGA (now SAROC) Regional Road Hierarchy, but cannot be downgraded without discussion and agreement from DIT.

4. The QGIS software product would be used to generate all regional road priority maps, with QGIS Cloud used as the browser based platform upon which the geographical information and associated attributes would be distributed.

The Working Group also requested that additional conversations be held with the Eyre Peninsula LGA (EPLGA) and Spencer Gulf Cities Group (SGC) to ensure that regional road definitions within their current regional transport plans could be adequately mapped across to the newly agreed state-wide road classifications.

2.2 Stage 2A – Preparation of Draft Regional Road Priority Maps

During this stage of the project, all regions provided existing mapping information to HDS Australia. Simultaneously, the base mapping document was set up in MapInfo using DIT state-wide mapping information, including classification of all DIT roads using the "State Maintained Roads" dataset.

All regionally significant local roads data was then entered, populated across Classes 2, 3 and 4A as per the MRLGA Regional Road Hierarchy. Once complete and internally reviewed, draft maps (state-wide and by region) in PDF format were distributed via the client representative to all Working Group members, in order to gain initial feedback before converting the data into QGIS format. At this point in the project, no currently approved regionally significant roads were changed from details shown in the respective regional transport plan. However it was expected, and quickly observed, that creation of a geographical based hierarchy of regional roads soon

identifies anomalies in road priority continuity. Such issues will need to be addressed by individual regions following completion of this overarching SAROC project.

Stage 2A of the project was completed by 18 March 2022. Notes distributed with the draft maps made the following observations:

1. The base roads dataset uses the latest publicly available state-wide mapping information supplied by DIT. This dataset also includes all council boundaries (allowing us to produce individual Regional LGA maps), as well as River Murray and coastal information for context.

2. The DIT "State Maintained Roads" dataset has been used to automatically identify all DIT roads as Class 1, 2, 3 or 4 in accordance with the traditional Austroads classification methodology. A few variances to the state classification have occurred where a regional transport plan identifies a key freight route that may comprise state and local roads (defined in the MRLGA Regional Roads Hierarchy as Class 2). Examples are Browns Well Highway, Karoonda Highway, Mannum Road, Ridley Road (DIT Class 3 but MRLGA (now SAROC) Class 2) and Halfway House Road (DIT Class 4 but SAROC Class 2) – all in MRLGA, plus Callington – Strathalbyn – Goolwa Road and the Cape Jervis end of Main South Road (DIT Class 3 but SAROC Class 2).

3. The DIT "State Maintained Roads" dataset also has a few anomalies that appear inconsistent with Austroads classification guidelines, but may be a conscious decision by DIT. In particular, quite a few Adelaide Hills roads have been classified as Austroads Class 6 (urban highway) or Class 7 (urban road), despite being in rural environments. These have been changed to SAROC Class 2 and Class 3 respectively. Another anomaly is the Burra heavy vehicle bypass, which has been altered from DIT Class 3 to SAROC Class 1, while the section of Barrier Highway which goes through the centre of Burra has been altered from DIT Class 1 to SAROC Class 3. No doubt further anomalies will be identified as individual Regional LGAs examine their data.

4. All regionally significant local roads in the LCLGA, MRLGA, S&HLGA and Legatus Group Regional Transport Plans have been identified as SAROC Class 2, Class 3 or Class 4A in accordance with the agreed MRLGA Regional Roads Hierarchy guidelines. Specifically:

    a. Key freight routes have been identified as Class 2, regionally significant freight routes have been identified as Class 3, while locally important freight routes have been identified as Class 4A.

    b. Primary tourism routes have been identified as Class 3, while secondary tourism routes have been identified as Class 4A.

    c. Community access routes which are the only reliable road connecting smaller townships to main roads and/or important towns have been identified as Class 3, while all other community access routes have been identified as Class 4A.

5. EPLGA regionally significant local roads identified as Level 1 in the EPLGA Regional Transport Plan have been identified as SAROC Class 3, while Level 2 roads have been identified as SAROC Class 4A.

6. Regionally significant Spencer Gulf Cities local roads have been included for Port Pirie (since they are part of the Legatus Group Regional Transport Plan), but not for Port Augusta or Whyalla as yet. The SGC 2018 Regional Transport Infrastructure Plan is a higher level strategic plan with limited identification of regionally significant local roads. An update of the SGC Regional Transport Infrastructure Plan is planned to occur later this year, meaning that only limited SGC Region information can be included at this time in the overall SAROC Road Hierarchy, with a supplement to potentially be included in fourth quarter 2022.

2.3 Stage 2B – Preparation of Final Regional Road Priority Maps using QGIS

A second online meeting of the Working Group was held on 23 March 2022 to discuss feedback in relation to the draft maps and to review an initial QGIS Cloud version of the proposed final map output. Some observations from the meeting:

1. It was noted that the Flinders Highway and Tod Highway on Eyre Peninsula should both be Class 2 Key Freight Routes within EPLGA. They can be reclassified up to this level at some stage in the future, after discussion/endorsement by EPLGA works managers and CEOs.

2. Horrocks Pass Road is classified by DIT as Class 2 (Key Freight Route), but it was observed that this road cannot adequately handle PBS Level 3 vehicles. The implication of this, and possible need to downgrade the road to Class 3 or 4A, should be discussed with DIT.

3. Similar issues arise with Lincoln Highway (Port Augusta to Whyalla), Riddoch Highway (Keith to Mount Gambier) and Princes Highway (Mount Gambier to SA Border), which are all Class 1 roads accordingly to DIT, but are not a national highway intercity link, nor do they form part of the SA High Productivity Vehicle Network (PBS Level 3B/4A) project.

4. A working group between DIT and SAROC / Regional LGAs should be formed to address re-classification issues and possible road ownership changes, especially driven by state-wide heavy freight network planning.

5. All Regional Development Australia (RDA) regions should be engaged in developing opportunities to fully utilise outcomes from the regional road priority project, including joint pursuit of funding opportunities.

It was acknowledged by the Working Group that the above observations, and other regional route continuity issues across council and regional boundaries identified after release of the final maps and associated report, will need resolution by regional transport committees and/or at the level of SAROC as a follow-on to this project.

QGIS Cloud based regional road priority maps were released on 1 April 2022 for SAROC and for all six Regional LGAs. The release included instructions for operation of the QGIS Cloud maps, as detailed in Section 4 of this report.

