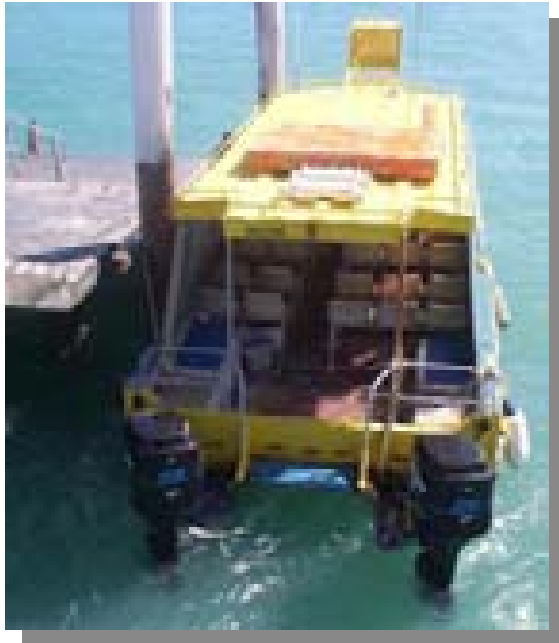


The demands for inter-island trips include:

- Education (**Figure 4.5** depicts a school ferry) and health purposes;
- Kinship activities (feasts, burials, weddings);
- Recreational and administrative reasons; and
- Work.

**Figure 4.5 School Ferry on Thursday Island**



**Table 4.1 Method of Travel to Work**

<b>Transport Mode</b>	<b>Number of People</b>	<b>Percentage of People</b>
Bus	61	1.7%
Ferry	37	1.0%
Taxi	27	0.7%
Car, as driver	645	17.9%
Car, as passenger	284	7.9%
Truck	52	1.4%
Motorbike/Scooter	49	1.4%
Bicycle	57	1.6%
Walked	1,792	49.6%
Other Mode	209	5.8%
Worked at Home	110	3.0%
Did Not Go To Work	190	5.3%
Not Stated	98	2.7%
<b>Total</b>	<b>3,611</b>	<b>100%</b>

Source: 2001 ABS Census of Population and Housing

The demands for external trips (i.e. the rest of Australia) include the following travel related (trip) purposes:

- Work;
- Health; and

- Recreational and administrative.

The number of passengers using QantasLink between both Cairns and Horn Island is shown in **Table 4.2**. It covers the period from 2000 to 2004, showing the percentage increase in passengers on the previous year.

**Table 4.2 QantasLink Passengers between Cairns and Torres Strait**

Year	Passengers	% Increase
2000	41,691	-
2001	42,942	3.0
2002	43,588	1.5
2003	44,665	2.5
2004	46,819	4.8

Source: Torres Shire Council, 2005

**Table 4.3** contains a monthly breakdown of passenger numbers on the regulated QantasLink air service between Cairns and Horn Island for the financial years 2002/03 to 2004/05.

**Table 4.3 Horn Island Airport Monthly Passenger Numbers by Financial Year**

Month	2002/03	2003/04	2004/05
July	4,263	4,490	4,558
August	3,649	3,851	3,756
September	4,845	4,217	4,504
October	4,374	4,486	4,335
November	3,388	3,622	4,277
December	3,781	4,035	3,992
January	3,184	3,613	3,537
February	2,654	2,863	2,949
March	2,878	3,191	3,604
April	3,805	4,086	3,855
May	3,503	3,660	3,609
June	4,036	4,135	n/a
<b>Total</b>	<b>44,360</b>	<b>46,249</b>	<b>42,976</b>

Source: Aviation and Regional Transport Management Unit, QT

**Table 4.4** contains the aircraft movements for most of the airline operators in the Torres Strait, between the 1<sup>st</sup> of June, 2004 and the 31<sup>st</sup> of March, 2005.

