



*Ratepayers & Residents Association Inc.*



**SWAN VALLEY**  
Perth, Western Australia

## **City of Swan Transportation Strategy**

### **Questions and Comments by**

### **Swan Valley Ratepayers and Residents Association <sup>1</sup>**

The Swan Valley Ratepayers and Residents Association has studied the City of Swan's Transportation Strategy which has led to a series of questions for the City.

The City of Swan Transport Strategy document was produced by consultancy Cardno in 2014 and adopted by council in the same year. It should be noted that the quality of many images/figures in the report are so fuzzy that it renders them basically useless.

The transport strategy will in a large part based on information obtained from Main Roads WA. In section 2 in some of the questions we highlight fundamental problems with Main Roads' information. From the information we have seen their data should be closely scrutinised. In a few places we refer to an earlier transport consulting report (Connell, 1996).

Section 1 is a summary of questions for the City of Swan, followed by our conclusions about the strategy. Section 2 deliberates on the context of the questions raised in section 1.

#### **Section 1.**

Question #A. Why is the **Swan Valley Planning Act** nowhere mentioned in the report?

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<sup>1</sup> The Swan Valley Ratepayers and Residents Association focused on private vehicles and strategic connectors with some comments on cycling.

Question #B. Why does the City of Swan does not have the skills to put a strategy together, and how critical and independent can a consultant be?

Comment #1. The strategy does not show trigger based scenarios and pathways.

Comment #2. How much cooperation is there with the community to diverse viewpoints?

Question #C. Why are there no references to different scenarios provided?

Question #D. When had the City planned to update this now outdated traffic modelling because it has not considered new roads and a planned railway?

Question #E. The strategy does not refer to tourism traffic impacts. Why is this omitted?

Question #F. Why is some of the Main Roads WA road hierarchy inconsistent or does not make sense?

Question #G. How is the City of Swan intending to get some the road hierarchy in and around the Swan Valley changed?

Question #H. Under section 10 (10.4.1,10.44.3 & 19.4) of the report issues have been raised that have not been followed up. Like warnings such as "... *detrimental impact on West Swan Road* " <sup>2</sup>. Why have these warnings been ignored?

Question #I. Both sections 19.10 and 19.11 have the potential of diverting commuter traffic towards and from Bullsbrook away from West Swan Road. What is the current planning status?

Question #K. The strategy appears to have disregarded the environment and wetlands in particular. Why is the environment not mentioned in this strategy?

Question #9.1. How are the ROMs decide on, and how is the modelling adjusted for the variations?

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<sup>2</sup> *Text in italics is copied from the report.*

Question #9.3.3. Where are the traffic volumes along Park St both in easterly and westerly direction that underlie the current design? Can the City of Swan suggest how to change the intersection?

Question #10.1. Cardno does not specify what the assumptions it has made. How can Council make decision if it is not aware of these assumptions?

Comment #10.1. By even suggesting 4-lanes for West Swan Road shows the strategy has totally ignored the Swan Valley Planning Act.

Question #15. When will cyclists be provided with a safe cycle paths in the Swan Valley?

## **Conclusion**

From the strategy it can be concluded that the old-fashioned approach has been used of building more roads or upgrading them, without considering the Swan Valley Planning Act, social and/or environmental concerns. For example, there is no strategy to avoid commuter traffic through the Swan Valley. The tone of the strategy follows the following logic “To solve traffic congestion problems by building more roads is like fighting obesity by buying larger pants”<sup>3</sup>

It appears that the consultant at verbatim accepted Main Roads data without questioning it, maybe it was part of its brief not to question. Did the City and Council accept the strategy report verbatim as well? However, this process does not provide the best outcome possible since no different scenarios are provided<sup>4</sup>. As will become apparent in section 2, information obtained from Main Roads should be carefully scrutinised. The Swan Valley Ratepayers and Residents Association have focused on the Swan Valley we suggest the City of Swan to check Main Roads information from elsewhere in the city.

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<sup>3</sup> Max Hipkins, former mayor Nedlands, quoting a speaker at the World City 2014 conference in Singapore.

<sup>4</sup> If something the COVID-19 pandemic has taught us is when carrying out epidemic modelling that different scenarios play a crucial role.

The traffic to and from Bullsbrook has not been dealt with considering the Swan Valley Planning Act. Both MRWA and WAPC have had 25 years to come up with plans suitable for the Swan Valley but have not. Therefore, it is now time to put all current plans on hold and sort this mess out with the Swan Valley as defined in the Swan Valley Planning Act as a consideration and constraint.

The Swan Valley Ratepayers and Residents Association concludes that the City of Swan's Transportation Strategy needs urgently be updated to incorporate new roads, railways, the Swan Valley Planning Act, social and environmental impacts. This modelling to be done after some of the road hierarchy has been changed. It also requests that the transportation strategy is produced inhouse <sup>5</sup>.

The Swan Valley Ratepayers and Residents Association looks forward to getting written answers on all these questions and we welcome any discussion about any of the issues raised.

## **Section 2**

**Re Question #A.** The **Swan Valley Planning Act** was enacted in 2020, its predecessor was enacted in 1995, both to **preserve** the Swan Valley. The fact that the Swan Valley Planning Act has not been part of this consultancy report indicates a lack of due diligence by the consultant, resulting in treating the Swan Valley as any other suburb or greenfields area. When the City and the Council read the report did no one pickup that the Swan Valley Planning Act was not addressed by the consultant? At the Swan Valley Ratepayers and Residents Association we feel that showing to care about the Swan Valley both at Local Government Authority and State level is just lip service, a sort of "valley washing".

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<sup>5</sup> How private management consultants took over the public service. The Saturday Paper, October 9 - 15 2021.  
[www.thesaturdaypaper.com.au](http://www.thesaturdaypaper.com.au) .

**Re Question #B.** The City of Swan is assumed to know its own backyard best. Sure, there may need for some specific information gathering by and discussions with a consultant or the use of a facilitator, but creation of a strategy should be done in house. The report shows no strategic input by the City of Swan. The Swan Valley Ratepayers and Residents Association is of the opinion defining a strategy be done in house instead of being outsourced (Sat Paper, 2021). That newspaper article indicates that outsourcing is not necessarily cost effective and is likely having a negative effect on the organisation. Why does the City of Swan not like owning their Transportation Strategy?

#### **Comment #1 Trigger based Scenarios and Pathways**

The policy document should contain a mechanism to trigger changes to higher targets and/or to stricter regulations in implementation when there are negative changes encountered by observed facts. In the unlikely event that climate changes are-positive the trajectory should not be modified but used as an opportunity to restore the environment. Policies are often adjusted ad hoc when there are changes caused by the unforeseen uncertainties, to avoid this a different planning paradigm has emerged called “dynamic adaptive policy pathways”. The chair of the Delta Programme <sup>6</sup> in The Netherlands characterises the issue as follows “... *One of the biggest challenges is dealing with uncertainties in the future climate, but also in population, economy and society. This requires a new way of planning, which we call adaptive delta planning. It seeks to maximise flexibility; keeping options open and avoiding ‘lock-in’ ...*” (Haasnoot, 2013) <sup>7</sup>. This ‘lock-in’ may easily resulting by going in the wrong direction like *lemmings over a cliff*.

