Galway Harbour Company

Galway Harbour Extension

Brief of Evidence
Roads, Traffic and Rail

Date: January 2015

TOBIN CONSULTING ENGINEERS

TOBIN
Patrick J Tobin & Co Ltd

1 INTRODUCTION

Brief of Evidence – Tom Cannon BEng(Hons), CEng, MIEI.

Qualifications and Experience

1.1 My name is Tom Cannon. I am a Chartered Engineer and a Member of Engineers Ireland. I hold the position of Associate within the Roads and Transportation Department of TOBIN Consulting Engineers. In 1992 I attained a Bachelor of Engineering honours degree in Civil Engineering from Coventry University, England. In 2011 I attained a professional certificate in Road Safety Audits from University College Dublin.

1.2 I have over 22 years experience in the planning, design and construction of a variety of roads and transportation projects throughout Ireland and the UK.

1.3 I have managed a number of major roads scheme, including the recently constructed Bishop O'Donnell Road / Seamus Quirke Road Improvement Scheme to the west of Galway city and the Design Build Tender Process for the N18 Oranmore to Gort Scheme and the Stage 1 Tender Process for the N17/N18 Gort to Tuam PPP Scheme. I have also prepared and managed Traffic Impact and Transport Assessments for developments of various sizes, including commercial, industrial and residential developments.

Scope and Nature of Evidence

1.4 I appear on behalf of TOBIN Consulting Engineers as a roads and transport witness, covering the following.

- EIS Chapter 13.4 – Road Traffic & Infrastructure
- EIS Chapter 13.5 – Mobility Management Framework
- EIS Chapter 13.3 – Rail

1.5 The evidence I am presenting relates to the traffic analysis undertaken for the proposed Port of Galway. I will deal with the traffic modelling process, traffic forecasting and the impact of the generated traffic for the proposed Galway Harbour Extension upon the surrounding road network. I will also encompass the proposals for improvements to the roads and the proposals for rail freight. In addition, I present the proposed Mobility Management Framework for the proposed development.

Errata / Addendums

1.6 Updates and amendments have been made to various chapters. The amendments are presented in the following documents:

- EIS Errata Chapter 13.5 Enhanced Mobility Management Framework;
- Enhanced Cycle Lane / Links Path Layout Plan drawing 2139-2132 Revision B;
- Amended Harbour Hotel Junction drawing 2139-2165 Revision B;
- Amended Autotrack Analysis Site Access Junction drawing 2139-2173 Revision B;
- Amended Operational Traffic Haul Route drawing 2139-2180 Revision B.

2 ROAD TRAFFIC & INFRASTRUCTURE

AIMS AND OBJECTIVES OF THE TRAFFIC MODELLING PROCESS

2.1 The aim of the traffic modelling process was to establish existing traffic patterns and traffic flows on Galway City's road network and to derive traffic flows for the proposed Galway Harbour Extension.

2.2 The traffic forecasts were used for the assessment of junctions around the city and to inform what impact the harbour related traffic would have on the junctions and what junction improvements may be necessary.

ANALYSIS / UPDATES

2.3 In order to determine the magnitude of the existing traffic flows, the Galway City 2011 SATURN Model, prepared by MVA Consultancy on behalf of Galway City Council, was used to ensure that the full effects of both the inclusion of the proposed harbour extension, committed development and the proposed adjacent developments of the Ceannt Station Quarter and the redevelopment of the Inner Harbour Lands (reported in the EIS as Galway Harbour Village) and any junction or network improvements external to the site would be determined throughout the road network.

2.4 Since the publication of this EIS in January 2014, a new validated Galway City base traffic model (2012 base year) has recently been made available to Galway City Council. This updated model has been developed to appraise the Galway City Outer Bypass and was not available for use for the Galway Harbour Extension EIS. Therefore the 2011 SATURN Model remains the reference model used to assess traffic impacts for the proposed Galway Harbour Extension development.

2.5 In order to demonstrate that the 2011 model is still applicable for the Galway Harbour Extension, an examination of the traffic flows was carried out on one of the key junctions in the vicinity of the Port of Galway, i.e. the Moneenageisha Cross Junction. This examination compared the total traffic flows passing through the junction in the AM Peak period in the Do Nothing scenario of the 2011 traffic model and the new Galway City 2012 base year model and also compared these flows with actual traffic flows established from the annual traffic counts carried out in November 2011, 2012, 2013 and 2014.

- 2494 vehicles (AM Peak Traffic - 2011 Do Nothing Traffic Model);
- 2679 vehicles (AM Peak Traffic - 2012 Base Model);
- 2602 vehicles (AM Peak Traffic – Nov 2011 Traffic Count);
- 2739 vehicles (AM Peak Traffic – Nov 2012 Traffic Count);
- 2739 vehicles (AM Peak Traffic – Nov 2013 Traffic Count); and
- 2891 vehicles (AM Peak Traffic – Nov 2014 Traffic Count).

2.6 The NRA's Project Appraisal Guidelines (PAG) Unit 5.2 provides guidance on the level of calibration and validation of a traffic model that should be achieved. Table 5.2.3 of the PAG, (extract below), specifies the validation criteria for assigned hourly flows compared with observed flows. Criteria 1 specifies that individual flows shall be within 15% for flows between 700 and 2,700 vehicles per hour.

NRA Project Appraisal Guide | *Unit 5.2: Construction of Transport Models*

Table 5.2.3: Validation Criteria

	Criteria and Measures	Acceptability Guideline
	Assigned hourly flows compared with observed flows	
1	Individual flows within 15% for flows between 700 & 2,700 v/h.	More than 85% of cases
2	Individual flows within 100 v/h for flows less than 700 v/h.	
3	Individual flows within 400 v/h for flows greater than 2,700 v/h.	
4	Total screen line flows (> 5 links) to be within 5%.	
5	GEH statistic: (i) individual flows – GEH < 5 (ii) screenline totals – GEH < 4	More than 85% of cases
Notes: Screenlines containing high flow routes should be presented both with and without such routes.		
	Modelled journey times compared with observed times	
6	Times within 15% or 1 minute if higher.	More than 85% of cases

2.7 The modelled 2011 traffic through Moneenageisha Junction compared with the actual observed flows from the November 2011 traffic count is within 4.3%. As the traffic flow discrepancy is within 15% of each other, this meets the validation criteria and it is therefore considered that the 2011 traffic model is still fit for purpose, i.e. to inform what impact the harbour related traffic would have on the surrounding junctions.

2.8 The analysis contained within this EIS is considered conservative and robust as a number of differences have come about since the preparation of the 2011 traffic model. The differences include:

- the maximum projected tonnage used in the 2011 traffic model are higher than current projected tonnages for the proposed harbour extension. The harbour projected tonnages have been reduced from 2,102,000 tonnes to 1,932,000 tonnes;
- The robust future year growth factors applied to the 2011 traffic model (see EIS Section 13.4.4.4) assumed a front-loading of population growth (and associated traffic) in Galway City between 2011 and 2016. Due to the recent economic slowdown, high growth has not been experienced in the city. In addition, the introduction of committed development, such as the Crown site and the Headford Road Shopping Centre redevelopment have not yet been constructed.

EXISTING ENVIRONMENT AND TRIP GENERATION

2.9 Extensive discussions were held with Galway City Council on the traffic implications of the proposed development over a number of years.

2.10 The 2011 traffic model included for some of the recent and proposed upgrades of the junctions along the N6 corridor that have or are proposed to change from roundabout junctions to traffic signal controlled junctions. The 2011 traffic model also accounted for the upgrades to the Seamus Quirke Road / Bishop O'Donnell Road.

2.11 In September 2010, roadside surveys were carried out at the existing harbour access to establish TRIP rates for the proposed development. This survey recorded the number of hourly arrivals and departures to the harbour, as well as their origin / destination within the Harbour and Enterprise Park, over a midweek period between 7th September and 9th September 2010. This survey also classified the various classes of vehicle. The maximum traffic levels that were observed on Thursday 9th September 2010 were used as a representative day for harbour-related activities. From these surveys it was possible to identify the proportion of current traffic accessing the Harbour and Enterprise Park which was Harbour-related, Enterprise Park-related or neither Harbour nor Enterprise Park related, thereby facilitating a more accurate estimation of future year traffic generation as a result of the proposed development.

2.12 The HGV arrivals and departures were recorded for each peak period, and a trip rate calculated. The calculated trip rates were then applied to the projected future increases in tonnage for various years, i.e. at completion of Stage 1, completion of Stage 4 and 10 years after completion of Stage 4.

2.13 The traffic generation determined for the various components of the proposed development, (i.e. Haulage Port and Enterprise Park related Trips, Marina Trips, Cruise Liner Trips), as contained in the EIS section 13.4.4.1 was forwarded to Galway City Council and their traffic modelling consultants so as to input in to the 2011 SATURN model to establish the impact the proposed harbour development would have on the surrounding road network. Estimates of the traffic generated during Construction were also included in the model.

2.14 Traffic Generation from large committed developments of the Galway Shopping Centre Redevelopment and the Crown Site Development was also included in to the SATURN Model. (Note: These have not since progressed).

2.15 At the request of An Bord Pleanála, an additional scenario was assessed. This scenario was the addition of traffic flows to the network that would be generated from proposed adjacent developments such as the Ceannt Station Quarter redevelopment, and the re-development of the Inner Harbour lands (reported in the EIS as Galway Harbour Village). Both these developments have not yet progressed.

2.16 Haulage distribution was determined by a region-wide population-based distribution pattern, based on Census data. Non-haulage related activities were informed from a vehicle registration plate survey carried out on Tuesday 9th February 2010.

2.17 The 2011 SATURN model analysed the road network for the following scenarios:

- Do Nothing – Background traffic growth only (including committed development);
- Do Harbour (i.e. background traffic growth with the inclusion of the proposed harbour extension);
- Do Harbour, Harbour Village and Ceannt Station Quarter (CSQ) (i.e. sensitivity testing for inclusion of all possible future development in Galway City Centre);
- Do Harbour Sensitivity Test (i.e. background traffic growth with inclusion of the proposed harbour extension based on a high tonnage growth scenario).

2.18 The 2011 traffic model assessed traffic flows arising at a number of principal junctions on the City Network during the construction phase, and in the operational phase for the

proposed Galway Harbour Extension i.e. at completion of Stage 1, completion of Stage 4 and 10 years after completion of Stage 4.

POTENTIAL IMPACTS

2.19 A total of 15 principal junctions, some adjacent to the development and others further out on the network were analysed in order to assess the potential impacts from the Galway Harbour Extension development. The junctions assessed are described below:

- Junction 1 –Three arm priority junction between Lough Atalia Road, Dock Road and the Harbour (the location of the proposed development).
- Junction 2 – Three arm traffic signals junction between Lough Atalia Road and Fairgreen Road.
- Junction 3 – Four arm traffic signals junction between College Road, Moneenageisha Road, Wellpark Road and Dublin Road (Moneenageisha Cross).
- Junction 4 – Four arm traffic signal-controlled junction between Lough Atalia Road, College Road and Loyola Park.
- Junction 5 – Traffic signal-controlled crossroads junction between Fairgreen Road, College Road, Forster Street and Bóthar Ui Eithir.
- Junction 6 – Junction between Fr. Griffin Road, Wolfe Tone Bridge, Claddagh Quay and Ravens Terrace (modelled as a four arm junction, but now improved to a T junction).
- Junction 7 – Four arm traffic signal-controlled junction between the N6, Sean Mulvoy Road and Headford Road (formerly the Bodkin Roundabout at the Headford Road Shopping Centre).
- Junction 8 – Traffic signal-controlled crossroads junction between N6, N59 and Lower Newcastle Road.
- Junction 9 – 5-arm roundabout junction between the N6, N59, Seamus Quirke Road and UCHG (Browne Roundabout).
- Junction 10 – 5-arm roundabout junction between the N6, N84, Sandy Road and Castlelawn Heights (Kirwan Roundabout).
- