



Australian Government



BUILDING OUR FUTURE

Swan River Crossings Forum 23rd October 2020

Welcome

Facilitator: Nicole Lockwood

Start	Activity	Responsibility
11:30	Welcome, purpose and process	Nicole Lockwood
11:50	Project Objectives	Lance Thomas
12:05	Replacing the traffic bridge	Lance Thomas
12:20	Addressing the rail capacity	Gary Manning/Peter Satie/Sue Hellyer
12:35	Road Network Overview	Lindsay Broadhurst
12:45	Lunch, View maps, feedback	All
1:25	Introduction of Alignments	Russell Kingdom (City of Fremantle), Andrew Sullivan, Main Roads
1:35	Discussion	All
3:00	Final Feedback	All
3:20	Next Steps, Acknowledgments	Nicole Lockwood
3.30	Forum close	

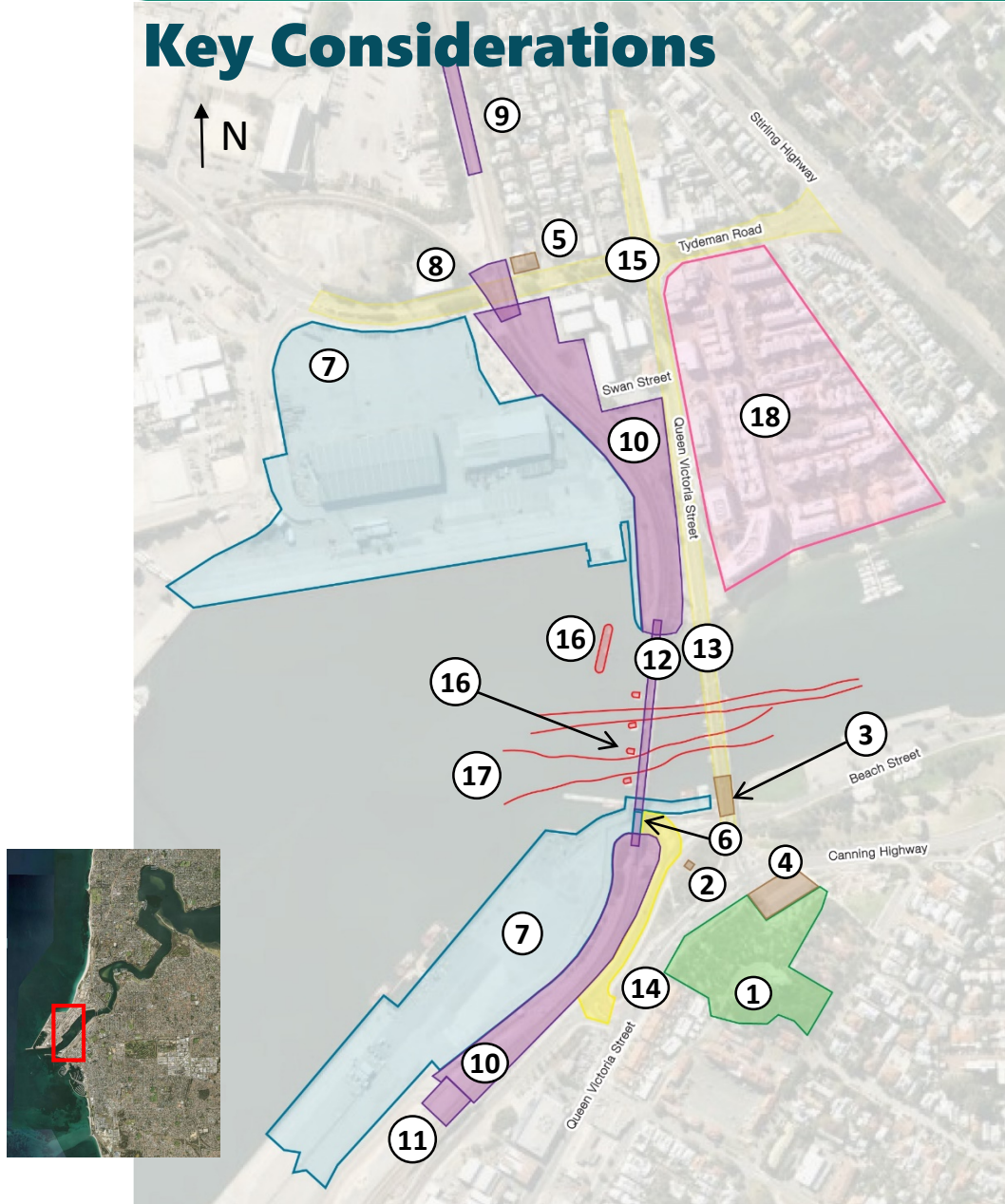
Project objectives

- The Project objectives are to:
 - Replace Fremantle Traffic bridge;
 - Increase rail capacity, efficiency and productivity;
 - Improve pedestrian and cycling connectivity over the Swan River and to North Fremantle Station;
 - Maximise sustainability through economic, social and environmental responsibility;
 - Improve amenity and sense of place for the community, tourists and road users, and
 - Create value through provision of affordable infrastructure.

Operational Constraints

- **Traffic** – minimum one lane in each direction on Fremantle Traffic Bridge to be retained during construction
- **Freight and passenger rail** – co-ordinated and minimised impact and shut downs of rail operations during construction
- **Port:**
 - co-ordinated and minimised impact on general Fremantle Port operations (land and river)
 - access to Victoria Quay via Peter Hughes Drive and Gate 3 to be maintained
 - operation of Fremantle Port's small craft pens to be maintained
- **River** – no impact to port and ferry operations and minimise impact to other river users

Key Considerations

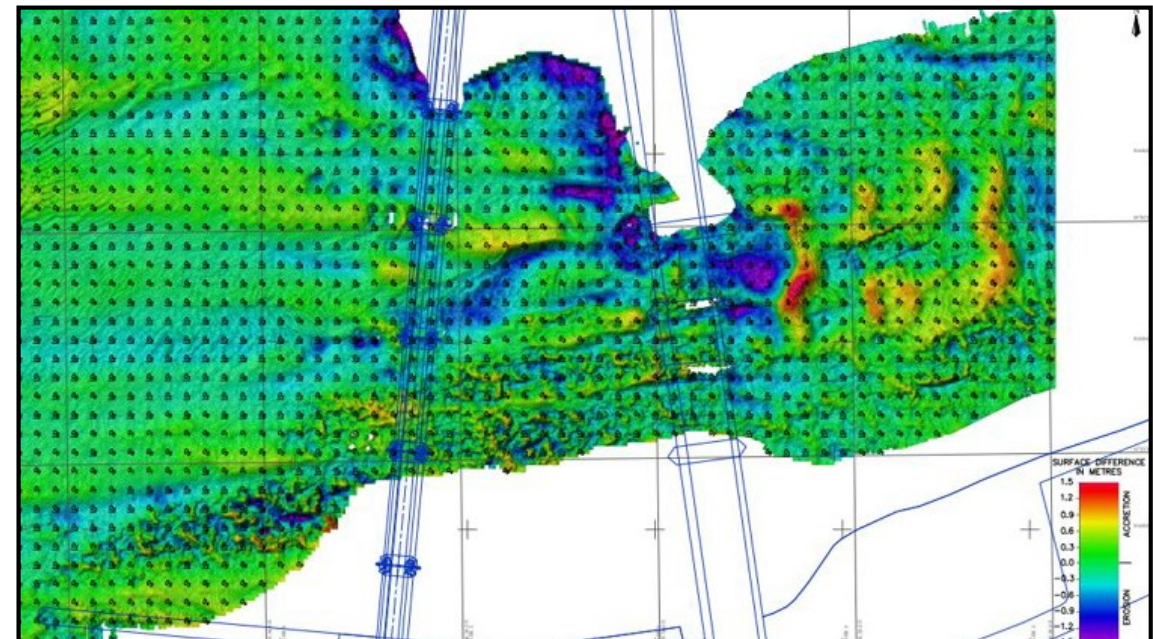
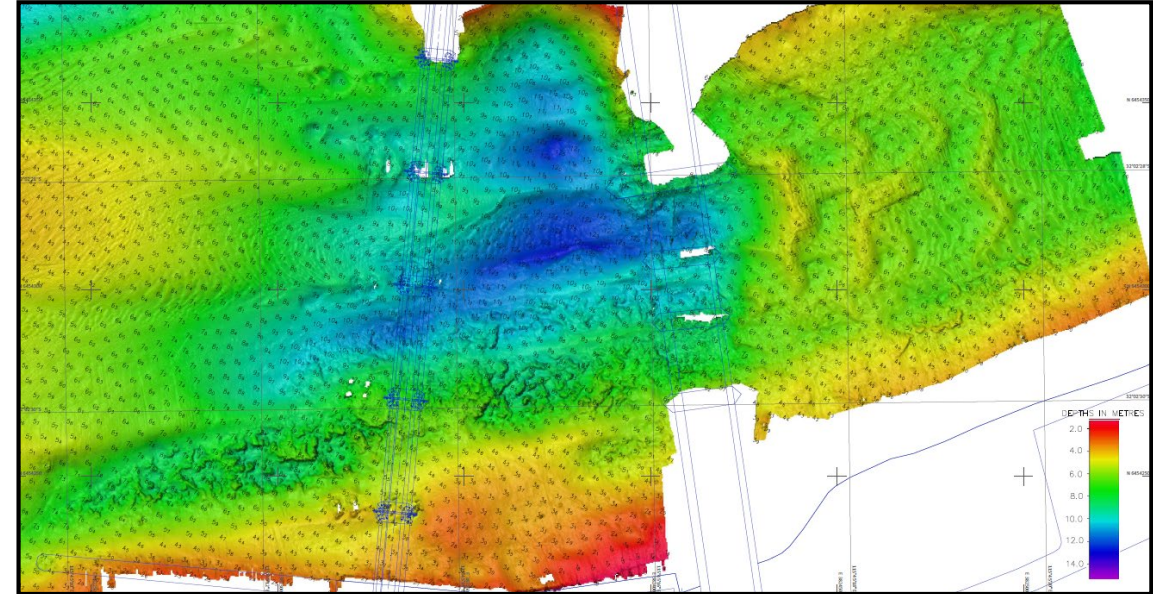


1. Cantonment Hill (environmental)
2. Ferry Capstan Base (heritage)
3. Remnants of existing Fremantle Traffic Bridge to be retained (heritage)
4. Naval Stores Building (heritage)
5. Heritage Building (heritage)
6. Gate 3 Fremantle Port access (port)
7. Fremantle Port (port)
8. Tydeman Rd Rail bridge (rail)
9. Cross-over 878-A/B (rail)
10. Rail Reserve (rail)
11. Peter Hughes Drive Bridge (rail)
12. Existing Fremantle Rail Bridge to remain open during construction (rail)
13. Existing Fremantle Traffic Bridge to remain minimum two lanes throughout construction (road)
14. Beach Street to remain (road)
15. Tydeman Road (road)
16. Vessel Impact Protection (navigation)
17. Navigation channels to remain open during and post construction (navigation)
18. North bank residential area (residential)

- Environmental consideration
- Heritage consideration
- Port consideration
- Rail consideration
- Road consideration
- Navigation consideration
- Residential consideration

Replacing the traffic bridge

- The required repairs have meant, over time, timber elements of the bridge have been replaced/or strengthened by steel and concrete. The remaining timber elements continue to deteriorate. Many are hidden from view – in particular underwater decay of the bridge supports.
- River Bed Issues:
 - Ongoing scour of river bed (image from 2016)
 - Ongoing scour is impacting the stability of the timber piles
 - Scour appears to be extending based on differences plot shown in second image



Replacing the traffic bridge

- Substructure Issues:
 - Cracks in concrete encapsulation due to reinforcement corrosion
 - Teredo worm activity on exposed timber below failed concrete encapsulation
 - Exposed timber piles at river bed level – noticeable “necking”



Replacing the traffic bridge

- Superstructure Issues:
 - Local section loss on steel stringers over navigation spans
 - Multiple corbels split and large areas of deterioration/section loss



Replacing the traffic bridge

- Deck Issues:
 - Poor condition of concrete overlay with heavy cracks and local failures
 - Poor condition of timber deck and timber bearers
- Pedestrian path too narrow, balustrade too low and in poor condition – high risks for cyclists using the shared path



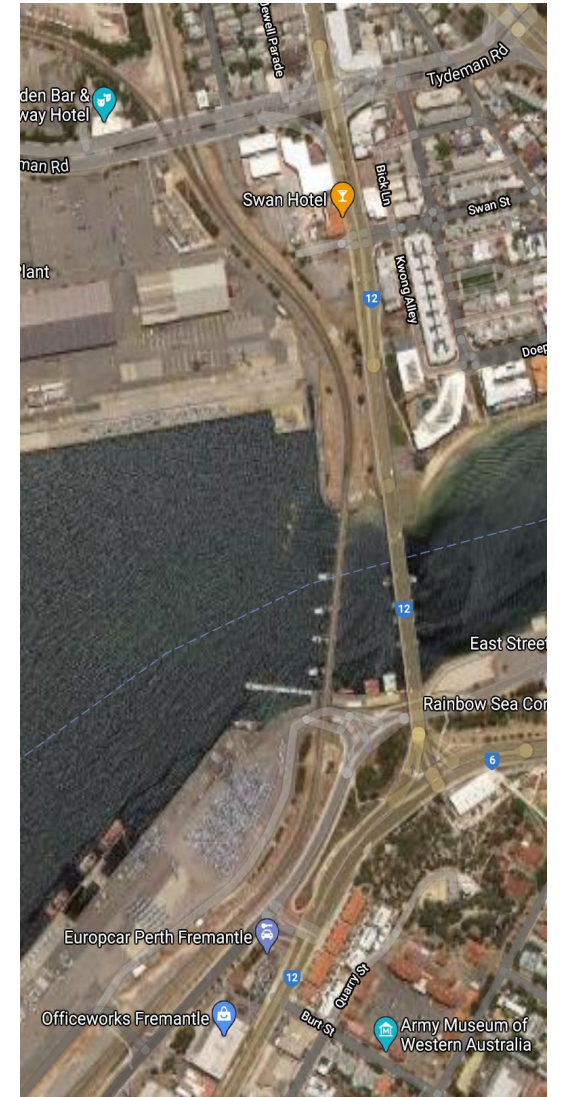
Replacing the traffic bridge

- Approximately \$23.5 million has been spent over the last five years to repair the bridge, including costly repairs in 2016 (these repair works focused on minimising the risk of vessels hitting the bridge and causing a collapse, until a replacement bridge was built).
- Maintaining the bridge in its current sub-standard state costs around \$400,000 per year – this includes routine bridge inspections, monitoring and routine maintenance and does not include emergency strengthening/repairs.
- Ongoing maintenance will not extend the life of the deteriorating timber elements. Restoring the timber elements like-for-like will not meet bridge design standards and durability requirements.
- The bridge has the lowest clearance and narrowest navigation spans of all the Swan River bridges up to the Causeway; which limits the size of vessels that can pass beneath it. Also, the bridge piers under the rail and road bridges are not aligned - which significantly increases the risk of vessel impact and possible damage.



Addressing the rail capacity issues

- The Swan River Crossings Project needs to address the current capacity issues with the sharing of freight and passenger rail on a single bridge.
- Fremantle Rail Bridge has two rail lines – one travelling south and the other travelling north, which is shared by passenger and freight rail services.
- Fremantle rail bridge has a remaining service life of around 40 years.
- With shared services the passenger rail takes priority. Freight trains are restricted from using the bridge during passenger peaks (6am to 9am and 3pm to 6.30pm). Second priority is for track and infrastructure maintenance, repairs and inspections that occur at night.
- These restrictions limit capacity between Kwinana/Forrestfield and North Quay to around 5 freight trains per day each way. Little opportunity to increase this capacity.
- The State Government target is for 30 per cent containers to be handled by rail reducing the number of freight vehicles on the road network.
- Building a new passenger bridge and separating passenger and freight rail lines will ensure additional capacity for passenger rail services into the future and adequate freight rail capacity until the port ultimately transitions to Kwinana.



Addressing the rail capacity

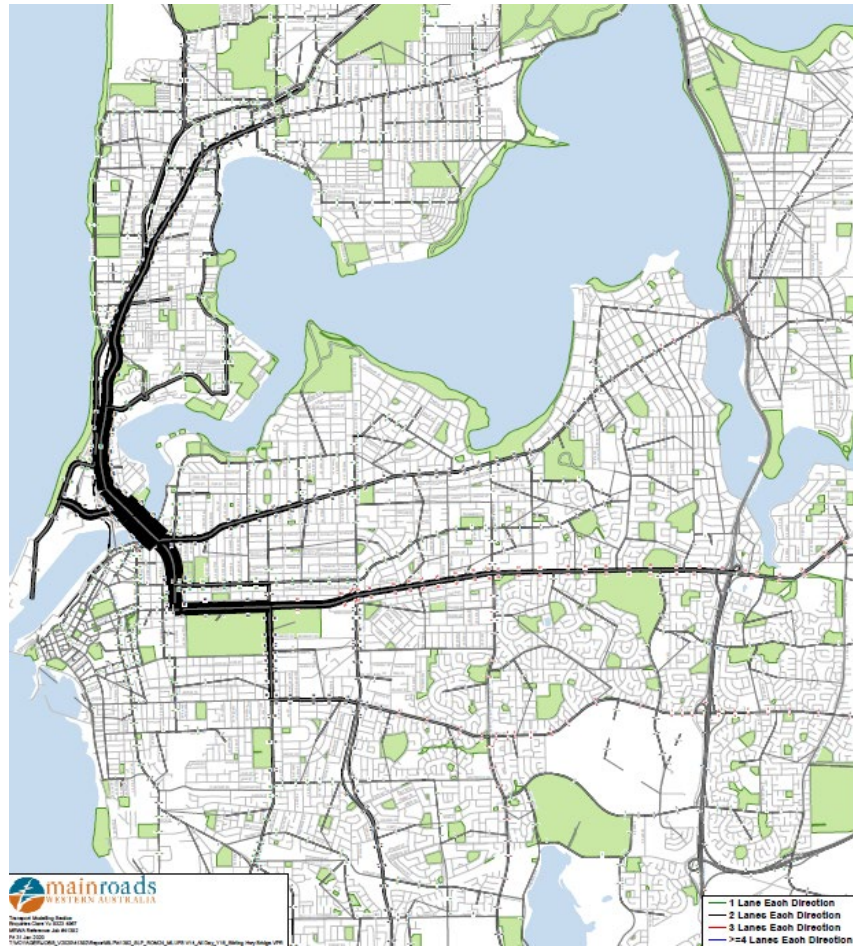
- Future passenger rail services - Public Transport Authority is proposing that trains will operate on the Fremantle line every 10 minutes by 2021 and by 2024 this will increase to every 8 minutes increasing demand on the shared lines.
- Freight rail services – Without the separation of freight and passenger lines we are capped at five freight trains per day (currently 3-4 per day) with little room to grow rail volumes beyond next year.
- If the new passenger rail line is not built and freight trains continue to be restricted, compared to current levels, an additional 260,000 trucks will be required to service the Inner Harbour trade in 2032/33, or around 1000 extra trucks per day.
- The immediate impact of building a new rail bridge to separate services will be the potential to remove over 60,000 trucks from the road in the first year.
- Additional freight train services could be provided by:
 - increasing evening and night operations, however, night trains impact the amenity of the surrounding area.
 - extending freight train length to carry more per journey. However, trains over 720 metres in length cannot be managed on the existing network due to the capacity of intermodal terminals.
 - Double stacked containers is not possible without major infrastructure improvements to all rail bridges, rail systems, and reconstruction of railway tracks to reduce vertical grades.
- The separated rail lines will mean freight can travel more during daylight hours resulting in better community outcomes (including less disruption to people's sleep); the percentage of TEU on rail can continue to grow and reach the WA Government target of 30%; and there will be fewer trucks on our roads resulting in less noise, less pollution and less congestion.

