



Department of
Transport

Perth's Ferry Services

Current Status and Future Use



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1. Executive Summary

1.1. Background and Purpose

The purpose of this report is to set out the current status of ferry services in Perth and possible future use, having regard to the restrictions and opportunities for expanding Perth's ferry services along the Swan and Canning Rivers.

This is within the context of a growing population, plans to activate high density activity nodes along parts of the Swan and Canning River foreshores, and a substantial increase in the number of tourists likely to visit Perth in the coming decades.

The report is intended as a reference document to inform those interested in activating higher land uses along the river foreshore and who would like to see greater use of ferries along the Swan and Canning River as a means of transport, either for commuters or others. This report is not concerned with yachting, yacht clubs, or recreational boating, which, in terms of vessel numbers, are the greatest users of the Swan and Canning Rivers. The report does not represent government policy or imply any commitment to expand Perth's ferry network.

Ferry operations in Perth service two types of markets: those which are designed for tourists or leisure purposes and which operate commercially and those designed mainly for commuters, which are operated as a public transport service by Government and are subsidised.

1.2. Challenges

Financial viability is the main challenge facing ferry operators that would like to expand Perth's ferry services. This is equally true for ferry operators providing a public transport service as it is for ferry operators providing services for tourists or people undertaking the trip for leisure or recreational reasons.

Other challenges include speed limits on the river, the need to dredge and maintain channels to existing and new jetty infrastructure, the low height of the Causeway Bridge, permits and licenses to operate ferry services, the cost of developing maritime infrastructure necessary for the safe movement of people on and off vessels or for mooring of such vessels, and maintaining environmental values.

1.3. Possibilities for expanding Perth's Ferry Network

Most of the possibilities for expanding Perth's ferry network will only come into play as major development projects around the river are realised, additional tourist attractions are activated and plans by the likes of the City of Perth, City of Belmont, City of South Perth, City of Melville and Town of Victoria Park for higher density housing and commercial development are implemented.

Higher density living and commercial development and the activation of the foreshore at nodes that are conducive to ferry services is a pre-condition for any substantial increase in Perth's ferry network.

If, and provided that, all the aforementioned developments take place, this may, in time, produce the conditions necessary for the introduction of a ferry loop service linking places like Elizabeth Quay, Waterbank, Perth (Optus) Stadium, Claisebrook Cove, Crown Perth, Burswood Peninsula, Belmont Park and East Perth Power Station or something similar.

The growth of the Canning Bridge Activity Centre and the increase in enrolments at the University of Western Australia (UWA) may eventually produce conditions to make a ferry service between Canning Bridge-Matilda Bay-Elizabeth Quay viable. However, it could be some years before development could support such a service in an area that will be well serviced by regular train and bus services.

There may be an opportunity to broaden the range of experiences for tourists travelling on vessels sailing up the Swan River to Middle Swan by introducing additional stops. A stop at Guildford, for example, may offer a heritage experience. This would require the support of the local Guildford community, private ferry operators and the State.

If commercial ferry operators were to invest in bespoke, fast and low-wash vessels on the Perth-Fremantle section and be issued with an exemption from current speed limits along certain stretches of the river, travelling time could be reduced and the frequency of service increased.

Because of the way Perth is laid out, cars together with the mass transit trains and buses are expected to continue to dominate the movement of people around the metropolitan area, with ferries operating in niche markets. From a public transport perspective, ferries are likely to play a complementary role to buses and trains in moving people over a few, highly defined routes around a small number of high density nodes along the river bank. Non-public transport ferries will continue to be aimed at a niche but growing market, aimed at giving customers an enjoyable experience within the limits of operators receiving a commercial return.

2. Opportunities and constraints for ferry services

2.1. Background

The Swan and Canning rivers define Perth's identity and are among the city's most picturesque assets. Early European settlers used the river extensively for exploration of the Swan Coastal Plain and the original settlements of Perth and Guildford were established due to their proximity to navigable waters. Ferries played a major role in transporting people and goods in the Colony of Western Australia.

The advent of the railway, and later road transport, saw a relative decline in the use of the river for transport purposes over the past century. However, ferries are set to play a role in connecting people and places in the 21st century. As the city's population grows, there will be more densification of development around the rivers, land transport will potentially become progressively more congested and travel times may get longer – making ferries a

more competitive option. A significant increase in the numbers of tourists coming to Perth, due in part to growing affluence in the Asia Pacific region and cheaper airfares, will also boost the demand for recreational ferry services.

Ferry operations in Perth service two types of markets: those which are designed for tourists and operated commercially and those designed mainly for commuters which are operated as a public transport service.

In time, the public transport ferry service network could expand from its current Perth (Elizabeth Quay)–South Perth (Mends Street) route to incorporate a Canning Bridge–Matilda Bay–Elizabeth Quay route, and a loop service linking Elizabeth Quay–Mends Street–Coode Street–Ellam Street–Fraser Point–Water Bank–Perth (Optus) Stadium–Claisebrook Inlet–Brown Street–East Perth Power Station and perhaps Belmont/Belmont Park. Alternatively, privately-operated hop-on and hop-off services may emerge as attractions are activated and maritime infrastructure such as jetties are provided.

2.2. Why Ferries?

Generally, the community has a very positive perception of ferries. Ferries are perceived as an attractive form of transport capable of providing a comfortable, pleasant, enjoyable and environmentally friendly travel experience. In densely populated cities, ferries can have an advantage over road transport where traffic congestion is an issue.

Ferries are attractive to tourists, offer a relaxed way of travelling and an opportunity to experience Perth differently by cruising along the river where they can enjoy the scenery, fresh air and discover some of the wonders of Perth, such as the wildlife.

2.3. Description of existing ferry services

The Elizabeth Quay to Mends Street ferry service is a public transport service provided by the Public Transport Authority (PTA). The *Transperth* service uses two low-wash, 148 passenger vessels. These are operated under a single manning exemption permit, which allows the ferries to be operated by one ferry master in the river precinct between Elizabeth Quay and Mends Street. The ferry service takes approximately eight minutes to cross the river and about seven minutes to board and alight passengers, meaning the predominant 15-minute frequency operated during the Summer Timetable (mid-September to mid-May) is very tight. During the Summer Timetable 92 trips are undertaken on an average weekday and in the Winter Timetable an average 60 weekday trips are undertaken. A third vessel is on order that will have additional features such as toilets and which will have a greater capacity to service routes with a longer range.

The Perth–South Perth ferry service is popular with tourists and commuters and has the highest public transport fare recovery rate of the three modes of public transport - approaching 70% compared to about 30% for the bus and train system. The relocation of the Perth ferry stop from Barrack Street to Elizabeth Quay and hence closer to the nearby railway and bus stations, has contributed to a substantial increase in ferry boardings. These boardings are expected to increase as Elizabeth Quay is further developed and other major high-density developments surrounding the area come to fruition.

In addition to the public transport ferry there are three private ferry operators that cater mainly for tourists and operate on a commercial basis.

- *Captain Cook Cruises* operates seven vessels with passenger carrying capacity ranging from 70 to 330. The company operates a variety of pleasure cruises to destinations on the Upper and Lower Swan, including a Perth to Fremantle Service up to three times a day in summer months.
- *Rottnest Express* operates services to Rottnest Island with ferries operating from Barrack Street Jetty in Perth and the B-Shed and Northport terminals in Fremantle, and other upriver and downriver cruises.
- *The Little Ferry Company* operates two, small 11-seater vessels offering regular services between Elizabeth Quay and Claisebrook and a shorter, half hour return cruise from Elizabeth Quay to Heirisson Island.

2.4. Characteristics of different operating models

The PTA's business model to provide public transport services in Perth is to maintain Government ownership or control of all key assets used in the delivery of Transperth bus, ferry and train services. These assets include buses, trains, vessels, stations, jetties, depots and ticketing systems.

Owning or controlling this infrastructure is integral to the operations of an efficient public transport system, facilitating a level playing field in the tendering of these services and providing best value for money in the delivery of these services. It also ensures the continuity of these essential public transport services in the event of a contractor failure (e.g. contractor goes into liquidation).

The service delivery model used for the ferry service requires the PTA to own the vessels and ticketing systems, and control the jetty berthing facilities through long term leases. The ferry services are tendered on long term contracts, typically 10 years. The successful contractor (currently Captain Cook Cruises) must operate the ferry service in accordance with Transperth's service specification, which includes maintaining the vessels. All fare revenue paid by passengers on the ferry service accrues to the PTA.

The non-public transport ferry services are characterised by private ferry operators providing services on a commercial basis. Typically, these operators will own their own vessels, although there is the opportunity to lease vessels should that suit a company's business model.

The non-public transport ferry services are eclectic and can include cruises based on particular destinations or non-destination orientated cruises, such as those for whale watching. Vessels are also available for private charter and to cater for birthday parties, engagement parties, wedding receptions, work and school functions and other special occasions such as Australia Day, New Year's Eve and Valentine's Day. Special occasions in the future might also include events at Perth (Optus) Stadium. There are also lunch, dinner and wine cruises, full day and half day cruises and night cruises.

Optimising the use of vessels and keeping them in work is something that private ferry operators are conscious of and is an important factor in maintaining commercial viability. Although consideration is often given to using commercial vessels on public transport services, the nature of the demand cycle for the commercial services often coincides with the demand cycle of public transport services, meaning that the commercial vessels would not be available at the times required for public transport services.

The number of passengers for new public transport routes is likely to be fewer and patronage less consistent than the currently operated Elizabeth Quay to Mends Street ferry service which, despite its high passenger loadings, still operates below full commercial cost recovery. This means that it is likely that any new route would require a government subsidy to remain viable. The level of subsidy would also vary quite considerably by time of year. For example, if a ferry service is introduced for Canning Bridge to UWA or between UWA and Elizabeth Quay, there will be large variations in boardings between UWA term periods and non-term periods affecting the overall viability of such a service.

Currently there are no known suitable commercial vessels available to undertake public transport services in Perth outside of those operated by Transperth. Given the likely uncertainty of contract tenure for any future public transport services (due to concerns over patronage take-up), it is expected that commercial options that involve securing a suitable vessel to perform these services on behalf of the PTA may carry a significant cost premium due to the contract risks involved. The operation of commercial vessels by a different operator than the Transperth contractor would require additional facilities as kiosk and mooring facilities only exist currently for one ferry operator at Elizabeth Quay.