An example of a trigger-based plan, illustration-1 is from a paper covering the Fremantle to Cockburn coastal sea level rise mitigation strategy pathways (Grace & Thompson, 2020). The second illustration is also about strategies and pathways to mitigate sea level rise in The

<sup>6</sup> The Dutch government established a Second Delta Commission for identifying actions to prevent future disasters ... , since expected future climate change and sea-level rises cannot be ignored. First Delta Commission was established after the 1953 flooding disaster that killed 1836 people.

<sup>7</sup> Referenced papers can be supplied on request.

Netherlands (Haasnoot, 2013 & 2018). Both are graphical examples of what could be incorporated in the Transportation Strategy. It should be noted that trigger scenarios are common practice in the defence force when planning campaigns. Ideally the planning and implementation action should be such that tipping points are not reached but that cannot be guaranteed.

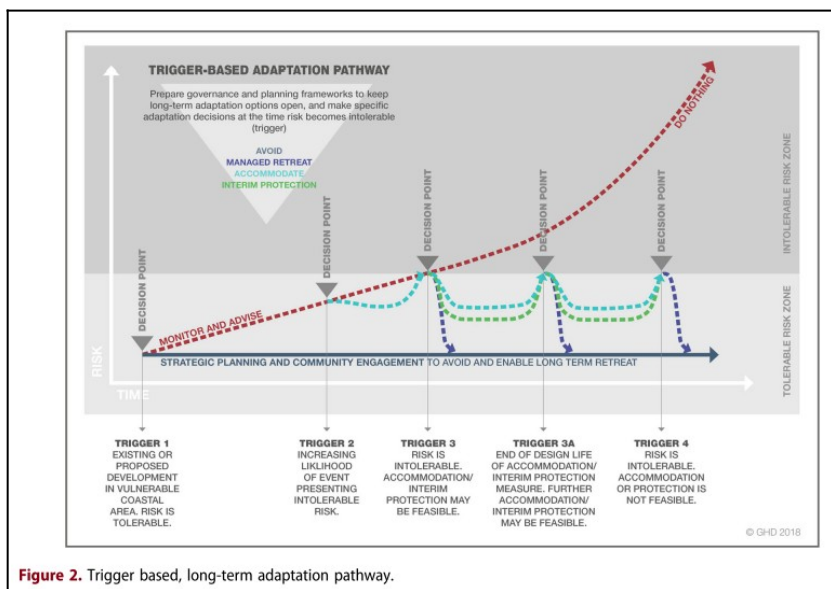


Figure 2. Trigger based, long-term adaptation pathway.

Illustration-1. A trigger based strategic planning scheme for south of Perth coastal adaption to sealevel rises. Copied from Grace & Thompson (2020).

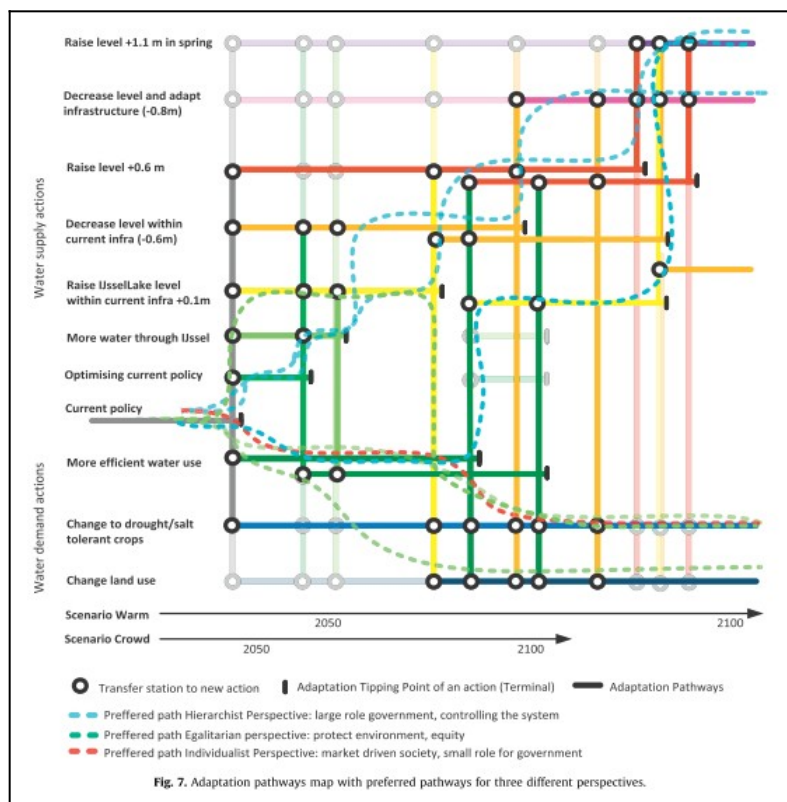


Illustration-2. An example from Haasnoot et al. (2013) where all the pathways are modelled and then used to create a preferred path depending on the viewpoint.

## Comment #2 Cooperative and Collaborative Engagements

It is common knowledge that to have a successful organisation diversity is paramount. For organisations like City of Swan this diversity includes using the expertise of community organisations. World renowned success of the Dutch cycling infrastructure planning and implementation is based on cooperation between various layers of government and community organisations like the Dutch equivalent of the RAC<sup>8</sup> and cyclists groups (Dekker, 2020). For that reason, we suggest that there is an ongoing collaboration between industry and stakeholder representatives. Not necessarily as formal committees but easy access for these groups to have an avenue to access the department and vice versa, especially when trigger points are used<sup>9</sup>.

<sup>8</sup> Resp: ANWB and Fietsersbond.

<sup>9</sup> It should be noted that staff at DWER were very helpful providing us with digital map data.

