

APPENDIX G

Traffic Impact Assessment



PLANS AND DOCUMENTS referred to in the PDA **DEVELOPMENT APPROVAL**



Approval no: DEV2021/1187

24 June 2022

Traffic Impact Assessment

REDLAND BAY FERRY TERMINAL

Pensar Structures

November 2021

Projex Partners Pty Ltd Level 3 135 Horton Parade Maroochydore Qld 4558

Our ref: 497-001



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Approved

Daniel Berry (RPEQ 6343)

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1 BACKGROUND

Redland Bay vehicular ferry terminal is located at the eastern end of Weinam Street, Redland Bay. It is owned by SeaLink who provide passenger and vehicle ferry services to the surrounding islands within the southern Moreton Bay.

Currently, the facility consists of a single ramp used for vehicle services plus a service ramp and disused ramp on the northern side of the vehicular loading ramp. To improve services for their customers, SeaLink are proposing to upgrade the existing facility to provide two vehicle access locations to accommodate a new fleet of ferries with associated improvements to queuing, ticketing and access.

The site is located within the Weinam Creek Priority Development Area (PDA) with development approvals coordinated by Economic Development Queensland (EDQ).

This Traffic Impact Assessment has been prepared to support the development approval application as advised by EDQ at the pre-application conference of 18 November 2020.



Figure 1-1: Redland Bay Vehicular Ferry Terminal Location



2 EXISTING TRAFFIC

2.1 Existing Ferry Services

Currently 3 vehicle ferries operate from the facility 7 days a week. The ferries currently operate concurrently from 5:30am to 8:20pm from Monday to Friday and from 5:30am to 7:05pm on Saturday and Sunday. A full timetable can be found in *Appendix A*.

During the week there are 16 departures and 16 arrivals at the facility each day. This is reduced to 10 departures and 9 arrivals on the weekend.

The current ferries and their capacities are provided in Table 2.1 below.

Table 2-1: Current Ferries

Barge	Length	Capacity
Stradbroke Venture	54.41m	34 cars / 400 pax
Bay Islander	33.99m	16 cars / 297 pax
Lakarma	38.77m	18 cars / 204 pax
Moreton Escape (additional)	36.77m	16 cars / 197 pax

			AM	AM	AM	AM	AM	AM	AM	AM	AM	PM						
REDLAND BAY	DEP	1	5.30	6.05	6.45	8.00	8.35	9.15	10.30	11 65	11.45	1.00	1.35	2.15	3.30	4.05	4.45	6.00
KARRAGARRA	DEP	1	6.05	770	7.20	8.35	2.	9.50	11.05	=	12.20	1.35	-	2.50	4.05	-	5.20	6.35
MACLEAY	DEP	1	6.10	6.40	7.25	8.40	9.10	9.55	11,10	11.40	12.25	1.40	2.10	2.55	4.10	4.40	5.25	6.40
LAMB	DEP	1	6.15	+	7.30	8.45	-	10.00	11.15	-	12.30	1.45	-	3.00	4.15	-	5.30	6.45
RUSSELL	ARR		6.35	7.00	7.50	9.05	9.30	10.20	11.35	12.00	12.50	2.05	2.30	3.20	4.35	5.00	5.50	7.05
RUSSELL	DEP	1	6.45	7.20	8.00	9.15	9.50	10.30	11.45	12.20	1.00	2.15	2.50	3.30	4.45	5.20	6.00	7.15
LAMB	DEP	1	7.05	-	8.20	9.35	-	10.50	12.05	-	1.20	2.35	-	3.50	5.05	-	6.20	7.35
MACLEAY	DEP	1	7.10	7.40	8.25	9.40	10.10	10.55	12.10	12.40	1.25	2.40	3.10	3.55	5.10	5.40	6.25	7.40
KARRAGARRA	DEP	1	7.15	-	8.30	9.45	-	11.00	12.15	-	1.30	2.45	-	4.00	5.15	-	6.30	7.45
REDLAND BAY	ARR		7.50	8.15	9.05	10.20	10.45	11.35	12.50	1.15	2.05	3.20	3.45	4.35	5.50	6.15	7.05	8.20