2.5. Users of ferry services and their requirements

In the public transport network, any new ferry service will need to complement other forms of public transport such as buses and trains. Typically, passengers will favour convenience and speed of travel over any other factor and make modal choices accordingly. If ferries offer a slower or less convenient commute than other modes of transport then commuters will not use the service.

In general, when commuters choose a mode of transport, they look for convenience and endeavour to minimise their travel times at the lowest cost. Timetables and frequency of service are important considerations, as are the location of stops. The walking distance to and from the ferry service to the ultimate destination and transfer times between transport modes such as between train, bus and ferry all impact on the decision of whether or not to use a ferry.

Public transport bus and train services will be more widely spread across the metropolitan area than ferries, service more destinations and offer more frequent services. In the limited number of routes where ferries may offer an attractive alternative to other transport modes ferry users will expect the vessels to be spaciousness and provide a highly reliable, comfortable and pleasant and pleasant travel experience.

People taking ferries for leisure or tourism purposes are less concerned about travel time than commuters. However, for some routes like Perth to Fremantle, the introduction of fast,

low-wash ferries could offer the opportunity for quicker journeys and more frequent services running to a timetable that can provide operators with an opportunity to optimize use of vessels. From a tourist perspective, passengers can fit more into their day if the ferry travel time between Perth and Fremantle is reduced and the services are more frequent.

One of the challenges of introducing new public transport ferry services is that the most suitable locations are already serviced by bus, train or both. At most of these locations any decision of commuters to transfer from their bus or train to a ferry service would depend on convenience and the time advantage involved. If new public transport ferry services are introduced, these services will need to be fully integrated with other modes of public transport, with standardised tickets and fares. They would also need to offer a service that is at least as convenient as other modes of public transport in order to be competitive and produce an acceptable fare recovery rate comparable to other public transport modes.

2.6. Nature of Perth's rivers and urban development

Perth is a low-density city stretching over 150km from north to south. Almost three quarters of new housing is on the metropolitan fringe, while most jobs are in the central region. Low density suburbs disperse commuter demand, creating a reliance on cars as the primary mode of travel.

Much of the foreshore adjacent to the rivers is parkland and public open space. The reason for this is partly historical because the Swan and Canning rivers are shallow with a wide flood plain. Retaining the river foreshore as public open space represents a deliberate planning decision that has widespread support and acceptance. This planning decision has allowed for the protection of the flood plain and allows the foreshore to be used for recreational purposes and for landscape protection, but it does not always create an environment that readily supports a network of public transport ferry stops along the rivers.

Housing around the Swan and Canning rivers is, in the main, low density. Except for high rise apartments on the South Perth Esplanade and high-rise buildings on the city side near Elizabeth Quay, there are no other examples along either the Swan or Canning rivers where there is high density development on both sides of the river. The WA Planning Commission's *Perth and Peel @ 3.5 million* sets a 47% target for residential infill to drive higher density development in the central area and around activity centres. Meeting these targets, and having major attractions/destinations along the river, is essential to the viability of expanded commuter ferry services.

The Swan and Canning rivers can be characterised as having large variations in depth and including areas of very shallow water, being broad downriver with isolated narrowing and narrowness up river. The Swan River has to be dredged in places to support vessel activity.

Comparing Brisbane with Perth, the former has a comparatively narrow river with high density developments on both sides of the river and sufficient population to sustain a network of 25 terminals for a city hopper ferry service. There also is no requirement for dredging in Brisbane and there is good clearance under all bridges. It is noteworthy that neither the ferries in operation in Brisbane nor Sydney could work upriver in Perth because they could not fit under the Causeway Bridge.

The situation of Brisbane is not analogous with Perth and it is unlikely that Perth's ferry service will ever be as extensive as the ferry network in Brisbane. However, Perth is changing and as higher density development takes place there may be an opportunity to expand the ferry service so that it plays a greater role than it does currently and notwithstanding that buses and trains will continue to be the primary modes for mass passenger transit.

2.7. Critical Factors and keys to expanding Perth's ferry services

According to a study undertaken by GHD in 2000 there are four keys for the future of urban waterborne transport:

1. Modal integration

Modal integration ensures that ferries will link with other modes of transport such as the CAT bus links to Elizabeth Quay and Fremantle and bus routes that link to ferry stops.

2. Technological Innovation

Technological innovation includes the use of higher speed, low-wash/wake, maneuverable, comfortable ferries that are sufficiently versatile in the configuration to be used for a range of commuter, entertainment or other tourism uses.

3. Respect for the Environment

Respect for the environment means having a low-wash design which does not:

- compromise or do harm to riverbanks, the natural environment of the river and species inhabiting it;
- damage built infrastructure on the shoreline; and
- cause a nuisance to other river users, vessels that are moored at adjacent marinas and yacht clubs.

4. Waterfront Redevelopment

Waterfront redevelopment means redevelopment of land and facilities around the river, including the building of new attractions and high-density precincts that incorporate new maritime infrastructure to accommodate the easy movement of passengers onto and off ferries. Good pedestrian access to ferry stops for those walking or arriving by other modes of transport is also a key for successful urban waterborne transport in the future.

The critical factors and keys to expanding Perth's Ferry Services identified by GHD remain relevant today. What has changed is that Elizabeth Quay now exists as does the new Optus Stadium, and there are now firm plans to develop several high-density nodes around the river, albeit it could be some time before such plans are fully implemented. There are also more tourists visiting Perth now and the number of tourists is likely to continue to increase.

2.8. Relationship to tourism, development and transport objectives

The *Draft Swan River Tourism Strategy Discussion Paper* notes the significant amount of development and activity occurring in key nodes around the river which offer many opportunities to develop the Swan River as a destination, as well as an attraction.

Ferries can contribute to development and activation by improving connectivity between key tourist nodes on the Swan River, such as linking King's Park, Elizabeth Quay, South Perth, East Perth and the Perth Central Business District (CBD). Significantly, ferries enable visitors to Western Australia to experience Perth's river environment, which is a unique feature of the city. Ferries can also play a part for those wanting a cultural and heritage interpretation experience, wanting to participate in casual food and wine experiences on the river or using the ferry to access a restaurant located by the river.

They also provide an opportunity to develop itineraries for visitors and package together experiences that focus on the river due to increased access. As an example, a visitor could potentially hire a bike at Elizabeth Quay, cycle down to Fremantle for lunch, and then catch a ferry for the return journey as part of a day trip on the Swan River.

Ferries play an important role in transporting tourists between the Perth CBD and South Perth to visit the zoo, as well as to attractions both up and down river. Expanded ferry services in the future have the potential to take cars off the road, reduce the need for parking infrastructure and take a modicum of pressure off some train and bus services.

Ferries have a part to play in achieving the transport high order targets of facilitating economic development, providing social connectivity and moving people safely while maintaining social amenity. Ferries have the potential to improve mobility, alleviate some road, bridge and public transport congestion and provide a flexible, dependable, comfortable, attractive and safe mode of transportation that helps the city to meet accessibility goals and enhance tourism and recreational development.

2.9. Maintaining environmental values and required approvals

It is important that ferry operators ensure that no significant damage to the riverbed, water or foreshore within the Swan Canning Development Control Area occurs as a result of the operation.

The Department of Biodiversity, Conservation and Attractions (DBCA) is responsible for regulating activities that take place on or in the Swan and Canning Riverpark and issues permits and licences to ferry companies wishing to operate on the river. There are a number of licence conditions that ferry operators must adhere to. For example, the operator must ensure that no sewage, grey water, fuel, garbage or waste material enters the river as a result of the ferry operation. The Swan and Canning Riverpark is depicted at Appendix 9.

Speed limits are also imposed in certain parts of the rivers for reasons of managing boat wash/wake and/or for reasons of public safety. The Department of Transport (DoT), in consultation with DBCA, determines speed limits and the issuing of exemptions where warranted.

It is likely that any expansion of public ferry services will require the construction of new accessible jetty infrastructure and dredging of the river bed.

DBCA approval is required for any development within the Swan and Canning Rivers. A licence issued by the Department of Transport is required prior to the erection or construction of a jetty which may include specific maintenance and use conditions.

Dredging would also require the consent of DBCA in addition to environmental agencies and liaison with relevant Local Government Authorities would be required, with respect to shore based access to any jetty facility and the provision of any parking areas that were considered necessary.

2.10. Use of the river and competing interests on the river

Ferry operators must share the rivers with other users, such as the recreational boating community comprising yachts, motorised recreational vessels, fishing craft, rowing boats, canoes, personal water craft and water skiers. Ferry operators do not have priority over other users of the river although they may be issued with exclusive mooring licences around jetties that are licensed for their operations.

There are 10 yacht clubs located along the rivers offering 2076 pens, three commercial organisations providing pens and moorings and a power boat club located adjacent to the Crown Casino, with greatest use of the rivers occurring on Wednesday afternoons and weekends. There are 52,000 registered recreational vessels in the metropolitan area and 11 boat ramps along the river providing access for recreational vessels. There is also a sea plane service utilising Perth waters.

Examples of special events on the river include the annual Australia Day Fireworks Sky Show, the Avon Descent, the Classic Paddle and the Red Bull Air Race.

DoT determines and enforces speed limits that apply to various stretches of the river and can set aside particular areas of the Swan and Canning Riverpark for certain activities. For example, there are areas where water skiing is allowed and areas for powered water sports and personal water craft.

It is also noted that there is an increase in interest in using the river associated with Elizabeth Quay, with proposals for floating event venues, sea plane operations and other water-based activities being received. Interest in using the river is also likely to occur with the development of other areas and is an important consideration in the potential expansion of the ferry network.

2.11. Ferry opportunities

The introduction of high speed, low-wash commercial ferries on the Perth to Fremantle route is a potential commercial opportunity. Exemption from current speed limits along stretches of the Swan River for new bespoke, low-wash vessels means that travelling times can be significantly reduced and frequency of service increased, which is likely to lead to a significant increase in the number of people using ferries on the route.

The State is supporting and facilitating a fast low-wash ferry service on this route with DBCA issuing a 10 year permit and licence to Wadjemup Trading Pty Ltd in July 2017, trading as Rottnest Express, to operate a fast ferry service in the Swan and Canning Riverpark from Barrack Street, Perth to Fremantle.

However, Wadjemup Trading sold Rottnest Express to Experience Australia in August 2017 and as the Permit does not automatically transfer upon sale of the business, Experience Australia would be required to apply to DBCA for a new permit if they were to consider operating fast ferries on the river. If a new permit was issued on the same terms, the company would still need to complete field trials and wake impact studies as well as demonstrate they can fulfil the conditions of the permit in order to operate a fast ferry service.