**Table 4.4 Aircraft Movements between 1 June 2004 and 31 March 2005**

<b>Company</b>	<b>Total Movements</b>	<b>Average per Week</b>	<b>Annual Total Projected</b>
Aerotropics	2,775	71	3,692
Australian Helicopters	592	15	780
Barrier Aviation	594	15	780
Barrier Leasing	496	13	676
Cape Air Transport	685	18	936
Cape York Helicopters	398	10	520
National Jet Systems	87	2	104
QantasLink *	548	14	730
Regional Pacific Airlines	967	25	1,300
RFDS	87	2	104
Skytrans Airlines	1,156	30	1,560
Surveillance Australia	603	15	780
<b>Total</b>	<b>8,988</b>	<b>230</b>	<b>11,962</b>

Source: Torres Shire Council, 2005

- a) One aircraft movement includes landing and takeoff.
- b) Information provided by AVDATA for Companies based at and operating out of Horn Island Airport.
- c) Other frequent operators include the Military, State and Federal Government aircrafts, and Queensland Police Air wing.
- d) Data for other small charter/itinerant aircraft operators have not been sourced but would equate to approximately 5-10% of the total figures supplied.

As previously stated, over 61% of air travel is either directly or indirectly funded commercially or by the State/Federal Government. For example, much of the travel is undertaken by people working for the following groups:

- Queensland Health;
- Police;
- Telstra;
- Australian Quarantine and Inspection Service;
- Torres Strait Regional Authority; and
- Island Co-ordinating Council.

Additionally, travel expenses are paid for:

- Children travelling to school;
- Patients travelling to receive medical treatment; and
- People travelling under government funded projects.

QT's policy on airfare regulation and subsidisation is based around a 'price per kilometre test' to determine if fares are affordable. The policy deals only with 'transport disadvantage,' and if a town is classified by QT to be disadvantaged, town people will then be able to receive a regulated and/or subsidised service at a level prescribed by QT (i.e., size of the plane, frequency of service, fares, etc.).

An internal project into the affordability of airfares in regional Queensland was undertaken in 2003, and some of the results are summarised in **Table 4.5**.

**Table 4.5 Airfare Costs per Kilometre for Selected Routes**

Service	Distance (km)	Airfare	Airfare cost per kilometre (\$ / km)	Airline
Cairns – Bamaga	749	\$357	\$0.48	Aerotropics
Cairns – Boigu Island	927	\$655	\$0.71	Aerotropics
Cairns – Yorke Island	833	\$655	\$0.78	Aerotropics
Cairns – Yorke Island	833	\$387	\$0.46	Skytrans
Cairns – Murry Island	796	\$706	\$0.89	Aerotropics
Cairns – Weipa	623	\$250	\$0.40	QantasLink
Cairns – Horn Island	793	\$385	\$0.48	QantasLink
Cairns – destination <400 km	249 *	\$152 *	\$0.65	-
Cairns – destination 400 km to 600 km	490 *	\$306 *	\$0.62	-
Cairns – destination >600 km	771 *	\$471 *	\$0.60	-
Torres Strait – Outer Islands	118 *	\$238 *	\$2.02	-
Mt Isa – Gulf	359	\$251	\$0.70	-
Cairns – Cape York	444	\$275	\$0.62	-
Cairns – Torres Strait Outer Islands	824	\$536	\$0.65	-
Melbourne – King Island	254	\$224	\$0.88	-
South Australia **	355	\$256	\$0.72	-
Northern Territory **	557	\$345	\$0.62	-
New South Wales **	785	\$510	\$0.65	-
Western Queensland **	983	\$442	\$0.45	-
Western Australia **	1,027	\$483	\$0.47	-

Source: Aviation and Regional Transport Management Unit, QT

- a) Airfare is based on a Y-class (economy) fare as at 2003
- b) Average
- c) \*\* Only 'very remote' and 'remote' services included, based on QT's Remoteness Index

**Table 4.5** shows the distance, airfare and airfare per kilometre for many of the services offered in and out of the Torres Strait, as well as other regional services from all around Australia.

The report found that Queensland regulated services had lower fares than other comparable services offered, and that these fares were maintained at a low level through either regulating the route, or both regulating and subsidising. It was shown that the patronage levels on the services to Horn Island were sufficient to maintain low fares as prescribed by QT, and did not require a subsidy, unlike other services in the area such as to Weipa.

**Table 4.6** shows the break-down of ticket types sold on the regulated Cairns to Horn Island air service for the financial years 2002/03 to 2004/05.