**Re Question #C.** In our view the amount of commuter traffic in the Swan Valley should be reduced. It is accepted that two major connector (= primary distributor) roads go through the Swan Valley, namely the north-south Great Northern Highway and the east-west Reid Highway. The report does not indicate that any traffic modelling scenarios has been carried by ring-fencing / cookie-cutting the Swan Valley out of the modelling bar the Great Northern highway and Reid highway (Example 1). This scenario is to ascertain commuter traffic flows around it and use that information to model need for new roads. After this first modelling add other roads to see what the results are as for example in Examples 2 & 3. Nothing like this is mentioned in the report and that raises the question why is Main Roads WA not doing or reporting on this? Or, is it the case that the software Main Roads WA uses cannot do it. May be programs like 'Traffic Analysis' for ArcGIS (ArcGIS, 2021) or opensource AequilibaE for QGIS (AequilibraE, 2021) are to be used as additional tools to achieve this. These tools may help where Lovelace (2019) describes “*Geographic analysis has long supported transport plans that are appropriate to local contexts. Many incumbent ‘tools of the trade’ are proprietary and were developed to support growth in motor traffic, limiting their utility for transport planners who have been tasked with twenty-first century objectives such as enabling citizen participation, reducing pollution, and increasing levels of physical activity by getting more people walking and cycling*”. The strategy document does not appear take all of these issues into consideration. This raises the question where are the references to documents that show potential different scenarios? How can council have made an informed decision on a strategy if they do not have access to by different scenarios but just been spoonfed?

The 1996 (Connell) traffic study reported on different modelling scenarios. Quoting from that report : *The brief requires that the following tests should be carried out:*

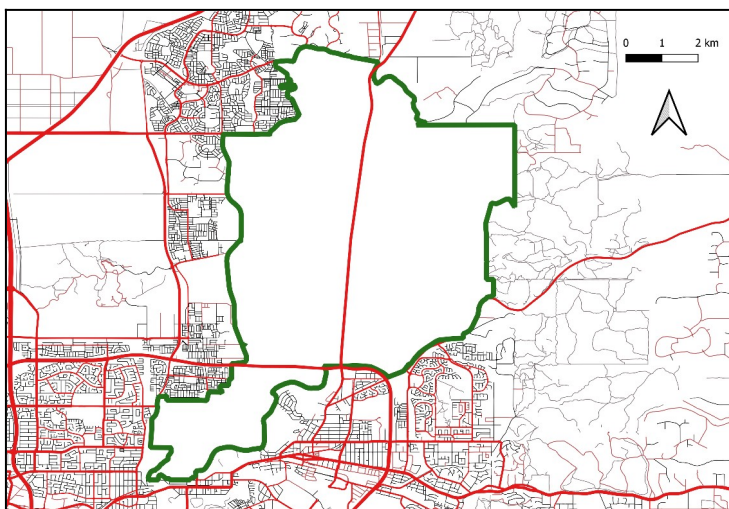
- *The full length of Henley Brook Drive is constructed,*
- *Henley Brook Drive is not Constructed at all,*



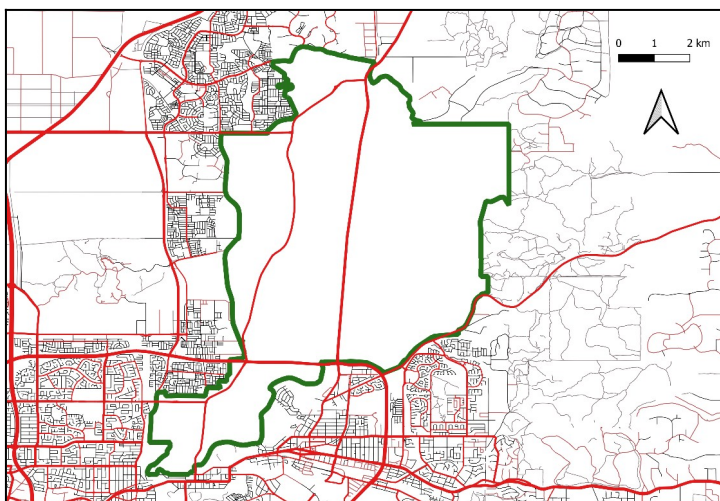
- *All but the Northern section of Henley Brook Drive is constructed,*
- *All but the central section of Henley Brook Drive is constructed, and*
- *All but the southern section of Henley Brook Drive is constructed.*

*The importance Of West Swan Road is also to be examined as an alternative to replace Henley Brook Drive in part or in full or to reduce its planned capacity.*

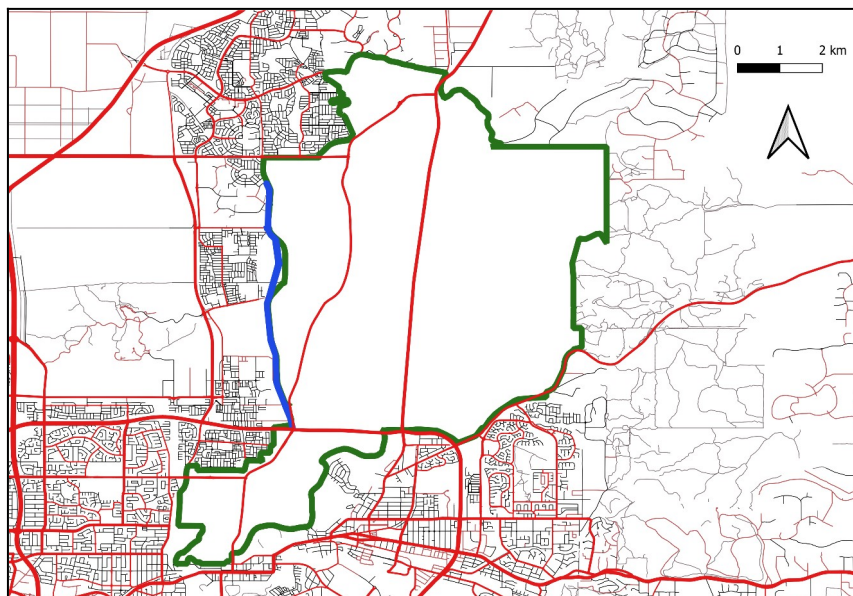
Why could they do it then but not 20 years later when computing power would make it much easier to create different scenarios?



Example 1 : Traffic modelling scenario around Swan Valley with only connector roads Great Northern highway and Reid highway included. Boundary Swan Valley Planning Act in green.



Example 2. Traffic modelling scenario around Swan Valley with connector roads Great Northern highway and Reid highway, the primary West Swan and Gnangara roads included. Boundary Swan Valley Planning Act in green.



Example 3. The scenario of Example 2 but Henley Brook Avenue added in blue. Note that the new 4-lane Drumpellier Drive is less than 2km west of the proposed Henley Brook Avenue.

**Re Question #D.** Since this report was released new roads and a bridge (Tonkin Hwy = North Link, Drumpellier Drive, Arthur Street) have been built and Ellenbrook railway is under construction. Another reason for the Strategy is out of date, and needs to be updated. This is also commented on in section 10.4.2. Did the City of Swan have any plans to have the Transportation strategy updated and when?

**Re Question #E.** Tourism has a major economic impact on the Swan valley and so on the City of Swan. Having less commuter traffic in the Swan Valley will make it more attractive for tourists. Where are the scenarios of what the impact of a fully separated cycleways around the Valley's major roads? Cycling is not the only tourist traffic impact. See also section 15. How is tourism traffic modelled?