DoT has drafted exemptions from certain provisions of the *Navigable Water Regulations 1958* and the *Western Australian Marine Act 1982* (WA Marine Act) so that speed limits on certain stretches of the river may be exceeded by approved high speed low wash vessels. Both DoT and DBCA are prepared to consider proposals from other ferry operators to introduce fast, low-wash services if the operators are prepared to undertake the necessary technical work and follow a similar process that led to Rottnest Express being given an exemption from speed restrictions in certain areas.

Broadening the range of experiences for tourists travelling by ferry upriver represents another opportunity. For example, discussions have taken place between the City of Swan and Captain Cook Cruises for a ferry stop at Guildford as an additional stop for tourists interested in having a heritage experience. Currently, the vessels only stop further up the Swan River at wineries. Commercial ferry operators will identify new ferry stops that they consider have the most tourist potential. The operators will work with the relevant local government authority, DoT and DBCA with regard to placement and construction of appropriately designed jetties.

The Canning Bridge to Matilda Bay route was modelled in 2012 and found to be unviable. However, this route may have potential in the future as a potential public transport service in the context of increasing densification in suburbs around Canning Bridge, growing enrolments at UWA and by including in the patronage numbers tourists as well as commuters.

A Canning Bridge Activity Centre Plan provides for a high density activity area comprising a mix of residential, civic, office, retail and entertainment uses within a convenient walking distance of the Canning Bridge Rail Bus Interchange (see link <https://southperth.wa.gov.au/our-future/projects-and-places/canning-bridge> for further information and Appendix 3 for schematics).

Planning by the PTA for a new, larger bus station at Canning Bridge, which is aimed primarily at improving bus to train transfers might also include a future ferry stop with easy pedestrian, cycling and public transport access.

There are also opportunities for ferry operators to take advantage of new maritime facilities that have been developed at Perth (Optus) Stadium, known as Burswood Jetty. For

example, in June 2018 and following an expressions of interest process, DoT issued an exclusive use licence to Captain Cook Cruises for one of the three berths at the jetty. On event day, Captain Cook Cruises is expected to pick up and drop off up to 1,400 people on two return services across five vessels.

Other charter operators and the public can use the two additional berths for drop off and pick up of patrons.

A public transport or commercial ferry service to Perth (Optus) Stadium on match days is another possibility in the future if the Government of the day is prepared to extend a public transport ferry service to the precinct.

Increasing land-use activity along the river foreshore, together with a growing population and an increasing number of tourists visiting Perth, will provide stimuli for expanded ferry services. For example, a ferry loop service could be implemented as projects such as Elizabeth Quay, Waterbank, Perth (Optus) Stadium, Claisebrook Cove, Crown Perth, Burswood Peninsula, Belmont Park and East Perth Power Station are fully developed and the City of Belmont, the City of South Perth and the City of Melville proceed with plans to introduce higher density housing and activate additional tourist attractions near the river.

One example of higher density is a \$3.8 billion development besides the Belmont Park racecourse that will eventually see 4,500 apartments, together with retail and commercial property built next to the Swan River (see link <https://thewest.com.au/news/wa/golden-group-to-confirm-go-ahead-for-38-billion-precinct-beside-belmont-park-racecourse-ng-b88819528z> and Appendix 4 for further information).

Another example of higher density are the Waterbank redevelopment project along the banks of the Swan River near the WACA ground and Gloucester Park, which is expected to attract \$2 billion in investment and bring 7,000 new residents and 6,000 new workers into the area (see link <https://www.mra.wa.gov.au/projects-and-places/riverside/vision> and Appendix 5 for further information).

It is not clear yet whether a future ferry loop service would initially be a public transport or commercial service. If conducted as a commercial service it is likely to be a hop-on and hop-off arrangement over a limited number of stops.

The Old Swan Brewery could become a ferry stop in the future if a pedestrian access link is provided to Kings Park.

A ferry stop at Crown Casino is also a possibility if the WA Powered Water Sports' interests are accommodated. The area is currently reserved for the use of motorised aquatic events and is closed at all times to other vessels unless approved by DoT.

2.12. What the state government agencies and local authorities can do to activate the river and mitigate constraints

State government agencies and local authorities can do a number of things to improve opportunities for expanding Perth's ferry services. These include:

- Planning for and allowing waterfront redevelopment and increasing land use activity in appropriate locations and nodes along the river foreshores;
- Encouraging higher density living in suburbs close to the river;
- Supporting tourism projects;
- Dredging the river in an environmentally sound manner when required;
- Providing good design parameters when ordering new public transport ferries;
- Providing speed exemptions for proven low-wash/wake vessels in areas of the river where this is warranted;
- Ensuring that when new bridges are built across the river or existing bridges replaced that these bridges have sufficient clearance underneath to cater for most commercial and recreational vessels;
- Planning and providing suitable facilities around ferry stops that make them attractive and accessible;
- Designing, building and funding new jetty infrastructure that meets contemporary standards and is suitable for access by the young, elderly and people with disabilities;
- Issuing permits and licences to commercial operators to operate ferry services on the river;
- Integrating ferries with other modes of public transport commuter trips by providing appropriate feeder services;
- Promoting tourism and ferry use with targeted promotion particularly important in garnering support and usage of any extended ferry service; and
- Streamlining regulatory approvals.

3. Potential stops and routes for expanded ferry services

In late 2016, a Ferries Working Group, which comprised several government agencies and chaired by the Member of South Perth, John McGrath MLA, compiled a list of 56 existing and possible ferry site locations (Appendix 6). These were discussed in the context of the Tourism Western Australia *Draft Swan River Tourism Strategy Discussion Paper*, which identified potential key tourism nodes and attractions around jetties.

Members of the working group used this information, combined with observations made during a field trip on the river, to identify 16 sites with the most potential for being a stop for an expanded ferry service. The names of these sites and Working Groups comments can be found at Appendix 7

The Working Group considered promising routes which could contribute to an expanded ferry service, these include:

1. The Perth-Fremantle Ferry Route – the introduction of fast-speed, low-wash commercial ferries is likely to markedly expand both the frequency of services and the number of ferry boardings on this route.
2. Canning Bridge-UWA-Elizabeth Quay.
3. Ferry loop service linking key nodes as densification occurs, and attractions are activated.

The Working Group noted that of the 16 potential stops, only Elizabeth Quay and Perth (Optus) Stadium, are ready-made for a new ferry service. All the others would require new jetty facilities to be constructed, and most would need complementary development to take place before the site could be seriously considered as a stop for an expanded ferry service.

4. Practical and Operational Considerations

There are a number of practical and operational considerations that must be worked through that are relevant to expanding Perth's ferry services.

4.1. Berthing, refuelling and maintenance of vessel

If more ferry services are introduced, there will be a need to increase the number of berths and identify areas where vessels can be maintained and moored overnight.

Having vessels tied up overnight or moored in places a long way from their normal operation adds to operational costs and is time consuming. More operationally-friendly locations include developing facilities at Mends Street, Coode Street or Ellam Street, Victoria Park or expanding facilities near Barrack Square. For operational efficiency reasons, ferry operators prefer berthing, maintenance and refueling facilities located closest to end of route for the ferry.

Concept plans have been drawn up by the Public Transport Authority for the redevelopment of Mends Street Jetty to accommodate the Transperth ferries. The preferred option allows for a separate new jetty structure to the existing jetty with provision for overnight berthing of four Transperth ferries (see Appendix 7 for the concept design).

Currently Barrack St Jetty berthing facilities are at capacity and there are insufficient refueling locations within the precinct as Jetty 1 has been decommissioned due to major structural issues. The provision of appropriately designed jetties is critical to expanding Perth's ferry network. New jetty facilities would entice ferry operators to call at the stop and prove a catalyst for expanding the ferry network. Because ferries run to timetables, commercial ferry operators will need to have a guarantee that they can berth at jetties that are on their itinerary in a timely manner. While many of these jetties will also be available for recreational and public use, protocols can and will need to be put in place to manage competition for space at the berths.

4.2. Crewing

One of the reasons that the Perth-South Perth ferry service is economic is because vessels can operate with just a single ferry master.

The Perth-South Perth service was granted an exemption from normal crewing requirements by DoT, under the WA Marine Act, based upon a strong safety case. DoT no longer has the power to grant such exemptions under the National Law and it is unlikely an operator seeking to operate beyond Perth Waters would be able to demonstrate a safety case that would result in the Australian Maritime Safety Authority (AMSA), now responsible for regulating commercial vessel), granting such an exemption.

For example, if PTA were to introduce a public transport ferry service from Canning Bridge to UWA and /or linking to Elizabeth Quay it would need to have an additional crew member on the vessels, thereby increasing operational costs compared to the Perth-South Perth Service.

4.3. Speed Restrictions

Speed restrictions apply in most parts of the Swan and Canning rivers and the speed limit is the major determiner of ferry journey times (see Appendix 8 for a depiction of speed limits along the Swan and Canning rivers). Speed limits are set for safety and/or environmental protection reasons

The speed limit upriver of Belmont is 5 knots so as to keep boat wash at a minimum which otherwise would lead to the erosion and degradation of the riverbank. This means that it takes a long time to reach attractions upriver and, conversely, a long time to travel back to Perth. While slow, leisurely cruising and long journey times can be acceptable for tourist purposes, they are not acceptable to commuters. Therefore, ferries are not a viable public transport alternative to other modes of transport upriver of Belmont.

Downstream of Belmont the Swan River is considerably broader lending itself, in places, to faster ferry speeds without generating unacceptable boat wash/wake or unduly compromising safety. The technology now exists for high-speed low-wash ferries that are more environmentally acceptable. Ferry journey times can be reduced if operators invest in high-speed low-wash ferries and are granted exemptions from speed restrictions in certain stretches of the river.

Permits and licences are required from DBCA for commercial ferry operations and an exemption from speed limits is required from DoT for a ferry operator to operate a fast ferry service.

4.4. Government approvals

There are a number of approvals a ferry operator needs to establish and maintain a ferry service. These can be classified as follows:

Planning Approvals

- Planning approval from the local authority or the Department of Planning, Lands and Heritage or, if within the Swan Canning Development Control Area, the approval of DBCA.
- Building approval from local authority.

Operating Approvals

- Licence and Permit from DBCA to operate within the Swan and Canning Riverpark.
- Ferry Licence from DoT.
- Certificate of Survey for the ferry vessel from AMSA.
- Liquor Licence from the Department of Local Government, Sport and Cultural Industries if alcohol is to be served on a ferry.