As the last activity in Stage 2B, this final report has been produced to support the mapping task. It details the regional road hierarchy approach, describes operation of the QGIS Cloud based maps and identifies examples of continuity gaps within and across the regions.

2.4 Future Opportunities

In addition to regional road continuity issues, the South Australian Regional Road Priority Maps have the potential to add further attributes to regional road segments, such as strategic level condition (reflected in regional road action plans), plus consideration of road responsibility, surface type, environment and purpose (all as detailed in the MRLGA Regional Road Hierarchy Framework discussed in Section 3 of this report). This additional capability has been demonstrated using data already available from work undertaken for the MRLGA and for the Southern Mallee District Council. Further demonstrations can be arranged if required, to support any Regional LGAs that might choose to separately pursue these opportunities.

3.0 PROPOSED REGIONAL ROAD HIERARCHY FRAMEWORK

With permission from the MRLGA, the SAROC Working Group agreed to adopt the MRLGA Regional Road Hierarchy Framework (down to Class 4A) as the basis for developing a SAROC sponsored state-wide regional road classification system. In order to describe the framework, the following information has therefore been extracted from the MRLGA Regional Road Hierarchy Plan Final Report dated March 2021. For completeness, all classes and sub-classes have been discussed, even though the SAROC Working Group only adopted the methodology down to Class 4A. Similarly, discussion of "Road Differentiators" is for the general information of individual Regional LGAs, as it falls outside the agreed scope of the SAROC Regional Road Priority Project.

3.1 Overview

The MRLGA Regional Road Hierarchy Framework organises roads firstly in terms of "Road Classification", putting the road into a nationally standardised context. Where applicable (at Classes 4 and 5) a "Road Sub-Classification" is also applied, introduced to maintain the level of detail at which individual councils commonly classify their roads.

In addition, roads have been assigned "Road Differentiators". These assign a differentiation code for each of the four nominated groupings (Responsibility, Surface, Environment and Purpose). They will allow councils to better identify the most appropriate fit-for-purpose standard associated with construction and/or maintenance of that road.

The Regional Road Hierarchy Framework allows roads to be assessed in a national context for State and/or Federal Government funding, while using the differentiators to position the road in an appropriate regional or council context for local government asset valuation and asset management.

3.2 Road Classification

The regional road classification structure, which is broadly based upon the role and/or importance of each road link, aligns with the traditional Austroads classification system of Classes 1 to 5.

The fundamental (underlined) definition shown in Table 1 for each road class generally aligns with existing national and state road authority definitions and is based upon the relative importance of each road link. Additional definitions are provided for Class 2 and Class 3 which derive from key regional research and development project reports, namely:

- M&MLGA 2030 Regional Transport Plan Final Report, HDS Australia, March 2014 and
- Regional Roads Freight Movement Study Final Report, Tonkin Consulting, July 2017.

For Class 3, Class 4 and Class 5, the definitions include some further quantitative and/or qualitative descriptors, which can be used as a guide for inclusion of roads into these three classes. Such descriptors include the mix of through/local traffic, permissible vehicle access type, daily traffic volumes, and regional or local significance for freight, tourism or community access. However, these descriptors (particularly where traffic volumes are mentioned) should not be treated as an absolute figure – discretion is appropriate when determining the role and importance of road links at Classes 3, 4 and 5.

At Class 4 and Class 5, allowance is also made for road sub-classifications, as were suggested and agreed at the MRLGA sub-regional workshops conducted in March 2019. For Class 4, there are various quantitative measures available to determine the difference between Class 4A and Class 4B. However, for Class 5, differentiation factors have been described in qualitative, rather than quantitative, terms. It will require significant local knowledge from council asset managers in order to complete this component of the regional road hierarchy framework.

Table 1 – Road Classifications (Revised December 2020)

Road Classification Aligned with Austroads	**Road Sub-Classification** Allows for sub-categories within Austroads classifications that best fit the local environment
1 National Highways - Managed by DIT[1].	N/A
2 State Highways / Key Freight Links - Managed by DIT[1]; or - Key freight route managed by councils[2].	N/A
3 State Arterials / Regional Links - Managed by DIT[1]; or - Council managed, and ○ Regionally significant freight route[3], or ○ Regionally significant tourism route[3] (primary), or ○ Regionally significant community access route (connecting towns)[3].	N/A
4 Local Distributor/Collector Roads - Managed by DIT[1]; or - Council managed; and……	**A** ○ Locally important freight route[3], or ○ Gazetted B-Double GML route[4], or ○ Regionally significant tourism route[3] (secondary), or ○ Regionally significant community access route (to key services) / to concentration points / emergency diversion routes[3]).
	B ○ Gazetted B-Double Commodity route[4], or ○ Long term permitted B-Double route, or ○ Local tourism route[3], or ○ Mix of through and local traffic; or ○ 100+ vehicles per day.
5 Local Access Roads - Managed by DIT[1]; or - Council managed; and……	**A** - Local road, articulated vehicle access, but B-Double access unlikely, or - 25 – 100 vehicles per day.
	B - Laneway, farm gate, cul-de-sac, generally paved, articulated vehicle access unlikely.
	C - Formed but unpaved.
	D - Unmade track, road reserve.

[1] See Location SA Map Viewer at http://location.sa.gov.au/viewer/, with Infrastructure & Utilities / Transport / State Maintained Roads selected as the Dataset.

[2] See *Regional Roads Freight Movement Study Final Report, Tonkin Consulting, July 2017*, for details on which roads fall under this classification within the MRLGA region and the methodology behind the determination of these routes.

[3] See *M&MLGA 2030 Regional Transport Plan latest Regional Routes (as at December 2020)* for details on which roads fall under this classification within the MRLGA region and the methodology behind the determination of these routes.

[4] See RAVnet at http://maps.sa.gov.au/ravnet/index.html with GML Routes / 26m B-Double (GML) selected as the Dataset.

3.3 Road Differentiation

The road differentiation coding provides additional information for each road which is of particular importance for asset valuation and asset management at a local government level. Roads are identified using four separate differentiators (namely responsibility, surface, environment and purpose).

