

Riverside Inverclyde Gourock – Environmental and Public Realm Improvements

Transport Assessment

March 2012



FAIRHURST

CONTROL SHEET

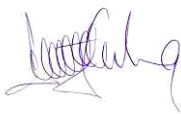


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1 Introduction

1.1 Current Development Proposals

- 1.1.1 Finalised proposals by Riverside Inverclyde in support of a Detailed Planning Application for the Gourock Pierhead Regeneration Scheme (“the scheme”) utilising a section of shoreline located between the existing Kempock Street car park and Gourock Station car park include the creation of a new eastbound carriageway of A770 in Gourock Town Centre as part of significant public realm improvements. The scheme focuses on improving the environment for pedestrians, providing improved journey time reliability for car drivers by ensuring that local bus services and frontage servicing arrangements for businesses on A770 Kempock Street do not impact on the free flow of traffic.



Looking west from Gourock Station Car Par to Kempock Street Car Park

- 1.1.2 The site is located within the Central Gourock Development area for which Inverclyde Council produced a Central Gourock Development Strategy in 1999. Proposals for development have evolved, with the development of a Public Transport Hub based on a relocated Gourock Railway Station no longer possible, Network Rail having now progressed with station refurbishment on the existing site. Early proposals for more significant retail and commercial development have been similarly impacted with a much smaller area of land available for development.

1.2 Current Scheme Development

- 1.2.1 Most recent proposals for development initially involved the provision of an internal vehicular and pedestrian link between the Kempock Street car park and Gourock Station car parks. The link would complete the coastal path link, existing arrangements requiring pedestrians and cyclists to utilise Kempock Street as part of their journey. These proposals also identified a further phase of potential development (Phase II) on part of the site formerly occupied by the Bay Hotel, located on A770 Shore Street adjacent to Gourock Pierhead and Railway Station.



Initial Proposals presented at August Public Consultation

- 1.2.2 The initial proposals illustrated above were presented at a public consultation meeting held at Gamble Hall, Gourock on 16th August 2011. Representatives from Inverclyde Council, local trade associations and members of the public were present at the well attended event. A strong preference for the provision of a formal eastbound vehicular link to provide relief to existing congestion on A770 Kempock Street was expressed.
- 1.2.3 The finalised scheme which includes the provision of the eastbound carriageway was presented to a further public consultation meeting held on 4th December 2011. The scheme is illustrated below with a larger scale plan shown at Appendix 1.



Finalised Scheme presented at Public Consultation December 2011

1.2.4 Following the December consultation, discussions with Inverclyde Council identified that the proposed altered circulation arrangements for Kempock Place could not be provided and that the existing south to north one-way system would remain, with the result that any traffic wishing to turn right from Kempock Place towards Greenock will now require to travel via Kempock Street and the Relief Road, as it will not be possible to provide a right turn at this junction.

1.3 Project Scoping

1.3.1 Initial Scoping discussions on the Transport Assessment (TA) were held with Inverclyde Council on 10th August 2011 in the context of the linked car park scheme. These discussions confirmed that there would be no requirement for detailed traffic assessment of the predicted impacts of Phase II given that no alterations to the road network were proposed for either Phase and that traffic impacts of phase II were predicted to be very modest.

1.3.2 Following scheme finalisation, a revised Scoping statement was submitted to Inverclyde Council in January 2012 for comment. A requirement to assess the

performance of revised junction arrangements at Gourock Station and the possible impacts of changes to circulation arrangements was identified during this process, along with a requirement to quantify journey time benefits of scheme completion for journeys via A770 Kempock Street.

1.4 Report Structure

1.4.1 The report will follow the undernoted structure

- Review of Scheme Objectives against Local and National Policy Context
- Accessibility Review
- Existing and Proposed Traffic Circulation Arrangements
- Network Performance
- Impacts on Journey Times through A770 Kempock Street
- Assessment of Impacts of Phase II development

1.4.2 Consideration to both Phase I and Phase II will be provided in the same section of report where appropriate to avoid repetition.

1.5 Terminology

1.5.1 The area containing Gourock Railway Station, Gourock Ferry Terminal, the station car park and bus terminus will be referred to as Gourock Pierhead.

2 Review of Scheme Objectives against Local and National Policy Context

2.1 Introduction

2.1.1 This section provides a review of scheme proposals against National, Regional and Local Transportation Policy Objectives. Documents reviewed will be identified.

2.2 Scheme Objectives

2.2.1 Principal scheme objectives are identified as undernoted

- Public Realm Improvements including the provision of a riverside walkway/cycleway connection between Gourock Pierhead and Albert Road
- Improvement to traffic circulation via A770 Kempock Street by the provision of a new eastbound relief road allowing one way operation in each direction
- Improvements to existing parking provision in the area

2.3 National Policy Review

2.3.1 National Policy Context for the proposals is contained within the undernoted documents

- Scottish Planning Policy (SPP)

2.3.2 The scheme objectives are consistent with SPP Paragraph 169 which notes that

‘Improvements to active transport networks, such as paths and cycle routes, in urban and rural areas will support more sustainable travel choices. The aim is for urban areas to be made more attractive and safer for pedestrians and cyclists, including people with mobility difficulties.’

2.4 Regional Policy

2.4.1 Regional Policy Context for the proposals is contained within the undernoted documents

- Glasgow and Clyde Valley Joint Structure Plan 2006 (GCVJSP)
- SPT A Catalyst for Change – The Regional Transport Strategy for the west of Scotland 2008 – 2021 (RTS)

2.4.2 Gourock is identified within the GCVJSP as one of three Strategic Development Areas requiring prioritised investment. The scheme proposals seek to prioritise significant capital investment of approximately £4.6 million to Central Gourock.

2.4.3 The RTS is a strategic document which identifies high level transport objectives. Current scheme proposals for the provision of the relief road to improve traffic flow through the centre of Gourock will support Strategy Objective 4 Effectiveness and Efficiency

‘To ensure the provision of effective and efficient transport infrastructure and services to improve connectivity for people and freight’

2.4.4 Scheme Proposals provide significant public realm improvements designed to further encourage the use of sustainable modes of travel in the area as identified at RTS Strategy Objective 2 Modal Shift.

‘To increase the proportion of trips undertaken by walking, cycling and public transport’

2.5 Local Policy

2.5.1 Local policy context for this development is largely defined by

- Inverclyde Local Plan 2005 (adopted January 2006) (ILP)
- Inverclyde Local Development Plan Main Issues Report May 2011 (MIR)
- Inverclyde Local Transport Strategy 2011-2014 (ILTS)

2.5.2 The scheme is located within the Central Gourock Special Area and Inverclyde Council produced the Central Gourock Development Strategy in 1999 which identified the requirement for the provision of a new road to remove traffic from Kempock Street.

2.5.3 The provision of a relief road for Kempock Street is identified in ILP Policy TA13 Safeguarding Land for New Road Proposals :

‘Inverclyde Council, as Planning Authority, will support the development of, and safeguard the land necessary for, the following road schemes:

- (i) Greenock Town Centre Relief Road; and

(ii) Gourock (Kempock Street) Relief Road.’

2.5.4 MIR acknowledges that the Kempock Street Relief Road is featured in the Local Transport Strategy Action Plan as a Medium Term Objective.

2.5.5 ILTS notes that proposals for a public transport interchange at Gourock to provide improved access to rail, bus, ferry and taxi services will require to be revisited in light of Network Rail’s refurbishment of the railway station.

2.5.6 The scheme is consistent with ILTS Action AWalk6 which identifies that Inverclyde Council should

“Work with all interested parties and stakeholders to ensure the provision of appropriate infrastructure to link the Waterfront with the town centres - Gourock, Greenock & Port Glasgow”

2.5.7 The scheme complies with ILTS Action ASafe 37 which identifies:

“Gourock Town Centre: Construction of Kempock Street Relief Road north of existing Kempock Street”

2.5.8 The provision of a relief road in the scheme will assist with addressing the issue identified in the ILTS in relation to ferry related congestion:

“Congestion occurs in Gourock at Ferry arrival times and in Kempock Street when shop deliveries are being made”

2.5.9 The scheme is consistent with ILTS Action ASafe 63 which proposes to

“Review the existing parking provision along Gourock Waterfront”

2.6 Conclusion

2.6.1 Scheme Objectives are strongly supported by Policy Context at all levels.

3 Accessibility Review

3.1 Introduction

3.1.1 Existing accessibility to both Phases I and II will be considered in this chapter. As Phase II is immediately adjacent to Phase I, accessibility to both sites will be considered together.

3.1.2 The chapter will consider first the most sustainable methods of travel by walking and cycling, then public transport and finally by private car.

3.2 Walking

3.2.1 Footways are provided to both sides of the carriageway on A770 through the development area. Kempock Place is provided with a single footway to the west side of the carriageway only.

3.2.2 Signalised pedestrian crossings are located on A770 Shore Street adjacent to the westbound bus layby along the desire line from Gourock Pierhead to the bus stop, and at the west end of the shopping area on A770 Kempock Street



A770 Shore Street signalised pedestrian crossing towards Railway Station

- 3.2.3 Dropped kerbs and a pedestrian refuge are provided at the vehicular access to the Kempock Street car park.



Kempock Street Car Park access

- 3.2.4 Improvements to footways and footpaths in the vicinity of Gourock Station car park adjacent to scheme proposals have been provided as part of a separate project by Riverside Inverclyde and Inverclyde Council.



Pedestrian footway and footpath improvements west of Station Car Park

- 3.2.5 Inverclyde Council Core Paths 1D Lunderston Bay to Gourock, 1E Gourock to Greenock, and 21 Gourock Town Centre to Cardwell Bay all pass through the scheme area. These Core Paths, which form part of the Inverclyde Coastal Path, and others in the immediate vicinity of the scheme area are illustrated at Diagram 1.
- 3.2.6 Inverclyde Council promote the 5km Gourock to Lunderston Bay Coastal Walk (Core Path 1D) which commences from Kempock Place as one of a number of leisure walks in Inverclyde.
- 3.2.7 Provision for leisure walking along the riverside is maintained eastwards towards Greenock for a distance of approximately 4km (Core Path 1E). This distance includes one short section of route remote from the riverside as a result of industrial development along the shore.
- 3.2.8 The walks from Gourock to Lunderston Bay and Greenock to Gourock Pier were identified as two out of twelve popular walks in Inverclyde by a local walking group Inverclyde Ramblers.

3.3 Cycling

- 3.3.1 A770 Kempock Street forms part of National Cycle Route 75 (NCN75). The route connects Leith in east Edinburgh with Portavadie in Argyll via the ferry linkages from Gourock to Dunoon and McInroy's Point to Hunter's Quay. NCN75 is principally off-road between Greenock and McInroy's Point with the exception of the section between A770 Albert Road and Tarbet Street via A770 Kempock Street. The withdrawal of the Calmac vehicle ferry service has resulted in reduced vehicle movements in the vicinity of the ferry terminal, improving the on-road environment for cyclists on Tarbet Street.
- 3.3.2 Gourock Pierhead provides a start point for three longer distance enthusiast cycle routes including the Loch Lomond Loop and Loch Long Cycle which take advantage of the frequent rail and ferry connections provided.

3.4 Public Transport

3.4.1 The site is situated adjacent to Gourock Railway Station and Pierhead, and rail, bus and ferry services are all easily accessible. Phase II development will be adjacent to all these modes of travel within the 400m walk distance identified in PAN75.