**Table 4.6 Tickets Sold by Type of Fare**

<b>Ticket Type</b>	<b>2002/03</b>	<b>2003/04</b>	<b>2004/05</b>
Unrestricted Economy	12,261	17,023	14,212
Frequent Flyers	738	1,510	1,417
Discount Fares	21,669	21,419	24,404
Childs Fare	1,964	608	58
Other	7,728	5,689	2,885
<b>Total</b>	<b>44,360</b>	<b>46,249</b>	<b>42,976</b>

Source: Aviation and Regional Transport Management Unit, QT

Note 2004/05 figures are not for a complete year

As the population grows, the demand for passenger travel will increase steadily. The future passenger travel demand by air will likely be influenced by proposals for faster passenger / vehicular ferries, expanded Horn Island airport, and “roll-on roll-off” ferry services. All of these proposals could influence an increase in passenger travel in the longer term.

### 4.3.2 Freight

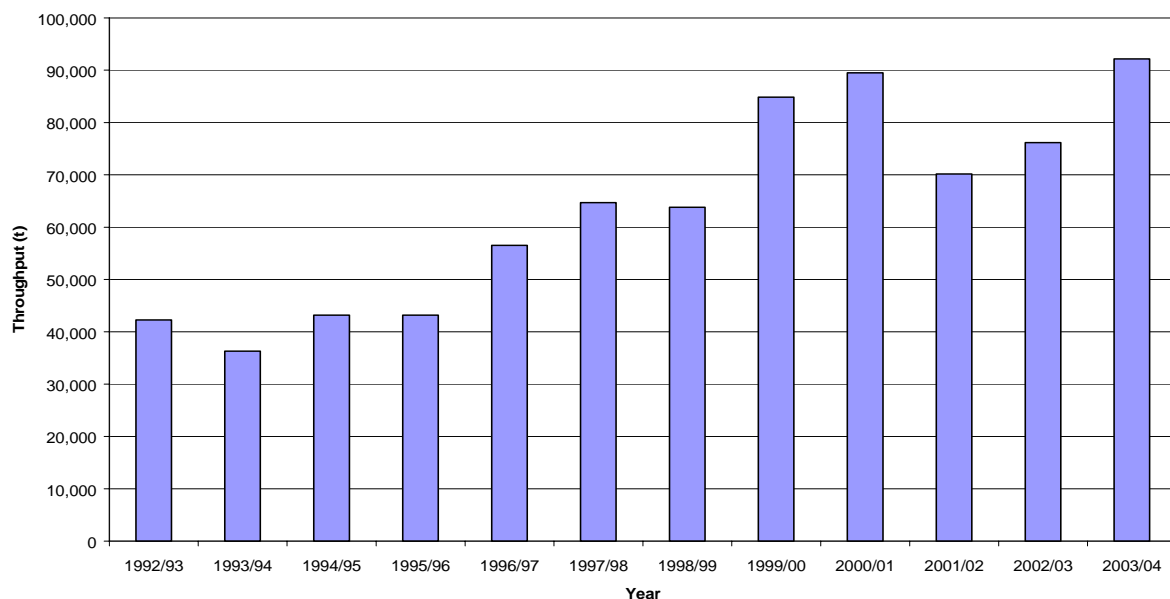
One of the major transport needs for the people of Torres Strait is the movement of goods flowing through Port Kennedy and, to a lesser extent, the facility at Seisia. Freight items include food, fuels, consumables and construction materials.

The demand for freight trips include the following travel related (trip) purposes:

- State and Federal Government programs for housing, hospitals, sewage, airstrips etc – i.e. material is required for the construction and maintenance operations; and
- Delivery of food, fuel and other consumables for the residents and small business on the islands.

**Figure 4.6** shows the historical port throughput for Port Kennedy between 1992 and 2004. Throughput over this period has been a little unsteady, but on average, has grown at approximately 7% per year.

**Figure 4.6 Historical Throughput for Port Kennedy 1992-2004**



Source: PCQ, 2005

It should be noted that over 50% of the cargo shipped to Port Kennedy in 2001/02 was transhipped to the outer islands.<sup>2</sup>

The peaks shown during the 1999/00 and 2000/01 years are understood to be due to large infrastructure development projects in the Torres Strait.

#### 4.4 Transport System Demand Projected to 2026

With a population of approximately 8,500 in 2005 and moderately increasing at 2.3% per year to approximately 13,000 in 2026, there will be some transport demand issues that need to be addressed. The level of infrastructure and services available for the air and sea transport in 2005 will require some improvements to adequately meet the transport system demand in 2026. The transport demand is discussed in terms of passenger and freight transport below.

The most critical transport system demand issue in 2026 will be “how best to meet the needs of the islanders for travel”. There are a few proposals being discussed that would bring about improvements in terms of cost and travel time for both passenger and freight movements. Below is an estimate of passenger and freight travel in the Torres Strait in 2026.

##### 4.4.1 Passenger

Passenger movements in the Torres Strait will continue to grow steadily due to reasons such as:

- Natural population increase in the Torres Strait;
- Increase in movement of people to and from PNG for services in line with the Torres Strait Treaty with PNG;
- Increase in numbers of students;
- Increase in number of government agencies / workers based on the islands;
- Increase in health related travel to attend hospitals;
- Likely increase in development on some islands (e.g. Thursday, Horn and Badu) leading to employment and work related travel;
- Possibility of private sector proposal for high speed ferry services for combined passenger and freight movements;
- Possibility of Horn Island Airport upgrade and roll-on roll-off ferry services between Horn and Thursday Islands; and
- Improvements in marine and air transport infrastructure.

In 2026, the best scenario would be to have an affordable, safe and efficient passenger transport service that caters for the needs of the islanders. It is apparent from discussions with the island based administrative bodies that travel by the small boat (“dinghies” or “tinnies”) would be the principal form of travel, for shorter trips between islands, into the future. While this may be the case, weather conditions and time taken to travel by this mode would always remain a constraint.

It would appear that air travel (by plane) is the safest and fastest mode of travel available, and the majority of current air travellers will continue to travel by air in 2026. Most of the patronage will still be government funded travellers and will be unlikely to change their travel method to the slow and rough boat ride (be it ferry or small boat).

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<sup>2</sup> Source: “Report on the feasibility of operating a roll-on roll-off passenger vehicle ferry between Thursday Island and Horn Island”, Campbell Smith Enterprises (2003)

The high seas and strong winds that prevail for much of the year in the Torres Strait would impact any potential safe and fast ferry service from providing a reliable and efficient passenger service.

**4.4.2 Freight**

Freight movements in the Torres Strait will continue to grow moderately as the disposable income of the population grows and the population increases. The programs undertaken by the State and Federal Governments (e.g. housing, hospitals, sewage and airstrips) have impacted on the freight movements into the Torres Strait. Indications are that there is support from the governments for continuation of the programs for a number of years to come and therefore infrastructure development is set to continue.

The future demand for freight to the Torres Strait is difficult to forecast, given the past volatility observed (see **Figure 4.6**). **Table 4.7** shows potential future freight demand for the region, given various assumed growth rates. Based on discussion with some key freight related stakeholders (Seaswift, PCQ and DMR) it is envisaged a growth rate of 4.0% is a likely upper limit that could be handled with existing facilities and vessel types. Should actual growths be higher than 4.0%, then intervention may be necessary by facilitating upgrade or changing vessel type. Therefore existing facility capacity should be adequate to at least 2020.

The intervention planning threshold is indicated by the bold line in **Table 4.7**. Intervention would be required when freight demand exceeds this threshold.

**Table 4.7 Future Freight Demand for the Torres Strait (tonnes)**

<b>Growth</b>	<b>2005/06</b>	<b>2010/11</b>	<b>2015/16</b>	<b>2020/21</b>	<b>2025/26</b>
2%	95,916	105,898	116,920	129,090	142,525
4%	99,714	121,317	147,601	<b>179,579</b>	218,485
6%	103,586	138,621	<b>185,506</b>	248,249	332,214
8%	107,532	157,999	232,153	341,108	501,200
10%	111,551	<b>179,654</b>	289,335	465,977	750,460

While freight growth over the past ten years has been averaging approximately 7% per annum, consultation with the Ports Corporation of Queensland (PCQ) provided a growth rate of only 2%. PCQ believe that the bulk of the increase in trade has been due to the infrastructure programs funded by governments over the past decade. They also note that if these programs are to continue to be funded, trade could continue to increase at levels well above their 2% estimate.

**Figure 4.6** highlights several jumps in trade throughput, such as in 1999/00 and 2000/01. The trade throughput over the years appears to strongly relate to the building and infrastructure funding provided by the State and Federal Governments. The peaks shown during 1999/00 and 2000/01 are understood to be due to funds provided for waste treatment, barge ramps, some road infrastructure, health initiatives and other social expenditure in the Torres Strait.

Information on planned infrastructure for the next three years was provided by the TSRA. **Table 4.8** shows the projects that are contained in Stage 3 of the MIP. Over the next twelve months, the TSRA will be planning for beyond this period, but it is likely that maintenance and operations will be the main focus.

**Table 4.8 MIP3 Implementation Schedule**

Year	Project	Management	Submission Closing Date	Contract award	Construction start
1	Regional Mobile De-Sal Plant	Program Manager	22/03/2005	4/05/2005	8/09/2005
	Regional Meters, Hammond and Murray Water	Program Manager	12/04/2005	4/05/2005	8/09/2005
	Waste Management Strategy	TSRA	-	-	-
	Badu Roads and Water Main	DMR	-	-	-
2	Masig Bores and Sewerage	Program Manager	24/05/2005	14/06/2005	1/05/2006
	St Pauls and Kubin Sewerage	Program Manager	21/04/2005	19/05/2005	1/05/2006
	St Pauls Drainage	DMR	-	-	-
3	Mabuiag Water and Sewerage	Program Manager	5/08/2006	26/08/2006	1/05/2007
	Warraber Sewerage	Program Manager	22/07/2006	12/08/2006	1/05/2007
	Ugar Roads	DMR	-	-	-
	Bamaga Subdivision	Program Manager	12/08/2006	2/09/2006	1/05/2007

The demand for significant freight growth is not evident in Torres Strait and it appears that the future development and population increases could be catered reasonably well with the type of freight services currently available.

The exact capacity of Port Kennedy is difficult to determine as it is not a bulk port facility. Currently Seaswift uses the facilities on Thursday Island and Horn Island only twice a week for their vessel bringing cargo up from Cairns. The facilities are used during other times for transshipment purposes. Although PCQ believe there is plenty of capacity on the wharves, one issue is the storage of cargo on Thursday and Horn Islands. PCQ has very limited land at Thursday Island, however land for the storage of additional cargo is available on Horn Island. No investigation into proposals for a new hub have been undertaken, however PCQ advised that if the port was to handle 750,000 tonnes, additional wharves and storage would be required. Again, land for storage is considered to be the major limiting factor. As shown in **Table 4.7**, 750,000 tonnes would only be achieved under the highest reported growth rate of 10%, sustained for the next twenty years to 2025/26.

If there were any limitations on the wharves, additional facilities could be constructed, such as a second causeway with a hardstand and ramp on Horn Island.

PCQ do not believe capacity will be an issue at the facilities in Port Kennedy for a number of years. However, additional facilities could be constructed, provided sufficient land is available.

Collectively, Seaswift have the capacity for an extra 50% cargo volume if all vessels were used and the time spent in port was reduced. In addition to the three landing craft, a large 'dumb' barge is also available for project work and general cargo, and is currently only utilised for three months each year.

Improvements to the cost of travel (i.e. reduction in freight charges) and an improved frequency of freight movement to the islands would bring about efficiencies in the livelihood of the island communities.

Seaswift foresee future freight rates to increase only in-line with normal trends. However, perishable items may be subject to abnormal increases if requirements to deliver to stores in refrigerated containers were to eventuate.



Currently, the perceived high costs and level of service provided by the existing carrier are of concern to the residents. However, it should be recognised that the services and infrastructure provided in the Port of Thursday Island do not receive government funding. All infrastructure developed and maintained within the port is funded through revenue collected by the port.