Tenure approvals

- Jetty and Mooring Licence from DoT.
- Ground Lease from local shire or DoT if building land-based infrastructure.

4.5. Ferry Design

Vessel design is emerging as a key factor in expanding Perth's ferry services. High speed ferries are the key to opening up new public transport ferry service routes. They are also the key to increasing patronage on the Perth-Fremantle route.

Technical advances have seen a significant increase in large vessel speed without consequential damage caused by excessive wake.

However, not all vessels need to be capable of operating at high speed. There is also a market for slow moving vessels.

One of the features of the commercial ferry fleet is that operators look for vessels that offer flexibility and can be used for a number of roles.

PTA has been considering the required characteristics of new vessels and staying abreast of new opportunities for expanding public transport ferry services as they arise, in order to ensure the vessels can be used for their immediate task as well as other purposes.

Vessel design is important and if ferries are fitted with toilets and other facilities they become more versatile as they can be used for longer trips and cater for a greater number of uses. Provision for bike storage and passenger access to open decks may also be desirable.

It is likely that any new Transperth ferry will be longer and faster than existing vessels and have a toilet on board to facilitate longer trips, if required.

4.6. Bridge heights

Existing infrastructure in the form of bridges are a constraint on the type of vessels that can be operated on the Swan and Canning rivers. The vertical clearance above maximum predicted tide is only 3.0 m for the Causeway Bridge, 2.6 m for the Garratt Road Bridge, 3.7 m for the Canning Bridge and 5.2 m for the Elizabeth Quay Bridge.

The low vertical clearance of the Causeway Bridge is the biggest single constraint on operators who would like to use their fleet of vessels more flexibly. The only way around this problem at present is for operators to utilise low profile vessels upriver of the Causeway. In the very long term, when the Causeway Bridge comes to the end of its useful life, consideration should be given to a replacement structure that provides more vertical clearance.

When new bridges are built across the Swan River or existing bridges replaced, vertical clearance ought to be high enough to accommodate most vessels that are capable of operating on the river.

4.7. Accessibility from land side and water side, links to other transport modes and availability of parking

When examining the potential for sites to be used as ferry stops, the key considerations are:

- Is there something to attract people to the potential stop?
- Is the stop easily accessible from both the water and land side?
- Is the site well connected to other modes of travel (walking, cycling, buses, trains and cars)?
- Is car and bike parking available nearby?
- Is dredging required?
- How suitable is the existing jetty and what modifications are required?
- Is the site sheltered from the wind and wave action?
- What is the proximity to fuelling and maintenance facilities?
- Is there a catchment of potential passengers nearby? (Important for public transport services).

5. Previous studies

There have been a number of previous studies undertaken regarding expanding Perth's ferry services. These include:

- Swan and Canning Rivers Ferry Study (1990).
- Report on Feasibility of Study of Ferry Services on Swan River (1993).

- Discussion Paper on River Ferry Transport (1997) - Ministry for Planning.
- Additional Ferry Services on the Swan and Canning rivers – An investigation into the feasibility of increased use of river ferries to form an integral part of a comprehensive public transport system for Perth (2000) [A major study with 6 separate reports] – GHD on behalf of Ministry of Planning, Department of Transport, Swan River Trust.
- Interim Review of Future Transport (Public Transport) Ferry Options on the Swan and Canning rivers (2011) Public Transport Authority.
- Ferry Network Expansion Study (2012) Public Transport Authority with assistance from the Department of Planning.
- Interim Report of the Ferries Working Group; Opportunities for Expanding Perth's Ferry Services (December 2016).

While these studies have considered numerous potential routes for a public transport ferry service, a new route that is feasible has not yet been identified. Feasibility in this context means a fare recovery rate in the order of that achieved by other modes of public transport, which currently falls within the range of 25% to 30%.

The last of these studies completed in 2012 noted that in future a ferry system on the Swan River linking intense developments such as Canning Bridge Precinct, Elizabeth Quay, Riverside, Claisebrook Cove, UWA and Burswood Stadium would provide a net benefit to the overall public transport system. However, until these projects are completed to a satisfactory level, patronage levels are likely to be low.

A précis of these studies appears at Appendix 1.

List of Appendices

- Appendix 1 – Previous studies
- Appendix 2 – Potential public transport ferry area
- Appendix 3 – Canning Bridge Activity Centre Plan
- Appendix 4 – Waterbank
- Appendix 5 – Belmont Park Racecourse
- Appendix 6 – Existing and possible ferry site locations
- Appendix 7 – Comments on potential ferry stops
- Appendix 8 – Mends Street Concept Plan
- Appendix 9 – Depicting speed limits
- Appendix 10 – Swan and Canning Riverpark

Appendix 1- Previous studies

(Prepared by The Public Transport Authority with assistance of the Department of Planning WA – Ferry Network Expansion Study -2012)

Since 1990 there have been a number of studies conducted on the expansion of the Transperth ferry service.

▪ **Swan and Canning Rivers Ferry Study (1990)**

This study, commissioned in 1990 by the Department of Transport, investigated *“the technical feasibility and cost/benefit of providing a metropolitan ferry service as a supplement to existing bus and train services in the metropolitan area, as an alternative to private car use”*. Two conceptual ferry routes were assessed. The first was a triangular service between Nedlands, Como and Applecross; the second was a linear service between Barrack Square and Applecross. The ferry services were based on the use of new 80 to 100 seat vessels designed to operate at 20 knots, with additional capacity for cyclists. The conceptual services were also based on the use and upgrading of existing jetties.

The study concluded limited economic evaluation of ferry route viability but did paint an optimistic picture on the patronage viability of the services. The rigour of the economic evaluation is questionable.

▪ **Report on a Feasibility Study of Ferry Services on the Swan River (1993)**

The Western Australian Coalition’s Transport Policy (1993) committed to undertaking a study of the prospect of increased ferry services. The 1993 report was a consequence of that commitment. This study investigated the viability of three route options:

- Point Walter to Applecross to Perth;
- Point Walter to Claremont; and
- Matilda Bay to Applecross to Canning Bridge to Como.

This review was a more comprehensive study involving market research on potential users and transport modelling with a view to identifying economic and financial viability based on estimated future demand. The study made optimistic assumptions about possible ferry speeds that could be achieved in areas of the river that have speed restrictions.

Even with an optimistic speed assumption, the study concluded that based on the patronage demand estimated, the services would not return the cost recovery levels of normal public transport; that is they would require a higher level of subsidy than other public transport services. The study concluded that the passenger demand would need to be more than double what was estimated in order for the services to be viable under normal public transport subsidy considerations. The different methods of patronage estimation and modelling between the 1990 and 1993 studies were identified as the key reason for their quite different conclusions.

▪ **Additional Ferry Services on the Swan and Canning Rivers (2000)**

This study was the most comprehensive of the studies in the past 21 years. It was prepared by consultants Gutteridge, Haskins and Davey (GHD), for joint Government clients, being the Ministry for Planning, the Department of Transport and the Swan River Trust. The study aimed to investigate the feasibility of extending ferry services on the Swan and Canning rivers. As with previous studies, it was identified that Perth residents from many suburbs would be able to conduct their journeys faster using existing train and/or bus services. Therefore, the key issue

of time sensitivity does not weigh in favour of ferry services which are relatively slow and have passenger capacity limitations which do not favour peak period mass transit. Of the seven routes considered it was concluded that each would require a substantial subsidy. However, the study identified that the percentage level of subsidy would be approximately commensurate with the overall subsidy provided to the wider public transport system (approximately 80% at the time).

One of the key issues identified in the study was that additional development needed to occur around the proposed ferry stations on the routes under consideration to make these services viable.

▪ **Opportunities for expanding Perth's Ferry Services (2016)**

This Interim report was prepared by the Department of Transport on behalf of the Ferries Working Group which was chaired by Hon John McGrath MLA Member for South Perth.

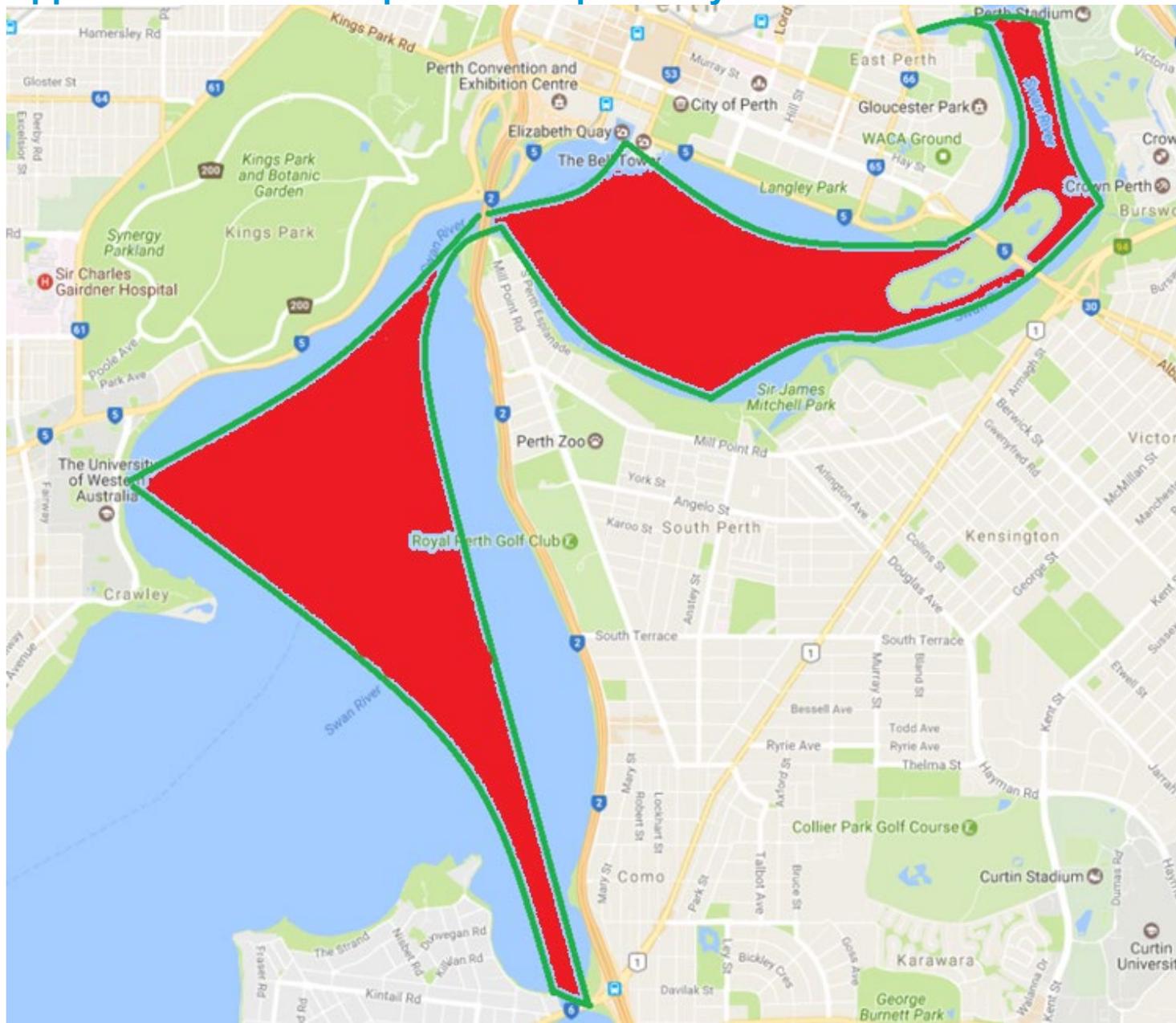
The purpose of the Interim Report was to advise on the opportunities for expanding Perth's ferry services. In so doing the report identified opportunities and constraints, potential routes and sites for expanded services and practical and operational considerations

