7.17 Corridor 17: Glasgow to Inverclyde and Islands

7.17.1 Setting the Context

Corridor 17 extends west from Glasgow to Gourock and south to the North Ayrshire town of Largs. The corridor is approximately 40 kilometres in length and has a total population of 115,300[717] and connects the city of Glasgow with the main population centres in Renfrewshire and Inverclyde. The extent of the corridor and the main settlements are shown in Figure 7.17.1.

The main road and rail network in the corridor performs three roles; it provides a strategic link connecting Inverclyde with Glasgow, the Central Belt and further afield; it serves settlements within the corridor providing access to local services and employment; and it caters for a large number of commuting trips into Glasgow.

It also provides access to Glasgow Airport and to the areas of regeneration at Inverclyde.

The population in the corridor is forecast to increase by approximately 4,000 people between 2005 and 2022 from 115,000 to 119,000, a rise of three per cent[717]. At the same time, the number of households in the area is forecast to increase from 51,000 to 59,200 by around 8,000, a rise of 14 per cent[717]. The town of Bishopton, which lies to the west of Paisley on the corridor, has been identified as a location for long term expansion within the Glasgow and Clyde Valley area with proposals for up to 2,300 houses and a business park providing employment for up to 4,000 people[718]. With a focus on housing and employment at Bishopton, this may lead to lower growth in other parts of the corridor.

Historically, the economy in Inverclyde was centred on the River Clyde with a large emphasis on shipbuilding and heavy engineering. Renfrewshire also had a large traditional engineering base. Following the decline in the heavy industries, the economy base has diversified into the electronics and modern technology industries and more recently, the financial services and service industry in general. The Riverside Inverclyde Urban Regeneration Company has been set up to facilitate the regeneration of the waterfront area in Greenock and Port Glasgow for business and residential use[719]. This area has been identified as one of three national priorities for regeneration[720].

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[717] TELMoS
[718] Glasgow and the Clyde Valley Structure Plan 2006
[719] Riverside Inverclyde Urban Regeneration Company www.riversideinverclyde.com
[720] People and Place: Regeneration Policy Statement, Scottish Executive, 2006

Figure 7.17.2 shows the areas of changes in population and employment. Employment is expected to increase from 44,500 to 46,600 jobs, a rise of six per cent between 2005 and 2022[721]. In the same time period, inactivity levels in the corridor are forecast to reduce from 23,000 to 20,500, a decrease of 12 per cent[721], reflecting the development of new businesses in the area. Income levels for the corridor are £402 per week in Inverclyde and £435 per week in Renfrewshire, ranging from 98 per cent to 106 per cent of the average for Scotland (£412)[722].

[721] TELMoS
[722] Scottish Economic Statistics 2006, table 4.20

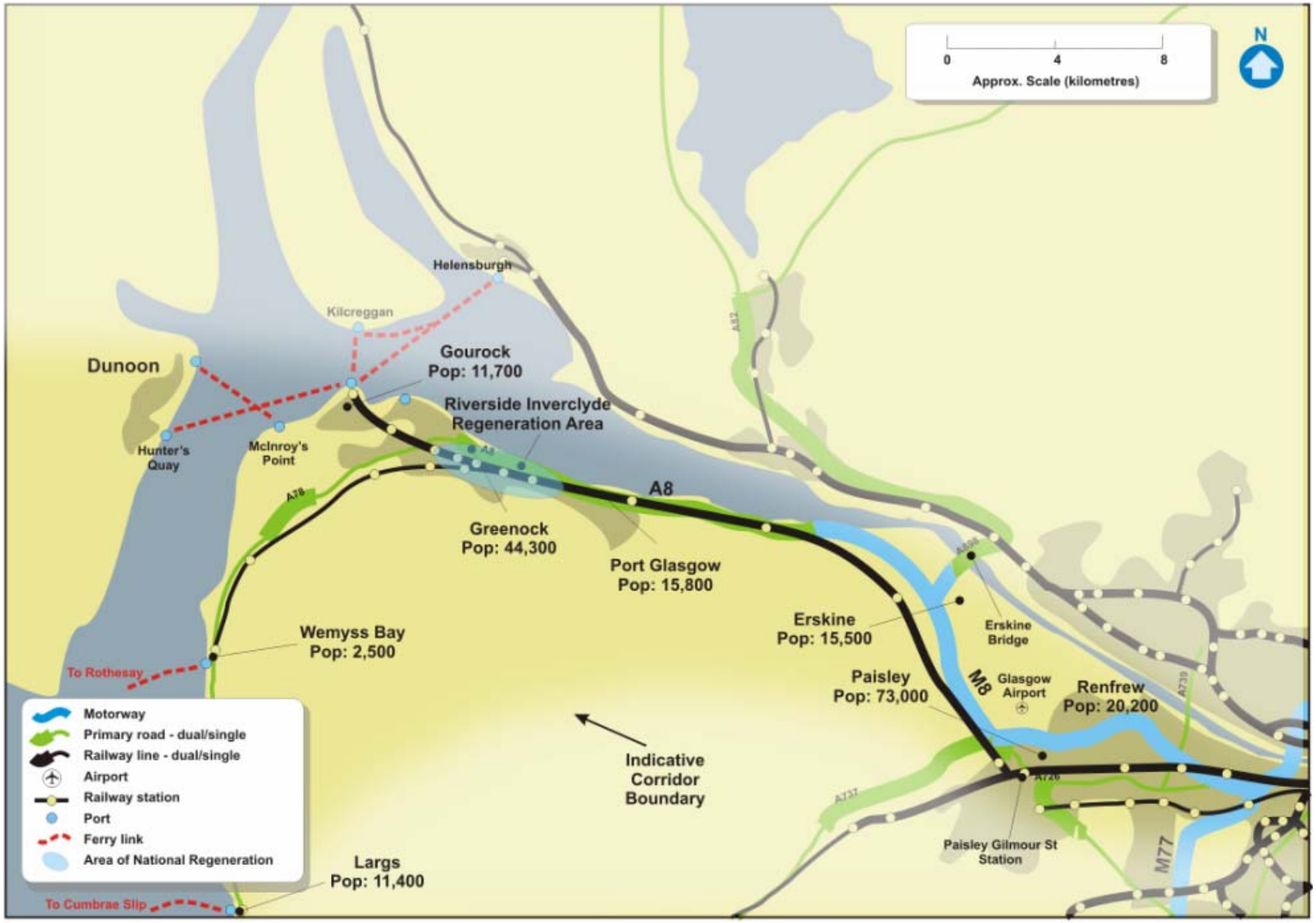

Figure 7.17.1: Setting the Context, Corridor 17 - Glasgow to Inverclyde and Islands