Table 2 – Road Differentiators

Responsibility Who is the designated road manager?	**Surface** Indicates the maintenance requirements of the road	**Environment** Is the road/road segment within or outside the boundary of a township	**Purpose** What is the most significant user group(s) on the road
D - DIT managed (state or federal funding)	**S** - Sealed	**R** - Rural	**F** - Freight
L - Local Authority managed	**U** - Unsealed	**T** - Township	**T** - Tourism
P - Privately owned / leased			**C** - Community Access

3.4 Application

By adopting the regional road hierarchy framework as described in Sections 3.2 and 3.3, all roads within the MRLGA (and potentially right across regional South Australia if fully adopted by other Regional LGAs) will be assigned a classification (and sub-classification where required), along with one code for each of the four differentiators.

For example, a 4A-L-S-R-F road would be a Class 4A road owned and managed by a council, with a sealed road surface situated in a rural environment which has a purpose of freight transport. If a road is designated as having more than one purpose (refer *M&MLGA 2030 Regional Transport Plan Final Report, HDS Australia, March 2014*), then multiple purposes may be used in the code, e.g. 4A-L-S-R-FT.

Once implemented, individual councils will be able to filter their geographical information system and road asset databases based on both road classification and road differentiation. Integrated road networks of a particular classification level can then be readily identified, with gaps in the network addressed. In addition, by cross checking the regional road hierarchy code (with its associated fit-for-purpose standard) against council road asset condition records, roads that do not meet the required standard can be identified and addressed. This will also provide a more consistent approach to road construction and road maintenance across councils for all roads down to at least Class 4A, possibly Class 4B or even to Class 5.

4.0 REGIONAL ROAD PRIORITY MAPS

4.1 Draft Regional Maps

Draft regional priority maps were produced as PDFs on 18 March 2022 and circulated to the Working Group for review. For information, these are included as Appendix A to this report.

4.2 QGIS Cloud Online Maps

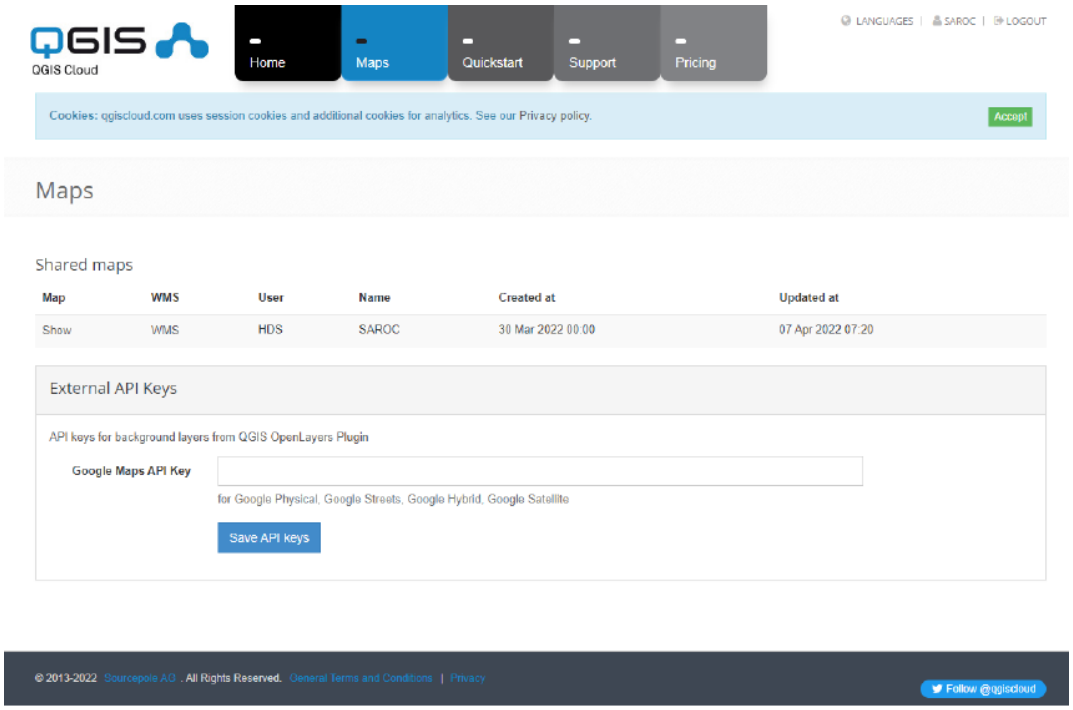
Final versions of the regional priority maps were produced as QGIS Cloud based online maps, accessible through the QGIS Cloud sign in page at https://qgiscloud.com/account/sign_in using an authorised username and password.

User instructions for operation of the QGIS Cloud based maps have been provided to the SAROC Executive Officer and each of the Regional LGA CEOs/EOs. The same information is repeated below:

Once a user has clicked on the sign-in link and typed in the account name and password provided, they will be able to click on a "Maps" tab which will appear at the top of the QGIS Cloud page. The following information will then be available online:

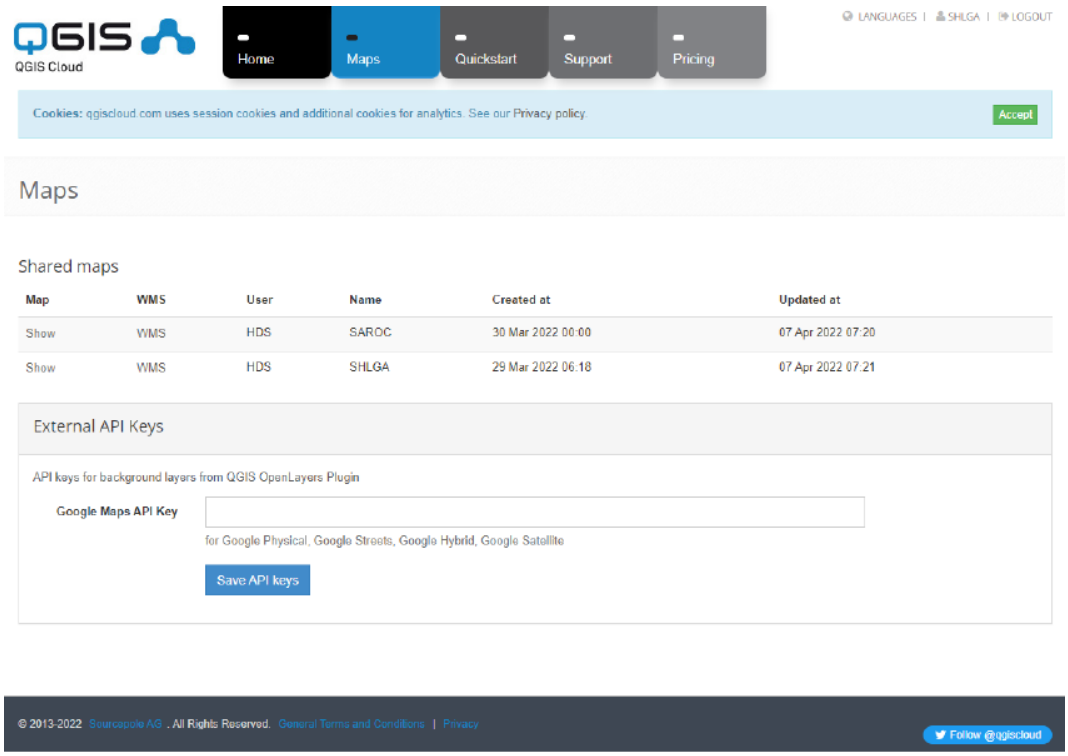
1. SAROC Account.