Figure 2-1: Ferry Timetable with times colour coded to ferries (Weekdays)

			AM	AM	AM	AM	AM	AM	PM	PM	PM	PM
REDLAND BAY	DEP	1	*5.30	645	8.00	9.15	10.50	(11.45)	1.00	2.15	3.30	4.45
KARRAGARRA	DEP	1	*6.05	7.20	8.35	9.50	11.05	12.20	1.35	2.50	4.05	5.20
MACLEAY	DEP	1	*6.10	7.25	8.40	9.55	11.10	12.25	1.40	2.55	4.10	5.25
LAMB	DEP	1	*6.15	7.30	8.45	10.00	11.15	12.30	1.45	3.00	4.15	5.30
RUSSELL	ARR		*6.35	7.50	9.05	10.20	11.35	12.50	2.05	3.20	4.35	5.50
RUSSELL	DEP	1	*6.45	8.00	9.15	10.30	11.45	1.00	2.15	3.30	4.45	**6.00
LAMB	DEP	1	7.05	8.20	9.35	10.50	12.05	1.20	2.35	3.50	5.05	**6.20
MACLEAY	DEP	1	*7.10	8.25	9.40	10.55	12.10	1.25	2.40	3.55	5.10	**6.25
KARRAGARRA	DEP	1	*7.15	8.30	9.45	11.00	12.15	1.30	2.45	4.00	5.15	**6.30
REDLAND BAY	ARR		*7.50	9.05	10.20	11.35	12.50	2.05	3.20	4.35	5.50	**7.05

Figure 2-2: Ferry Timetable with times colour coded to ferries (Weekends)



2.2 Existing Facility

The current facility consists of:

- One loading point utilising the southern-most ramp providing storage for 39 standard vehicles (cars) across 4 queuing lanes.
- Informal carparks adjacent to the queuing storage with storage of up to 9 cars.
- Ticketing and administration facilities are located to the south of the vehicle queuing area and require passengers to exit their vehicles to obtain a barge ticket.

No dedicated footpaths or pedestrian facilities are provided within the site.

The layout of the existing facility can be found in the "Existing Features and Services" drawing in Appendix B.

2.3 Generated Vehicle Traffic (weekday)

The vessel tasking and utilisation varies according the availability of the vessels and demand.

For the purposes of this assessment, the following assumptions regarding vessel tasking have been made for the 16 departures with three ferries.

Stradbroke Venture conducts 6 round trips.

Bay Islander and Lakarma conduct 5 round trips.

There are three departures over a 1 hour and 15 minutes period 5 times a day with a 1 hour and 15 minutes pause with no departure.

With customers advised to arrive 20 minutes before departure time, no overlaps of departing passengers exist with 35-40 minutes separating departure times leaving 15-20 minutes of minimal vehicle queues.

Due to the staggered departure times, it is expected only one full ferry load of passengers will be present at any one time. This equates to a maximum of 34 vehicles within the facility at one time (when the largest ferry is used).

2.4 Generated Vehicle Traffic (weekend)

As there are 10 departures with three ferries it is assumed the Stradbroke Venture conducts 4 round trips while the Bay Islander and Lakarma conduct 3 round trips.

Ferries on the weekend leave every 1 hour and 15 minutes. With passengers advised to arrive 20 minutes before departure, there is no overlap of departing passengers with 55 minutes of minimal vehicle queues.

With departure times separated by 1 hour and 15 minutes, there will be a maximum of 34 vehicles within the facility at one time.

2.5 Peak Holiday Periods

During peak holiday seasons, the demand for services is higher and Sealink has implemented an extra ferry service.