Serving on the Working Group were the Department of Transport, the Public Transport Authority, the Department of Parks and Wildlife, the Department of Planning and Tourism WA. Not long after the report was presented to the Minister for Transport an election was called and the Government went into caretaker mode. The Interim report was not publicly released.

Much of the technical content of the Interim report has been incorporated into this report on the status of Perth's ferry services and future use. This will help people in the future, who have an interest in ferry matters, understand the restrictions and opportunities for expanding Perth's ferry services along the Swan and Canning River.

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Appendix 2 – Potential public transport ferry area



Appendix 3 – Canning Bridge Activity Centre Plan

The Canning Bridge Activity Centre Plan (CBACP) area is less than 8km from the Perth CBD, with direct road, public transport, walking and cycling access. This Activity Centre plan has been prepared to provide a guide to development of the CBACP area, an area recognised as an 'activity centre' under the Western Australian Planning Commission's *State Planning Policy 4.2: Activity Centres for Perth and Peel*. The study area comprised the area generally considered a convenient walkable distance from the Canning Bridge bus and rail interchange which is located at the junction of the Canning Highway and Kwinana Freeway.

It is proposed that the CBACP area will comprise a mix of residential, civic, office, retail and entertainment uses against the backdrop of the Swan and Canning Rivers and the adjacent open space. The CBACP area comprises land within both the City of Melville and the City of South Perth and includes a substantial area of the river.

The CBACP establishes a foundation for the future of the area including objectives and goals for its ongoing development, guidelines for the style of built form which is expected, and an implementation framework for orderly improvements to infrastructure and land over time.

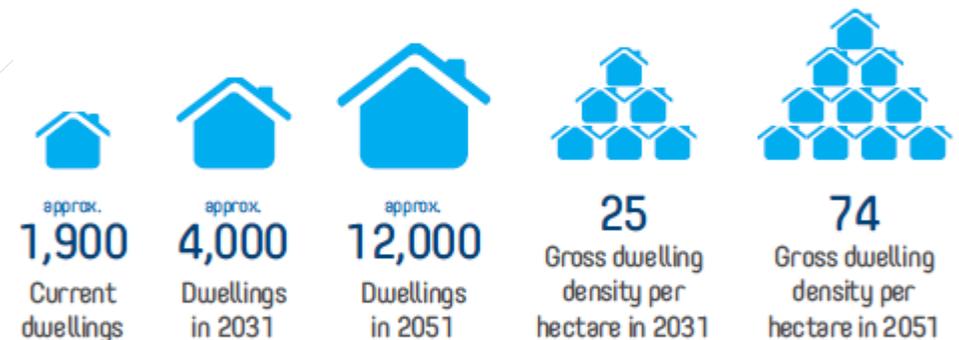
This Activity Centre plan has been prepared by the Western Australian Planning Commission, Department of Planning, City of Melville, City of South Perth, Department of Transport, Public Transport Authority and Main Roads WA as a joint initiative to progress long term planning for the Canning Bridge Activity Centre Plan area.

The following table comprises a summary of key CBACP information:

Population



Dwellings



Employment





Appendix 4 – Waterbank- Proposed Development





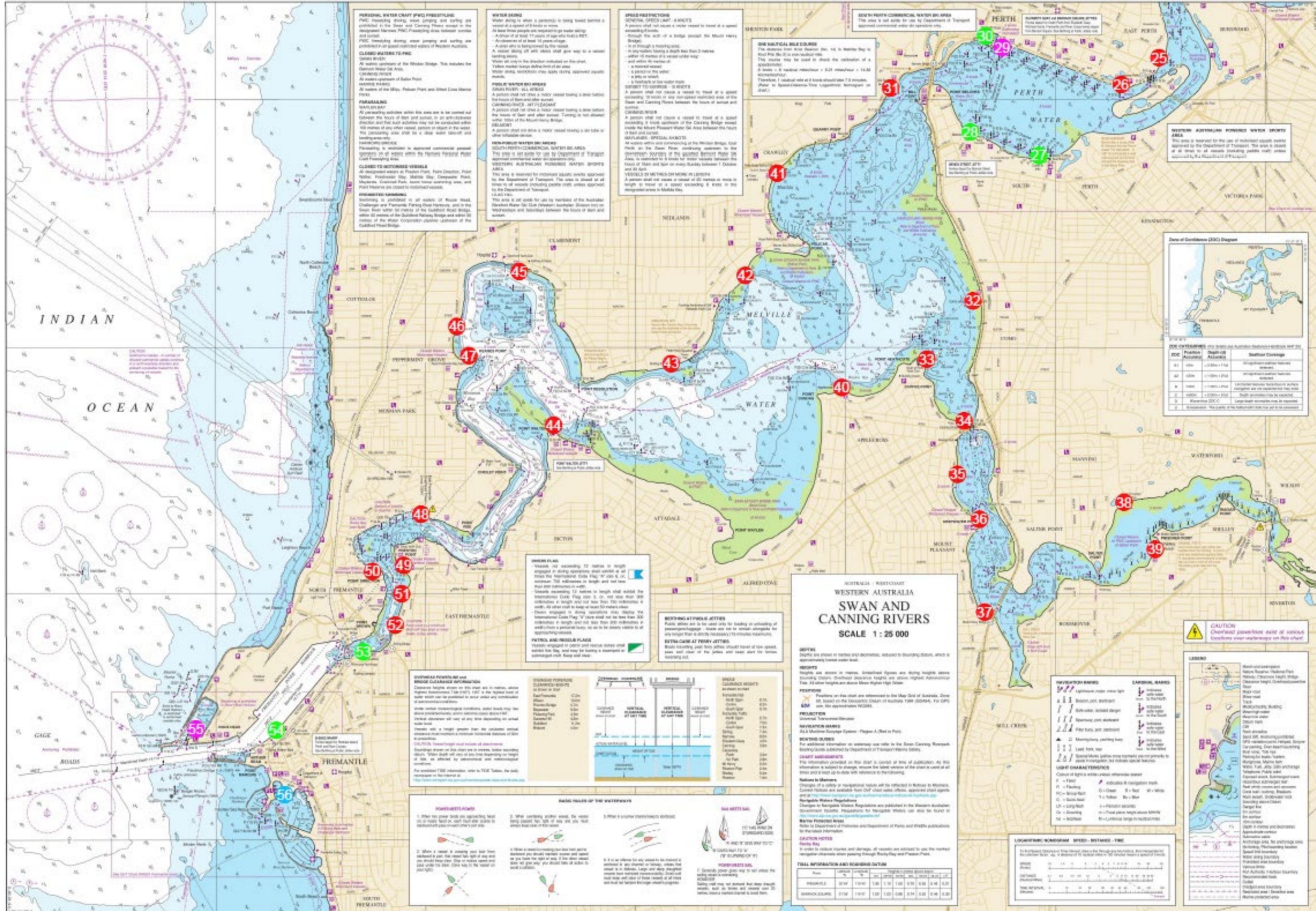
Appendix 5 – Belmont Park Racecourse- Proposed Development



Appendix 6 – Existing and possible ferry site locations

EXISTING AND POSSIBLE FERRY SITE LOCATIONS		
SITE No.	SITE NAME	EXISTING / POSSIBLE
1	CAVERSHAM HOUSE	POSSIBLE LANDING SITE
2	WOODBIDGE	POSSIBLE LANDING SITE
3	MOULTONS LANDING	POSSIBLE LANDING SITE
4	SUCCESS HILL	POSSIBLE LANDING SITE
5	CLAUGHTON RESERVE	POSSIBLE LANDING SITE
6	ASCOT JETTY	POSSIBLE LANDING SITE
7	ASCOT	POSSIBLE LANDING SITE
8	BAYSWATER BOAT RAMP	POSSIBLE LANDING SITE
9	BAYSWATER	POSSIBLE LANDING SITE
10	GARRATT ROAD BRIDGE	POSSIBLE LANDING SITE
11	BATH STREET RESERVE	POSSIBLE LANDING SITE
12	TRANBY HOUSE	POSSIBLE LANDING SITE
13	BOAT YARD MAYLANDS	POSSIBLE SERVICE LOCATION
14	ASCOT WATERS	POSSIBLE LANDING SITE
15	HARDEY PARK	POSSIBLE LANDING SITE
16	MAYLANDS BOAT RAMP	POSSIBLE LANDING SITE
17	BELMONT JETTY	POSSIBLE LANDING SITE
18	GOODWOOD BOAT RAMP	POSSIBLE LANDING SITE
19	MAYLANDS YACHT CLUB	POSSIBLE LANDING SITE
20	BANKS RESERVE	POSSIBLE LANDING SITE
21	EAST PERTH POWER STATION	POSSIBLE LANDING SITE
22	BROWN STREET JETTY	POSSIBLE LANDING SITE
23	CLAISEBROOK INLET	EXISTING LANDING SITE
24	PERTH STADIUM	POSSIBLE LANDING SITE
25	WATER BANK	POSSIBLE LANDING SITE
26	POINT FRASER	POSSIBLE LANDING SITE
27	COODE STREET JETTY	EXISTING LANDING SITE
28	MENDS STREET JETTY	EXISTING LANDING SITE