3.4.2 Impacts of scheme proposals on public transport operations will be considered at Chapter 4.

3.4.3 Existing public transport services are summarised at Table 3.4.3 below.

Table 3.4.3 Existing Public Transport Services

Mode	Operator	Service	Proximity to development	Principal calling points <i>(alternate routes in italics)</i>	General Frequencies			
					Peak	Mon-Fri Off peak	Evening	Sat
Bus	Marbill	308	Gourock Pierhead	Beith - Lochwinnoch - Paisley - Port Glasgow - Greenock - Gourock	One service each direction	No service	No service	No service
Bus	McGills	540	Gourock Pierhead	Greenock Cardross Crescent - Tesco - Greenock bus station - Inverclyde Royal Hospital - Gourock	30 minutes	30 minutes	No service	30 minutes
Bus	McGills	547	Gourock Pierhead	Gourock Pierhead - Greenock bus station	30 minutes	20 minutes	No service	As Mon - Fri
Bus	McGills	901	A770 Shore Street	Largs - Wemyss Bay - Inverkip - McInroys Point - Gourock - Greenock - Port Glasgow - Paisley - Glasgow Bothwell St - Glasgow Buchanan Bus Station	60 minutes	60 minutes	No service	As Mon - Fri
Bus	McGills	907	A770 Shore Street	Dunoon - McInroys Point - Gourock - Greenock bus station - Port Glasgow - Braehead - Glasgow Bothwell Street - Glasgow Buchanan Street Bus Station	120 minutes	120 minutes	One journey	As Mon - Fri
Bus	McGills	908	A770 Shore Street	Largs - Wemyss Bay - Inverkip - McInroys Point - Gourock - Greenock - Port Glasgow - Braehead - Glasgow Bothwell St - Glasgow Buchanan Bus Station	One service	120 minutes	No service	As Mon - Fri
Rail	ScotRail	Inverclyde	Gourock Pierhead	Gourock - Fort Matilda - Greenock W - Greenock Central - Port Glasgow - Bishopton - Paisley Gilmour Street - Glasgow Central HL (limited stop services)	3 per hour - most call all stations	3 per hour - one calls only at principal calling points	2 per hour	3 per hour - one calls only at principal calling points
Ferry	Argyll Ferries	Cowal	Gourock Pierhead	Gourock - Dunoon	30 minutes	30 to 60 minutes	30 to 60 minutes	As Mon - Fri
Ferry	SPT	Kilcreggan	Gourock Pierhead	Gourock - Kilcreggan - <i>Helensburgh (two winter/four summer services)</i>	Four services	Seven services	No service	As Mon - Fri

3.4.4 McGills provide all principal bus services in Gourock, with local services 540 and 547 from Greenock both terminating at Gourock station car park. Longer distance express services in the 900 service group operate from Glasgow to Largs and Dunoon (via Western Ferries), combining to provide a 30 minute interval service between Glasgow Buchanan Street and McInroys Point during the day, with alternate services serving Braehead and Paisley en route.



McGill's Service 540 to Clynder Road, Greenock departs from Gourock Station

- 3.4.5 ScotRail operate frequent services from Gourock to Glasgow Central High Level via Port Glasgow and Paisley. There are generally three services per hour, one of which operates on a limited stop basis. Connections can be achieved en route at Port Glasgow for stations to Wemyss Bay, and at Paisley Gilmour Street to Ayrshire Coast and Stranraer services.



ScotRail service at Gourock station

- 3.4.6 Gourock Pierhead is served by two ferry services. The principal Cowal service is operated by Argyll Ferries with two services per hour at most times of the day. This service conveys only foot passengers since retendering in June 2011 as Transport Scotland funding has only been made available for a passenger service.



Argyll Ferries Ali Cat departs Gourock for Dunoon

- 3.4.7 The Argyll Ferries service replaced the hourly CalMac service which conveyed vehicles. As a consequence of the withdrawal of this service, all vehicle traffic is required to use the Western Ferries service from McInroy's Point to Hunters Quay. Whilst this service operates generally on a 15-20 minute interval frequency, both terminals are located outwith the centre of the towns they serve, as McInroy's Point is 3km west of Gourock Town Centre and Hunters Quay is 3km north of the centre of Dunoon.
- 3.4.8 SPT currently provide a passenger only service to Kilcreggan with some journeys extended to Helensburgh. The service is currently operated by Clyde Marine, but the contract renewal in April 2012 sees Clydelink take over the operation of the service using a new smaller ferry, which will only serve Kilcreggan as a result of very limited demand for the Helensburgh section of the route.



Clyde Marine Seabus approaches Gourock from Kilcreggan

- 3.4.9 Network Rail are improving the walkway from Gourock Station to the adjacent Gourock Ferry Terminal as part of an overall refurbishment programme.



Gourock Station ferry terminal walkway refurbishment

3.5 Private Car

- 3.5.1 A770 forms the principal connection from Greenock to Gourock and connects with A78(T) and A8(T) in central Greenock to the east and at Bankfoot Roundabout, east of Inverkip. A78(T) provides direct connection between Greenock and the Ayrshire Coast avoiding Gourock.



A770 Shore Street looking towards A770 Kempock Street

- 3.5.2 A770 provides vehicular connection to passenger and vehicle ferries to Cowal from Gourock Pierhead and McInroy's Point.
- 3.5.3 The principal car park in the centre of Gourock is located at Kempock Street where capacity for 200 cars is provided. On street parking is available on Kempock Street for limited periods only. 105 car spaces are available at Gourock Station car park at a cost of £3 per day. This capacity will be increased to 112 as part of current planned improvements referred to at 3.2.4 above. Car parking is also available at the former CalMac ferry terminal on the area formerly used by vehicles awaiting departure to Dunoon.
- 3.5.4 Disabled Parking is currently provided at both Kempock Street and Gourock Station car parks.

3.5.5 Current arrangements for traffic circulation in Gourock Town Centre and within the Kempock Street and Gourock Station car parks are discussed in more detail in the next Chapter.

3.6 Conclusions

3.6.1 Existing accessibility by all modes of transport to the development area is of a high standard.

4 Existing and Proposed Traffic Circulation Arrangements

4.1 Introduction

4.1.1 A requirement to consider alterations to existing traffic circulation arrangements has been identified through the Scoping process with Inverclyde Council.

4.1.2 This chapter will describe existing traffic flows and circulation arrangements on A770 Kempock Street/Shore Street in the vicinity of the scheme proposals, and internal circulation arrangements in both Gourock Station and Kempock Street Car Parks.

4.2 Existing Traffic Flows and Circulation Arrangements

4.2.1 A770 Kempock Street provides the principal route through Gourock eastwards to the M8 link to Glasgow and westwards to Wemyss Bay and the Ayrshire Coast. Traffic flows are shown at table 4.2.1 below. Increases in the AM peak on Shore Street by comparison with 2011 may be partly attributed to the withdrawal of the CalMac vehicle service, but as the increase in eastbound flow exceeds the maximum CalMac vehicle capacity of 40 per hour there would appear to have been a modest residual increase of 6% in this flow. Other flows are noted as consistent or reduced from 2011.

Table 4.2.1 Peak Hour Traffic Flows

87097 Gourock Traffic Count Data				2012 Peak Period Counts 7th February			
				AM Peak Hour		PM Peak Hour	
				East	West	East	West
A770 Shore Street east of Gourock Station				692	304	473	514
A770 Kempock Street				648	275	385	515
A770 Albert Road				651	230	327	516
				2011 ATC Counts 5 Day Average			
				AM Peak Hour		PM Peak Hour	
A770 Shore Street east of Gourock Station				612	283	445	557

4.2.2 Gourock Station and Kempock Street car parks are accessed from the north side of A770 by simple priority junctions.

4.3 Proposed Vehicle Circulation Arrangements

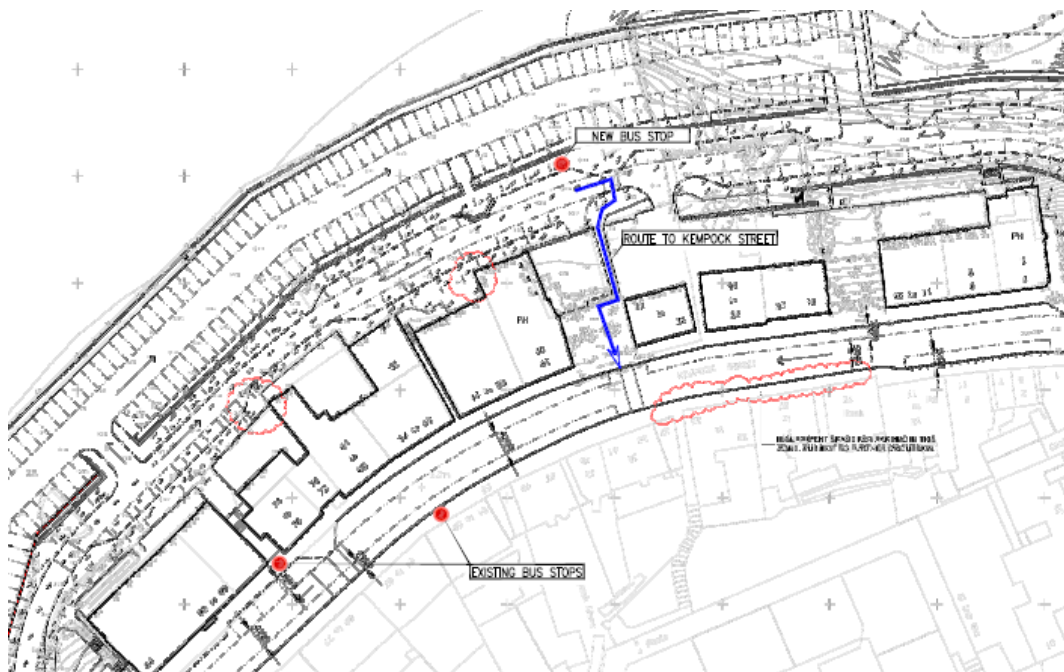
- 4.3.1 The provision of a new A770 eastbound carriageway will allow A770 Kempock Street to become westbound only. In order to accommodate this arrangement provision has been made for vehicles to u-turn from one carriageway to the other at both ends of Kempock Street.
- 4.3.2 A new one way access will be provided to Gourock Station car park from A770 Shore Street adjacent to Gourock Health Centre. Egress from the car park will continue to be via the existing route which will become one way. Principal circulation will be one way south to north.
- 4.3.3 Access to and egress from Kempock Street car park is to be provided from the new eastbound carriageway by means of a western access and an eastern egress, with a one way system operating within the car park.

4.4 Disabled Parking On Street Provision

- 4.4.1 A number of Disabled Parking Spaces are to be identified on Kempock Street as part of the additional on-street parking provision on the south side of Kempock Street.

4.5 Bus Service Arrangements

- 4.5.1 As outlined at 3.4.3 above, existing local bus services follow one of two routes, either operating to Gourock Pierhead and terminating at the bus stop within the station car park via the current two way access, or operating via A770 and calling only at bus stops on the main carriageway.
- 4.5.2 Terminating bus services, identified as Marbill 308 and McGills 540 and 547, will utilise the revised access arrangements for Gourock Station Car Park, entering via the new one way entrance and departing via the revised exit route. The revised bus layby is adjacent to the Railway Station entrance and a pedestrian crossing is provided.
- 4.5.3 Express bus services in the 900 group will continue to call at existing westbound stops on A770 Shore Street and A770 Kempock Street. Eastbound services will route via the relief road and call at a new bus stop located in the vicinity of the rear of 32-36 Kempock Street where an existing pedestrian connection is provided to the Kempock Street car park. The plan below illustrates the location of the new bus stop and the walk route to Kempock Street.



Location of new eastbound bus stop and walk route

5 Network Performance

5.1 Introduction

5.1.1 This chapter begins by assessing performance of the existing road network, giving consideration to the operation of existing car park accesses at Gourock Pierhead and the Kempock Street car park.