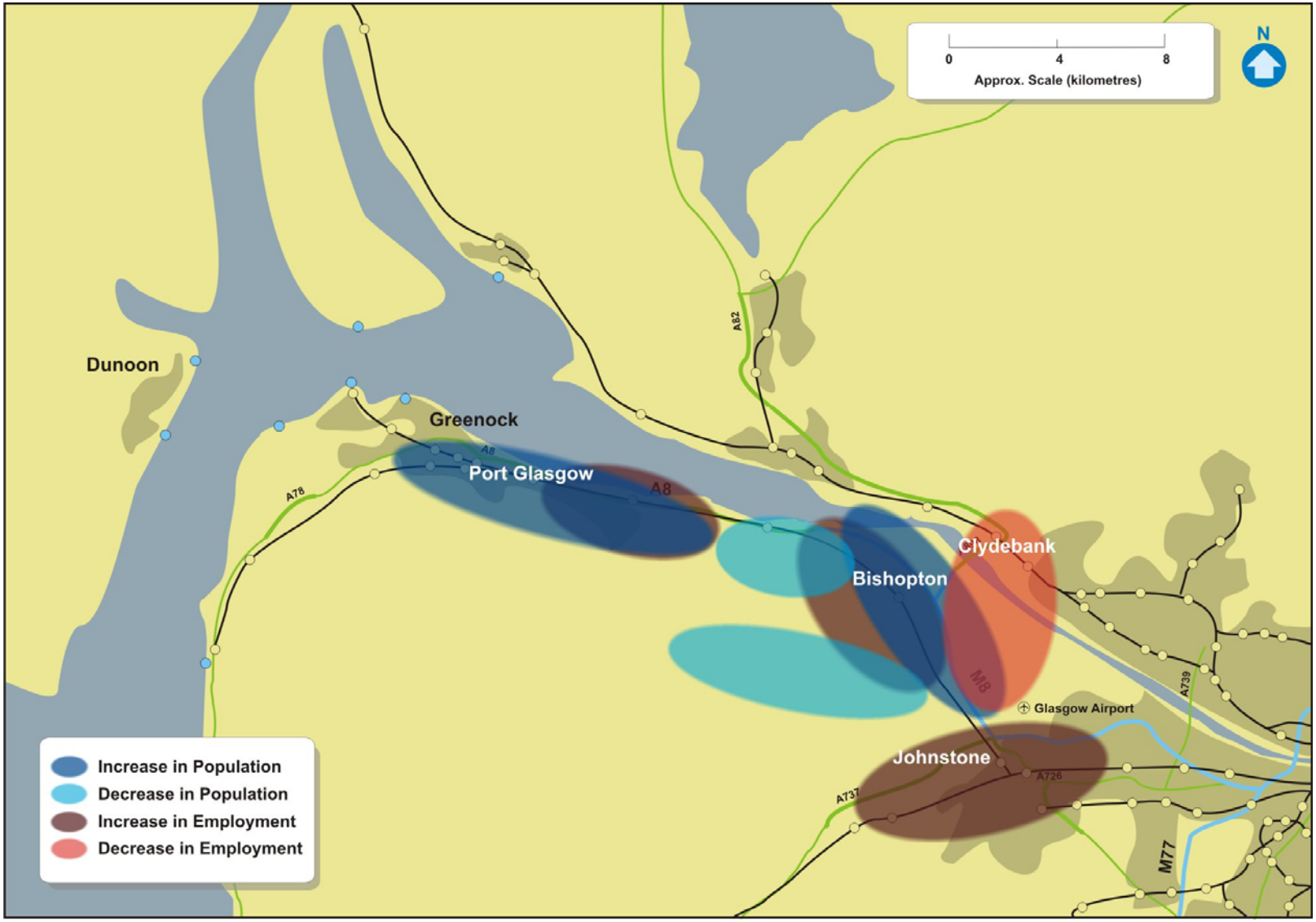

Figure 7.17.2: Changes in Population and Employment, 2005 & 2022, Corridor 17 - Glasgow to Inverclyde and Islands

Car ownership in the corridor, measured in percentage of households with access to a car, is below the national average of 67 per cent:

- Inverclyde: 57 per cent; and
- Renfrewshire: 63 per cent[723].

7.17.2 Transport Network and Operations

Infrastructure and Services

The principal elements of the transport network that play a national strategic role are shown in Figure 7.17.1.

The M8 / A8 Trunk Road, which is part of the Trans European Network, forms the main spine of the road network and is generally of dual two / three lane motorway and dual two-lane carriageway standard but has many at-grade junctions as the road passes through the settlements of Greenock and Port Glasgow. Other important elements of the road network include:

- The A78 Trunk Road single lane carriageway road links Inverclyde with North Ayrshire; and
- M898 / A898 Trunk Road dual two lane carriageway over the Erskine Bridge connects Inverclyde and Renfrewshire to West Dunbartonshire.

The corridor is well served by the rail network, with electrified routes from Glasgow Central to Gourock, Wemyss Bay and Largs. The majority of the route is double track, although the Wemyss Bay and Largs branches are predominantly single track.

The Gourock line is double track with the single track Wemyss Bay line branching off to the west of Port Glasgow. The route to Largs uses the main Glasgow to Ayr route as far as Kilwinning, before branching off at Ardrossan (see Corridor 15 also). There are several intermediate stations on these lines within Inverclyde and Renfrewshire. Service patterns are generally:

- Three trains per hour between Glasgow and Gourock;
- One train per hour between Glasgow and Wemyss Bay;
- One train per hour between Glasgow and Largs; and
- Various freight services.

[723] Scotland's Census 2001 – www.scrol.gov.uk Table KS17

Bus services in this corridor include commuter services from Glasgow to Renfrewshire, longer distance services from Glasgow to Inverclyde and Largs, and local services between the settlements in the corridor. Service patterns are generally:

- Two buses per hour between Glasgow and Gourock/Greenock/Port Glasgow; and
- Two buses per hour between Glasgow and Largs.

This corridor provides access to several ports, including the commercial port at Greenock, and the ferry terminals providing lifeline services to the islands and the Cowal peninsula; these are located at Gourock (for Dunoon), McInroy's Point at Gourock (for Hunter's Quay at Dunoon), Wemyss Bay (for Rothesay) and Largs (for Cumbrae). Service patterns are generally:

- One ferry per hour between Gourock and Dunoon (Cal-Mac);
- One ferry every 20 minutes between McInroy's Point, Gourock and Hunters Quay, Dunoon (Western Ferries);
- One ferry every 90 minutes between Gourock and Kilcreggan;
- One ferry every 45 minutes between Wemyss Bay and Rothesay; and
- Two ferries per hour between Largs and Millport.

The principal interchange locations on the corridor are:

- Paisley Gilmour Street (interchange between corridor rail services and those to Ayr and Ardrossan and local bus services including links to Glasgow Airport);
- Largs (interchange with ferry to Cumbrae);
- Gourock (interchange with ferry to Dunoon and local bus services); and
- Wemyss Bay (interchange with ferry to Rothesay).

Integrated tickets in the corridor are available in the form of the *PLUSBUS* ticket and the SPT Zone Card. *PLUSBUS* tickets cover rail journeys into Glasgow and provide the addition of unlimited bus travel within the destination. The SPT ZoneCard is widely used within the Glasgow urban network and gives unlimited travel on bus, rail, subway and certain ferry services within designated zones in the SPT area.

The corridor provides access to Glasgow Airport, near St James Interchange on the M8, which provides flights to domestic and international destinations. The airport is well served by bus and car. The programmed opening of the Glasgow Airport Rail Link in 2012[724], coupled with the completion of the M74, will offer improvements to both public transport and car travel journeys accessing Glasgow Airport.

[724] Scottish Minister's High Level Specification Output

Asset Management

In 2007, five per cent of the trunk road network pavement[725] in this corridor is judged to require structural strengthening as it has no theoretical residual strength. This compares with a national level of four per cent[726]. Under Transport Scotland's planned maintenance schedule, the net figure for the corridor is expected to fall to four per cent by 2012.

Further details on asset management, including bus and rail, are provided in Chapter 4.

Demand Management

Park-&-Ride opportunities are provided at most of the railway stations on the corridor. A strategic Park-&-Ride facility is provided at Shields Road Subway Station in Glasgow. It has a capacity of 800 spaces and is signed from the M8[727]. The major towns in the corridor have a mixture of free and paid parking. This mixture of provision and the charging regimes in place are such that parking is not used in the same way as Glasgow as a demand management measure. There are no other demand measures within this corridor.

Programmed Schemes

The following programmed transport and land use developments in this corridor are highlighted in Figure 7.17.3 as follows:

- Glasgow Airport Rail Link;
- Gourock Transport Interchange; and
- Major urban expansion at Bishopton with business and residential elements which include proposals for a new grade separated junction with east facing accesses on the M8.

[725] Transport Scotland SERIS Database
[726] STS No. 25 (2006) Table 5.5
[727] SPT: www.spt.co.uk

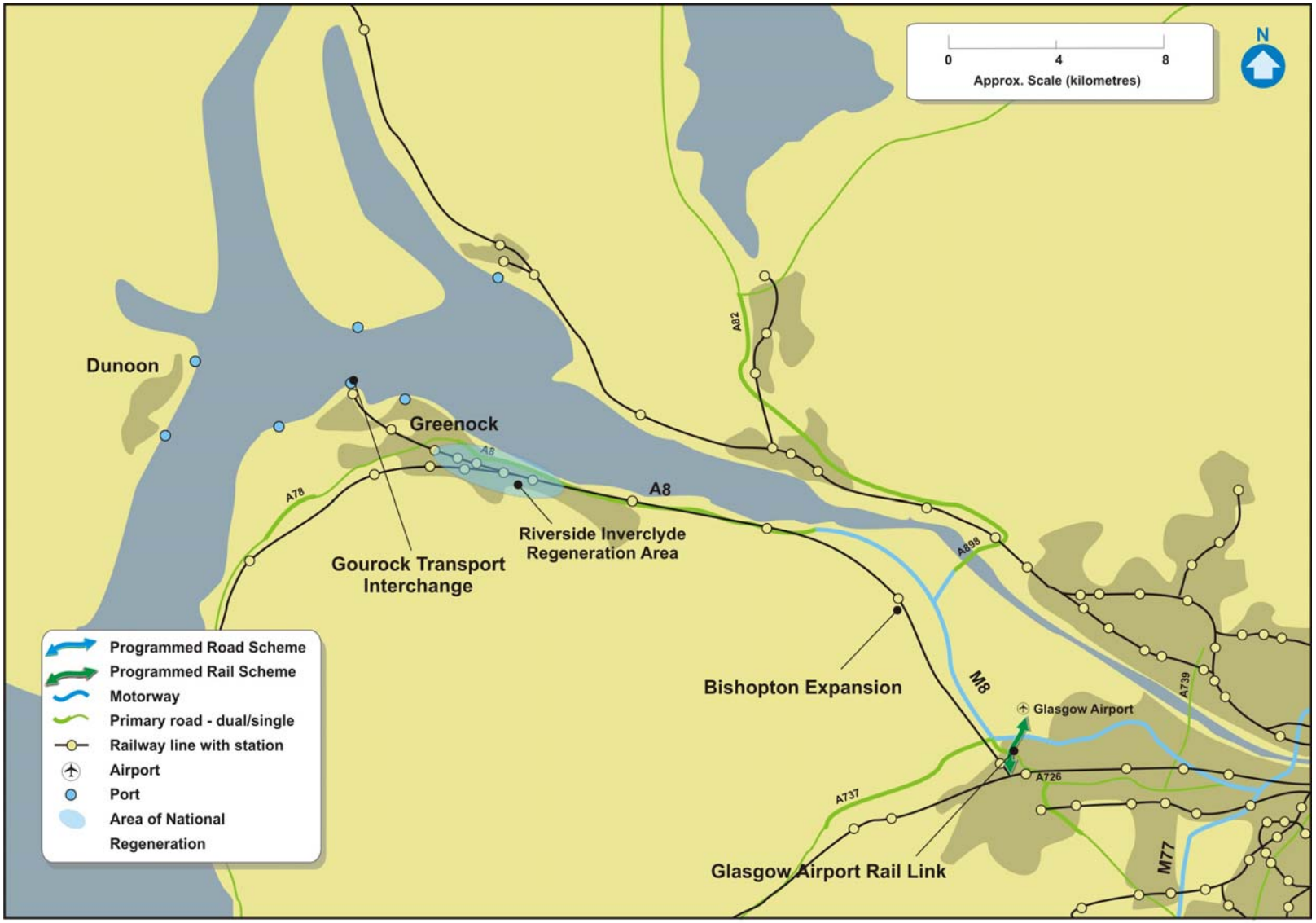

Figure 7.17.3: Programmed Transport and Land Use Developments, Corridor 17 - Glasgow to Inverclyde and Islands

7.17.3 Travel Patterns

Travel patterns for Corridor 17 are graphically presented in Figure 7.17.4. In addition, a summary of the demand levels in the corridor and mode share is included in Table 7.17.1.

Table 7.17.1: Summary of Demand (12 Hour) and Public Transport Share[728]

		Within Corridor	Between Corridor and Glasgow	Between Corridor and other destinations	Total Trips
2005	Total Trips	13,600	81,600	46,000	141,200
	% of Corridor	10%	58%	32%	100%
	PT Trips	3,500	8,800	1,300	13,600
	PT Share	26%	11%	3%	10%
2022	Total Trips	16,300	92,900	58,100	167,300
	% of Corridor	10%	55%	35%	100%
	PT Trips	3,300	7,900	1,500	12,700
	PT Share	20%	9%	3%	8%
Change	Total Trips	+20%	+14%	+26%	+18%
	PT Trips	-6%	-10%	+15%	-7%

As can be seen from Table 7.17.1, more than half of the trips on the corridor have an origin or destination in Glasgow. Of the trips to other destinations, 14 per cent of the total trips are to Corridor 9 (Glasgow to Perth), Corridor 13 (Glasgow to Edinburgh) and Corridor 18 (Glasgow to North West England and beyond). All of these will generally require trips to route through Glasgow. More than a quarter of trips that are made within the corridor are made by public transport, however public transport mode share on other movements is lower, particularly to other corridors. The high level of travel within the corridor by public transport may be attributed to the provision of a high density of railway stations within the urban areas of Greenock and Port Glasgow.

[728] TMfS:05

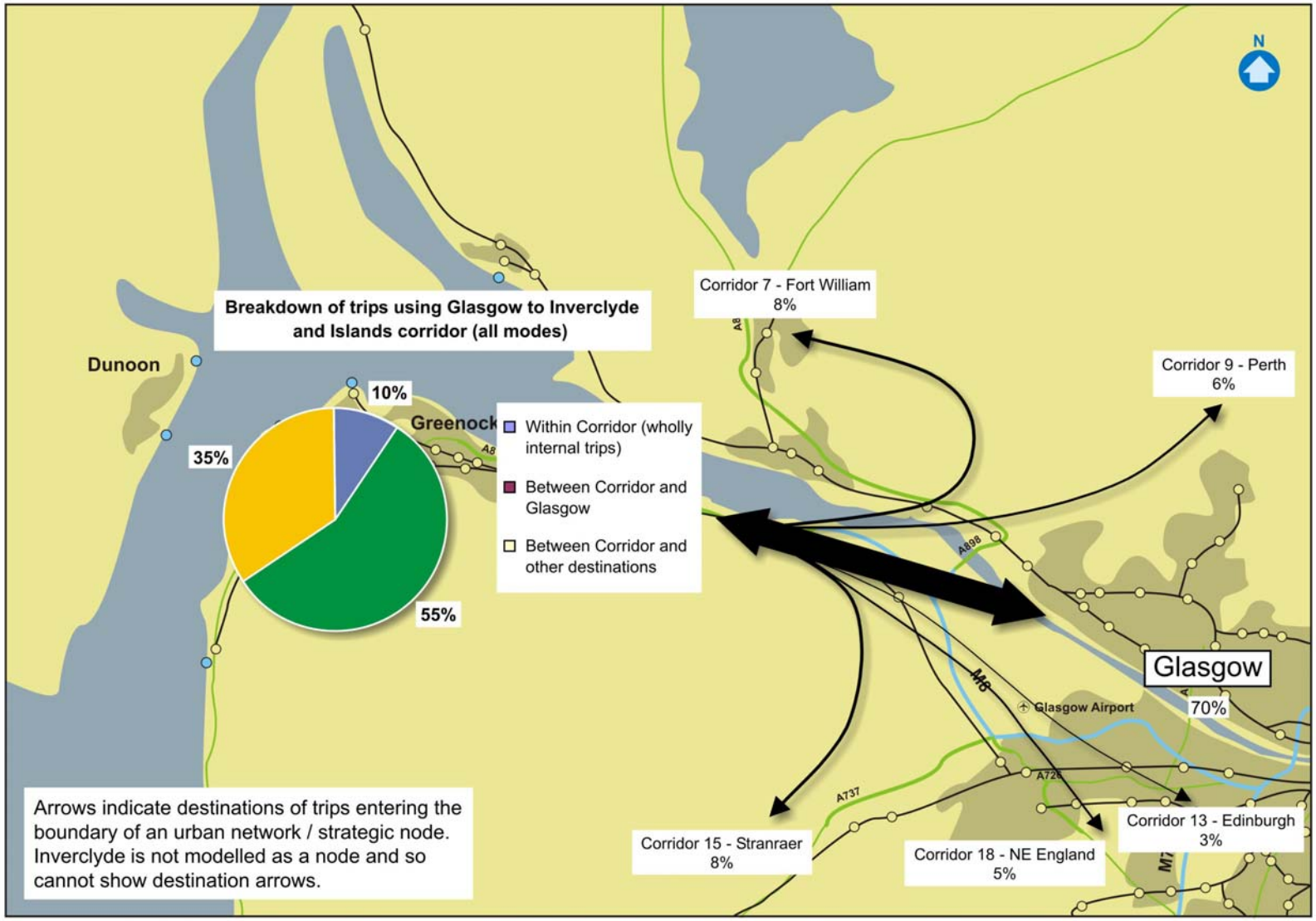

Figure 7.17.4: Travel Patterns 2022, Corridor 17 – Glasgow to Inverclyde and Islands

By 2022, car based trips are forecast to increase by 20 per cent for trips within the corridor, nine per cent for trips to Glasgow and 26 per cent to other destinations. The relative public transport trips within the corridor are forecast to decrease by six per cent, whereas the level of public transport demand to areas outside the corridor are forecast to rise by 15 per cent. These projections assume no change in the level of bus service provision but do include new rail services, including the Glasgow Airport Rail Link. Therefore the level of rail demand is forecast to increase by approximately 10 per cent. The lack of change in bus services is likely to lower projected bus usage given the projected concentrations of activity in the regeneration area and at Bishopton.

The rail network provides a direct linkage to Glasgow, the destination of most of the trips, and serves the major settlements along the corridor. However, for travel to other corridors, interchange within Glasgow or Paisley is required, potentially reducing the attractiveness of rail for these journeys.

The corridor contains the commercial port at Greenock that handled almost 70,000 twenty foot equivalent containers in 2004[729]; an average of just under 200 per day. Whilst a rail link exists to the commercial port at Greenock from the Wemyss Bay branch line, it has not been used for some time. Freight transferred to / from Greenock port is currently all road based and has to pass through part of the town centre to access the strategic road network.

ATC data from the SRTDb gives a figure of approximately twelve per cent HGV traffic on the M8 at Bishopton, and of nine per cent on the A8 at Greenock[730].

The main railway stations in this corridor have a total throughput of some 5.9 million passengers per annum (2005), with most of the passenger trips passing through Paisley Gilmour Street and Bishopton[731].

The expansion of Greenock port is constrained by the lack of full rail connections and the proximity of the town of Greenock itself[732]. Corridor 17 also contains several ferry ports which serve some of the busiest routes in Scotland. Passenger and car numbers for 2005 are detailed in Table 7.17.2.

[729] Scottish Freight Strategy Scoping Report – Final Report June 2006
[730] SRTDb
[731] Rail industry LENNON data (Station Usage 2004/2005) The total rail passenger trips do not include SPT zonecard trips
[732] Freight Transport and Logistics in West Central Scotland, Logistics Research Centre Heriot Watt University 2002

Table 7.17.2: Ferry Loadings in Corridor 17[733]

Route	Passengers (annual)	Vehicles (annual)	Percentage Commercial Vehicles and Buses
Gourock-Dunoon (Cal Mac)	625,000	Passenger only	N/A
Gourock-Dunoon (Western Ferries)	1.2900,000	607,000	6%
Gourock-Kilcreggan (SPT)	73,000	Passenger only	N/A
Wemyss Bay-Rothesay (Cal Mac)	750,000	164,000	8%
Largs-Cumbrae (Cal Mac)	699,000	141,000	4%

In 2006, Glasgow Airport had a throughput of 8.8 million passengers (25,000 per day) and over 8,700 tonnes of freight[734]. The passenger numbers vary from month to month throughout the year as the airport will be at its busiest during holiday periods. The air passenger numbers are forecast to rise to between 12 and 14.5 million by 2015[735], a faster rate than the UK generally. Surface access to the airport by public transport is currently available by a shuttle bus from Glasgow city centre and local bus services from Renfrewshire. Currently 11 per cent of passengers use public transport to access the airport, a level which is comparable with many other regional airports in the UK, 58 per cent of passengers travel to the airport by car and 26 per cent by taxi[735]. The airport is therefore a major influence on the surrounding road network.

The Glasgow Airport Rail Link is forecast to transport five per cent of domestic passengers and nine per cent of international passengers to the airport. Additionally, it is expected that 60 per cent of passengers using the Glasgow Airport Rail Link will be non-airport users, utilising the additional capacity between Glasgow Central and Paisley Gilmour Street stations that the Glasgow Airport Rail Link will supply[736].

[733] STS No. 25 (2006) Table 10.14/10.15
[734] STS No. 25 (2006) Table 9.6/9.13
[735] BAA Glasgow Airport Masterplan: July 2005
[736] SPT www.spt.co.uk/garl

7.17.4 Performance Review

Journey Times and Connections

This section addresses the following questions from Table 3.1:

- Does the network offer competitive journey times?
- Is the network operating efficiently and reliably?
- Where are the delays and when do they occur?

The average speed at which vehicles can progress through the network is a good indicator of the performance of the network. Figure 7.17.5 shows that the average speed on the A8 / M8 between Glasgow and Gourock is forecast to decrease across all three time periods between 2005 and 2022, resulting in an increase in average journey time of around eight per cent or three to four minutes.

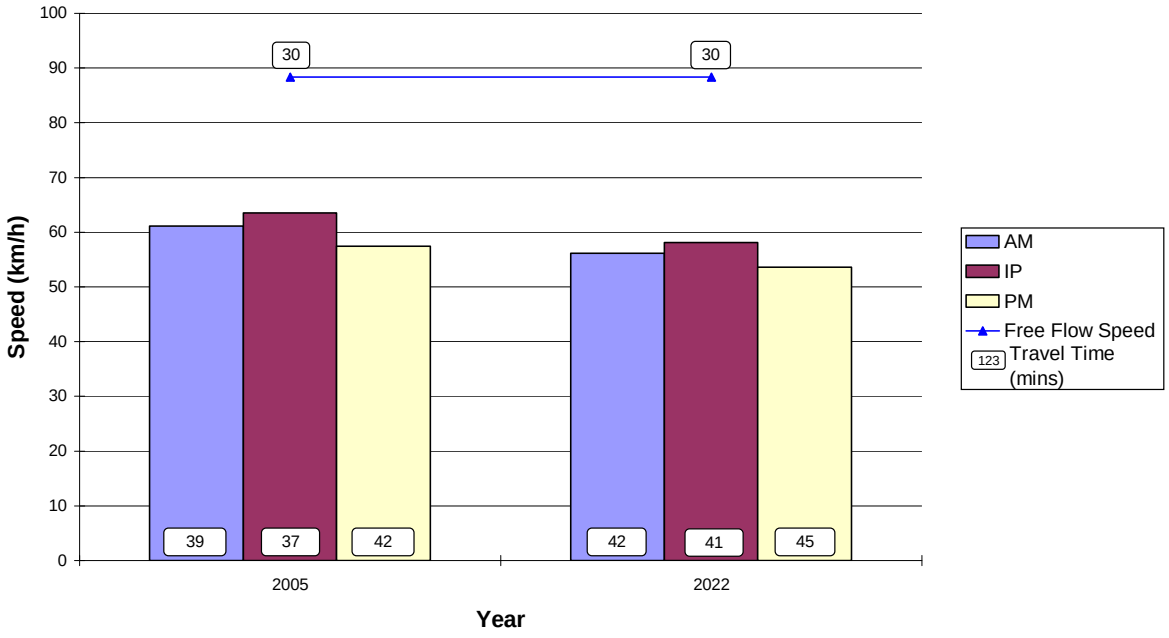

Figure 7.17.5: Average Road Speeds (Corridor 17)[737]

Travel time along the corridor in 2005 is broadly similar across all time periods at 37, 39 and 42 minutes for off peak, morning peak and evening peaks respectively. The free flow travel time in 2005 is 30 minutes, which is slower than any time period. In 2022, the travel times are again similar at 41, 42 and 45 minutes for off peak, morning peak and evening peak respectively. The free flow travel time in 2022 does not change from 30 minutes.