This service is run concurrently with the normal services and slots into the 1 hour and 15 minute break between services. This then creates a service every 35-40 minutes for the entire day.

As passengers are advised to arrive 20 minutes before departure time, no overlap exists, and increased traffic congestion is not considered likely on local roads.



2.6 Vehicular Traffic Management

Traffic management during ferry loading and unloading is undertaken by SeaLink staff in accordance with the following:

- Queues are established based on destination island to manage vehicle loading and unloading order
- Vehicle loading is under the direction of SeaLink staff, including management of vehicle size and position within the vessel
- Vehicle unloading is under the direction of SeaLink staff.

It is proposed to continue to manage the loading and unloading of vessels under SeaLink traffic control.

2.7 Non-Motorised Traffic and Management

There is currently limited demand for non-motorised traffic (including pedestrians and cyclists) utilising the vehicular barge service due to the existing passenger ferry service departing from Weinam Creek. This passenger ferry service provides a more frequent and faster service and is more attractive to non-motorised users.

SeaLink estimates that there is an average of 5 pedestrian and non-motorised users on the barge service each day.

Non-motorised users traffic management during ferry loading and unloading is undertaken by SeaLink staff in accordance with the following:

- Non-motorised users are given priority boarding (ahead of vehicles) under traffic control
- Non-motorised users are located clear of traffic movements within the vessels
- All non-motorised loading is under the direction of SeaLink staff, including management of position within the vessel
- All non-motorised unloading is under the direction of SeaLink staff.

It is proposed to continue to manage the loading and unloading of vessels under SeaLink traffic control.

2.8 Car Parking

The public carpark to the north of Weinam Street adjacent to the terminal has provision for 116 vehicles within the precinct.

The public carpark to the south of Weinam Street adjacent to the terminal has provision for 29 vehicles, including 2 disabled bays.

The Weinam Street carparks are used by the current staff and vessel workers at the existing ferry facility, walk-on patrons of the passenger and vehicular ferry terminals in addition to users of the surrounding parkland and operate in conjunction with the wider carparking facilities at Weinam Creek to cater for Southern Moreton Bay residents and visitors. The Weinam Street carparks also function as overflow parking for the Redland Bay Fishing Club and Redland Bay community hall, noting that these facilities also have off-street parking.

Limited temporary staff carparking is provided for SeaLink personnel on the northern side of the existing queuing area within the lease boundaries (on the approaches to the existing northern berths). This area has been used as temporary staff parking to provide controlled access to the northern berths when they are in use. When the northern berths are in use, parking is not allowed in this area.

Current staff at the Redland facility are:

- 9 Vessel crew
- 3 ticketing / administration staff



The Weinam Street parking is under review by the Redland Investment Corporation (RIC) as part of the larger PDA master planning and upgrades to this carpark are anticipated.



3 PROPOSED TRAFFIC

3.1 Proposed Ferry Services

It is proposed three new larger vehicle ferries will operate from the ferry terminal 7 days a week,

The three ferries will replace existing ferries and run as per the current timetable, operating concurrently from 5:30am to 8:20pm from Monday to Friday and from 5:30am to 7:05pm on Saturday and Sunday. A full timetable can be found in *Appendix A*.

As per the existing conditions, during the week there are 16 departures and 16 arrivals at the facility. This is reduced to 10 departures and 9 arrivals on the weekend.

The new ferries and their capacity are provided in Table 3-1 below.

Table 3-1: Proposed Ferries

Barge	Length	Capacity
New Vessel 1	44m	34 cars
New Vessel 2	44m	34 cars
New Vessel 3	44m	34 cars

3.2 Proposed Facility

The proposed ferries will be available once the facility has been upgraded. The upgraded facility will provide additional storage for waiting vehicles within the facility boundaries.