5.1.2 An assessment of the performance of the revised circulation arrangements will be provided based on reassignment of observed turning movements at the junctions surveyed.

5.2 Traffic Data Collection

5.2.1 Surveys were performed at the undernoted junctions as agreed through the Scoping process on (Tuesday 7th February 2012). The results of these peak period classified counts are shown at Figures 1 and 2.

- A770 Shore Street/Kempock Place/Gourock Pierhead car park
- A770 Kempock Street/Kempock Street car park access

5.3 Traffic Growth and Committed Development

5.3.1 Observed Traffic Flows have been factored to 2014 estimated year of scheme completion using NRTF Low Growth Factors, which identify a growth factor of 2.3% from 2012.

5.3.2 Inverclyde Council requested that consideration be given to the identification of a Local Growth Factor as data in the vicinity of the development was available from both 1997 and 2011. This data is shown at Table 5.3.2 below and suggests that traffic through Gourock has reduced between 1997 and 2011 rather than increased.

Table 5.3.2 Local Traffic Data Comparison 1997 and 2011

87097 Gourock Traffic Count Data Comparison Inverclyde Council Data	1997		2011		2011 Difference vs 1997		NRTF Low Growth
	AM Peak Hour		PM Peak Hour		AM	PM	
	East	West	East	West			
A770 Cardwell Road east of Tarbert Street	878	552	719	435	-18%	-21%	16.3%

5.3.3 A further comparison of 2011 and 2012 data is possible, and this comparison is presented at Table 5.3.3 below. An allowance has been made for the withdrawal of

the CalMac ferry in the 2012 data, assuming notional 100% load factor for eastbound traffic and a notional 50% load factor for westbound traffic in the AM peak, with reversed flows in the PM peak in line with peak traffic flows to and from the Cowal Peninsula. Whilst eastbound flows suggest that there has been growth of between 4% and 7% in traffic since 2011, westbound flows show a reduction, with the total flows in both directions down 2% on 2011 after adjustment.

Table 5.3.3 Local Traffic Data Comparison 2011 and 2012

Comparison of Inverclyde Council Data with 2012 data	AM Peak Hour		PM Peak Hour		Total Flows	NRTF Low Growth
	East	West	East	West		
A770 Shore Street 2011	612	283	424	569	1888	
A770 Shore Street 2012	676	304	473	514	1967	
Notional Allowance for CalMac traffic	40	20	20	40	120	
A770 Shore Street 2012 adjusted	636	284	453	474	1847	
2012 traffic vs 2011	4%	0%	7%	-17%	-2%	

5.3.4 The results of the above comparison exercises suggest that traffic growth in the area is modest at best and confirms the suitability of the use of a Low Growth factor to adjust 2012 data to the 2014 scheme completion year.

5.3.5 No committed development was identified through the Scoping process as requiring consideration for the purposes of traffic impact assessment.

5.3.6 Since Scoping was agreed, Scottish Government have overturned the refusal of Planning Permission for the construction of a 375m² Sainsbury’s “metro” style shop on a site at 32-36 Kempock Street currently in use as a retail outlet. The scale and nature of this development is such that the incremental level of car trips which may be generated to the new Sainsbury’s development is envisaged to be very modest indeed, as it is expected to fulfil a convenience shopping role. Phase II proposals for the former Bay Hotel site are noted as similar in nature and approximately four times greater than the Sainsbury’s facility, suggesting on a pro-rata basis that there may be a maximum of 15 or so two-way vehicle trips in the peak period generated by the Sainsbury’s store even if all trips are new to the network. Traffic impacts of this development are viewed as likely to be almost imperceptible in the context of existing traffic flows, with a maximum impact of the order of 2-3%.

5.4 Performance of existing junctions

5.4.1 The performance of the existing junction arrangements has been performed using industry standard PICADY software. Results for both junctions are shown at Table 5.4.1 below

Table 5.4.1 Existing Junction Arrangements

Kempock Street Car Park		AM Peak		PM Peak	
		RFC	Max Q	RFC	Max Q
B-A	Kempock Street Car Park right	0.023	0.0	0.134	0.2
B-C	Kempock Street Car Park left	0.046	0.0	0.151	0.2
C-AB	Kempock Street westbound	0.138	0.2	0.080	0.1
Junction delay (Min/pcu)		0.0		0.0	
Gourock Station Car Park		AM Peak		PM Peak	
		RFC	Max Q	RFC	Max Q
B-ACD	Kempock Place	0.101	0.1	0.146	0.2
D-A	Gourock Station	0.110	0.1	0.153	0.2
A-D	Shore Street	0.147	0.2	0.119	0.1
Junction delay (Min/pcu)		0.0		0.0	

5.4.2 Both existing car park accesses perform with minimal delay to traffic accessing or exiting the car parks in both peak periods, operating well within the maximum 85% Ratio of Flow to Capacity (RFC) applicable to Priority Junctions.

5.5 Operation and Performance of revised circulation arrangements

5.5.1 The performance of the revised circulation arrangements has been assessed using industry standard PICADY software. All vehicle movements have been reassigned to the revised networks shown at Figures 5 and 6 in line with revised access and circulation arrangements for existing movements through Gourock Town centre and to both car parks. Results for all junctions are shown at Table 5.5.1 below.

Table 5.5.1 Revised Circulation Arrangements

Relief Road West End		AM Peak		PM Peak	
		RFC	Max Q	RFC	Max Q
B-AC	Kempock Street to Relief Road	0.219	0.3	0.152	0.2
Junction delay (Min/pcu)		0.0		0.0	
Gourock Station Car Park Exit		AM Peak		PM Peak	
		RFC	Max Q	RFC	Max Q
B-AC	Gourock Station	0.229	0.3	0.283	0.4
Junction delay (Min/pcu)		0.0		0.0	
Gourock Station Car Park Entrance		AM Peak		PM Peak	
		RFC	Max Q	RFC	Max Q
C-AB	Shore Street to car park	0.144	0.2	0.208	0.3
Junction delay (Min/pcu)		0.0		0.0	
Relief Road East End		AM Peak		PM Peak	
		RFC	Max Q	RFC	Max Q
B-AC	East U Turn to Kempock Street	0.036	0	0.189	0.2
Junction delay (Min/pcu)		0.0		0.0	
Kempock Place		AM Peak		PM Peak	
		RFC	Max Q	RFC	Max Q
B-AC		0.067	0.1	0.109	0.1
Junction delay (Min/pcu)		0.0		0.0	

- 5.5.2 All movements which require to Give Way as part of the revised circulation arrangements operate with minimal delay to traffic. The very modest levels of queueing at both ends of the Relief Road where traffic will perform a U turn to travel in the opposite direction do not suggest that there is any reasonable likelihood of blocking back resulting in the main traffic flow being impeded.
- 5.5.3 Results of PICADY testing confirm that there are no issues with junction capacity following the implementation of revised circulation proposals.

5.6 Withdrawal of Calmac vehicle ferry service

- 5.6.1 As indicated at Paragraph 3.4.6 above, the CalMac vehicle and passenger ferry service from Gourock Pierhead to Dunoon was replaced in June 2011 by a passenger only service operated by Argyll Ferries. As a consequence, vehicles seeking to access the Cowal Peninsula from Inverclyde would require to travel through Gourock Town Centre to the Western Ferries terminal at McInroy’s Point, a distance of 3km.
- 5.6.2 Therefore in response to specific request implications of this change are considered in broad terms by reference to data from Scottish Transport Statistics 2011 and CalMac which has been used to predict changes in traffic flows arising from the withdrawal of the CalMac vehicle service. This data is shown at Table 5.6.2 below.

Table 5.6.2 Comparative Annual Vehicle Carrying Statistics

Ferry Patronage	2009		2010		Change	
	CalMac	Western	CalMac	Western	CalMac	Western
Annual Data from Scottish Transport Statistics and CalMac						
Car	70717	584000	61443	564200	-13%	-3%
Coach	333		217			
Commercial Vehicle	3511		3225			
Coach and CV	3844	33800	3442	33000	-10%	-2%
Total	74561	617800	64885	597200	-13%	-3%
Average per Day	204	1693	178	1636		

- 5.6.3 Western Ferries at McInroy’s Point were carrying the bulk of the vehicle traffic prior to the withdrawal of the CalMac service from Gourock Pierhead, as they provided a frequent interval service at a lower cost than the competing CalMac service which ran only hourly. In the final full year of operation in 2010 vehicle movements associated with the CalMac service were estimated at approximately 180 per day, suggesting

that a similar number of additional movements will pass through Gourock town centre each day as a consequence of the need to access McInroy's Point.

- 5.6.4 Impacts on comparative peak period observed flows from 2011 and 2012 presented at Table 5.3.3 above suggest that only a portion of changes in traffic flows could be attributed to the change to ferry arrangements, with in particular AM peak eastbound flows increasing by greater than the CalMac capacity during the peak hour.
- 5.6.5 It is reasonable to conclude that the impacts of the withdrawal of the CalMac vehicle service on traffic flows through Gourock town centre to McInroy's Point are very modest.

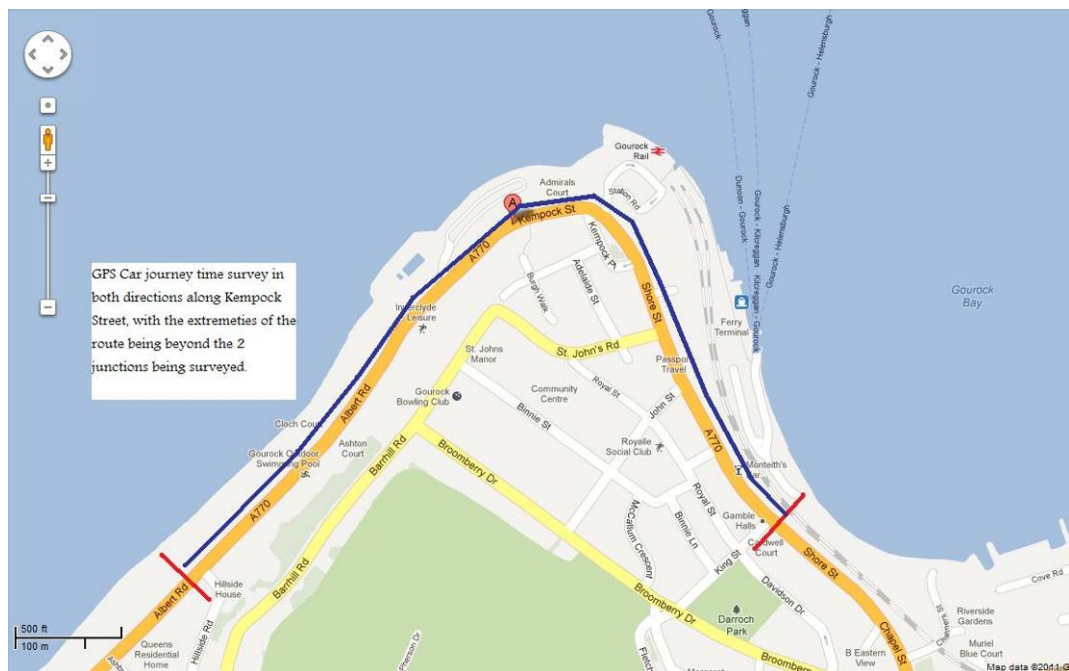
6 Impacts on Journey Times through A770 Kempock Street

6.1 Introduction

- 6.1.1 A key benefit from the completion of Phase I is envisaged to be an improvement in journey time and journey time reliability as a result of the provision of the relief road.
- 6.1.2 Inverclyde Council have requested an estimate of predicted journey time benefit as a result of the provision of the relief road during the Scoping Process.
- 6.1.3 Riverside Inverclyde have therefore commissioned journey time surveys in order to confirm the existing position in respect of journey times through the centre of Gourock.

6.2 Journey Time Surveys

- 6.2.1 Journey Time Surveys were performed on (Tuesday 7th February 2012) using a GPS equipped vehicle for three periods of approximately two hours each in order to assess mean journey times through the existing network. The route assessed is illustrated below.



Journey Time Survey Route

6.3 Survey Results

6.3.1 Results of the surveys are summarised at Table 6.3.1 below. Ten return journeys were completed during each period.

Table 6.3.1 Journey Time Results

Journey Time Surveys	Average		Minimum		Diff to Average	Maximum		Diff to Average
	Run Time (s)	kph	Run Time (s)	kph		Run Time (s)	kph	
Eastbound AM Peak	110	35.2	90	43.1	-18%	152	25.5	38%
Eastbound Off Peak	110	35.2	95	40.9	-14%	127	30.6	15%
Eastbound PM Peak	120	32.5	94	41.3	-21%	141	27.5	18%
Eastbound Overall Average	113	34.3	93	41.8	-18%	140	27.9	23%
Westbound AM Peak	107	36.1	95	40.9	-12%	124	31.3	15%
Westbound Off Peak	110	35.2	94	41.3	-15%	127	30.6	15%
Westbound PM Peak	115	33.8	92	42.2	-20%	160	24.3	39%
Westbound Overall Average	111	35.1	94	41.4	-15%	137	28.7	24%

6.3.2 The results indicate a consistency in both Minimum and Average Journey Times through the Study Area across the day, with Minimum Journey Times averaging 93 seconds eastbound and 94 seconds westbound, and Average Journey Times 113 seconds eastbound and 111 seconds westbound. Minimum Journey Times are noted as of the order of 15% to 20% better than Average Journey Times.

6.3.3 Maximum Journey Times through the Survey area are influenced by the tidal flow impact of the peak periods, with AM peak eastbound and PM peak westbound having the highest surveyed journey times noted at 152 seconds and 160 seconds respectively.

6.3.4 Individual Journey Times are presented at Table 6.3.4 below. The green shading indicates a Journey which is below Average duration and the Yellow Shading a Journey which is above average duration. The shading pattern demonstrates the impact that the peak period tidal flows have on Journey Time, with a number of extended duration journeys affecting the average figure and bringing more than 5 journeys above the Average.

Table 6.3.4 Journey Time Data

Journey Time Data	East AM	West AM	East Inter	West Inter	East PM	West PM
Shortest Journey Time	90	95	95	94	94	92
Below Average	94	97	96	95	103	100
	95	97	100	99	112	100
	98	98	105	105	115	102
	98	104	109	109	117	103
	100	110	111	112	123	104
Above Average	104	111	116	114	125	107
	128	119	118	121	128	134
Longest Journey Time	145	119	126	125	137	145
	152	124	127	127	141	160
Average Journey Time	110	107	110	110	120	115

6.3.5 Table 6.3.5 below summarises the Average, Minimum and Maximum journey times for each individual section of the route and confirms that Average and Minimum individual journey times for individual sections of the route are relatively consistent with the specific trip timings presented at Table 6.3.4 above.

Table 6.3.5 Individual Journey Section Timings

Journey Time Section by Section	East AM			Max > Ave	East Inter			Max as % of Ave	East PM			Max as % of Ave
	Ave	Min	Max		Ave	Min	Max		Ave	Min	Max	
A770 Albert Road / Hillside Road	0	0	0		0	0	0		0	0	0	
A770 Kempock Street / A770 Albert Road / Kempock Street Car Park Access	46	43	54	17%	47	45	60	28%	49	44	57	16%
Station Road / A770 Shore Street / Kempock Place / A770 Kempock Street	29	23	62	115%	32	23	56	73%	39	24	65	67%
A770 Shore Street / St. Johns Road	23	16	51	126%	20	16	29	49%	23	16	50	118%
A770 Shore Street / John Street	8	6	10	27%	12	7	36	213%	8	7	14	67%
	106	88	177		110	91	181		120	91	186	
	West AM			Max as % of Ave	West Inter			Max as % of Ave	West PM			Max as % of Ave
	Ave	Min	Max		Ave	Min	Max		Ave	Min	Max	
A770 Shore Street / John Street	0	0	0		0	0	0		0	0	0	
A770 Shore Street / St. Johns Road	10	9	14	35%	11	8	26	128%	12	8	30	152%
Station Road / A770 Shore Street / Kempock Place / A770 Kempock Street	20	17	24	22%	22	17	37	68%	20	17	30	54%
A770 Kempock Street / A770 Albert Road / Kempock Street Car Park Access	32	25	44	36%	30	25	39	30%	37	22	82	123%
A770 Albert Road / Hillside Road	45	41	49	9%	47	41	57	22%	47	42	52	12%
	107	92	131		110	91	159		115	89	194	

6.3.6 The aggregate of Maximum journey section timings is noted as greater than the Maximum individual journey times, but the potential for aggregation of cumulative delays arising on individual sections suggest that there is the potential for the Observed Maximum journey times to be exceeded if there is parking and loading congestion in more than one location in the Study Area at the same time.

6.4 Predicted Impact of Scheme Completion on Journey Times

6.4.1 The consistency of Minimum and Average Journey Times which are a function of generally free-flow traffic conditions suggests that the provision of a scheme which is designed to minimise congestion impacts on A770 Kempock Street arising from service vehicles and buses obstructing the carriageway will have a positive impact on journey times.

6.4.2 The reliability of journey times is expected to increase with implantation of proposals as vehicles will no longer be delayed by carriageway obstructions with both eastbound and westbound routes having sufficient provision for parking and servicing off-line such that delays to through traffic will be much less likely.

6.4.3 It is expected that the Average Journey Time will move closer to the Minimum Journey Time as the Maximum Journey Time reduces. It is not possible to accurately predict by how much these values will reduce on Scheme Completion as delays caused by pedestrian crossings for example are not explicitly allowed for in the analysis above. It is envisaged that the Average Journey Time will move closer to 100s in the AM and InterPeak periods and 110s in the PM peak, a reduction of the order of 10%.

7 Impacts of Phase II Development

7.1 Introduction

- 7.1.1 Phase II development is envisaged for the remaining undeveloped section of the former Bay Hotel site between Gourrock Pierhead and A770 Shore Street. Phase II development is expected to be the subject of a future Planning Application by Riverside Inverclyde who have however requested that possible impacts of development be considered within this Transport Assessment.



Bay Hotel (photo courtesy Colin Miller/RailScot)

7.2 Phase II Traffic Generation

- 7.2.1 The content of Phase II development remains to be confirmed at this stage, but has been identified for the purposes of this exercise as up to 1250m² of retail development and 1250m² of office development. As Phase II development is envisaged to form a subsequent planning application, an Addendum Report will be prepared in the event that the finalised land use is materially different to that identified below.
- 7.2.2 Trip predictions for Phase II development identified from the TRICS database and confirmed during the Scoping Process are shown at Table 7.2.2 below.

	SqM	AM Peak						PM Peak					
		Arrivals		Departures		Total		Arrivals		Departures		Total	
		Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips
Office	1250	0.760	9	0.060	1	0.820	10	0.135	2	0.628	8	0.763	10
Retail	1250	4.425	55	4.22	53	8.645	108	4.895	61	4.93	62	9.825	123
Total			64		54		118		63		70		133

Table 7.2.2 Phase II Development Trip Predictions

- 7.2.3 Predicted vehicle trip levels to the Office development are identified from the TRICS database at very modest levels.
- 7.2.4 The modest additional retail floorspace provision proposed is not envisaged to result in the increase in traffic demands predicted by TRICS for this land use, as a significant proportion of visits to the retail units are expected to form part of existing trips to retail facilities in Gourrock, or part of linked multimodal trips to work, study or for leisure purposes.
- 7.2.5 For the purposes of robust assessment, however, development trip predictions as identified above will be utilised.
- 7.2.6 Trip attraction and distribution to the road network shown at Figures 7 and 8 has been based on a 50% east 50% west split in of the modest levels of trips identified.

7.3 Alternative Land Use

- 7.3.1 A potential alternative land use as a hotel was considered during development of the scheme in substitution for the office/retail scheme detailed above. If a 2500m2 90 bed hotel were constructed on the site, TRICS estimates of trips are AM Peak 6 In, 18 Out and PM Peak 16 In, 6 Out. As these trip levels are significantly lower than those identified at Table 7.2.2 above, no requirement for further detailed traffic assessment would be necessary in the event that Phase II development takes the form of a hotel.

7.4 Predicted Junction Performance

- 7.4.1 Performance of the revised junction arrangements has been assessed utilising revised network flows shown at Figures 9 and 10, consistent with Phase I proposals.
- 7.4.2 Results of these junction tests are shown at Table 7.4.2 below. Testing has been limited to departing flows from the Station Car Park as results of Phase I testing of

the revised access suggest that the modest additional right turning flow is unlikely to have any material impact on performance.

Table 7.4.2 Phase II Junction Performance

Gourock Station Car Park Exit including Phase II		AM Peak		PM Peak	
		RFC	Max Q	RFC	Max Q
B-AC	Gourock Station	0.434	0.8	0.513	1.0
Junction delay (Min/pcu)		0.0		0.1	
Relief Road East End incl Phase II		AM Peak		PM Peak	
		RFC	Max Q	RFC	Max Q
B-AC	East U Turn to Kempock Street	0.134	0.2	0.296	0.4
Junction delay (Min/pcu)		0.0		0.0	

7.4.3 Results of junction testing confirm that these junctions continue to operate within the 85% RFC measure of junction capacity.

7.4.4 Given the level of additional traffic added to the network with completion of Phase II development in the context of the revised network testing summarised at Paragraph 5.5.1 above, it is reasonable to conclude that other junctions in Gourock Town Centre will continue to perform well within Practical Capacity of 85%.

7.5 Conclusion

7.5.1 Impacts of Phase II development do not result in any traffic capacity issues being identified.

8 Conclusions

8.1 Introduction

- 8.1.1 The Transport Assessment (TA) is provided in support of proposals by Riverside Inverclyde for the Gourock Pierhead Regeneration Scheme.
- 8.1.2 The TA outlines recent Scheme Development through a Public Consultation process and provides detail on Phase I and Phase II proposals, noting that Phase II proposals do not form part of the current Detailed Planning Application.
- 8.1.3 The TA goes on to confirm details of the Scoping process with Inverclyde Council.

8.2 Review of Scheme Objectives against Local and National Policy Context

- 8.2.1 The TA provides a review of scheme objectives against National, Regional and Local Policy Context for the proposed development.
- 8.2.2 The review confirm that the Gourock Pierhead Regeneration Scheme is consistent with Policy context at all levels.

8.3 Accessibility Review

- 8.3.1 The TA provides a review of Existing Accessibility to Phases I and II, considering firstly the most sustainable modes of walking and cycling, then public transport and finally by private car.
- 8.3.2 The TA concludes that existing accessibility by all modes to Phase I and Phase II development is very good.

8.4 Existing and Proposed Traffic Circulation Arrangements

- 8.4.1 The TA describes existing traffic flows and circulation arrangements.
- 8.4.2 The TA goes on to outline proposed traffic circulation arrangements including revised stopping arrangements for eastbound bus services.

8.5 Network Performance

- 8.5.1 The TA considers performance of the existing road network and then assesses performance of revised circulation arrangements to ensure that they perform within Practical Capacity.
- 8.5.2 The TA confirms that all junctions in the road network being assessed continue to perform within Practical Capacity.
- 8.5.3 At the request of Inverclyde Council, the TA considers the implications for traffic flows through Gourock town centre of the withdrawal of the CalMac vehicle ferry service from Gourock to Dunoon. The TA confirms that the impact of additional vehicle movements through Gourock Town Centre are modest, with the bulk of Cowal vehicle ferry traffic already using the Western Ferries service.

8.6 Impacts on Journey Times through A770 Kempock Street

- 8.6.1 Inverclyde Council have requested that the TA provide an estimate of predicted journey time benefit following the introduction of the revised circulation arrangements.
- 8.6.2 The TA provides an analysis of and commentary on Journey Time Survey data, and goes on to comment on possible journey time benefits arising from the provision of a Relief Road.

8.7 Impacts of Phase II Development

- 8.7.1 The TA provides an assessment of predicted Phase II development impacts on the local road network.
- 8.7.2 The TA concludes that no capacity issues arise from Phase II Development.

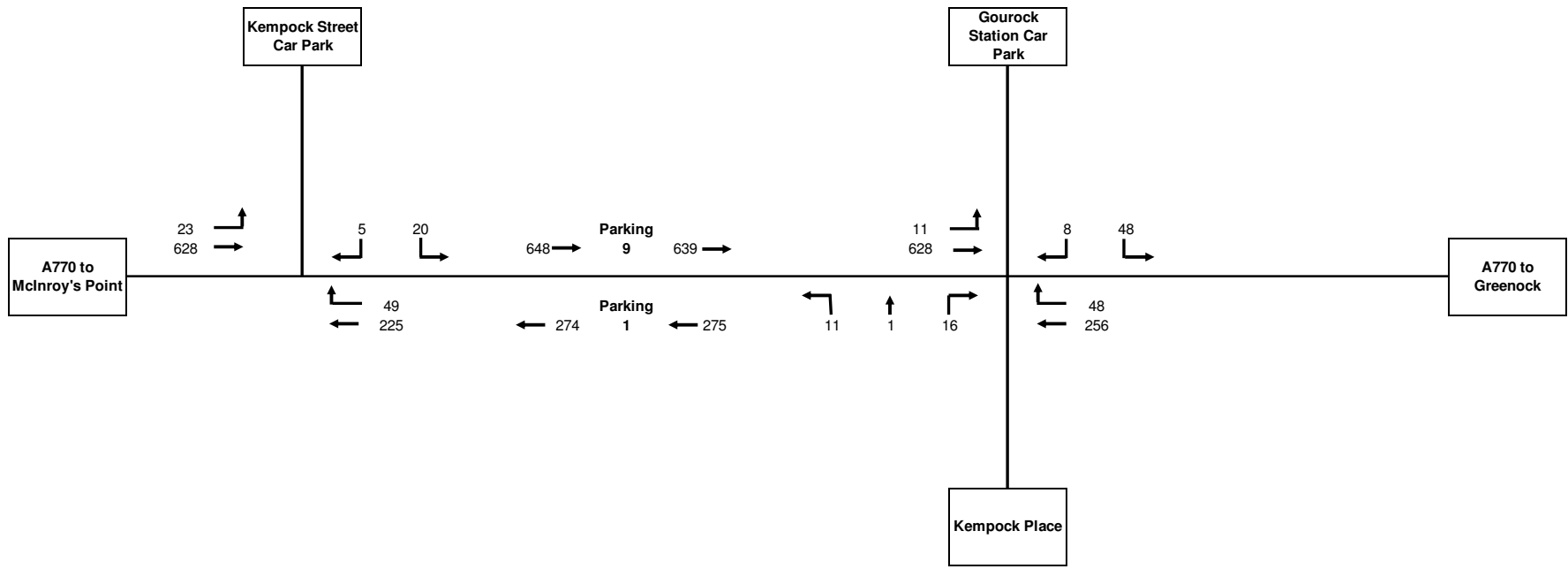
8.8 Conclusion

- 8.8.1 The TA concludes that Development can proceed.

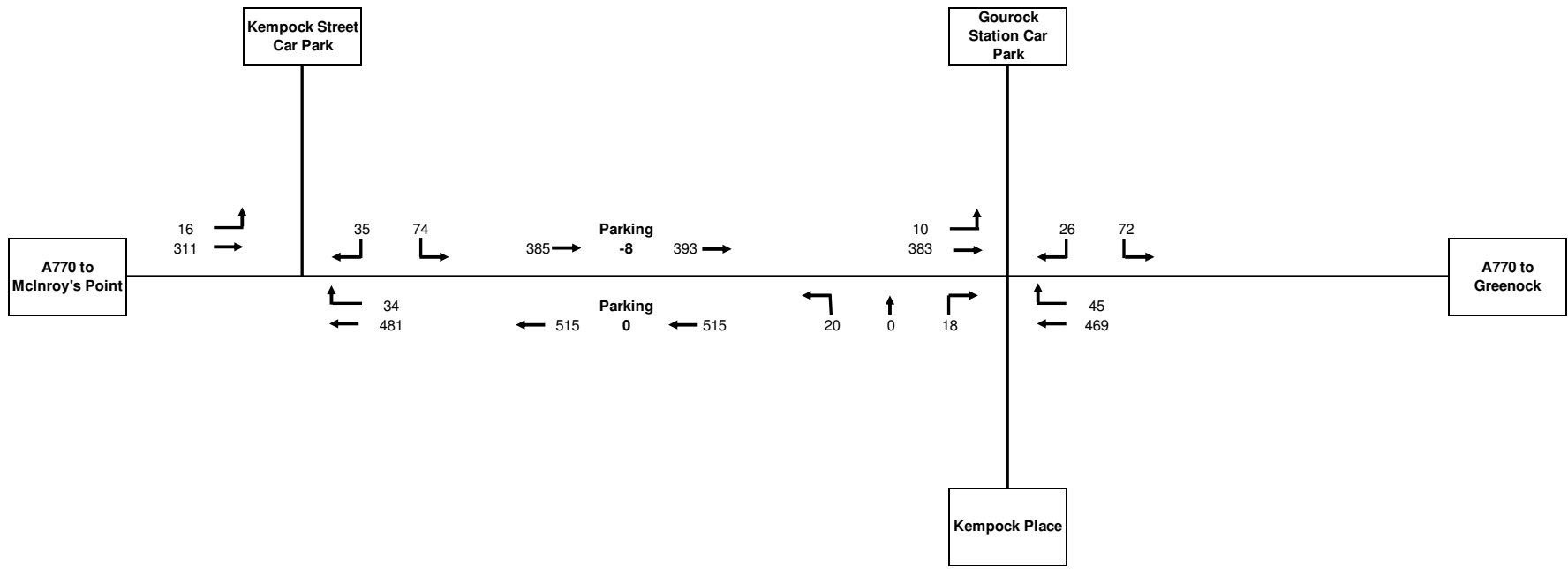
Figures

- 1 2012 AM Peak Observed
 - 2 2012 PM Peak Observed
 - 3 2014 AM Peak Factored
 - 4 2014 PM Peak Factored
 - 5 2014 AM Peak Revised Circulation
 - 6 2014 PM Peak Revised Circulation
 - 7 2014 AM Peak Phase II Development
 - 8 2014 PM Peak Phase II Development
 - 9 2014 AM Peak Total including Phase II
 - 10 2014 PM Peak Total including Phase II
-

87097 Gourock
 2012 AM Peak Observed
 Figure 1

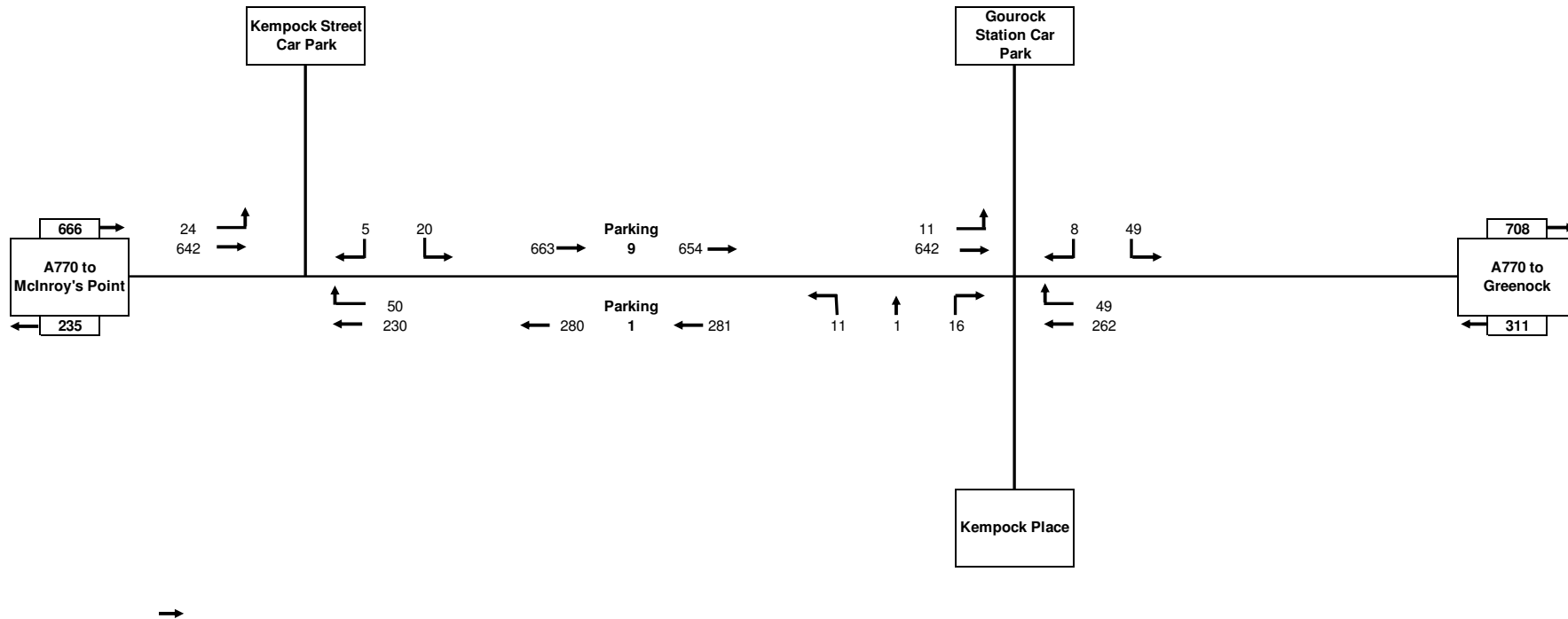


87097 Gourock
 2012 PM Peak Observed
 Figure 2



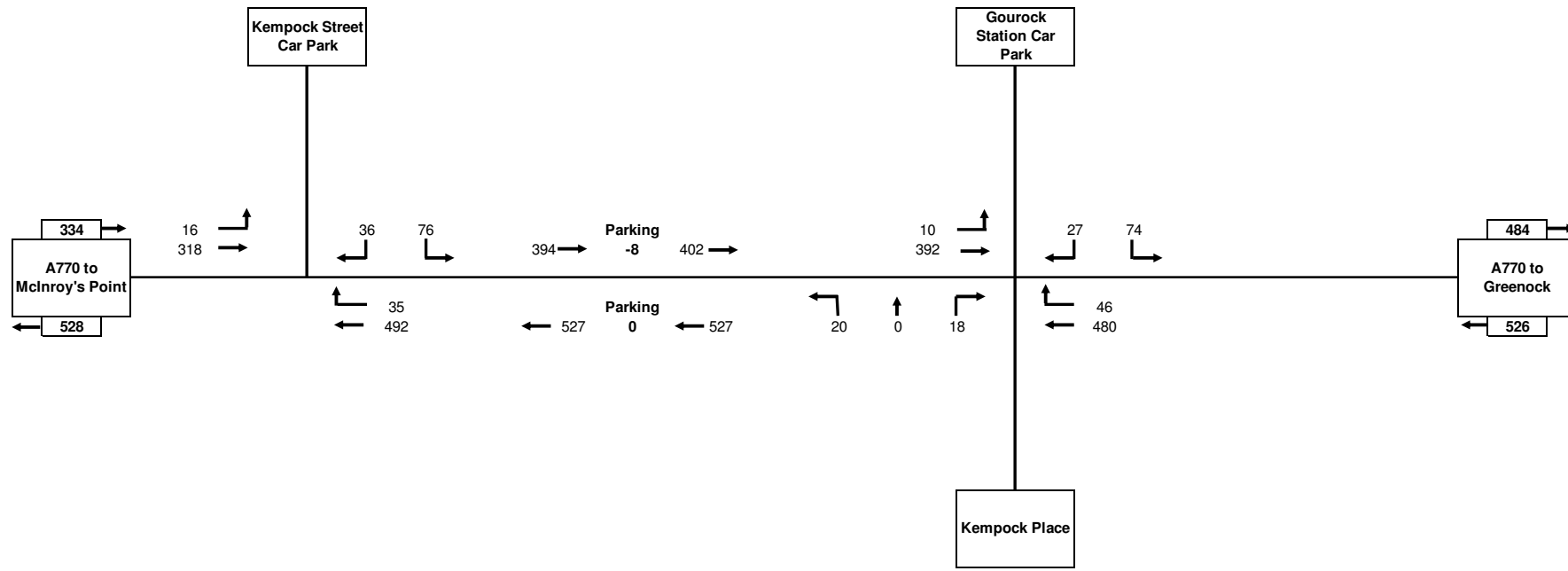
NRTF 1.023

87097 Gourock
2014 PM Peak Factored
Figure 4

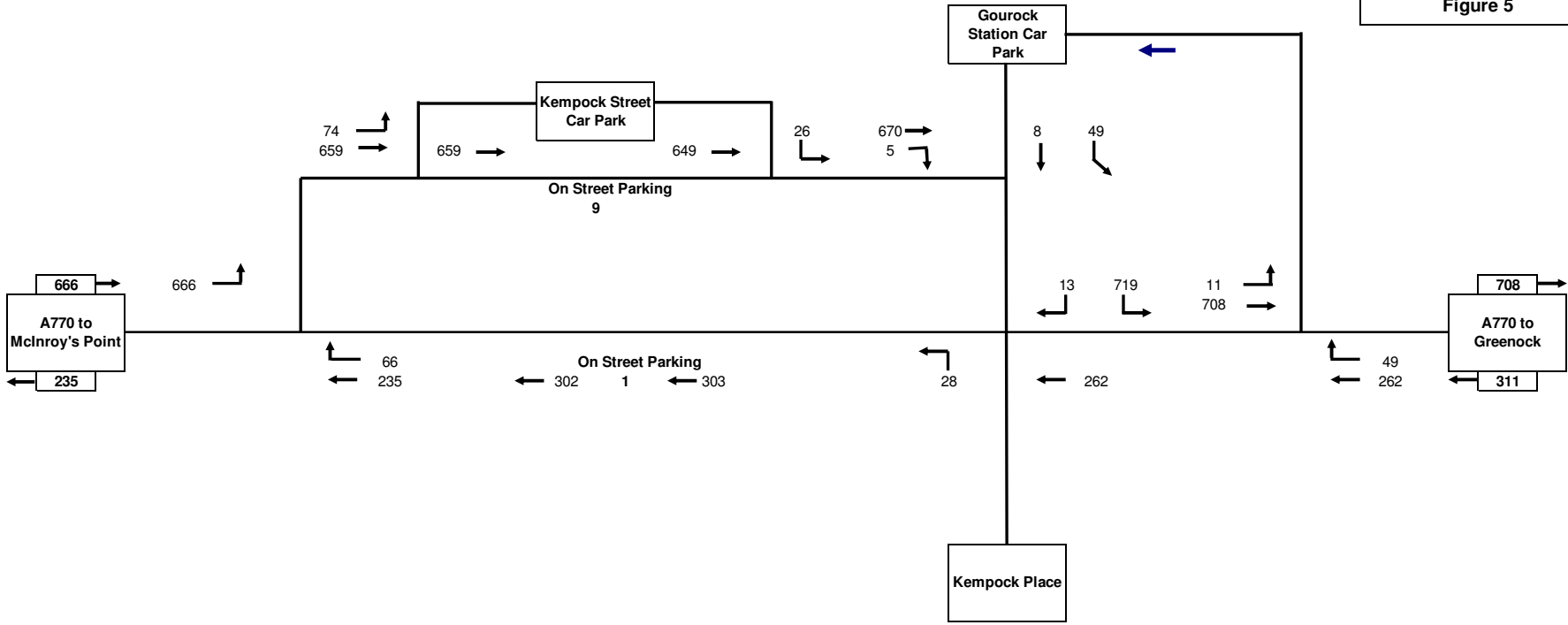


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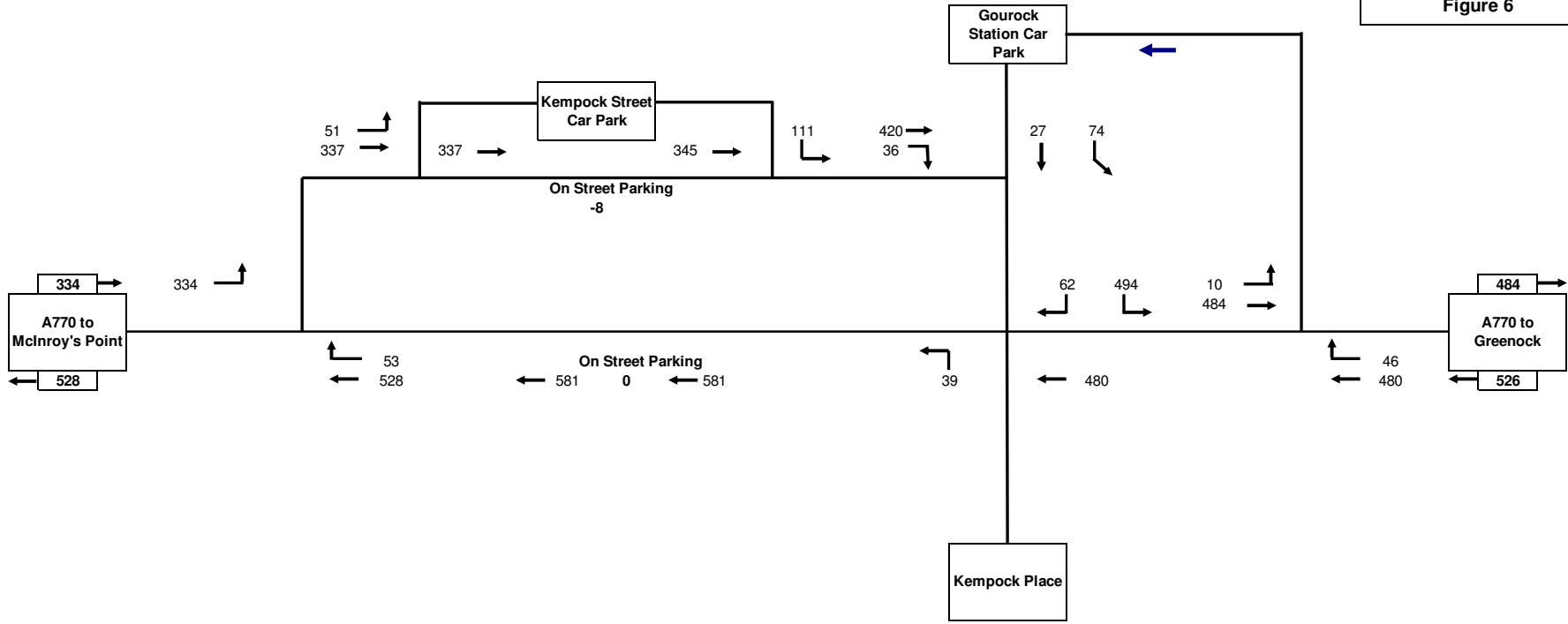
87097 Gourock
2014 PM Peak Factored
Figure 4