[737] TMfS:05

The average speed is less than 60kph (40mph) in the evening peak, and is forecast to fall further, while in the morning peak, the average speed is forecast to be less than 60kph after 2012. This is considered low for a corridor that contains mainly dual carriageways and motorways, as demonstrated by the gap between the modelled and free flow speed. The analysis suggests that while the majority of links are performing adequately and there are no journey time reliability issues, there is significant congestion on the M8 from Junction 29 Paisley St James to the west side of Glasgow city centre, especially at the M77 Junction. There are signs that congestion is increasing at at-grade junctions on the A8 and this is likely to affect future performance.

The average speed in the inter-peak continues to be little higher than during the peaks, although this also reduces over time to a point where the inter-peak average speed will be equivalent to conditions during the peak at present.

A comparison of road, bus and rail travel times is shown in Figure 7.17.6[738] for trips from Glasgow along the corridor in the morning peak and indicates that rail travel times are considerably longer than those by road on the corridor. Travelling the full length of the corridor, from Glasgow to Gourock, rail has a journey time of between 61 minutes and 72 minutes, including 20 minutes walk and wait time, compared with less than 45 minutes for road in 2005.

The electrified rail lines from Glasgow do not appear to offer a competitive alternative to the car for Gourock, Wemyss Bay, Largs and intermediate settlements in terms of journey time and frequency. There are no facilities for express services to overtake stopping services. In addition, capacity constraints on the Paisley to Shields section put a limit on the number of services that can operate at present. Increased congestion on the road network in future years will result in the rail network becoming more competitive but there will still be a significant journey time disbenefit for rail compared with road.

Rail service reliability is measured as the percentage of trains actually run in the last 12 months, split into seven service groups. The reliability of the services in Corridor 17 is:

- Strathclyde Passenger Transport Authority 94.1 per cent (target 94 per cent)[739].

The average AADT levels in 2006 on the A8 / M8 varied along the corridor between approximately 67,000 vehicles on the approach to Glasgow city centre after the M77 merge and about 25,000 between Langbank and Bishopton[740]. The road provision increases travelling from west to east from single carriageway in urban Gourock, through to multiple lane motorway on the M8 in line with the increasing demand on approach to Glasgow. The route currently provides sufficient theoretical capacity for the traffic levels. However, the combination of short junction spacing, traffic weaving where junctions merge and considerable commuter journeys creates tidal movements and congestion in peak periods.

[738] Journey times for bus/rail include a 20 minute walk/wait time
[739] http://www.firstgroup.com/scotrail/content/aboutus/ourperformance.php
[740] Transport Scotland, SRTDb

On the A78, AADT levels in 2006 varied between 7,500 at Skelmorlie and 18,000 in Greenock[741]. Demand is currently within theoretical capacity of the current road provisions which vary from single carriageway to wide single carriageway. However, in Greenock the A78 has numerous at-grade junctions and passes through the town centre resulting in a reduction in capacity and peak congestion.

Heavy congestion is experienced on the M8 in the morning and evening peak hours between Junction 29 (Paisley St. James) and Glasgow, especially where large volumes of traffic merge from both the M8 and M77 at Junction 22 (Plantation). Within Inverclyde, the at-grade junction of the A8 and A761 in Port Glasgow is approaching capacity.

The strategic bus services catering for commuters to Glasgow are nearing capacity and are also subject to congestion experienced on the approach to Glasgow city centre.