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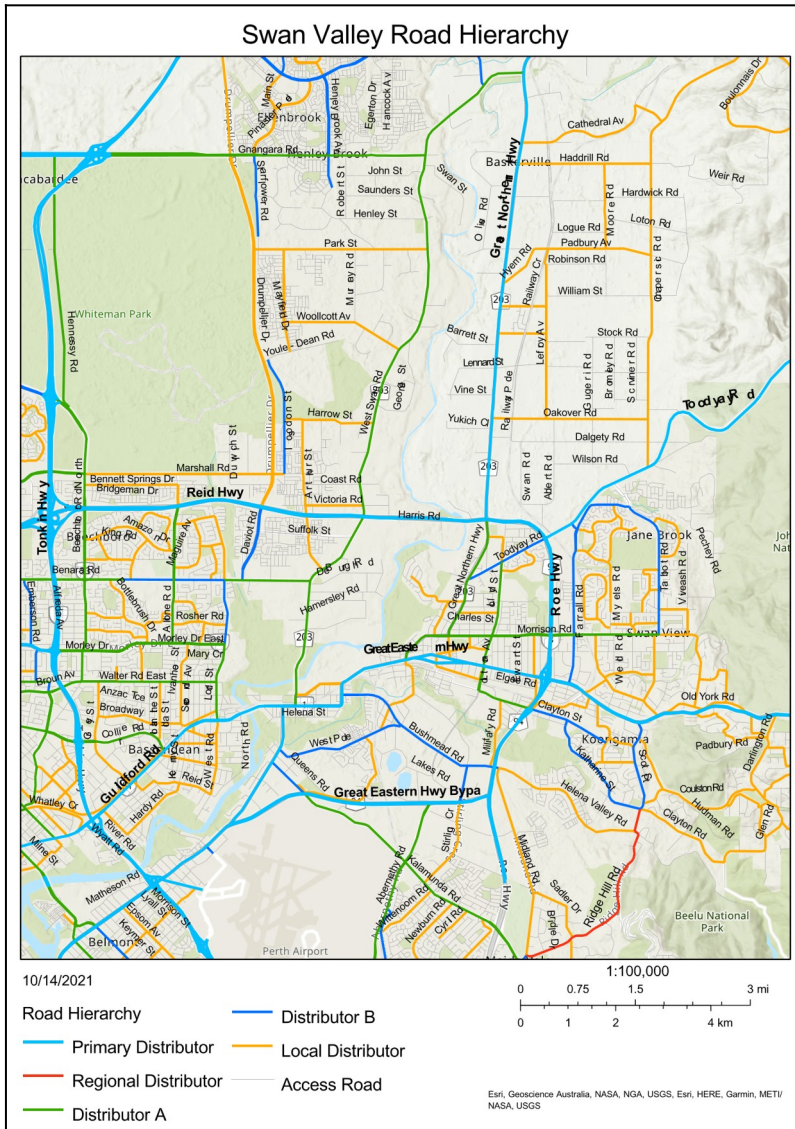


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## **Re Question #F**

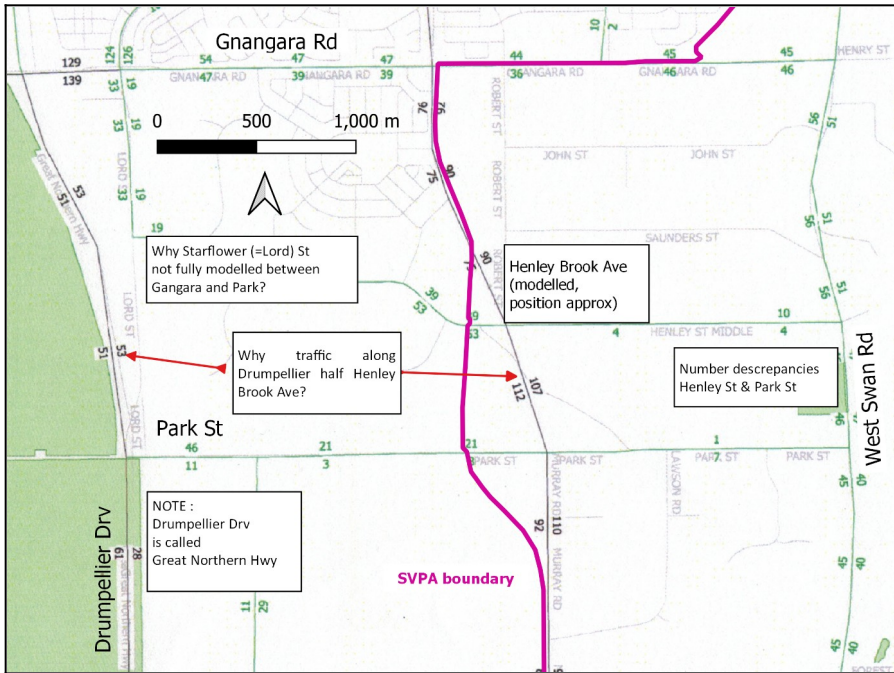
Why is Drumpellier Drive classified in Map-1 as "Local Distributor", shouldn't it be "Distributor A"? Starflower Road and Isodoon Street are ranked higher than Drumpellier Drive in the scheme, why? This incorrect road hierarchy will influence the results of traffic modelling, so it is essential that it is corrected. The City of Swan should point out to Main Roads WA and ask them to audit, and update update their road hierarchy?

Map MR-1 highlights a few questions. What went wrong in the modelling resulting in Henley Brook Avenue having twice as many vehicles than Drumpellier Drive? Is the latter therefore a white elephant or is there something wrong with the input data and assumptions? Based on the road hierarchy shown in map MR-2 why did modelling stop along Staflower at Henley Street and did not continue to Park Street? Henley Street East and West are both classified as "access roads" so local traffic only, while Starflower is a 'distributor B'. The traffic numbers along Park St east and Henley St east do not make sense by being so different in one way compared to the opposite way. As we understand it the modelling software cannot always distinguish which local roads to allocate traffic numbers to. Apparently, one has to add the numbers of both roads to get correct figures, but then the question remains to which road to allocate these fudged figures. That is not an acceptable method in 2022. Park St is a 'local distributor' while Henley St is an 'access road'. In our opinion this is very concerning that modelling creates such errors, what is the City of Swan going to do about it?