   The SAROC Executive Officer is the nominated contact for this account. The SAROC map is the only database available through this account. It contains just the "Road Classifications" layer, with Classes 1, 2, 3 and 4A shown. It completes the essential mapping task (regional road classifications) as requested in the original project brief.



2. Regional LGA Accounts (LEGATUS, MRLGA, LCLGA, S&HLGA, EPLGA & SGC).

   The relevant CEO/EO is the nominated contact for each account. These accounts have access to the SAROC map for a wholistic view of the state regional road network. In addition, these accounts also provide access to the respective Regional LGA database, which all have the same name as that Regional LGA's account.



In addition to the "Road Classifications" layer, each Regional LGA database also contains a "Road Differentiators" layer, which has been initially populated with a "Responsibility" sub-layer. This defines each road in the regional network as either DIT (state managed), Local (council managed) or Other (e.g. national parks roads, private property roads). The layer has been set up in response to queries received during demonstrations of the Regional LGA map capability. The layer also demonstrates the capability of this map-based solution to create other sub-layers covering attributes stored in the database, such as "sealed" vs "unsealed", "rural" vs "township" or "road purpose", thereby potentially fully replacing published maps in each Region's Transport Plan with a digital version. Further opportunity exists for the strategic level "fit-for-purpose" assessment of regional roads, currently reflected in regional road action plan spreadsheets, to be converted to a map-based format.

It is expected that all of these options will be individually considered by and funded through Regional LGAs, rather than as a further SAROC initiative, since the needs of each region and the format of this additional data varies between regions. However, the underlying road graphical elements and associated regional road hierarchy is expected to remain consistent throughout SAROC, hence why that database is provided to all regions.

3. Operation of QGIS Cloud.

Operation of QGIS Cloud is quite intuitive, and similar to the "Location SA Viewer" online database maintained by the State Government as a publicly accessible resource. Once a user has selected the database they are interested in, three core enquiry options are available, in addition to the usual zoom and pan tools inherent in all GIS and other mapping products. The enquiry options are:

a. Manage Layers. This is achieved by initially clicking on the top control button (of 6 on the right-hand side of the map), which will open up a "Layers & Legend" selection panel. Basic users should ignore the top layer group called "General Data" and the bottom layer group called "Map Background". As already mentioned, the SAROC database has only one other layer group called "Road Classifications" which if a user opens up will allow them to select/de-select some Classes, thereby assessing the

continuity of different road classes across the regional road network. Regional LGA databases have an alternative option of accessing the "Road Differentiators / Responsibility" sub-layer group. While not essential, it is recommended that users only turn on one layer group at a time (i.e. either Road Classifications or Road Differentiators) to avoid producing overlapping data when making subsequent enquiries. The default (starting) position is for the Road Classifications layer group to be "on" and Road Differentiators layer group to be "off".

b. Display Segment Attributes. At whatever scale a user is looking at on the screen, they can select a road segment using the mouse/cursor and the system will display all attributes associated with that segment. Note that, due to the search radius of the user's selection, multiple small segments may show up in the report and they will need a second step to examine the specific road segment in question. Alternatively, the user can zoom in further and then select a segment, which will be less likely to find duplicate entries.

c. Search for a Specific Road. QGIS Cloud uses a general purpose search tool linked to the world wide OpenStreetMap publicly available road database that is a backdrop to the Regional Road Priority Maps. Typing a road name (and also location if it is a common name) into the search box at the top of the QGIS Cloud map screen will bring up one or more potential roads. If the user selects the road name option they are looking for, it will reposition and/or re-scale the map and indicate the road location. The user must appreciate that OpenStreetMap is a world-wide resource, so they will at times get matches to other countries and so must be specific in terms of a town or locality near the road they are searching for.

5.0 ROAD NETWORK CONTINUITY OBSERVATIONS

5.1 DIT Managed Network

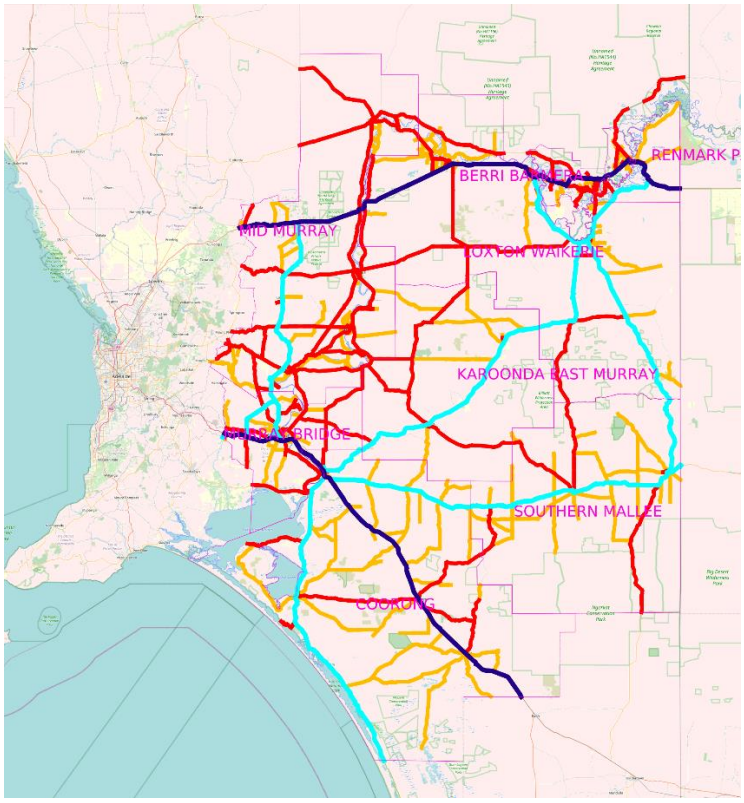
Examples of inconsistencies in the classification of and associated priorities for roads within the DIT managed network have already been mentioned in Section 2.3 of this report. They include:

- Hills (Greater Adelaide) Freight Bypass (incl Mannum Road, Ridley Road, Halfway House Road) from Class 3/4 to Class 1.
- Burra Main Street from Class 1 to Class 3 – associated with local government managed Burra Heavy Vehicle Bypass from Class 3 to Class 1.
- Flinders Highway from Class 3 to Class 2.
- Tod Highway from Class 3 to Class 2.
- Horrocks Pass Road from Class 2 to Class 3.
- Lincoln Highway (Port Augusta to Whyalla) from Class 1 to Class 2.
- Riddoch Highway (Keith to Mount Gambier) from Class 1 to Class 2.
- Princes Highway (Mount Gambier to SA Border) from Class 1 to Class 2.
- Strzelecki Track and associated Strzelecki Stock Route (incl parts of RM Williams Way, Goyder Highway and Murraylands Road) from Class 3 to Class 2.

All of these examples, and likely more, need to be discussed with DIT via a working group which recognises that the existing classifications listed in the DIT "State Maintained Roads" dataset are inconsistent with recent initiatives related to moving heavy freight around the state and nation.

5.2 Murraylands and Riverland LGA

The MRLGA is most advanced of the five Regional LGAs plus SGC in determining the need for key freight routes (Class 2) within their regional road network, along with the conduct of classification continuity checks across the region. This is reflected in the following diagram:

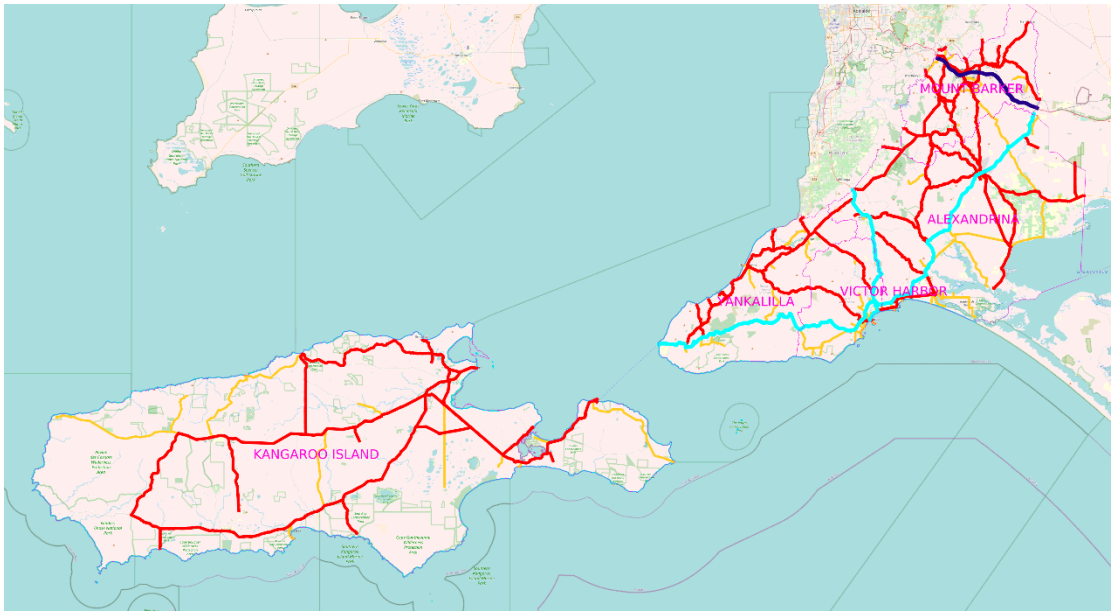


Despite the advanced state of their work, the MRLGA network still shows gaps, such as:

- The need for part of Goyder Highway and Murraylands Road to be upgraded to Class 2 to recognise the role of these roads as part of the future Strzelecki Stock Route.
- The need for either Murray Bridge Over-Dimension Route (comprising Hindmarsh Road, Maurice Road and Cypress Terrace) or the Monarto Freight Link (comprising Schenscher Road, Pallamana Road and Wagenknecht Road) to be upgraded to Class 1 when the Greater Adelaide Freight Bypass route is finalised at some stage during 2022.
- The scarcity of Class 4A or higher roads in the Mallee sub-region.
- Road classification discontinuities across several council boundaries, particularly Coorong / Karoonda East Murray and Southern Mallee / Karoonda East Murray.
- Class 3 and Class 4A roads which appear to terminate for no apparent reason. Closer inspection reveals these have key industry centres, tourism destinations or community access concentration points associated with the termination point. MRLGA (and likewise others regions) may wish to expand the QGIS Cloud based dataset to include the point based information currently in their regional transport plan, so that termination reasons for a particular road classification are evident in the QGIS Cloud dataset.