87097 Gourock
 2014 AM Peak Relief Road
 Figure 5

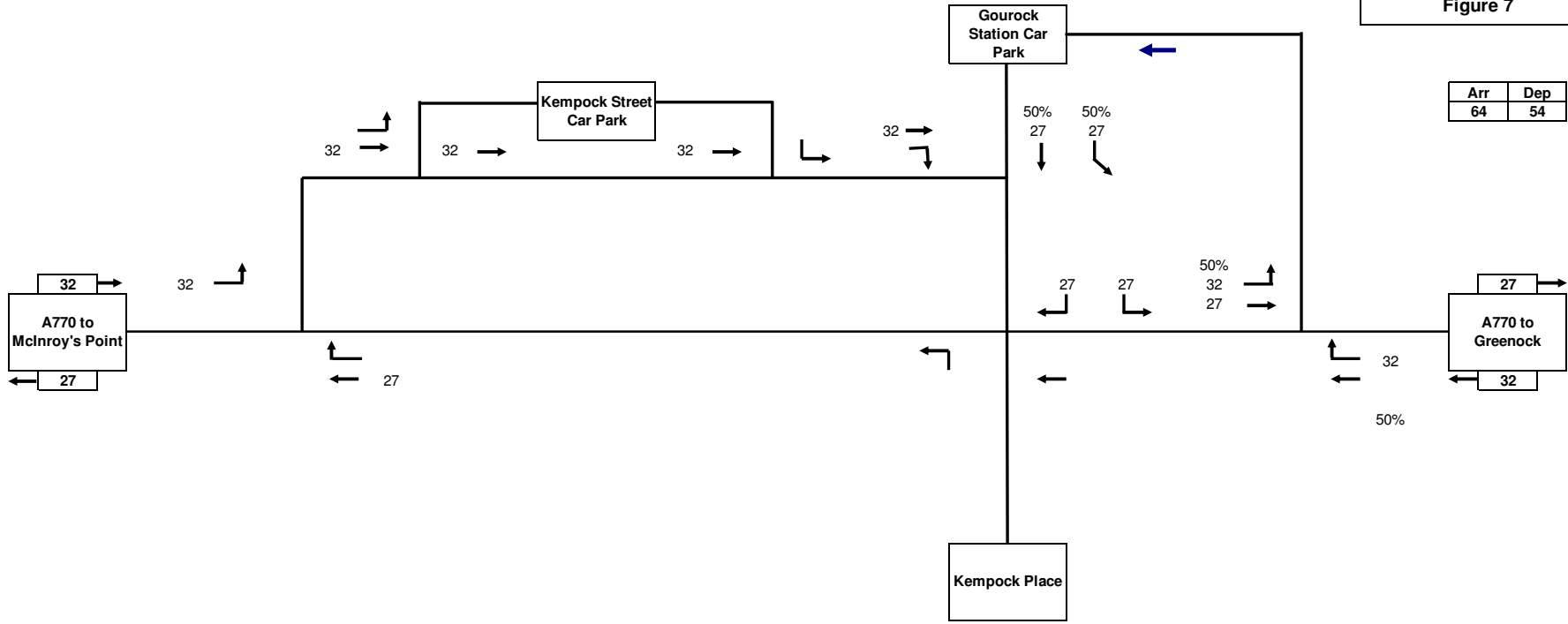


87097 Gourock
 2014 PM Peak Relief Road
 Figure 6



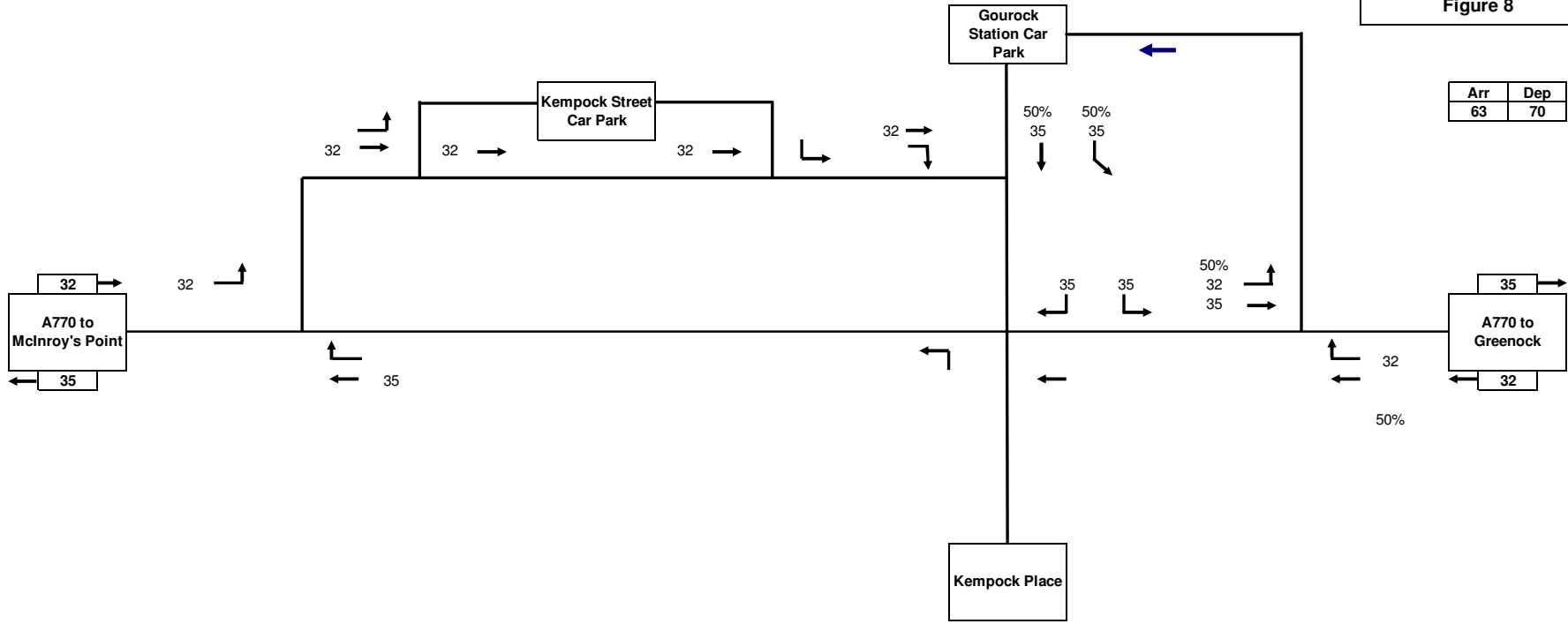
87097 Gourock
 2014 AM Peak Phase II
 Figure 7