Road network overview

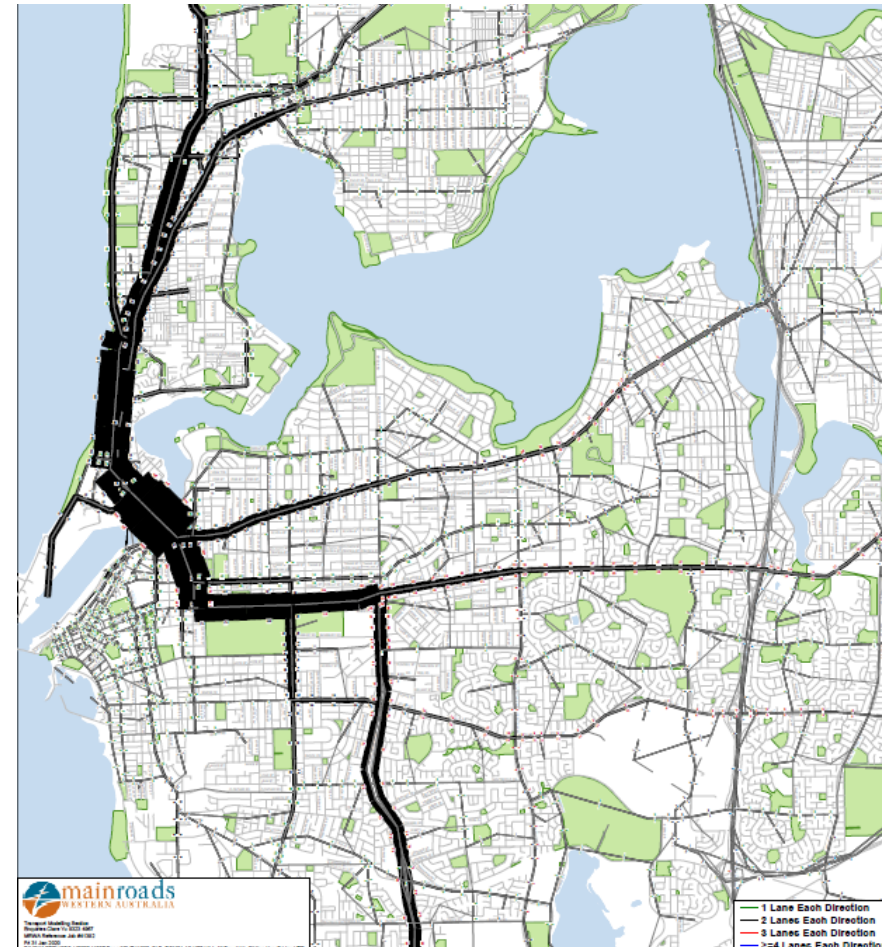
- Current weekday traffic volumes
 - **Fremantle Traffic Bridge**
 - 24,000 vehicles existing (94% cars and 6% trucks)
 - **Stirling Traffic Bridge**
 - 39,000 vehicles existing (87% cars and 13% trucks)
- Predicted traffic volumes in 2041 anticipate significant growth on Stirling Bridge.
- Location of port will have little impact on traffic growth across river.
- The growth in traffic is in cars from increasing population and development.