The new facility will consist of:

- Two vehicular ferry loading points (north and south) servicing different destination services within the Bay.
- Combined vehicle storage for 59 standard passenger vehicles within the site
- Single exit lane servicing both loading points
- 6 external spaces servicing both loading points
- 1 new dedicated ticket booth
- Retaining the existing combined ticket booth / administration facility
- Two seating areas will also be located on the south eastern corner of the facility. Provision has also been made
 for the future "Esplanade Path" that is currently planned within the Weinam Creek PDA across the frontage of
 the site.

The proposed facility can be found in the "General Arrangement" drawing in Appendix B.

3.3 Ticket Booth Operation

One new ticket booth is to be provided immediately within the entrance to the site to:

- Reduce pedestrian movements within the site
- · Facilitate use of the site by a second operator
- Manage traffic queuing based on destination and minimise errant queuing and associated impact on loading times
- Reduce non-customer access to the site
- Provide additional capacity to manage ticketing and bookings.



It is noted that ticket purchases are predominantly electronic (online) and the majority of ticket booth interaction will be to confirm passenger bookings and provide direction to queue lanes.

3.4 Generated Traffic (weekday)

As per the existing services, there are three departures over a 1 hour and 15 minutes period 5 times a day with a 1 hour and 15 minutes pause with no departures. With customers advised of arriving 20 minutes before departure time, no overlaps of departing passengers exist with 35-40 minutes separating departure times.

Due to the staggered departure times, it is expected only one full ferry load of passengers will be present at any one time. This equates to 34 vehicles within the facility at one time.

3.5 Generated Traffic (weekend)

Ferries on the weekend leave every 1 hour and 15 minutes. With passengers advised to arrive 20 minutes before departure, there is no overlap of departing passengers.

With departure times separated by 1 hour and 15 minutes, there will be a maximum of 34 vehicles within the facility at one time.

3.6 Parking

No dedicated long-term car parking for non-motorised users is proposed on site to reduce vehicle conflicts by minimising vehicle turning movements in the queuing area.

Barge user parking is intended to continue to use the existing Weinam Street carparking identified in Section 2.8.

3.6.1 Staff Car Parking

Up to 12 staff are intended to utilise the facility comprised of:

- 9 Vessel crew
- 2 Ticketing staff
- 1 Administration staff / support personnel

The staff numbers are unchanged from the current arrangement.

It is intended that the existing carparking arrangement is maintained where staff utilise unsealed areas adjacent to the administration building. Provision for nine on-site carparks has been made on both sides of the administration building. The future storage shed (part of a potential future project stage) will reduce the number of on-site staff car parks to seven.

Two dedicated staff car parks have been provided adjacent to the ticket booth for the ticket booth operator to manage staff safety during initial "out of hours" and opening operations.

The total on-site allocated staff parking is eleven.

Due to the intended increased frequency of use of the northern berths, the need to manage access on this berth is no longer required.

3.6.2 Bicycle Parking

Bicycle parking facilities are proposed to be installed on the southern side of the development within the open space area. Secure bicycle parking is to be provided using a Securabike Large 2 bike rail (x 2) or similar.

End of trip and other bicycle facilities are not appropriate as the development is not a trip attractor.



4 IMPACT

4.1 Existing Facility

The current facility at Redland Bay has a queued storage capacity of 39 standard vehicles. The maximum vehicles expected at one time is 34 due to vessel capacity constraints. This leaves 5 spaces spare for any additional queuing vehicles that may be present.

4.2 Proposed Vehicle Queue Storage

The new facility has a queue storage capacity for 59 passenger vehicles (cars) within the site plus 6 external spaces.

The maximum vehicles expected at one time is 34 due to the vessel capacity within each service.

This leaves spaces spare for any additional vehicles that may be present. It is noted that the facility is split by the exit lane with 33 vehicle storage spaces on the north and 26 vehicle storage spaces on the south. Vehicles can access both departure points from these locations, if required.