Arr	Dep
64	54

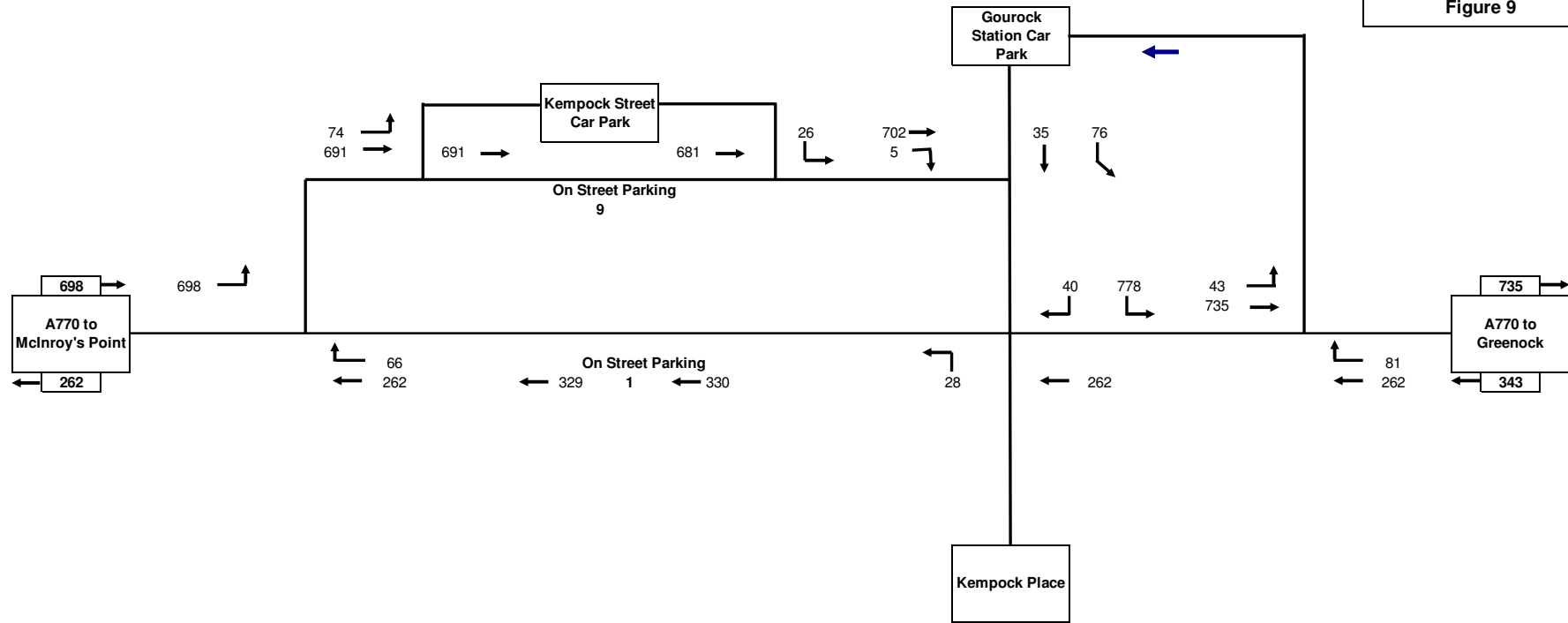


87097 Gourock
 2014 PM Peak Phase II
 Figure 8

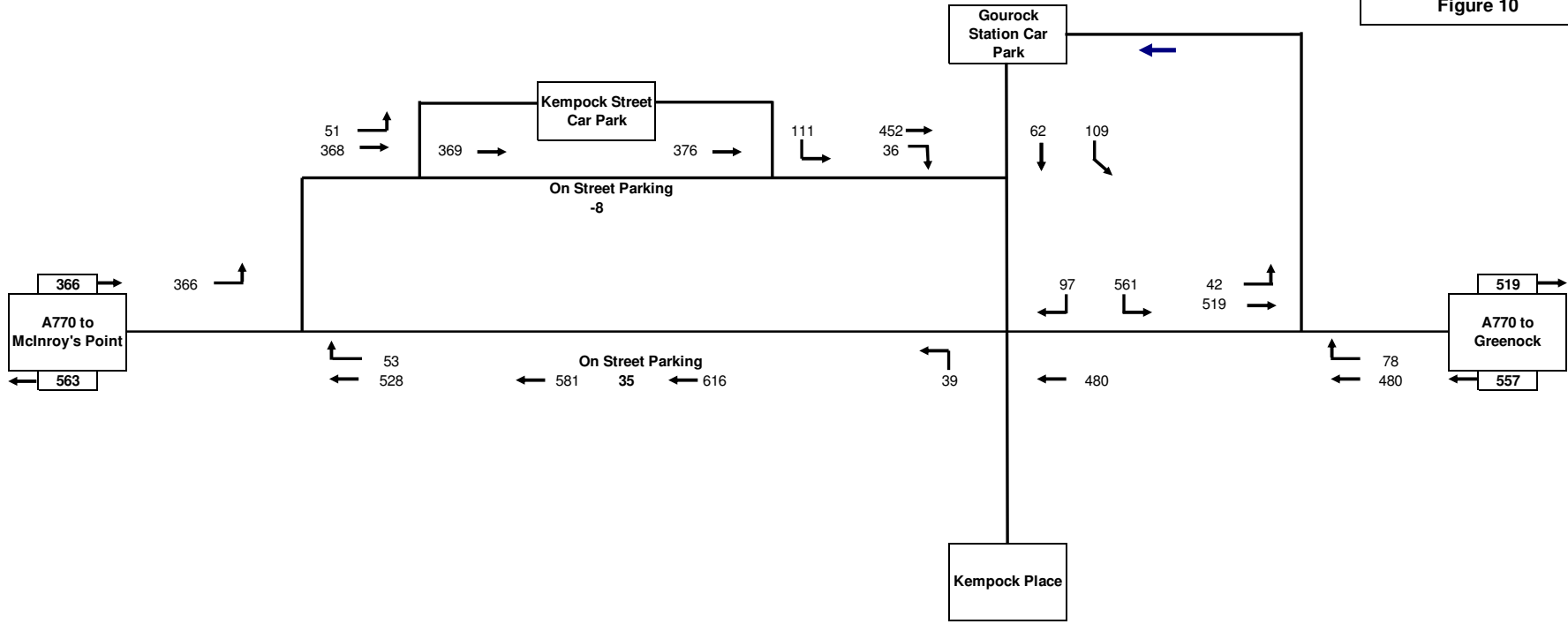
Arr	Dep
63	70



87097 Gourock
 2014 AM Peak with Development
 Figure 9



87097 Gourock
 2014 PM Peak with
 Development
 Figure 10






Diagrams

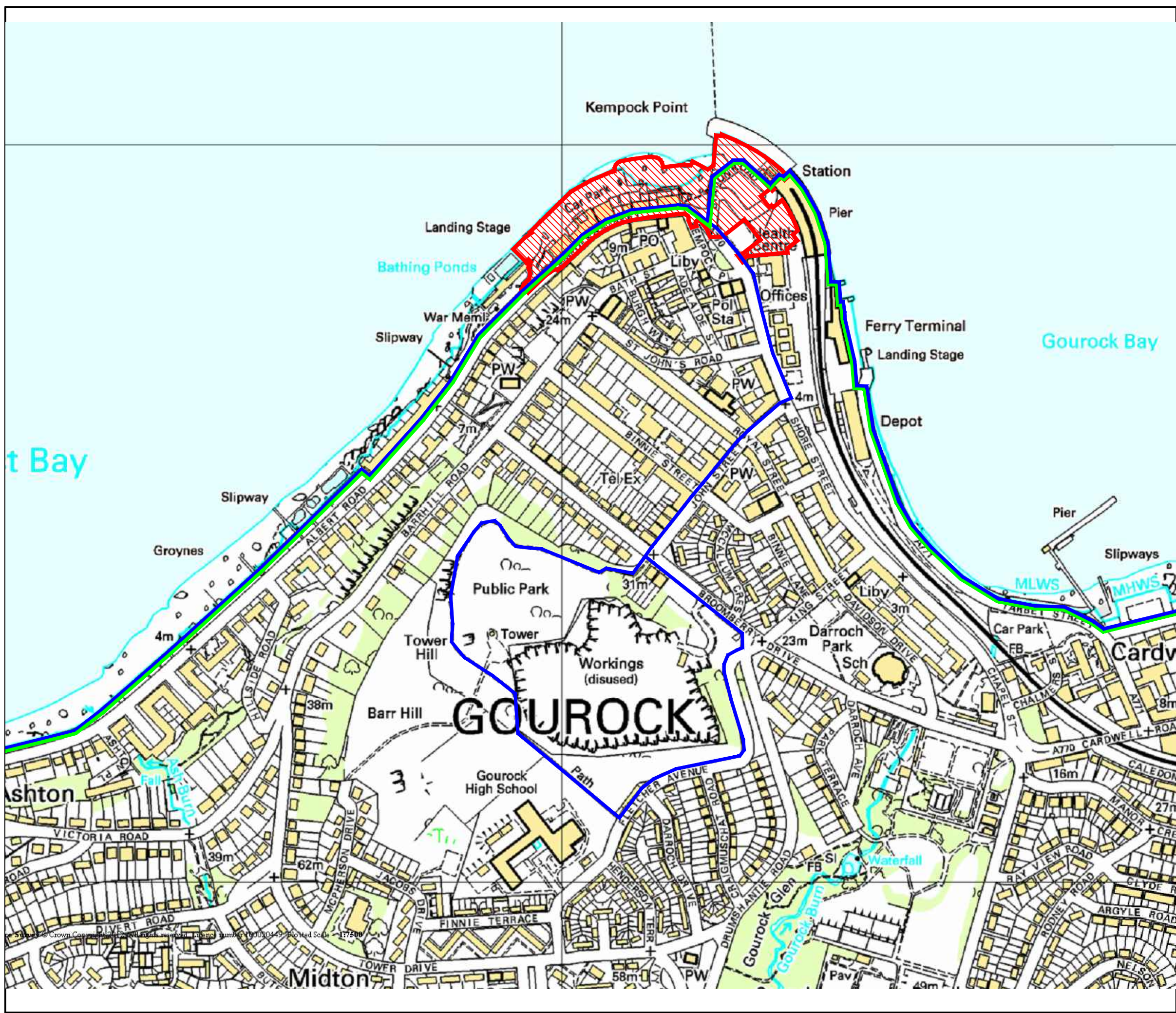
Diagram 1 Core Paths and Cycle Routes

Diagram 2 Bus and Rail Services

Diagram 3 Ferry Routes

Do not scale from this drawing.

-  SITE
-  CORE PATH NETWORK
-  NATIONAL CYCLE ROUTE 75



Rev.	Date	Description	Drwn.	Chkd.	Appd.
A		REVISION SITE BOUNDARY AMENDED	AC	DS	IM

FAIRHURST
 43 George Street
 EDINBURGH
 EH2 2HT
 Tel: 0131 225 6741
 Fax: 0844 381 4412

Project Title:
**RIVERSIDE INVERCLYDE
 GOUROCK PIERHEAD REGENERATION**





Drawing Title:
**DIAGRAM 1
 CORE PATHS AND CYCLE ROUTES**

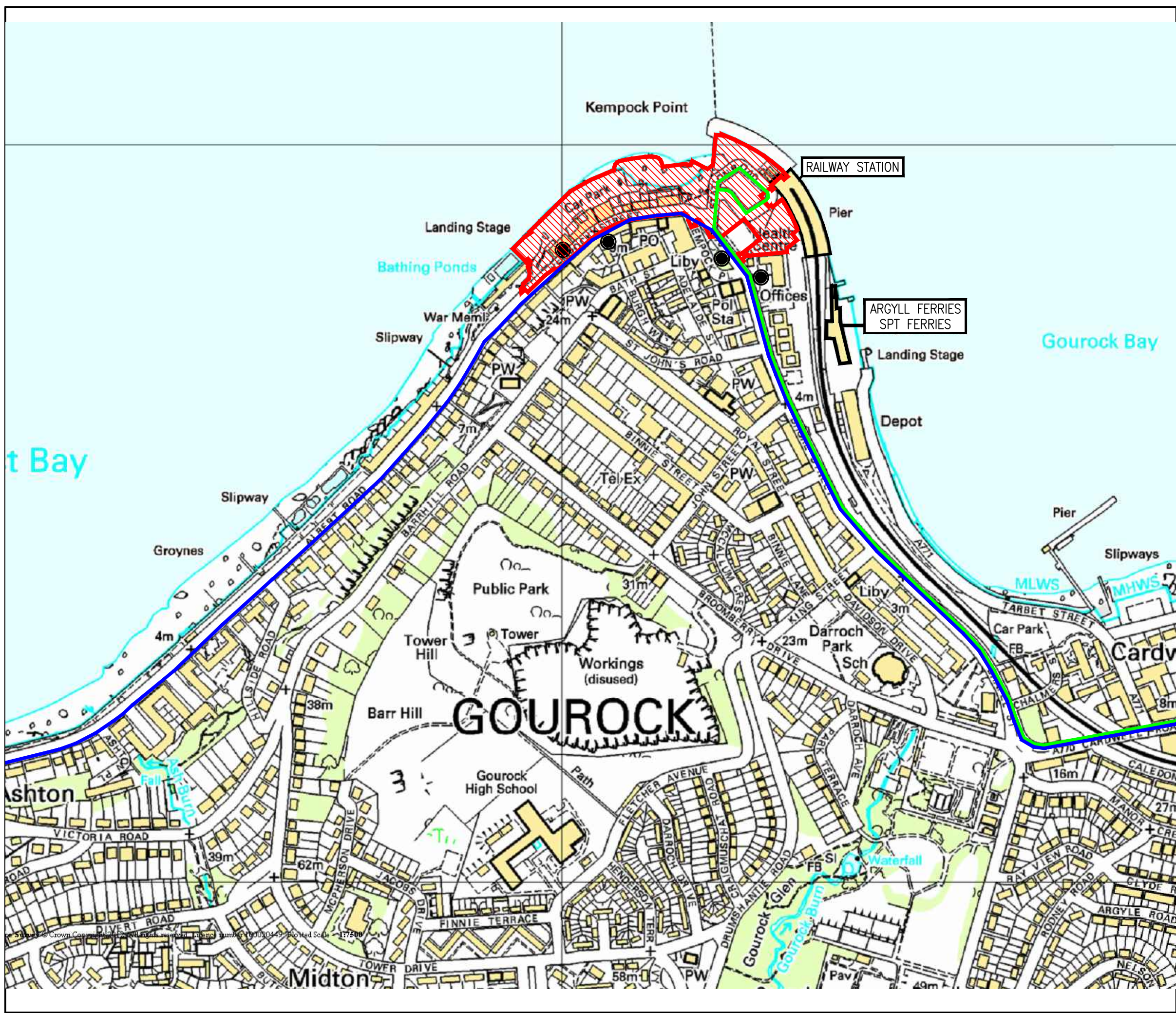
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Date: 20/02/12	Approved: IM
	Date: 20/02/12
	Date: 20/02/12

Drawing No.: **87097/DIAGRAM 1** A

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-  SITE
-  308, 540, 547
-  901, 907, 908
-  BUS STOP



Rev.	Date	Description	Drwn.	Chkd.	Appd.
A		87097 SITE BOUNDARY AMENDED	AC	DS	IM

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Project Title:
**RIVERSIDE INVERCLYDE
 GOUROCK PIERHEAD REGENERATION**

Drawing Title:
**DIAGRAM 2
 BUS & RAIL SERVICES**

Scale at A3: NTS	Status: For Information
Drawn: AC	Checked: DS
Date: 20/02/12	Approved: IM
	Date: 20/02/12
	Date: 20/02/12

Drawing No.: **87097/DIAGRAM 2** Revision: **A**



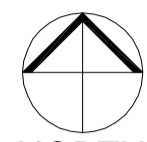
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Rev.	Date	Description	Drawn	Chkd.	Appd.
FAIRHURST					
43 George Street EDINBURGH EH2 2HT Tel: 0131 225 6741 Fax: 0844 381 4412					
Project Title: RIVERSIDE INVERCLYDE GOUROCK PIERHEAD REGENERATION					
Drawing Title: DIAGRAM 3 FERRY ROUTES					
Scale of A3: NTS			Status: For Information		
Drawn: AC		Checked: DS		Approved: IM	
Date: 20/02/12		Date: 20/02/12		Date: 20/02/12	
Drawing No.: 87097/DIAGRAM 3					Revision: -

Appendix

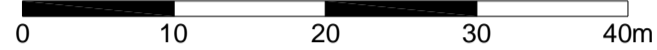
Appendix 1 Finalised Scheme Drawing

- LEGEND**
- PROPOSED PEDESTRIAN PUBLIC REALM AREAS
 - NEW CARRIAGEWAY + PARKING ZONES
 - EXISTING PARKING AREA RETAINED
 - PROPOSED GABION WALLS & EDGES
 - PLANTING/SOFT LANDSCAPE AREAS



NORTH

SCALE



FOR DETAILED INFORMATION REFER TO HLA DWG No's 1194-49, 1194-50 & 1194-51.

READ IN CONJUNCTION WITH FAIRHURST DRAWINGS FOR DETAILS OF PROPOSED ADOPTED ROADWORKS & RETAINING STRUCTURES.



IMPORTANT
The contractor will be held to have examined the site and checked all dimensions and levels before commencing construction work. Do not make assumptions - refer to the Landscape Architect. Do not scale from this drawing. If in doubt - ask!

REVISIONS

REV A - 12/01/12 - AK/PRM
DRAWING UPDATED WITH REVISED ROAD LEVELS FROM ENGINEER. CROSSING POINTS AMENDED PER DISCUSSION WITH ENGINEER. PARKING LOADING AREAS INDICATED ON KEMPOCK STREET FOR DISCUSSION.

REV B - 17/01/2012 - AK/PRM
CAR PARK EXIT AND RECYCLING POINT RELOCATED. WIDENED FOOTWAY ELIMINATED ON KEMPOCK STREET REF. TO MEETING WITH ENGINEER (16/01/12).
DRAWING RE-NAMED.

REV C - 17/01/12 - AK/PRM
HATCH COLORS ADDED FOR INVERCLYDE CONSULTATION.
REV D - AK/PRM - 26/01/12
EXISTING CROSSING POINT INDICATED. NIBS ADDED TO KEMPOCK STREET TO SEPARATE DISABLED PARKING BAYS. DISABLED BAYS RELOCATED. STACKING LANE AT WEST JUNCTION INDICATED.

REV E - 06/02/12 - AK/PRM
TREES MOVED TO TIE IN WITH EXISTING SERVICES. ROAD LEVELS ADDED (REF TO ENGINEERS DWG 03/02/12) 2 NO DISABLED PARKING SPACES ADDED.
NIB ADDED TO CAR PARK.

REV F - 17/02/12 - RCG/PRM
PEDESTRIAN AREA ADJUSTED.
CAR PARK ENTRANCE WIDTH REDUCED TO 4.5m.

REV G - 15/03/12 - RCG/PRM
GENERAL UPDATE WITH NEW LEVELS & SIMPLIFIED LEGEND FOR FURTHER CONSULTATIONS.
REV G - 15/03/12 - RCG/PRM
UPDATED IN LINE WITH DETAILED HLA DWG No's 1194-49, 50 & 51.

PRELIMINARY

Hirst
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Issue for **PLANNING**

Project **GOUROCK WATERFRONT PUBLIC REALM**

Title **LAYOUT DESIGN DEVELOPMENT**

Client **RIVERSIDE INVERCLYDE**

Drawn	Checked
BM	PRM
Scale	Date
1:500@A1	05/08/11

Job No	Drawing No	Revision
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