The role of Stirling Bridge - move people North to South along the network

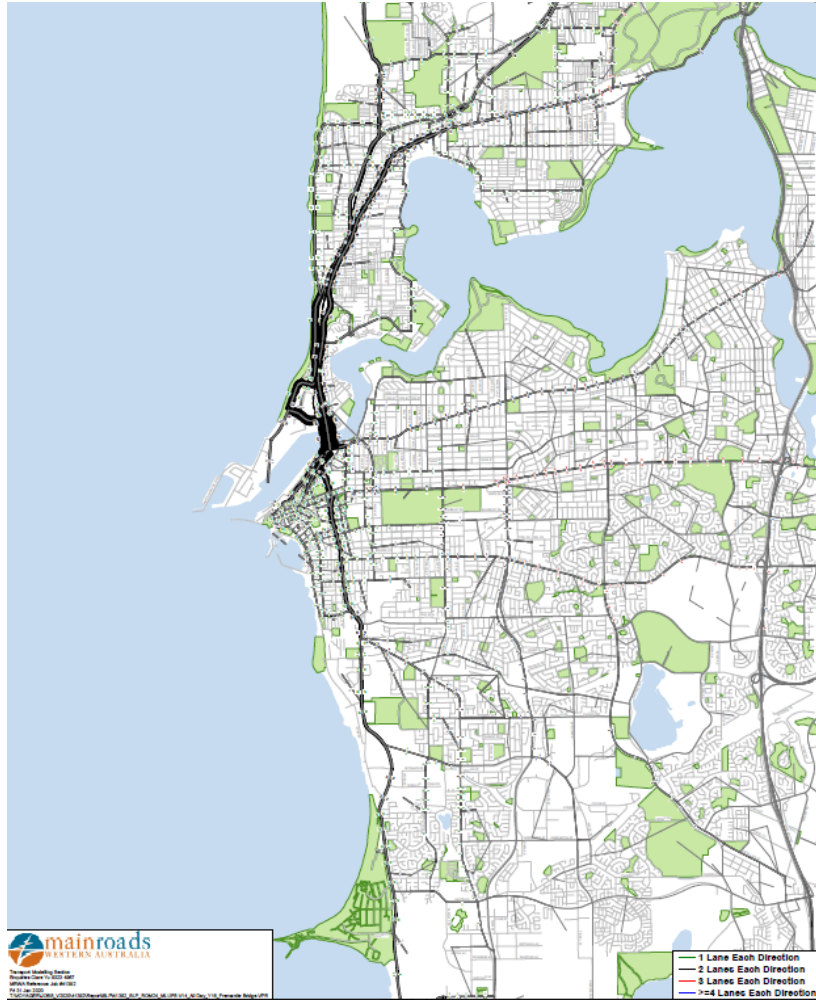


2016

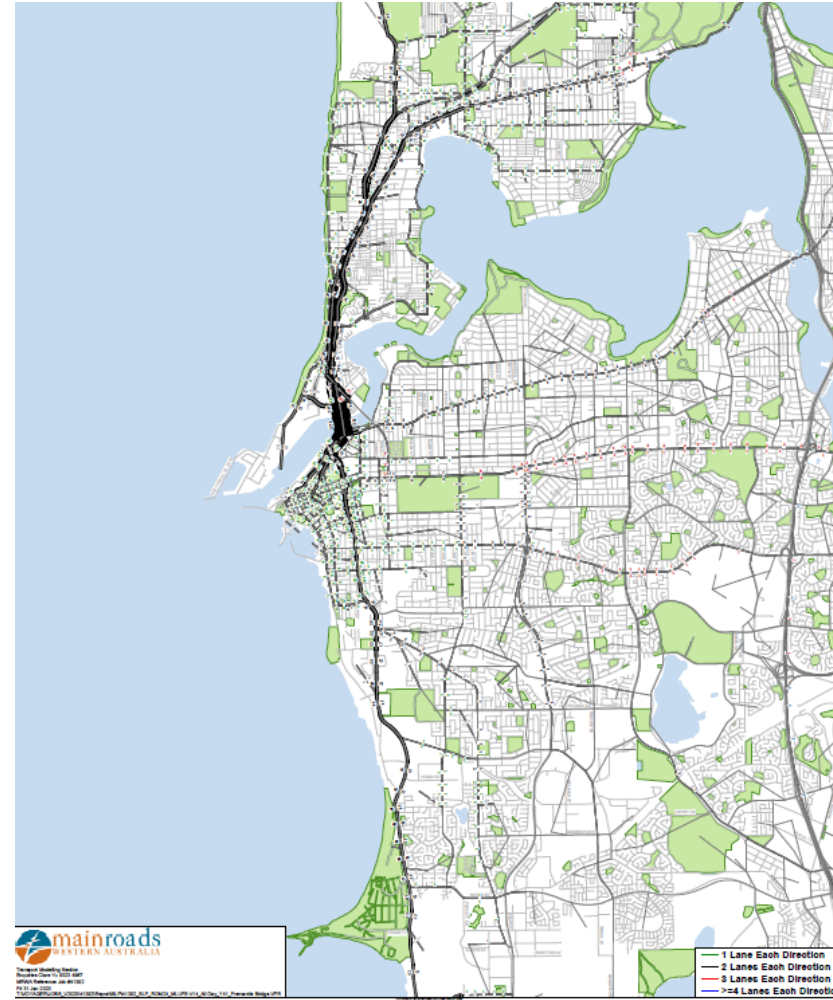


2041

The role of Fremantle Traffic Bridge - move people into and out of Fremantle



2016



2041