5.3 Southern & Hills LGA

The S&HLGA is well advanced in determining the need for a key freight route (Class 2) across their regional road network, namely the South Coast Freight Corridor. Classification continuity checks are still required in some instances, but are generally okay, as reflected in the following diagram:



5.4 Limestone Coast LGA

The LCLGA has not identified any Class 2 routes, apart from the Class 1 and Class 2 DIT managed roads. The north-south orientation of the primary road network in the LCLGA (particularly Riddoch Highway and Princes Highway) means that it is difficult to identify whether any of the east-west regional roads (whether DIT managed or local roads) need to be upgraded to Class 2 Key Freight Routes. This should be the subject of discussion at a regional level, and may require further assessment of non-timber commodity movements throughout the region to better understand the economic value of key transport routes. Road classifications are reflected in the following diagram:

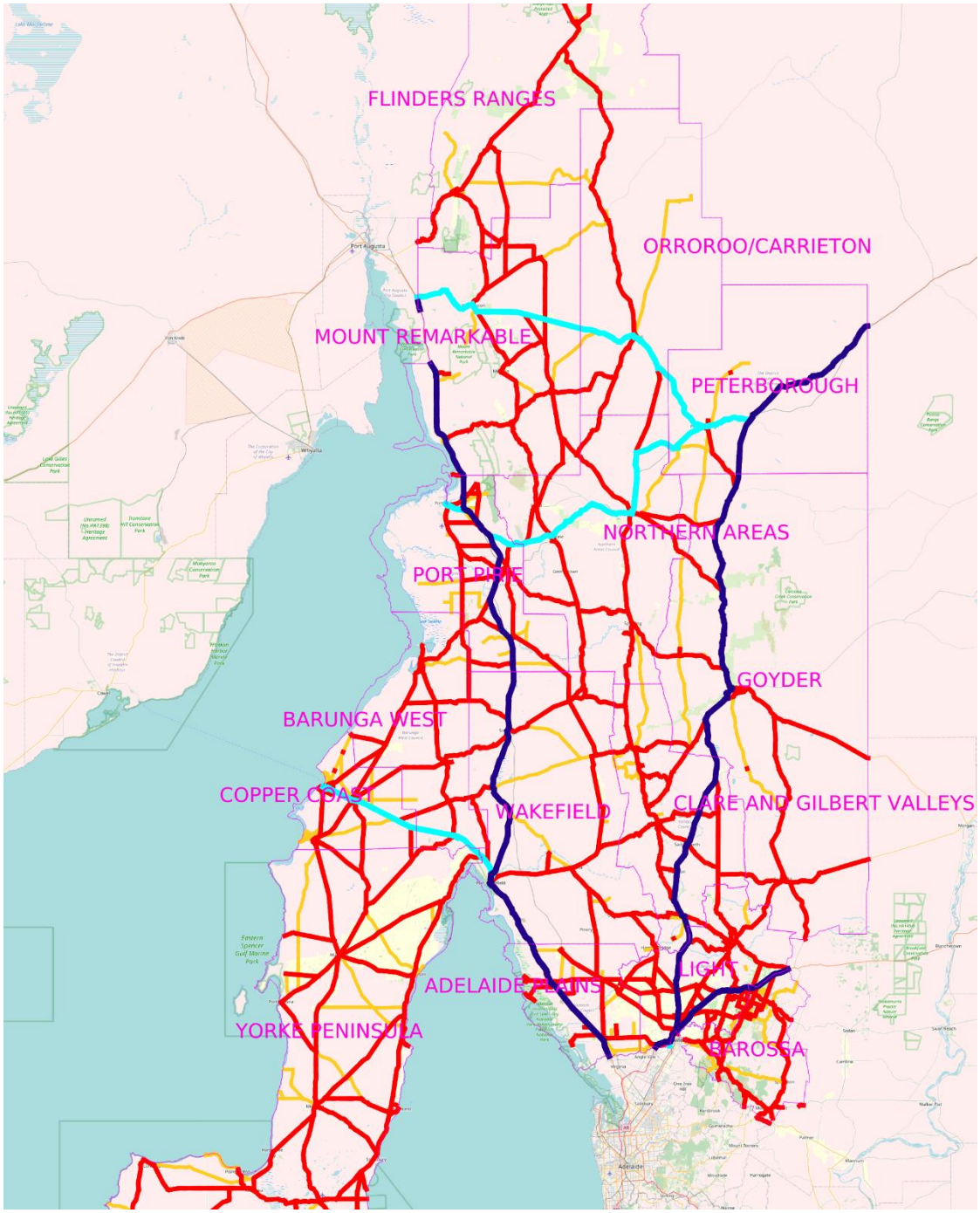
There do not appear to be any issues with discontinuity in road classification across the regional boundary with the MRLGA. However, there are a number of examples of Class 3 and Class 4A roads stopping at council boundaries within the LCLGA. These will need to be resolved and include:

- Woolumbool Road and Minnie Crowe Road, both where they cross the Kingston / Naracoorte Lucindale council boundary.
- Conmurra Road, Cluain Lane and Charcutt Road, all where they cross the Naracoorte Lucindale / Wattle Range council boundary.
- Paltridge Road, where it crosses the Wattle Range / Grant council boundary.

5.5 The Legatus Group

The Legatus Group has not identified any Class 2 routes, apart from the Class 1 and Class 2 DIT managed roads. There is a north-south orientation of the primary road network in the Legatus Group (particularly Port Wakefield Highway, Augusta Highway, Horrocks Highway, RM Williams Way and Barrier Highway). Of those routes, two are already designated by DIT as Class 1, namely the Port Wakefield Highway / Augusta Highway route and the Horrocks Highway / Barrier Highway route. However, the remainder of Horrocks Highway and/or parts of RM Williams Way should be investigated for possible upgrade to Class 2, dependent upon the volume of freight using those highways. As previously mentioned in Section 5.1, the future Strzelecki Stock Route (including parts of RM Williams Way and the DIT managed Goyder Highway) should also be

upgraded from Class 3 to Class 2. Additionally, freight volumes on the remaining section of the Goyder Highway through to its junction with the Augusta Highway near Crystal Brook should be investigated, to determine whether this section also warrants upgrading to Class 2. Road classifications are reflected in the following diagram:



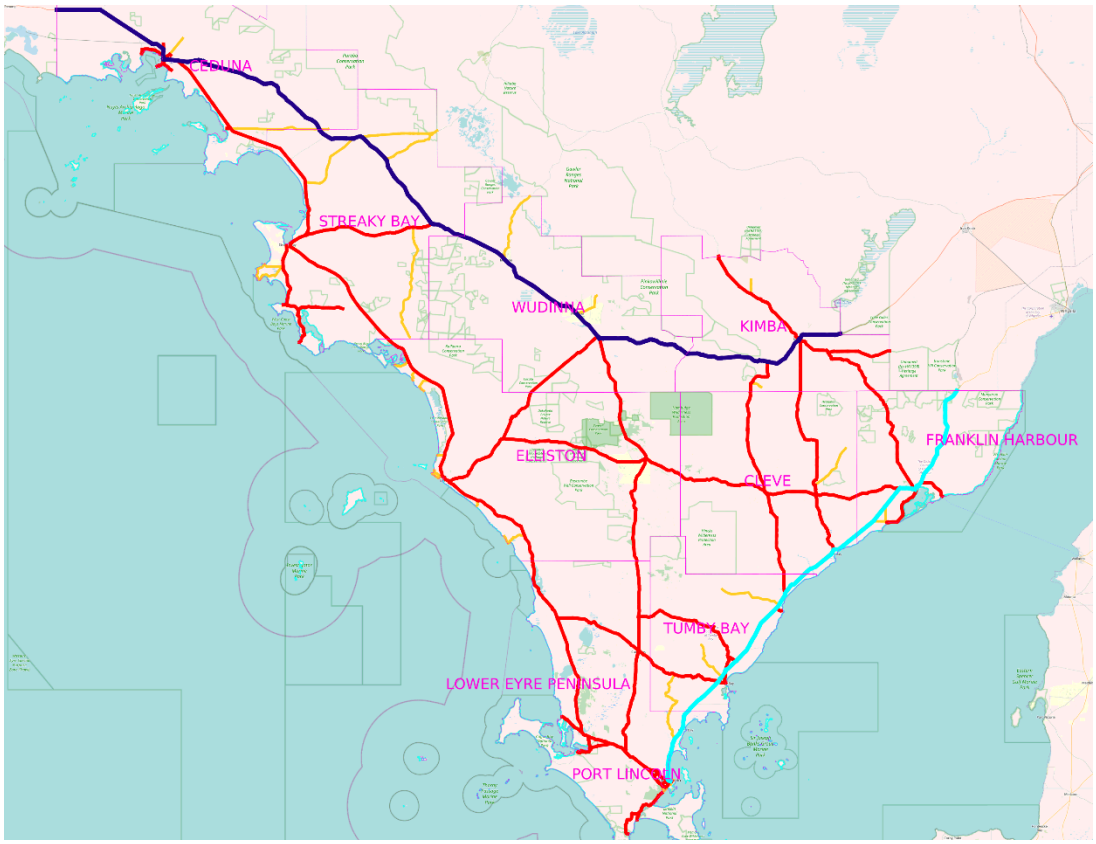
There is one issue with discontinuity in road classification across the regional boundary between the Legatus Group and the MRLGA at Truro Road, south of Truro. This will need to be resolved. There are currently no regional boundary continuity issues between the Legatus Group and Spencer Gulf Cities Group (SGC), though two councils within SGC (Port Augusta and Whyalla) are not particularly advanced in identifying regionally significant local roads in their respective council areas. This may result in continuity issues once SGC has further assessed their regional road network over the next few months.

On the other hand, there are no obvious examples of Class 3 or Class 4A roads stopping at council boundaries within the Legatus Group. A recent intermediate update to its Regional Transport Plan by the Legatus Group included extensive checking of regional roads crossing council boundaries. This is likely the reason that few, if any, anomalies remain.

5.6 Eyre Peninsula LGA

The EPLGA has not identified any Class 2 routes, apart from the Class 1 and Class 2 DIT managed roads. The east-west running Eyre Highway (Class 1) dominates the northern edge of the region, while the Lincoln Highway, a DIT designated Class 2 route (Class 1 to Whyalla) runs down the eastern side of Eyre Peninsula to Port Lincoln. As mentioned in Section 5.1, there are clear deficiencies in the key freight network, with both Flinders Highway and Tod Highway more appropriately Class 2 (they are already gazetted without restriction for PBS Level 3A vehicles including 36.5m road trains). Noting the large haulage distances involved, additional east-west routes like Birdseye Highway and Bratten Way may possibly be justified as Class 2. They are both already gazetted for 36.5m road trains (GML network), with all except the western section of Bratten Way, gazetted for PBS Level 3A vehicles.

Road classifications are reflected in the following diagram:



There is one issue with discontinuity in road classification across the regional boundary between the EPLGA and DIT's Outback Roads network. This is Buckleboo Road, which is designated Class 3 by the EPLGA while it is in Kimba's council area, but becomes Class 5 when part of DIT's network. This will need to be resolved.

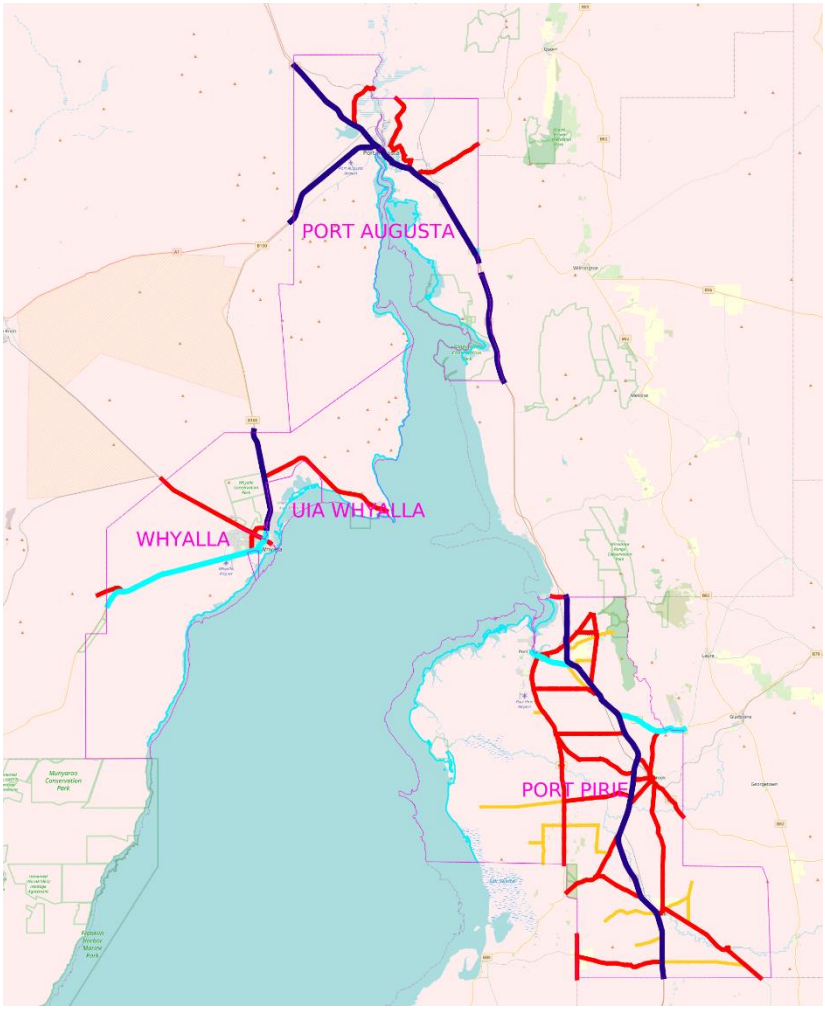
There are currently no examples of Class 3 and Class 4A roads stopping at council boundaries within the EPLGA. However, the Class 3/4A network shown above is limited by the EPLGA's current definition of regionally significant roads within their Regional Transport Plan. "Level 1" regional roads have been converted to Class 3, while Level 2 regional roads have been converted to Class 4A. Noting that numerous other local government controlled routes within the EPLGA have been gazetted for PBS Level 3A vehicles, using the definitions for Class 4A in Table 1 in