SITE No.	SITE NAME	EXISTING / POSSIBLE
29	BARRACK STREET JETTY	EXISTING LANDING SITE AND SERVICE LOCATION
30	ELISABETH QUAY	EXISTING LANDING SITE
31	OLD SWAN BREWERY	POSSIBLE LANDING SITE
32	COMO JETTY	POSSIBLE LANDING SITE
33	SOUTH OF PERTH YACHT CLUB	POSSIBLE LANDING SITE
34	CANNING BRIDGE	POSSIBLE LANDING SITE
35	ROOKWOOD STREET JETTY	POSSIBLE LANDING SITE
36	DEEP WATER POINT	POSSIBLE LANDING SITE
37	MOUNT HENRY BRIDGE	POSSIBLE LANDING SITE
38	SANDON PARK	POSSIBLE LANDING SITE
39	SHELLEY BEACH	POSSIBLE LANDING SITE
40	APPLECROSS JETTY	POSSIBLE LANDING SITE
41	MATILDA BAY	POSSIBLE LANDING SITE
42	NEDLANDS	POSSIBLE LANDING SITE
43	DALKEITH	POSSIBLE LANDING SITE
44	POINT WALTER	POSSIBLE LANDING SITE
45	CLAREMONT	POSSIBLE LANDING SITE
46	PEPPERMINT GROVE	POSSIBLE LANDING SITE
47	FRESH WATER BAY	POSSIBLE LANDING SITE
48	MINIM COVE	POSSIBLE LANDING SITE
49	LEEWIN BOAT RAMP	POSSIBLE LANDING SITE
50	WATER POLICE	POSSIBLE LANDING SITE
51	DOT BOAT SHED	POSSIBLE LANDING SITE
52	EAST FREMENTLE	POSSIBLE LANDING SITE
53	EAST STREET JETTY	EXISTING LANDING SITE
54	VICTORIA QUAY	EXISTING LANDING SITE
55	ROUS HEAD HARBOR	EXISTING LANDING SITE AND SERVICE LOCATION
56	FREMANTLE FISHING BOAT HARBOUR	POSSIBLE LANDING SITE AND SERVICE LOCATION



PERSONAL WATER CRAFT (PWC) PROHIBITED
 PWC (including driving water jets) are strictly prohibited in the Swan and Canning Rivers except in the designated PWC Prohibited Area between Sunset and Sunrise.
CLOSED WATERS TO PWC
 SUNSET POINT
 All waters upstream of the Median Bridge. This includes the Openway Water Ski Area.
 CLAYDON POINT
 All waters upstream of Sunset Point.
WATER SKIING
 All waters of the Swan, Peppermint Grove and Sunset Point Water Ski Areas.
PARASAILING
 All waters of the Swan and Canning Rivers.
WATER SKIING
 All waters of the Swan and Canning Rivers, except in the designated PWC Prohibited Area between Sunset and Sunrise.
WATER SKIING
 All waters of the Swan and Canning Rivers, except in the designated PWC Prohibited Area between Sunset and Sunrise.
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 All waters of the Swan and Canning Rivers, except in the designated PWC Prohibited Area between Sunset and Sunrise.

SPEED RESTRICTIONS
GENERAL SPEED LIMIT - 10 KNOTS
 A person shall not cause a motor vessel to travel at a speed exceeding 10 knots in any waters of the Swan and Canning Rivers.
WATER SKIING
 A person shall not cause a motor vessel to travel at a speed exceeding 10 knots in any waters of the Swan and Canning Rivers.
WATER SKIING
 A person shall not cause a motor vessel to travel at a speed exceeding 10 knots in any waters of the Swan and Canning Rivers.

ONE NAUTICAL MILE COURSE
 The distance from the Median Bridge to the Sunset Point Water Ski Area is one nautical mile.
WATER SKIING
 A person shall not cause a motor vessel to travel at a speed exceeding 10 knots in any waters of the Swan and Canning Rivers.

SOUTH PERTH COMMERCIAL WATER SKI AREA
 This area is reserved for the use of motorised water sports vessels.
WATER SKIING
 A person shall not cause a motor vessel to travel at a speed exceeding 10 knots in any waters of the Swan and Canning Rivers.

WESTERN AUSTRALIAN POWERED WATER SPORTS AREA
 This area is reserved for the use of motorised water sports vessels.
WATER SKIING
 A person shall not cause a motor vessel to travel at a speed exceeding 10 knots in any waters of the Swan and Canning Rivers.

Zone of Confusion (ZOC) Diagram
 This diagram shows the Zone of Confusion (ZOC) for the Swan and Canning Rivers. The ZOC is defined as the area within which a vessel is likely to be confused with another vessel.
Table 1: ZOC Data

Zone	Position	Depth of Water	Surface Coverage
1	100m	> 10m	Light blue
2	200m	> 10m	Light blue
3	300m	> 10m	Light blue
4	400m	> 10m	Light blue
5	500m	> 10m	Light blue

INDIAN OCEAN

**WESTERN AUSTRALIA
 SWAN AND CANNING RIVERS
 SCALE 1 : 25 000**

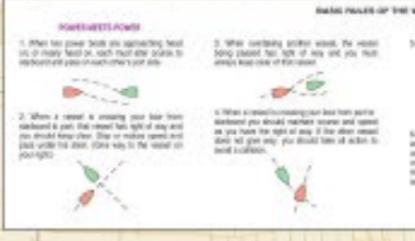
OVERHEAD POWER LINES AND BRIDGE CLEARANCE INFORMATION
 Overhead power lines are shown on this chart as in red, above the ground level. The height of the lowest wire above the ground level is shown in metres. The height of the lowest wire above the ground level is shown in metres. The height of the lowest wire above the ground level is shown in metres.



SWAN RIVER

Location	Depth (m)
Median Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10

ROADS
 Roads are shown on this chart as in black. The width of the road is shown in metres. The width of the road is shown in metres. The width of the road is shown in metres.



SWAN RIVER

Location	Depth (m)
Median Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10

NOTES
 This chart is based on the latest available information. It is subject to change without notice. It is subject to change without notice. It is subject to change without notice.

SWAN RIVER

Location	Depth (m)
Median Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10

NAVIGATION MARKS
 Navigation marks are shown on this chart as in red, white, and black. The height of the mark is shown in metres. The height of the mark is shown in metres. The height of the mark is shown in metres.

SWAN RIVER

Location	Depth (m)
Median Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10

CAUTION
 Caution is advised at various locations along the waterways. It is subject to change without notice. It is subject to change without notice. It is subject to change without notice.

SWAN RIVER

Location	Depth (m)
Median Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10
Claydon Point Bridge	10
Sunset Point Bridge	10
Peppermint Grove Bridge	10

Appendix 7 – Comments on potential ferry stops

The Ferries Working Group chaired by John McGrath MLA, made these comments in relation to the potential ferry stops.

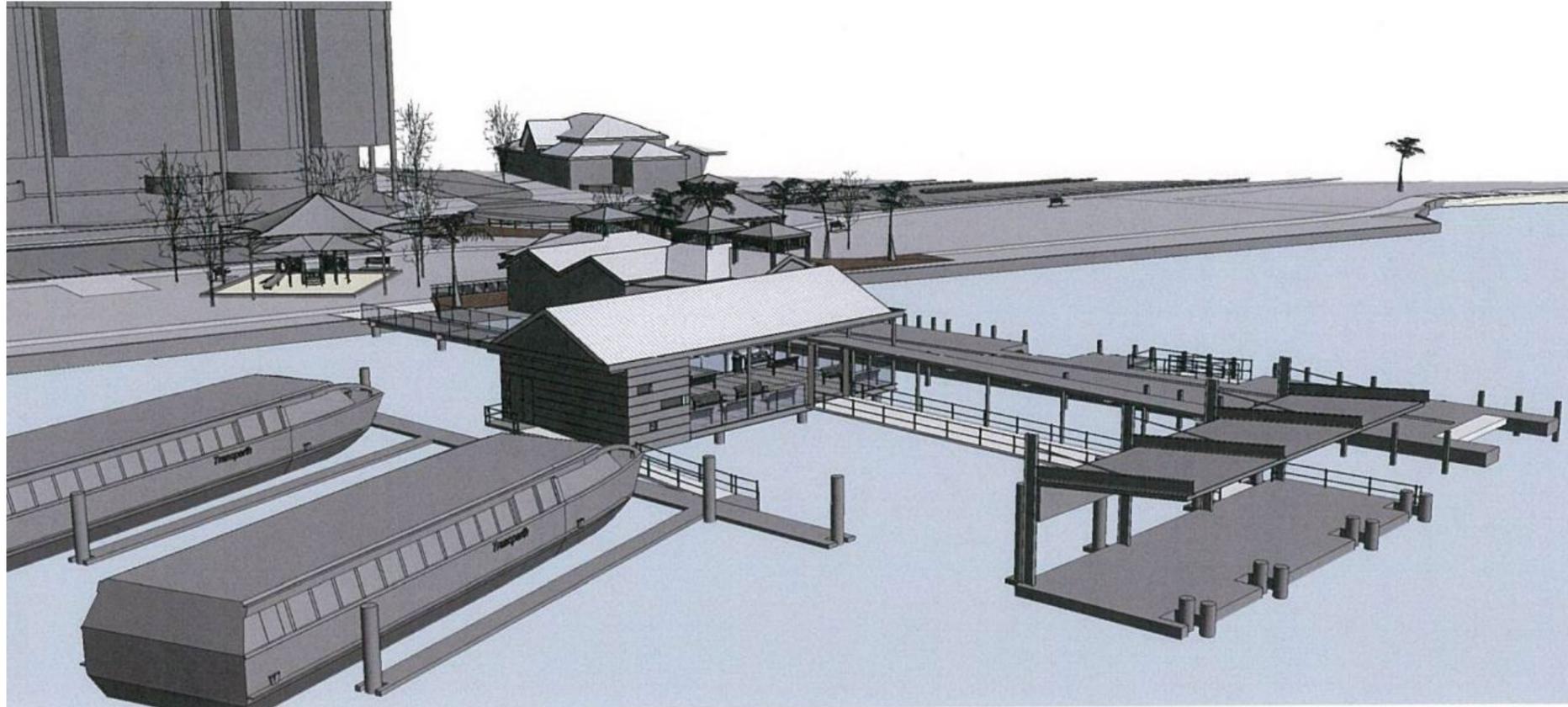
1. Canning Bridge – the best prospect for a potential public transport commuter service to UWA and Elizabeth Quay, linking into a bus and train interchange and assisted by plans of the City of South Perth and City of Melville to activate the Canning Bridge precinct and introduce high density buildings in the surrounds.
2. Matilda Bay (UWA) – student enrollments and staff numbers continue to rise, and there will soon be 25,000 people working and studying at the site. UWA is very keen to develop a ferry stop.
3. Perth (Optus) Stadium – another public transport prospect on match days and a hop-on and hop-off stop for the rest of year, using maritime infrastructure at Perth (Optus) Stadium that has been recently developed.
4. Waterbank – a possible hop-on and hop-off stop opportunity once residential and commercial towers are built.
5. Elizabeth Quay – will be the hub of public transport ferries including any expanded service and has capacity to handle new operators of small ferries.
6. Belmont – has potential as high-density development intensifies in Rivervale and as redevelopment around Belmont Park Racecourse is implemented
7. Claisebrook – has potential as a tourist stop if unsuitable jetties and pens that currently exist are replaced with more suitable boating infrastructure.
8. Coode Street – could be reopened when the City of South Perth activates further attractions and is also a strong candidate for a stop when a ferry loop service can be justified.
9. Old Swan Brewery – a possible stop if improved access to Kings Park was provided adjacent to the Old Brewery building.
10. Point Walter – a potential weekend service stop for tourism and picnicking.
11. Nedlands Jetty – a potential hire and drive and recreational/tourism opportunity.
12. Tawarri Reception Centre – potential for development of ferry stop associated with current EOI process being undertaken by City of Nedlands for the future use of this site.
13. Tranby House – possible tourist stop opportunity.
14. Ascot Waters – a potential tourist stop in the event that the area is further developed with more attractions and also a potential bespoke one-off charter ferry service for special events at Ascot race course.
15. Crown Casino – the Casino and related hotels would have the patronage to support a ferry stop. However, an agreement with the Western Australian Powered Water Sports community, that uses the river near the Casino, would be required before a ferry service could operate.
16. Guildford Jetty – a potential stop for heritage-minded tourists and as a potential access point to other parts of the Swan Valley.