Due to the staggered operation of the ferry berthing and departure operations, full capacity of all queue lanes is not anticipated. However, should the full queued capacity within the site be utilised, overflow capacity for an additional six vehicles can be provided without impacting on the external carpark operations.

Impacts of vehicles stopped at the ticketing booth (prior to joining the vessel queues) are to be managed by providing:

- Dedicated single vehicle (car) storage contained within the site at the ticket window
- Marked "keep clear" zones within the carpark external to the site on the alignment of the future esplanade path.

4.3 Pedestrians and Passengers

No new pedestrian movements are anticipated to be generated by the development.

The standard vessel specification for the proposed new barges includes a maximum passenger provision of 199 persons (refer Sea Transport Drawings), with seating available for 150 people. The seating and passenger provision includes vehicle drivers and passengers from the 34 car capacity.

The current walk-on patronage volume for the vehicular barges is very low (approximately 5 per day), with the majority of non-motorised patrons utilising the dedicated passenger ferry services due to higher frequency and speed of services compared to the barge service.

It is noted that Translink has introduced (July 2021) a limitation on dangerous goods passage on the passengeronly services, including fuel and other dangerous goods. The proposed ban on dangerous goods will impact on a number of users who currently use the passenger ferry services to transport portable fuel containers for use on the islands. Sealink anticipate this will increase the walk-on patronage usage of the barge service to approximately 20 persons per day. These passengers are anticipated to use the 145 car parking spaces either side of Weinam Street, the existing carparking to the southern side of Nevile Stafford Park or the proposed multi-deck parking facility

4.3.1 Pedestrian Movement Management

The pedestrian and other non-motorised access provisions have been established to be consistent with the Weinam Creek PDA masterplan and includes:

- Provision for the continuation of the Esplanade path across the site by inclusion of a marked pedestrian crossing



- Access to Weinam Street is to be a continuation of the proposed provision of a dedicated pedestrian crossing across the carpark to the north of the terminal access.

These access provisions are shown on the extract from Weinam Creek masterplan shown in Figure 3 below:

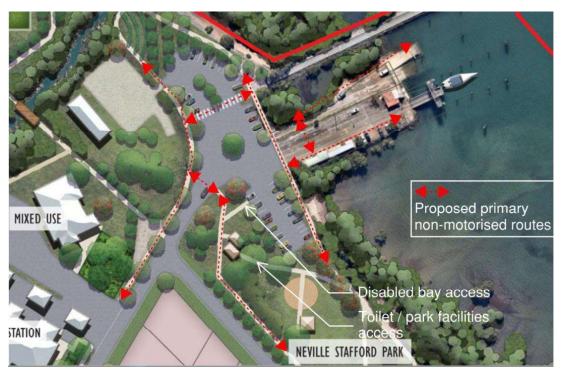


Figure 3-1: Weinam Creek Masterplan Extract (with pedestrian routes shown)

In the interim (prior to the development of the masterplan) the current pedestrian provisions to the jetty and terminal are intended to remain.

Vehicle movements within the site are currently uncontrolled and the intent of the design is to provide additional width adjacent to queued vehicles on pedestrian routes to improve pedestrian safety.

The waiting and queuing areas are very low speed environment (<10km/h) and it is intended that this is reinforced by speed signage at the entrance of the site. It is also noted that traffic control is in place during vehicle loading and unloading activities, further reinforcing the low speed environment.

Walk-on pedestrians and other non-motorised users (either associated with a vehicle or stand-alone) are managed under traffic control direction during the loading and unloading activities, consistent with current practices. Walk-on passengers will be directed from the path area under traffic control (separate to motorised vehicle movements) to the pedestrian facilities on the barge.

4.4 Staff Numbers

As outlined in Section 3.6.1, staff numbers and associated traffic and parking demands are anticipated to remain the same following the development.

4.5 Surrounding Road Network

No additional traffic movements are anticipated to be generated by the development. All traffic demand on this facility is due to demand from the Southern Moreton Bay Islands.