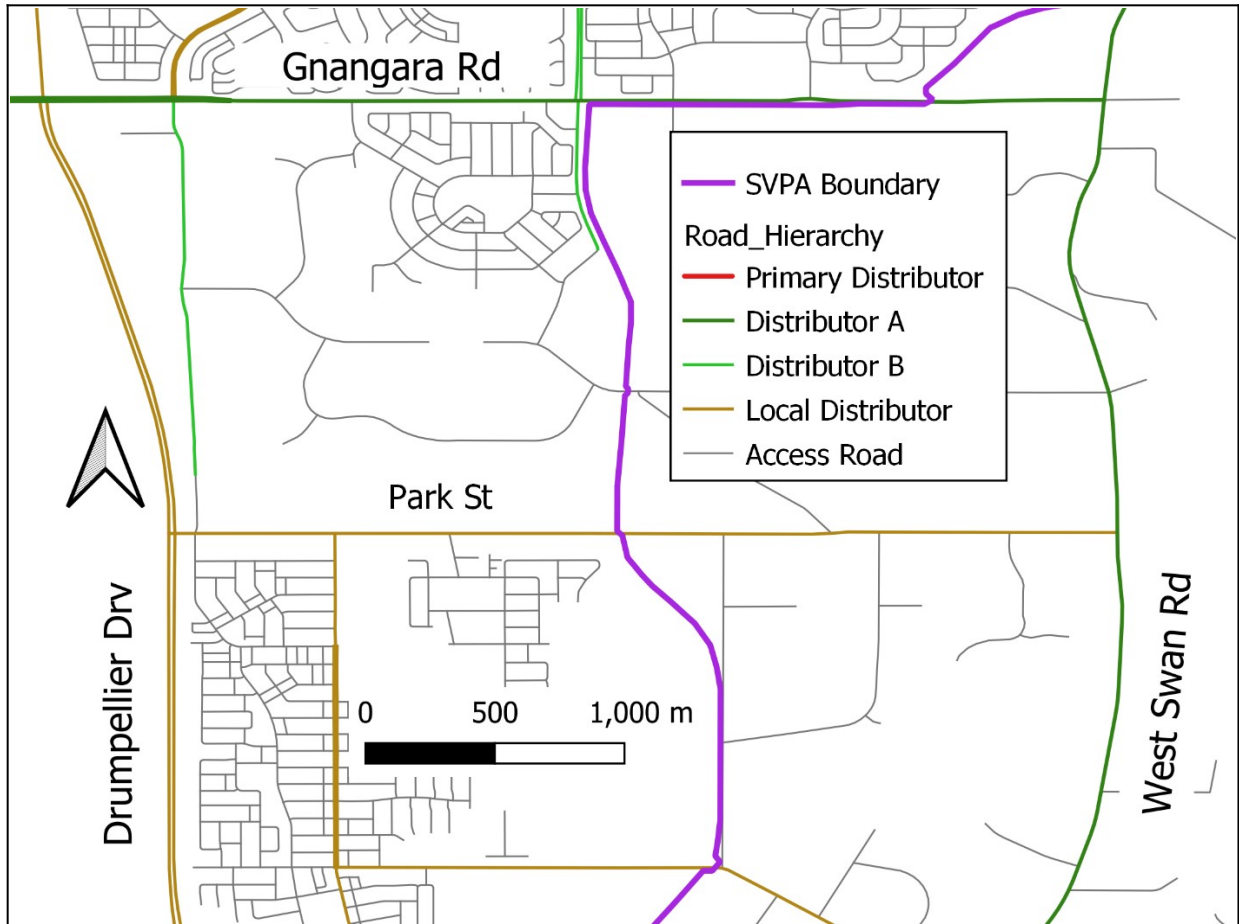


Map-1. Road hierarchy of Swan Valley downloaded from MRWA (2021).

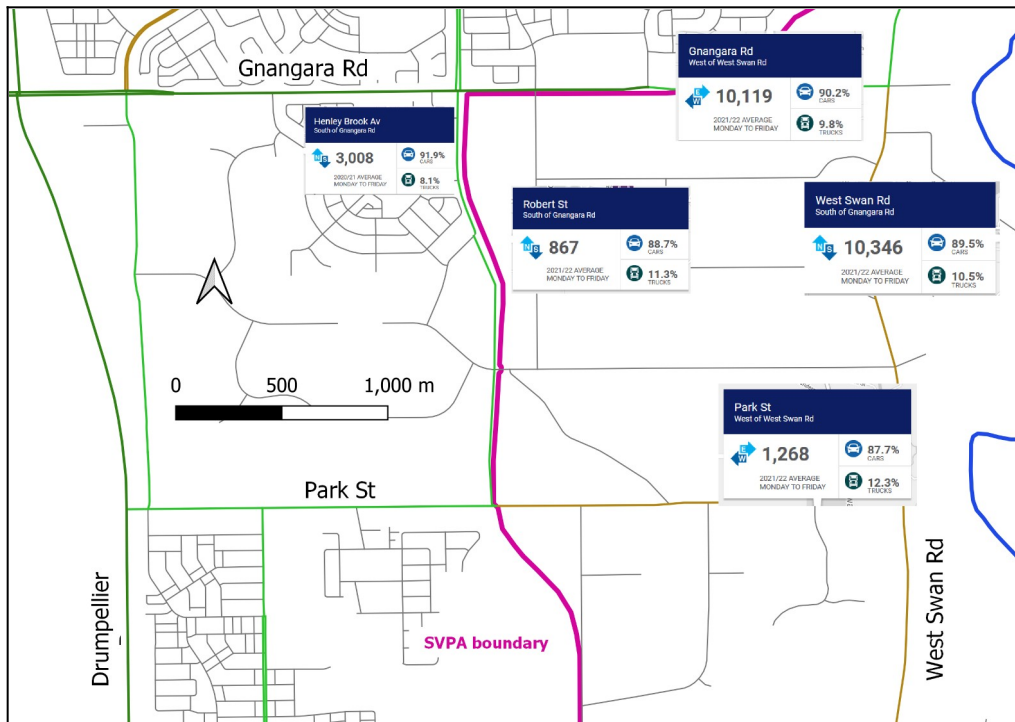
In the MRWA road hierarchy an “Access Road” has as its predominant purpose listed “*Provision of vehicle access to abutting properties*”. As shown on map MR-3 why are there 11.3% trucks along Robert Road which is an “Access Road”. Even Park Street which is a Local Distributor has 12.3% trucks. Why are there such a large number of trucks along these roads? What is known about truck traffic along other roads?



Map MR-1. Traffic modelling data from MRWA (2018). The annotations on the map highlight problems.



Map MR-2. The road hierarchy as downloaded from Main Roads WA in 2021.



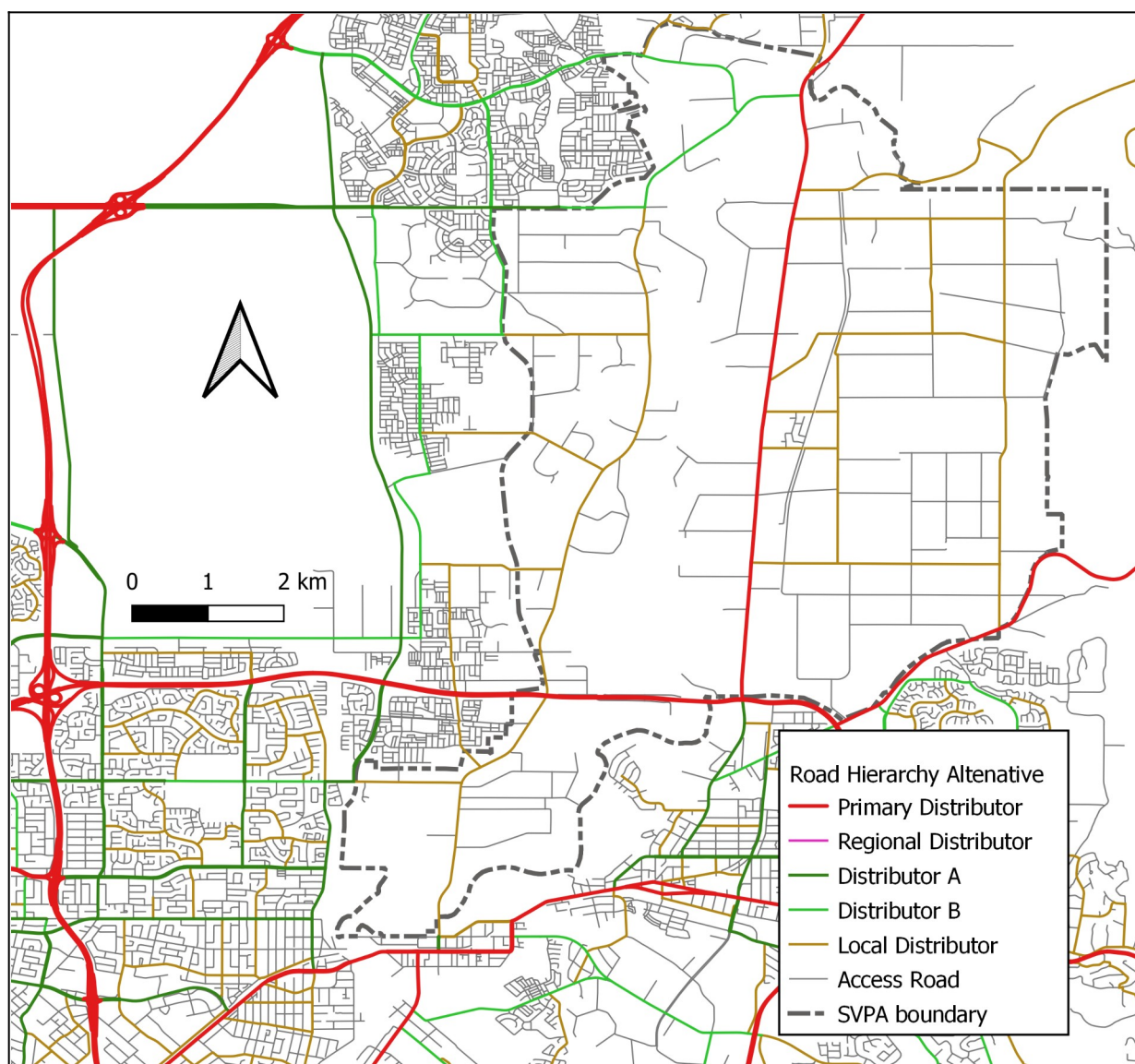
Map MR-3. This map show data downloaded from MRWA's Traffic Count webpage.

## Re Question #G

The Swan Valley Ratepayers and Residents Association suggest that roads that are 'distributor A or B' inside the Swan Valley Planning Act boundary get downgraded to "Local Distributors". Except for Reid and Great Northern Highways to remain "Primary Distributor", and Ghangara Road and West Swan Road to Great Northern Highway are designated "Distributor B". Roads in the Swan Valley are not to be used for "high capacity movements between industrial, commercial and residential areas" as the classification says about "Distributor A" roads. This modified version of the road hierarchy, as shown in Map-MR2<sup>10</sup>, in the Swan Valley takes into account the Swan Valley Planning Act. It is likely that Main Roads will dismiss this straight away. However, they together with the WAPC have had 25 years to get the road hierarchy right for the Swan Valley. But both had decided, consciously or unconsciously, to ignore the Swan

<sup>10</sup> Map-MR2 available in Shapefile format on request.

Valley Planning Act over that period, so now the time has come to correct it all. How will the City of Swan get the road hierarchy in and around the Swan Valley changed as proposed here?



Map-2. An alternative road hierarchy for the Swan Valley.



**Re Question #H. 10.4.1 West Swan Road – South of Reid Highway**

*The section of West Swan Road between Reid Highway and Great Eastern Highway primarily serves as a strategic north-south connection between these roads and is forecast to carry between 20,000 - 22,000 vpd in the 2031 ROM network, with a Degree of Saturation (DoS) between 0.81 – 1.25, **thereby indicating that this section of West Swan Road will be operating above its designed capacity** (highlight by author).*

Doesn't this indicate that the road planning has gone wrong, and that West Swan Road is to be used a commuting connector road? Can the City and Council explain why this warning was ignored, and how does it intends to correct this mistake?

**10.4.2 West Swan Road – North of Reid Highway**

*With the introduction of Henley Brook Avenue in the updated 2031 ROM network (Option 4A), it is forecast that traffic along West Swan Road will decrease by 40 - 60% (as compared to the original forecast traffic volumes). The decrease in traffic along West Swan Road is anticipated result in acceptable DoS for this section of West Swan Road during the 2031 AM and PM peak hours.*

**Comment #10.4.2.** Henley Brook Avenue, designed in early 1990s, is now redundant since Drumpellier Drive has been completed (Swan Valley Ratepayers and Residents Association, 2020 & 2021). The decrease of traffic along West Swan Road should be based on diverting commuter traffic from the Swan Valley Planning Act area.

**10.4.3 & 19.14 Arthur Street Bridge**

*The Arthur Street Bridge, as proposed, would have benefits for connectivity of public transport and active modes. However, **it may have a detrimental impact on the function of West Swan Road** (highlight by the author).*

**Re Question #H. another example.** The highlighted text relating to points 10.4.3 & 19.14, appears to have been ignored. What were the arguments by the City and the Council to ignore these warning and what can be done to rectify this problem?