Appendix 8 – Mends Street Concept Plan

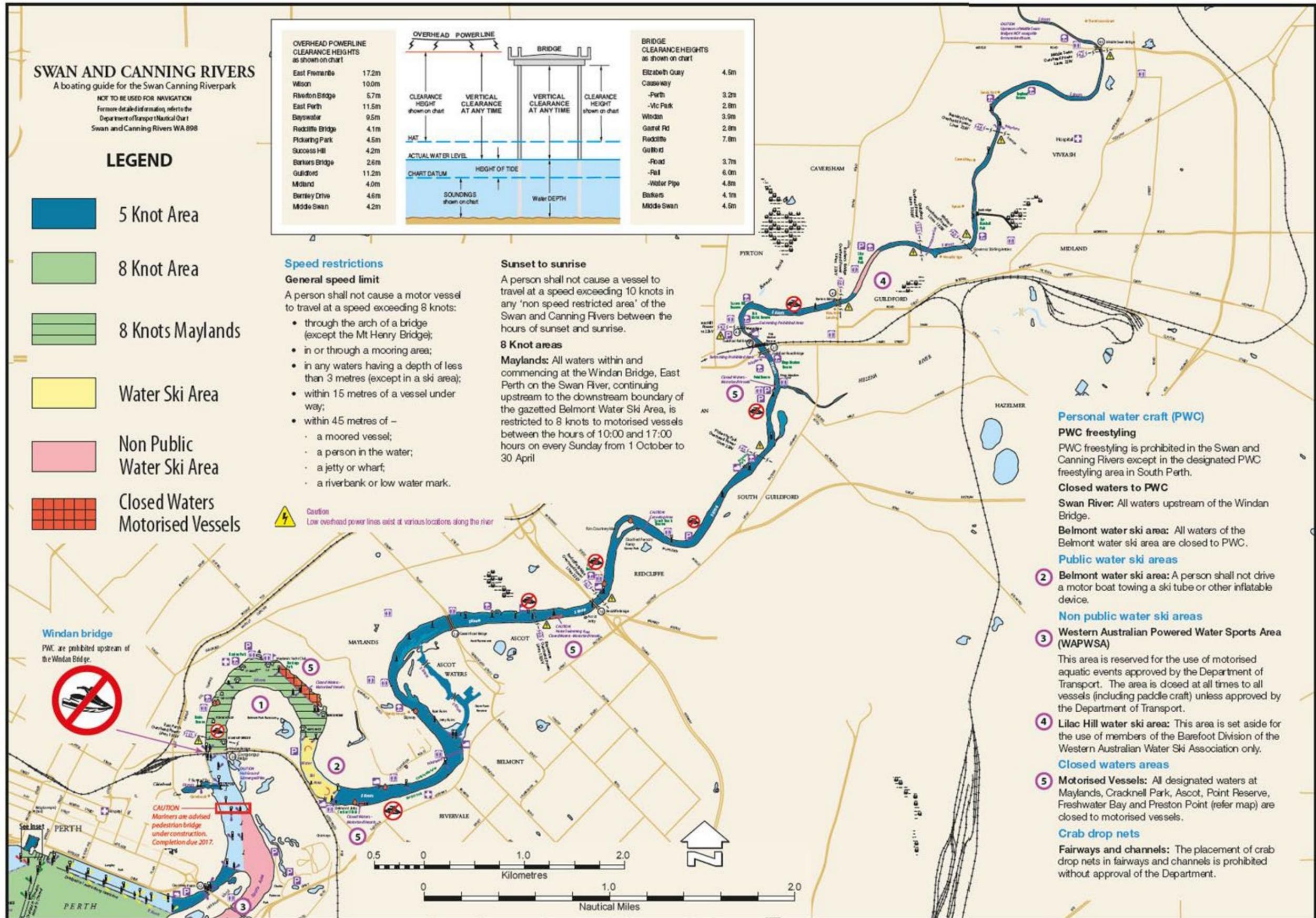
Extract Department of Transport Concept Design of Mends St Jetty Design Report - Revision 1 Dated May 2013

Figure 1 Preferred Concept Option

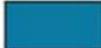
The preferred option consists of a new development to the east of the existing jetty, which is structurally separate from the existing jetty to minimise the requirement for maintenance and upgrade costs. Approximately 6,200m³ of dredging is required to accommodate the moored vessel facility, for storage of up to four Transperth ferries. Having the ferry terminal on the east side is the preferred option of the ferry operators from a predominant weather and shelter perspective, with protection provided from the predominant south westerly afternoon seabreezes. A base level and probabilistic cost estimate has been undertaken which indicates a mean estimate (expected cost) of \$6,443,635.41. It should be noted that the dredging required for the moored vessel facility represents a large proportion of the estimated cost, with a base estimate of approximately \$3,000,000 (without contingency).



Appendix 9 – Depicting speed limits



LEGEND

-  5 Knot Area
-  8 Knot Area
-  8 Knots for vessels over 20m only
-  Water Ski Area
-  Non Public Water Ski Area
-  PWC Freestyle Area
-  Closed Waters Motorised Vessels

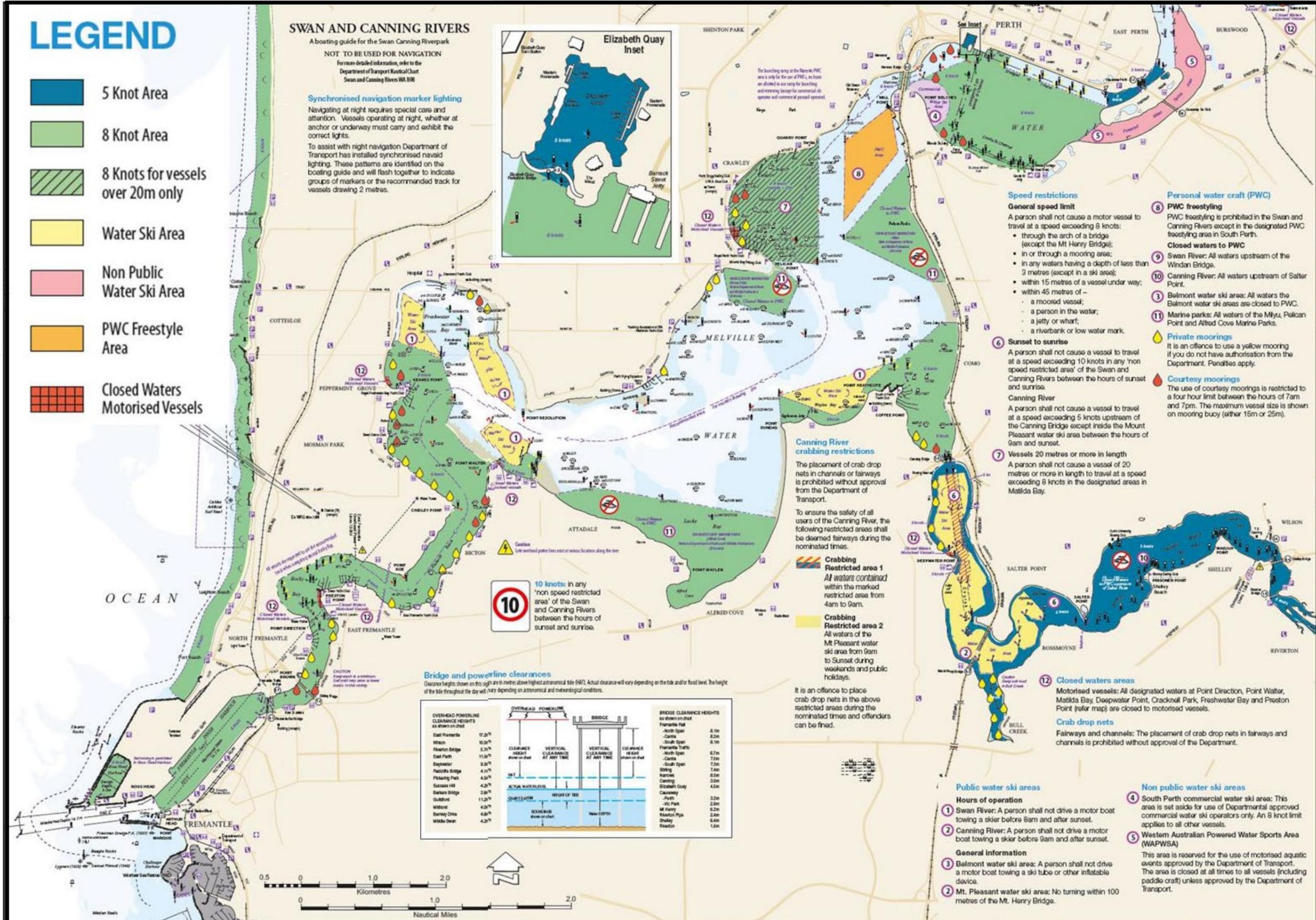
SWAN AND CANNING RIVERS

A boating guide for the Swan Canning Riverpark
NOT TO BE USED FOR NAVIGATION
 For more detailed information, refer to the Department of Transport Nautical Chart Swan and Canning Rivers WA 506

Synchronised navigation marker lighting

Navigating at night requires special care and attention. Vessels operating at night, whether at anchor or underway must carry and exhibit the correct lights.

To assist with night navigation Department of Transport has installed synchronised navaid lighting. These patterns are identified on the boating guide and will flash together to indicate groups of markers or the recommended track for vessels drawing 2 metres.



Speed restrictions

- General speed limit**
 A person shall not cause a motor vessel to travel at a speed exceeding 8 knots:
- through the arch of a bridge (except the Mt Henry Bridge);
 - in or through a mooring area;
 - in any waters having a depth of less than 3 metres (except in a ski area);
 - within 15 metres of a vessel under way;
 - within 45 metres of -
 - a moored vessel;
 - a person in the water;
 - a jetty or wharf;
 - a riverbank or low water mark.

Sunset to sunrise

- A person shall not cause a vessel to travel at a speed exceeding 10 knots in any 'non speed restricted area' of the Swan and Canning Rivers between the hours of sunset and sunrise.
- Canning River**
 A person shall not cause a vessel to travel at a speed exceeding 5 knots upstream of the Canning Bridge except inside the Mount Pleasant water ski area between the hours of 9am and sunset.

Vessels 20 metres or more in length

- A person shall not cause a vessel of 20 metres or more in length to travel at a speed exceeding 8 knots in the designated areas in Matilda Bay.

Personal water craft (PWC)

- 8 PWC freestyle**
 PWC freestyle is prohibited in the Swan and Canning Rivers except in the designated PWC freestyle area in South Perth.
- Closed waters to PWC**
- 9 Swan River: All waters upstream of the Windan Bridge.
 - 10 Canning River: All waters upstream of Salter Point.
 - 3 Belmont water ski area: All waters the Belmont water ski area are closed to PWC.
 - 11 Marine parks: All waters of the Myu, Pelican Point and Alfred Cove Marine Parks.

Private moorings

It is an offence to use a yellow mooring if you do not have authorisation from the Department. Penalties apply.

Courtesy moorings

The use of courtesy moorings is restricted to a four hour limit between the hours of 7am and 7pm. The maximum vessel size is shown on mooring buoy (either 15m or 25m).

Canning River crabbing restrictions

The placement of crab drop nets in channels or fairways is prohibited without approval from the Department of Transport.

To ensure the safety of all users of the Canning River, the following restricted areas shall be deemed fairways during the nominated times.

- Crabbing Restricted area 1**
 All waters contained within the marked restricted area from 4am to 9am.
- Crabbing Restricted area 2**
 All waters of the Mt Pleasant water ski area from 9am to Sunset during weekends and public holidays.

It is an offence to place crab drop nets in the above restricted areas during the nominated times and offenders can be fined.

10 10 knots in any 'non speed restricted area' of the Swan and Canning Rivers between the hours of sunset and sunrise.

Bridge and powerline clearances

Clearance heights shown on this sign are in metres above highest astronomical tide (HAT). Actual clearance will vary depending on the tide and/or flood level. The height of the tide throughout the day will vary depending on astronomical and meteorological conditions.

OVERHEAD POWERLINE CLEARANCE HEIGHTS as shown on chart	CLEARANCE HEIGHT AT ANY TIME	VERTICAL CLEARANCE AT ANY TIME	BRIDGE CLEARANCE HEIGHTS as shown on chart
East Fremantle 17.2m			Fremantle Rail 6.1m
Wilton 10.0m			South Span 8.2m
Rushton Bridge 5.2m			North Span 8.1m
East Perth 11.0m			Fremantle Traffic 6.7m
Boydston 9.5m			South Span 7.3m
Palmyra Bridge 4.1m			North Span 7.4m
Pickering Park 4.0m			Swing 8.0m
Sunover Hill 4.2m			Canning 3.8m
Barkun Bridge 2.8m			Stromboli Quay 4.5m
Guildford 11.2m			Cassway 3.5m
Midland 4.0m			Jelly Park 2.8m
Turney Drive 4.0m			Mt Henry 6.2m
Wattle Dam 4.0m			Rushton Pipe 2.4m
			Shelley 6.4m
			Wheaton 1.8m

Public water ski areas

Hours of operation

- 1 Swan River: A person shall not drive a motor boat towing a skier before 8am and after sunset.
- 2 Canning River: A person shall not drive a motor boat towing a skier before 9am and after sunset.

General information

- 3 Belmont water ski area: A person shall not drive a motor boat towing a ski tube or other inflatable device.
- 2 Mt. Pleasant water ski area: No turning within 100 metres of the Mt. Henry Bridge.

Closed waters areas

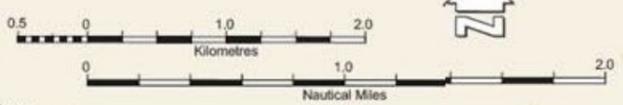
Motorised vessels: All designated waters at Point Direction, Point Walter, Matilda Bay, Deepwater Point, Cracknell Park, Freshwater Bay and Preston Point (refer map) are closed to motorised vessels.

Crab drop nets

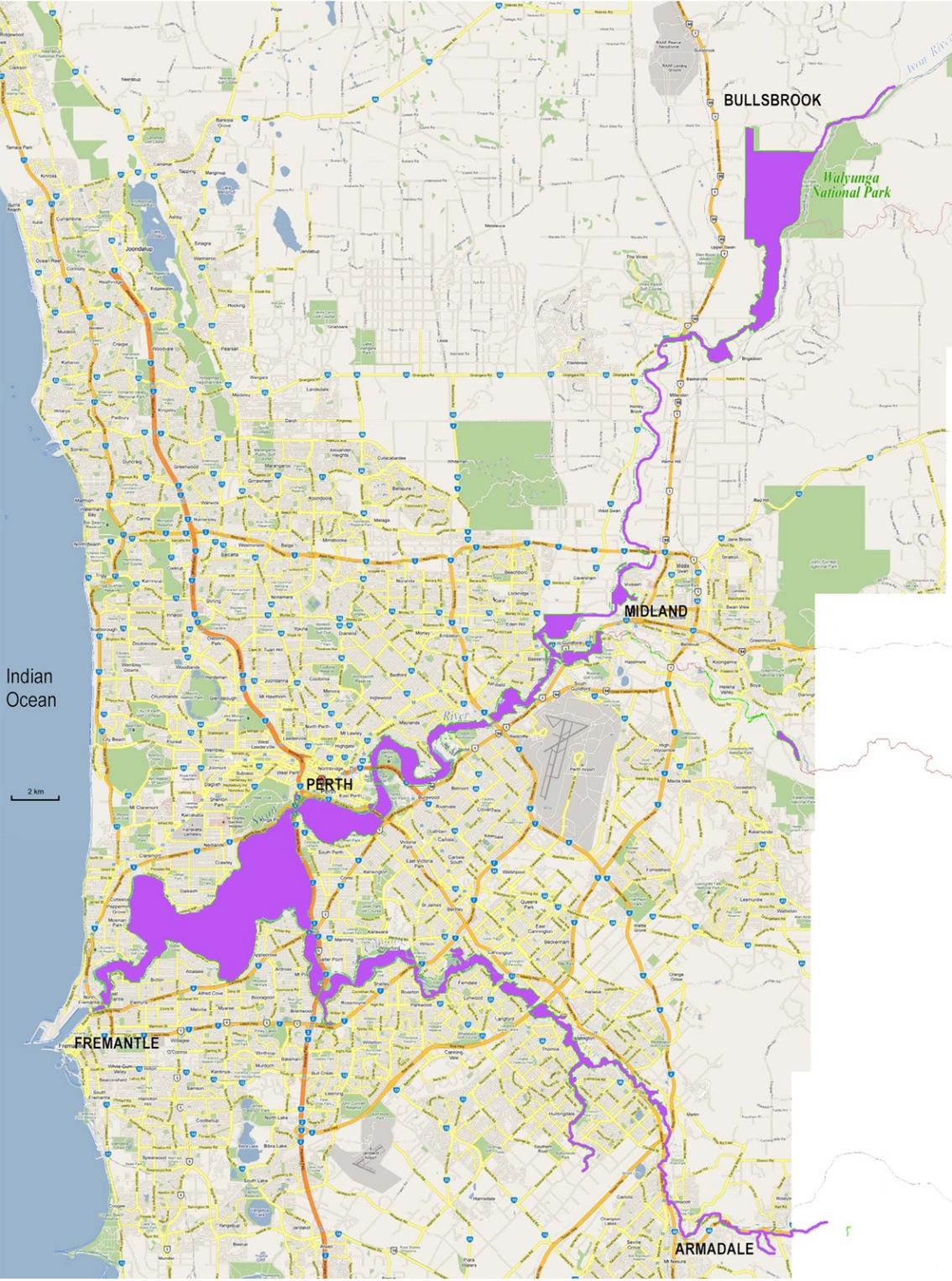
Fairways and channels: The placement of crab drop nets in fairways and channels is prohibited without approval of the Department.

Non public water ski areas

- 4 South Perth commercial water ski area: This area is set aside for use of Departmental approved commercial water ski operators only. An 8 knot limit applies to all other vessels.
- 5 Western Australian Powered Water Sports Area (WAPWSA)
 This area is reserved for the use of motorised aquatic events approved by the Department of Transport. The area is closed at all times to all vessels (including paddle craft) unless approved by the Department of Transport.



Appendix 10 – Swan and Canning Riverpark



The designated Riverpark is depicted in purple

Disclaimer: The information contained in this publication is provided in good faith and believed to be accurate at time of publication. The State shall in no way be liable for any loss sustained or incurred by anyone relying on the information.

February 2019