It is noted that the fleet improvements have been generated to replace the existing aged fleet rather than an increase in demand.



The current maximum size vessel within the fleet is the *Stradbroke Venture* (34 passenger car capacity). This capacity is identical to the capacity of the new vessel fleet.

Therefore the peak conditions during unloading of passenger vehicles are the same as the current peak condition during unloading operations of the *Stradbroke Venture*. As demonstrated in Section 2.3, no overlaps of arriving vessels are programmed to occur.

Impacts on the Surrounding Street Network

Each of the major movements has been assessed for potential impacts of the development:

Weinam Street Outbound

• Significant reduction in queuing within Weinam Street and the carpark due to the increased on-site vehicle queuing capacity (refer Section 4.2)

Weinam Street Outbound

- Weinam Street / Hamilton Street intersection is Give Way controlled, with priority on Hamilton Street. The
 proposed reconfiguration of the road network within the PDA reinforces this priority.
- Current peak discharge volume is 34 vehicles (*Stradbroke Venture* capacity), resulting in an maximum peak queue length of 204m¹. This results in a queue back into the barge terminal, however does not impact on the loading of subsequent barges.
- Banana Street is proposed to be closed as a through route under the PDA masterplan, therefore the queue will
 only be impacting the Weinam Street / Banana Road precinct, noting that currently multiple routes exist to
 bypass the Weinam Street / Hamilton Street intersection
- Predicted peak discharge volume is 34 vehicles (*New vessel capacity*), resulting in a similar maximum peak queue length of 204m.

Based on the above, the following conclusions are made:

- Additional traffic is not generated by the development
- Additional demand for the barge service is a result of changes in land use or development on the Southern Moreton Bay Islands and is not attributable to the development
- The peak traffic volume impact on the surrounding road network is unchanged compared to the existing peak situation

4.6 Overall

The proposed facility will provide significantly greater storage capacity than the existing facility and will reduce the overall queue length of vehicles waiting to board the ferries.

As the current and proposed facility have sufficient storage, neither are expected to impact on external road networks.

The maximum number of vehicles (34) using the facility remains the same for the existing facility and proposed facility. Therefore, the overall impact on the surrounding road network will remain unchanged. The new facility will have a higher storage capacity which will provide additional contingency for waiting vehicles if there are delays or early arrivals.

¹ Based on 6m average vehicle length and no available gaps on Hamilton Street due to coincident arrivals and vehicle egress at the Ferry Terminal, Barge Terminal and /or major event. This is a worst case scenario and is expected to very rarely occur.



The new facility will have pedestrian access which will improve accessibility for pedestrians who may utilise public transport or private passenger transport services to the facility. This will allow safer access to the ferries and encourage another mode of transport than private vehicles.



APPENDIX A

Redland Bay Ferry Terminal Timetable

HELP US TO HELP YOU

- When making your booking, please provide us with your vehicle registration number, the dimensions of your vehicle, and a telephone contact number
- Prepayment is required to confirm your booking
- On the day of travel, please arrive 20 minutes prior to departure and have your booking number ready.

BICYCLES

Bicycles are permitted on the ferries.

CARRIAGE OF FREIGHT

All freight transported on ferries is at the owner's risk and Stradbroke Ferries takes no responsibility for loss or damage. Fees and restrictions apply. Please see the Terms & Conditions on our website for more details.

FOR YOUR SAFETY

Please wait for the all clear from the crew before embarking or disembarking the vessel

WHERE TO FIND US

Stradbroke Ferries Mainland terminal is located at: 1 Weinam Street, Redland Bay.