[741] SRTDb

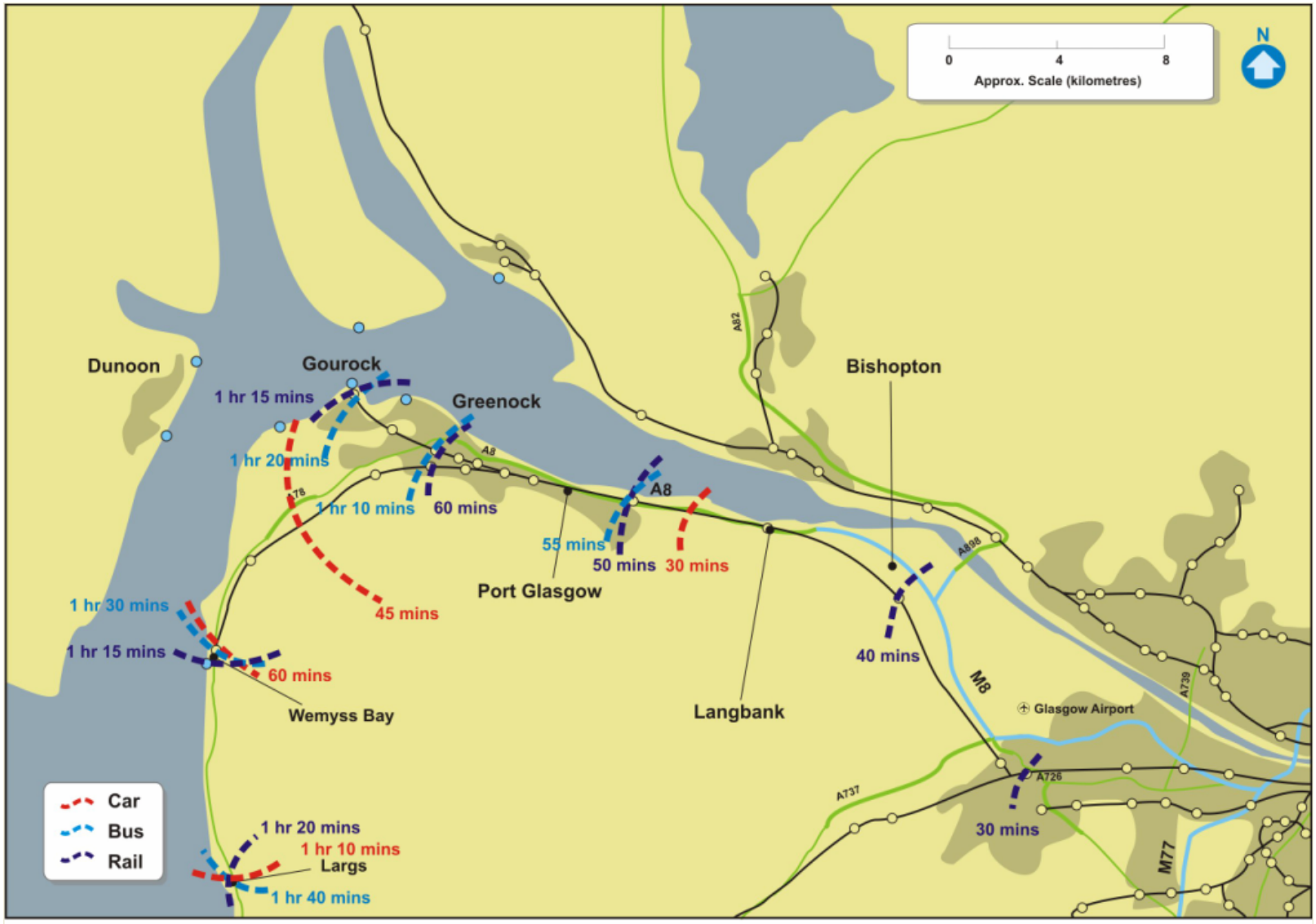

Figure 7.17.6: Journey Times to Glasgow City Centre (2005 am Peak), Corridor 17 - Glasgow to Inverclyde and Islands

Emissions (CO_2 only)

This section of the report addresses the issue:

- What is the level of transport based emissions within the corridor?

The road based transport network produced 105,000 tonnes of CO_2 in Corridor 17 in 2005[742]. This equates to just over one and a half per cent of the total road based transport related CO_2 emissions in Scotland.

By 2022, it is forecast that CO_2 emissions in Corridor 17 will rise to around 144,500 tonnes, just under two per cent of Scotland's road based transport related CO_2 emissions in 2022.

CO_2 per person kilometre is forecast to remain stable in future years, rising from 135 tonnes / million person kilometres to 141 tonnes / million person kilometres between 2005 and 2022. This is a result of CO_2 emissions rising at a slightly greater rate than person kilometres between 2005 and 2022.

Quality / Accessibility / Affordability

The following paragraphs address the issues of:

- Does public transport provision match origin/destination analysis?
- How competitive is public transport compared with the car?
- Do capacity issues impact on public transport service?
- How safe is the network?

Rail provision amounts to approximately 50 services per day between Glasgow and Gourock and 19 services per day between Glasgow and Wemyss Bay, which equates to a capacity of approximately 700 seats per hour in one direction. The peak hour services will be augmented by additional vehicles and increased frequency. Similarly bus capacity is approximately 200 seats per hour. This gives an estimated public transport capacity of 900 seats. When compared to demand, approximately 80 per cent of public transport capacity is being taken up in peak periods.

This corridor has several rural areas with generally poor access to key services by public transport predicted by 2022. In the east of the corridor, public transport competitiveness is expected to decline due to increased congestion affecting bus services.

Public transport is relatively competitive with car in this corridor, a situation forecast to continue into the future with little change. There are no major concentrations of people without cars, with a greater dependency on public transport for access to key services.

The infrastructure and service provision provide for effective business interaction between the centres of this corridor, with commuting opportunities allowing suitable return journeys to be made within a working day.

[742] TMfS:05

Table 7.17.4 provides an assessment of bus service quality on the strategic long distance service which operates to a 30 minute frequency, with additional peak journeys, between Glasgow, Greenock, Gourock and Largs. Reliability and coverage have been identified as good, with all other factors average. Journey times on the bus services will be affected by the change in average speeds over time highlighted in Figure 7.17.5.

Table 7.17.4, provides an assessment of the quality of strategic bus services within the corridor on a scale of one to five, with one being 'poor' and five being 'excellent'.

Table 7.17.4: Assessment of Bus Service Quality[743]

Service Numbers	Annual Journeys	Reliability	Frequency	Simplicity	Value	Coverage	Vehicle Quality
901	17,000	4	3	3	3	4	3

Table 7.17.5 shows the projected morning peak load factors (ratio of demand to supply) on the rail services in the corridor for various years, as reported in Network Rail's Route Utilisation Strategy. As these figures are averages across a number of train services, it suggests that some peak trains will suffer overcrowding and that this is likely to increase in the future.

Table 7.17.5: Rail Peak Load Factors[744]

	Base	2011	2016	2026
South West Electrics	0.87	0.85	0.86	0.93

The accident rate on the section of M8 between Junction 23 (west of M8 / M77 Junction) and Junction 31 (16.3 accidents per 100 MVKm) is significantly greater than the national rate for motorways (7.8 accidents per 100MVKm). Similarly, the A8, which runs from the western end of the M8 to Greenock has an accident rate which is higher than the national rate for similar road types (22.8 accidents per 100MVKm compared to 15.5 accidents per 100MVKm). The fatal accident rates on both sections are similar to the national rates[745]. Initial analysis of severe accident clusters indicated safety issues at three locations on the A8 and A78 roads.

[743] Bus Users UK (Qualititative Assessment – 1: very poor; 5: excellent)
[744] Network Rail Scotland Route Utilisation Strategy March 2007 Table 11
[745] Transport Scotland SERIS Database

Surveys repeatedly show that safety and security fears discourage individuals from using public transport, particularly in the evening. Within Inverclyde and Renfrewshire, 23 per cent of female bus users expressed a view that they felt either 'not safe' or 'not particularly safe' on buses. This is considerably lower than the national average of 30 per cent. The corresponding figures for rail in Inverclyde (42 per cent) and Renfrewshire (28 per cent) are considerably higher than the national average of 21 per cent. Responses from male passengers were generally in line with the national averages with the exception of rail users in Inverclyde where 30 per cent felt either 'not safe' or 'not particularly safe' compared to a national average of eight per cent. This analysis suggests that safety is a concern for public transport users in Inverclyde[746].

Summary of Infrastructure and Operational Constraints

Key constraints and congestion points are shown in Figure 7.17.7, including:

- M8 between Paisley St James and Glasgow city centre;
- Capacity issues developing on M8 between Junction 29 and 30 by 2017;
- Capacity issues at the Newark Roundabout between A8 and A761 in Port Glasgow;
- Wemyss Bay and Bishopton station car parks are currently at capacity;
- Single track on the Wemyss Bay branch limits increases in service frequencies;
- Tracks between Glasgow Central High Level and Paisley Gilmour Street stations are at capacity; and
- No direct rail link to Glasgow Airport.