## 4.5 Transport System Issues and Constraints

There are transport system constraints today that will probably still exist in 2026. These constraints are to be considered as “given” with any futures relating to transport in the Torres Strait in 2026. Outlined below are the key transport system constraints that have some influence on the type of transport system best suited to Torres Strait in 2026. The transport plan needs to take into consideration the constraints discussed below.

### 4.5.1 Topographic and Weather

The locality of Torres Strait presents a number of topographic issues such as:

- Shallow passage;
- High velocity tidal streams;
- High turbidity and significant levels of heavier suspended material;
- Large coral reefs on the seabed; and
- Coastal wet tropic area with seasonal high rainfalls and high winds.

Figure 4.7 illustrates king tides in January 2006 swamping the concrete causeway and affecting passengers accessing the ferry from the waterlogged jetty. PCQ is raising the causeway to ensure that flooding will be less frequent and reduce the amount of wash coming on to the causeway.

The above topographical and weather constraints affect the freedom of using the currently available sea and air travel modes all year around. Thus for all weather conditions, the types of vessel or aircraft and the standard of infrastructure to be used in the Torres Strait is a factor.

**Figure 4.7 King Tide at Horn Island Ferry Jetty**



#### 4.5.2 Population Growth

Population data for the Torres Strait is not considered to be reliable due to movement of people between the various communities. Population was estimated at 8,500 in 2005, and expected to grow at 2.3% to an estimated 13,000 in 2026. Population growth has been assisted with some migration of locals from the mainland back to the islands, as they are attracted to the lifestyle and affordable housing.

One issue associated with this population growth is the constraint on available land, with many of the islands expected to eventually reach a point where population growth is not possible due to a lack of land for housing. For example, Coconut Island is already largely developed and it is likely that within the next twenty years the population will reach a peak and then become static. Islands that have land constraints are: Warraber, Yorke, Yam, Coconut, Mabuig, Stephen, Boigu, Saibai and Dauan. However of these, only Coconut is expected to be fully developed within the next twenty years.

Darnley and Murray have reasonably large land areas, but there are ownership issues regarding the land and any development is dependent on these issues being resolved. It is not envisaged that these islands will be attractants for population growth in the long term. The islands of Badu and Moa have substantial land areas capable of accommodating significant development, and it is believed that ultimately spill-over population growth from constrained islands will end up on these islands or Horn Island. It is considered unlikely that the population growth in itself will lead to any significant changes to the transport needs in the Torres Strait.

#### 4.5.3 Infrastructure

There are a number of issues with respect to transport infrastructure that present a constraint for travel in Torres Strait. These include:

- Condition and age of current marine transport infrastructure;
- Potential limitation in terms of expansion for both air and sea transport infrastructure due to Environmental Protection Agency (EPA) requirements and native title issues;
- Infrastructure subject to harsh weather and sea conditions; and
- Limited scope for expansion due to scarcity of available land.

There are also other issues of particular concern to individual communities. One such issue concerns both Dauan and Ugar communities. Torres Strait islands with an airstrip, all have populations in excess of 200 persons. Dauan and Stephen Island have a population of 145 and 60 respectively (see **Table 2.1**), so neither have an airstrip. These are therefore the most difficult to provide with economic means of travel.

Investigations of an airstrip on **Dauan** have indicated an environmental obstacle as any airstrip would have to be built partly on reclaimed land, a cost in the order of \$10M, and a safety problem with windshear from the adjacent hill. This latter problem may well preclude its use, even if it were built. There is a ferry service that has run for some years for Dauan residents to access RPT services at nearby Saibai. This service would need to be maintained.

The population of **Stephen Island (Ugar)** would have even more difficulty in generating enough travel to warrant RPT services. Access to the island can only be gained by chartered helicopter or by boat to Darnley, which is a significant journey in open sea. Ugar also has the difficulty of having a large fringing reef and no dredged channel. This renders meeting a scheduled service difficult, and can require an overnight stay on Darnley. The public transport network here is therefore less than desirable. The TSRA has purchased a suitable ferry boat for the island, however, with the low population, this is very difficult to operate economically, and does not overcome the problem of lack of a suitable channel.