OFFICE HOURS

Monday to Friday: 6:30am – 4:00pm Saturday, Sunday & Public Holidays: 7:45am – 1:00pm



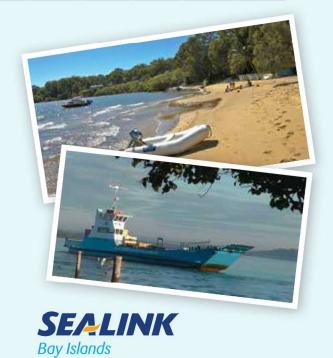
MONDAY TO FRIDAY

A.																		
			AM	AM	AM	AM	AM	AM	AM	AM	AM	PM						
REDLAND BAY	DEP	\downarrow	5.30	6.05	6.45	8.00	8.35	9.15	10.30	11.05	11.45	1.00	1.35	2.15	3.30	4.05	4.45	6.00
KARRAGARRA	DEP	\downarrow	6.05	-	7.20	8.35	=	9.50	11.05	-	12.20	1.35	=	2.50	4.05	=	5.20	6.35
MACLEAY	DEP	\downarrow	6.10	6.40	7.25	8.40	9.10	9.55	11.10	11.40	12.25	1.40	2.10	2.55	4.10	4.40	5.25	6.40
LAMB	DEP	\downarrow	6.15	-	7.30	8.45	-	10.00	11.15	-	12.30	1.45	-	3.00	4.15	=	5.30	6.45
RUSSELL	ARR		6.35	7.00	7.50	9.05	9.30	10.20	11.35	12.00	12.50	2.05	2.30	3.20	4.35	5.00	5.50	7.05
RUSSELL	DEP	\downarrow	6.45	7.20	8.00	9.15	9.50	10.30	11.45	12.20	1.00	2.15	2.50	3.30	4.45	5.20	6.00	7.15
LAMB	DEP	\downarrow	7.05	-	8.20	9.35	-	10.50	12.05	-	1.20	2.35	-	3.50	5.05	-	6.20	7.35
MACLEAY	DEP	\downarrow	7.10	7.40	8.25	9.40	10.10	10.55	12.10	12.40	1.25	2.40	3.10	3.55	5.10	5.40	6.25	7.40
KARRAGARRA	DEP	\downarrow	7.15	-	8.30	9.45	-	11.00	12.15	-	1.30	2.45	-	4.00	5.15	-	6.30	7.45
REDLAND BAY	ARR		7.50	8.15	9.05	10.20	10.45	11.35	12.50	1.15	2.05	3.20	3.45	4.35	5.50	6.15	7.05	8.20

SATURDAY, SUNDAY AND PUBLIC HOLIDAYS

	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM		
REDLAND BAY	DEP	\downarrow	*5.30	6.45	8.00	9.15	10.30	11.45	1.00	2.15	3.30	4.45
KARRAGARRA	DEP	\downarrow	*6.05	7.20	8.35	9.50	11.05	12.20	1.35	2.50	4.05	5.20
MACLEAY	DEP	\downarrow	*6.10	7.25	8.40	9.55	11.10	12.25	1.40	2.55	4.10	5.25
LAMB	DEP	\downarrow	*6.15	7.30	8.45	10.00	11.15	12.30	1.45	3.00	4.15	5.30
RUSSELL	ARR		*6.35	7.50	9.05	10.20	11.35	12.50	2.05	3.20	4.35	5.50
RUSSELL	DEP	\downarrow	*6.45	8.00	9.15	10.30	11.45	1.00	2.15	3.30	4.45	**6.00
LAMB	DEP	\downarrow	7.05	8.20	9.35	10.50	12.05	1.20	2.35	3.50	5.05	**6.20
MACLEAY	DEP	\	*7.10	8.25	9.40	10.55	12.10	1.25	2.40	3.55	5.10	**6.25
KARRAGARRA	DEP	\	*7.15	8.30	9.45	11.00	12.15	1.30	2.45	4.00	5.15	**6.30
REDLAND BAY	ARR		*7.50	9.05	10.20	11.35	12.50	2.05	3.20	4.35	5.50	**7.05

* Saturday only ** Sunday only







APPENDIX B

Design Drawings