**Re Question #I. 19.10 & 11 Ellenbrook Northern Access & Rose Street Bridge**

*The future Stage 7B Ellenbrook is proposed to include a connection to Maralla Road which will provide access to Bullsbrook via one of two at-grade rail crossings. This will significantly improve journey times between these two precincts but will require modelling assessment to determine demand and impacts.*

*Access to The Vines is currently provided via West Swan Road/Millhouse Road. A bridge crossing at Rose Street would create a more direct connection to Railway Parade/Great Northern Highway. This crossing has been previously proposed in the Vines Structure Plan, but triggers and timing have not been determined. The recent completion of the Millhouse Road link between Ellenbrook and The Vines may create some momentum for future planning.*

Access roads from Bullsbrook to Ellenbrook / Vines appear not to have been conclusively modelled. Undertake modelling to determine the need and impact of the Ellenbrook Northern Access on the Swan Valley. Both sections have the potential of diverting commuter traffic towards Bullsbrook away from West Swan Road.

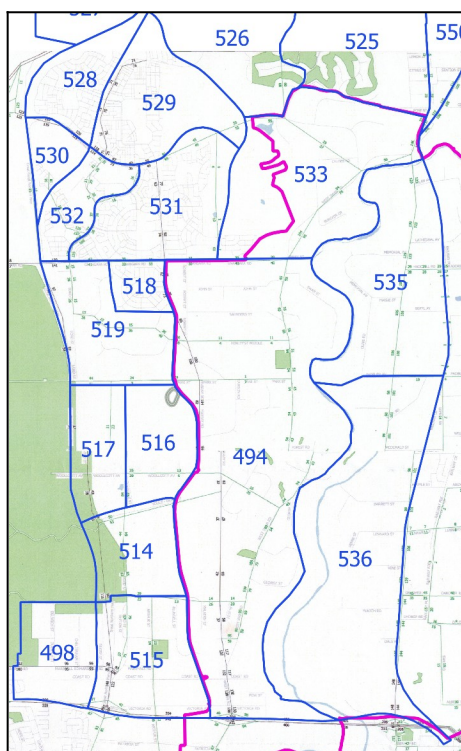
Both sections 19.10 and 19.11 have the potential of diverting commuter traffic towards and from Bullsbrook away from West Swan Road. What is the current planning status?

**Re Question #K.** Wetlands and other environments not mentioned in the report. The number of wetlands in the Perth metropolitan area have been decreasing over decades. Their importance is now well understood. There are only a few wetlands inside and outside the Swan Valley left and they need to be preserved. Any development needs to stay clear from wetlands not to cause changing water flows to creeks and wetlands. This has also to apply for any road proposed in new development areas, e.g. Henley Brook Avenue (SVRRA, 2020 & 2021). Why have these issues not being mentioned?

**Re Question #9.1. Road and Intersection Capacity**

*A review of data from the Regional Operations Model (ROM) supplied by Main Roads Western Australia (MRWA) was undertaken with an aim of identifying road links within the study area that have potential capacity constraints.*

How does modelling cope with various ROM extents. As shown in example #9.1, ROM 494 in the confines of Gnangara Rd, West Swan Road, Reid Highway and the western boundary of the Swan Valley Planning Act. ROM 533 straddles both (semi-)rural area within the Swan Valley Planning Act and suburban Aveley. ROM 518 is much smaller both in size and population than ROM 531. May be this is all clear for the experts but most councillors are not traffic engineers, so this should be explained. A ROM should be fully in or out the Swan Valley boundary. How are the ROMs decide on, and how is the modelling adjusted for the variations?



Example #9.1. Mismatch ROM sizes. The pink line is the boundary of the Swan Valley Planning Act area.

**Re Question #9.3.3. Intersection of Henley Brook Avenue and Park Street**

*... this intersection type is not expected to perform at an acceptable Level of Service with the updated modelled traffic volumes. While a 4-way controlled priority intersection with staged right turns most likely would perform satisfactory during the 2031 AM and PM peak hour volumes, the staged right turns combined with the **through traffic along Park Street** (highlighted by author) present a number of conflict points and it is therefore not recommended that this*

*option is considered for this intersection for safety reasons. ... includes conversion of the intersection to a roundabout form in alignment with the Henley Brook Avenue Reservation Review.*

All planning and land acquisition by City of Swan south of Park St for Henley Brook Avenue has been put on hold as decided by Council in March 2021, until new modelling has been carried out indicating this road is needed. The Henley Brook Avenue intersection with Park St should be totally redesigned. As stated before the Swan Valley should not be a commuter thoroughfare and therefore the traffic flow should be Henley Brook Avenue-Park St West (both suggested to be Distributor B as in Map 2). Even if Henley Brook Avenue gets developed south of Park Street traffic flow into Park St East towards West Swan Rd should be restricted to local traffic only to stop commuter traffic in the Swan Valley with changes to ‘access road’. Where are the traffic volumes along Park St both in easterly and westerly direction that underlie the current design? Can the City of Swan suggest how to change the intersection? This would also stop drivers using Murray Road as a rat race.

**Comment #10.1      Modelled Road Duplication**

<b>Table 10-1    Main Roads WA 2031 ROM - Modelled Road Duplication</b>			
<b>Modelled Road</b>	<b>Extents</b>	<b>Existing Form</b>	<b>Modelled Form</b>
<i>West Swan Road</i>	<i>North of Reid Highway</i>	2	4
<i>West Swan Road</i>	<i>Between: Coast Road and Youle-Dean Road</i>	2	4

The fact that West Swan Road has been modelled for 4 lanes means total lack of awareness of the Swan Valley Planning Act by the consultant. The idea of 4 lanes for West Swan Road should be outright rejected.

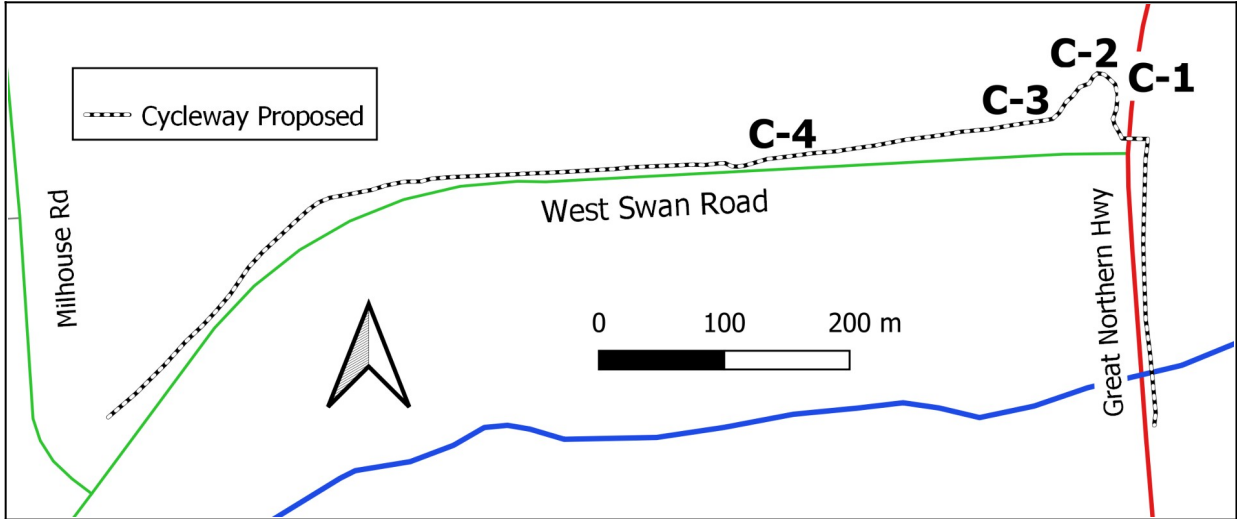
**Re Question #10.1.** *Cardno has undertaken a review of the 2031 ROM to determine the assumptions regarding road form and capacity through to a 2031 horizon. This has been compared to the existing network and assessed in the context of 2031 projected traffic demands.*