[746] Scottish Household Survey 2003/3004 Perceptions of safety from crime during evening bus/rail travel

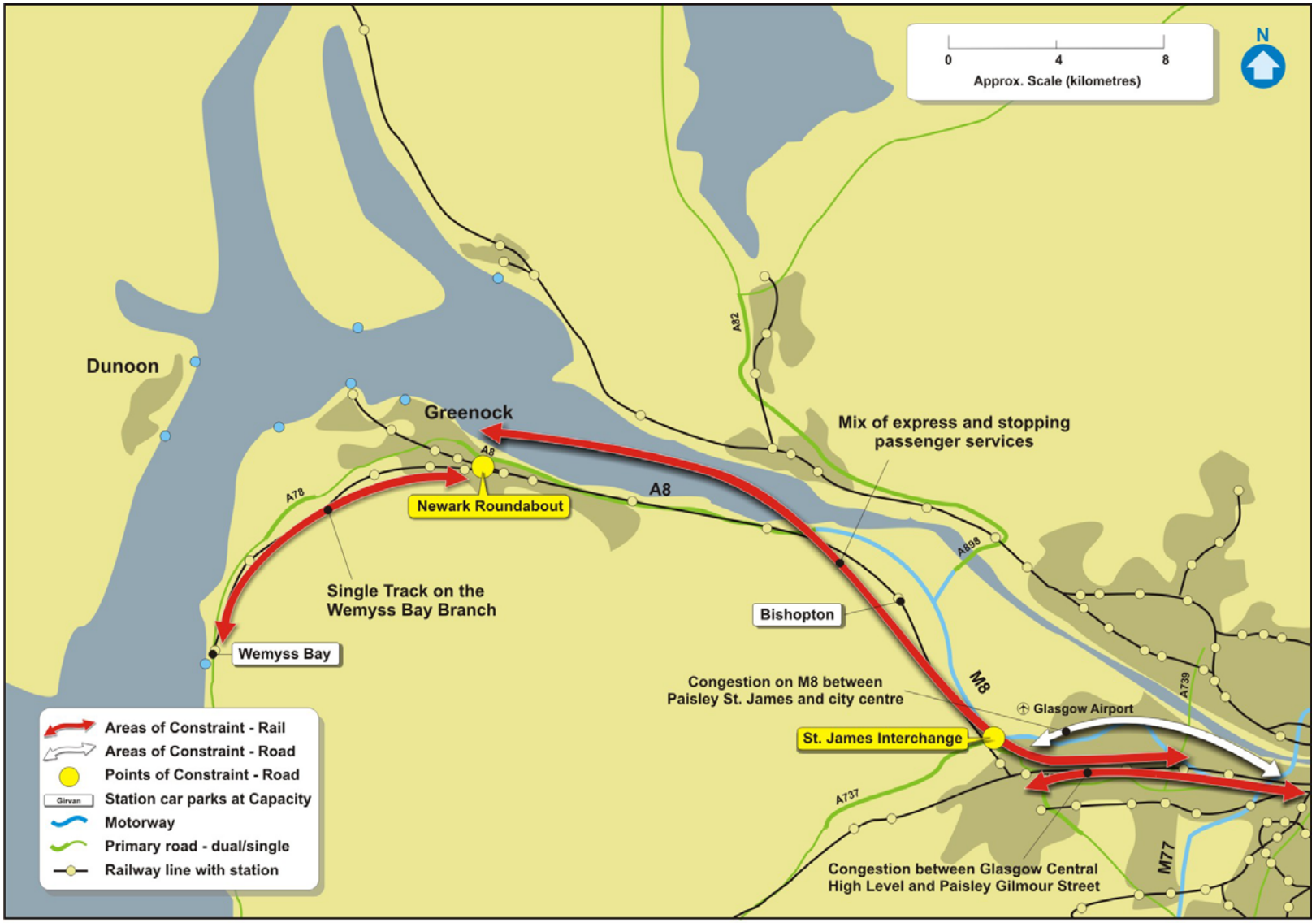

Figure 7.17.7: Areas of Constraint on the Network, Corridor 17 - Glasgow to Inverclyde and Islands

7.17.5 Summary and Conclusions

Overall, how well does the transport network perform?

The performance of the A8 / M8 in all three time periods suggests that the strategic road network is not operating effectively. This is partly due to the impact of at-grade junctions within Greenock and Port Glasgow and recurrent congestion on the approaches to Glasgow. High accident rates indicate safety concerns on the A8 and M8 within the corridor.

The high level loading on peak rail services suggests that even with a poorer journey time when compared with road, it remains a popular mode of travel. The impact of both of these performance issues is given greater significance when the high proportion of trips between the corridor and Glasgow is taken into account.

Will the transport network meet future demand, particularly in areas of economic activity?

The road network is already currently affected by congestion and this situation is expected to deteriorate in the future, with an increase of around eight per cent in journey time. This will not only affect commuter traffic, but also commercial traffic associated with the container port at Greenock. The at-grade junctions on the A8 are a fundamental constraint to capacity.

The Glasgow Airport Rail Link scheme will not only provide a new high quality public transport option for those using the airport, but will also provide a step change in rail capacity for Paisley. Notwithstanding this, rail overcrowding is forecast to worsen in the future and this may constrain potential growth in patronage and negate the high level of accessibility to rail services in the Inverclyde area. The uncompetitive journey time to Glasgow by rail compared with road, even when accounting for future congestion, may affect the ability to offer appropriate levels of access to support regeneration. The single track railway to Wemyss Bay offers little opportunity to improve frequency. This is of particular importance if rail access to the port is to be reused.

What are the key drivers that will impact on performance in the future?

Development and regeneration are likely to be the key drivers that will impact on the performance of the transport network in the future. The high level of trips associated with Glasgow suggests that the performance of the corridor is likely to be linked to the way in which the city develops. The proposed major land release at Bishopton will have a significant impact on the transport network both as an origin of commuter trips and as a destination for workplace trips. The Riverside Inverclyde regeneration area has both the A8 and railway line to Gourock transiting through it, and therefore the way in which the regeneration is taken forward has significant implications for the performance of these parts of the network.

Maintaining effective access to the international gateways at Glasgow Airport and Greenock Port will also be a driver.

What are the key problems associated with delivering the KSOs?

The predicted increase in road journey times as a result of increasing congestion is likely to be a problem in providing improvements to journey times.

The ability to improve journey times on the rail network is affected by the lack of capacity to allow fast services to overtake stopping trains or to reduce station stops without reducing accessibility.

There is a predicted increase in demand to travel between the corridor and Glasgow or further afield. The road network is currently subject to the effects of congestion and the rail network offers little scope to accept additional demand. This may in turn result in a poorer modal split for public transport and negatively affect emissions. Poor public transport accessibility contributes to social exclusion in Greenock West, near Gourock.