Section 3.2, the Class 4A network within the EPLGA should be significantly expanded. This may then generate potential council anomalies, requiring resolution at that time.

5.7 Spencer Gulf Cities

The Spencer Gulf Cities Group (SGC) has not identified any Class 2 routes, apart from the Class 1 and Class 2 DIT managed roads. Apart from regional roads identified by the City of Port Pirie as part of their participation in the Legatus Group, the cities of Port Augusta and Whyalla do not presently have a well-defined regional road network. The existing 2018 SGC Regional Transport Infrastructure Plan is highly strategic in nature, with a strong emphasis on major transport initiatives that support economic development in the region (most of which would be DIT managed and funded, and several of which are nearing completion). It is intended that a 2022 update of the SGC Regional Transport Infrastructure Plan will extend consideration of regional transport initiatives to a more "granular" level, allowing for better identification of local government managed Class 3 and Class 4A roads. The updated SGC Regional Transport Infrastructure Plan is due for completion in the third quarter of 2022, necessitating an update to the SGC section of this report and associated QGIS Cloud dataset.

Road classifications are reflected in the following diagram:



6.0 CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

1. Adoption by SAROC of the Regional Road Hierarchy originally developed for the MRLGA will provide a consistent state-wide approach to classifying national, state and regionally significant local roads within regional South Australia, allowing for coordinated State and Federal Government funding applications.

2. The SAROC Regional Road Hierarchy identifies Class 1 (National Highways), Class 2 (State Highways and Key Freight Routes), Class 3 (State Arterial Roads and major Regionally Significant Local Roads) and Class 4A (State Sub-Arterial Roads and additional Regionally Significant Local Roads).

3. Definitions of further Regional Road Hierarchy Classes adopted by the MRLGA, namely Class 4B and Classes 5A to 5D, are available under the Regional Road Hierarchy Framework Table 1, published in Section 3.2 of this report. These classes can be optionally applied at Regional LGA or individual council levels to further assist with prioritisation of local road investment.

4. Use of QGIS Cloud as a simple internet browser based geographical information system platform for display of the SAROC Regional Road Hierarchy digital maps will provide flexible access to all associated road data for use by LGASA, Regional LGAs and individual councils, without the need to introduce complex and expensive GIS tools for every user. That said, those councils with an existing corporate GIS and the resources to manage their own data, will be able to load a copy of the SAROC Regional Road Hierarchy digital maps into their own systems.

5. In general, the continuity of road classifications across regional boundaries and, within regions, across council boundaries is good. Some anomalies have been identified in this report, while others are likely to be found upon formal review of the regional priority maps by Regional LGAs and individual councils.

6. There are inconsistencies in DIT classifications for some roads within the state managed road network, as available through DIT's State Maintained Roads dataset. This may be due to the age of the dataset or be related to a specific classification strategy adopted by DIT.

7. Only the MRLGA (and to a lesser degree the S&HLGA) has fully examined the need for Class 2 Key Freight Routes within their region. There is a high potential for additional Class 2 Key Freight Routes to be identified, particularly in the EPLGA and Legatus Group regions.

8. The extent of Class 3 and more particularly Class 4A regionally significant roads within the EPLGA and SGC is limited by the definitions used and level of granularity within their respective regional transport plans. Opportunity exists for these two regional groups to re-visit their regional road networks under the new SAROC Regional Road Hierarchy, with potential expansion of their respective Class 3 and Class 4A regional road networks.

6.2 Recommendations

1. The QGIS Cloud based Regional Road Hierarchy digital maps circulated to the SAROC EO and Regional LGA CEOs/EOs on 1 April 2022 (with subsequent online refinements) be adopted as the initial Regional Road Hierarchy dataset, showing the network of regional roads from Class 1 to Class 4A.

2. This final version of the SA Regional Road Priority Project report be adopted as supporting documentation for the Regional Road Hierarchy digital maps.

3. SAROC budget for and implement an ongoing annual support arrangement to ensure that the base graphical roads database, SAROC Regional Road Hierarchy classification data and structure for holding additional road attributes is maintained and periodically updated, along with provision of continued access to the SAROC state-wide dataset and six regional datasets for all users through QGIS Cloud.

4. Individual Regional LGAs budget for and implement separate annual support arrangements to ensure that additional regional data stored within the main SAROC dataset (potentially including road differentiators and road action plans) is maintained and periodically updated, along with provision of continued access to and help-desk support for authorised council users of their regional dataset through QGIS Cloud.

5. A Working Group be established with DIT reps to confirm and/or amend inconsistencies in the current classification of DIT roads using DIT's State Maintained Roads dataset.

6. The LCLGA, Legatus Group, EPLGA and SGC identify any Class 2 Key Freight Routes within their respective regions, using the SAROC Regional Road Hierarchy Framework.

7. The EPLGA and SGC re-examine the regional road networks defined within their respective regional transport plans, with a view to expanding the Class 3 and Class 4A road network consistent with the SAROC Regional Road Hierarchy Framework.

8. One full revision of the SAROC Regional Road Hierarchy digital maps be budgeted for (either by SAROC or by individual Regional LGAs) to occur in December 2022, allowing for anticipated updates mainly by the EPLGA and SGC, but with consideration of DIT road classification changes and other Class 2 road classification upgrades by Regional LGAs.