Cardno does not specify what the assumptions it has made. How can Council make decision if it is not aware of these assumptions?

**Comment #10.** Is it common practice to have in the Future road hierarchy maps all freight and private roads are treated all the same? For example, there should be a distinction between freight along Northlink-Tonkin Hwy (in past called Perth-Darwin Hwy) and great Northern Hwy. With the latter only to be carrying "local" or "oversized" freight, all other freight to use Tonkin Hwy or may be even Drumpellier Drive. This is confusing, can a simple explanation have been given? See also question #H.

**Re Question #15. Cycling** To encourage tourists and for that matter anyone else to cycle safely it is necessary to have separated cycle ways. Separated cycleways exist only partially along West Swan Road. The foundation of the new bridge over Ellenbrook has incorporated the cyclist / pedestrian bridge part.

From our knowledge to build cycleways State funding is essential and we will write to the responsible ministers about this issue. As we understand it the extension of the cycleway along West Swan Road from Gnangara Rd to Great Northern Hwy was stopped because the plans indicated the removal of mature trees, a decision we fully support. However, now we have investigated this section and have designed a possible route that does not require removal of trees. (Map-3). The path is windy in places and so may need some extra road sign to enhance safety. See photos C-1 to C-4 and the comments below.



Map-3. Showing the position of the cycleway. C-1 to C-4 related to photo



C-1. Looking southwards to Traffic lights. Need sign steep slope and tight corner.



C-2. Looking along fence southwest wards.



C-3. Further along the fence southwestwards.



C-4. The cycleway needs a bit of a zigzag around the trees. Just add a winding Road sign for safety.

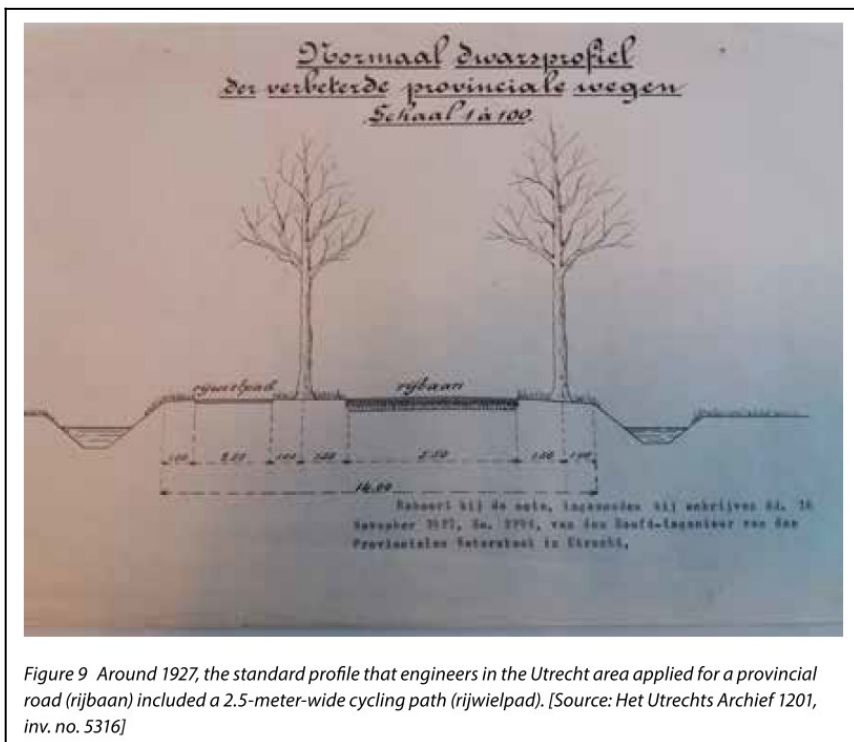


Figure 9 Around 1927, the standard profile that engineers in the Utrecht area applied for a provincial road (rijbaan) included a 2.5-meter-wide cycling path (rijwielpad). [Source: Het Utrechts Archief 1201, inv. no. 5316]

Even nearly 100 years ago engineers knew how to design safe cycleways. Copied from Dekker (2020).

None of the diagrams of roundabouts and other type intersections in the Transportation Strategy show any design of integrated cycleways. Even the recently constructed roundabout West Swan Road and Millhouse Road appears to have not taken into account cyclists. To incorporate cycle path in the roundabout it is worthwhile to study what they do in The Netherlands a world leading country for cyclists (Godefrooij, 2020) <sup>11</sup>. Traffic lights are not so much a problem in the Swan Valley but there are plenty of them elsewhere in the City of Swan so it would be useful to have a look at some very intelligent use of traffic lights in The Netherlands (Traffic, 2021).

When will the separated cycleway around the Swan Valley be completed? Besides the Maali cycling / pedestrian bridge over the Swan River are there any other ones suggested?

A separate cycleway along Great Northern Highway should have been constructed when it was upgraded some years ago. It is time to create a separated cycleway along it to encourage safe tourism. A quote from Dekker (2020) *“In sharp contrast to the first half of the 1900s, national policymakers (in The Netherlands) started to take an interest in urban cycling as a public good and potential solution to the automobility issues as well. That these engineers often rode a bicycle may have reinforced their support for measures that enabled cycling alongside car roads”*. Around 1924 Engineer Wentholt (in Dekker, 2020) *found the option of an on-road and unseparated cycling lane “too dangerous for cycling traffic, because regular drivers will see the path as part of the regular road surface and not recognize it as a cycling path.”* Another quote from Dekker (2020) *“That these engineers often rode a bicycle may have reinforced their support for measures that enabled cycling alongside car roads. P. Public Works highest official, director-general August Maris, was not the only official to commute by bicycle.”* Unfortunately something Main Road engineers still have to learn after 100 years.

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<sup>11</sup> In 2021 the old excuse of we do not know about this because Perth is the most isolated capital in the world is not valid anymore since the ease of internet searches.



## References

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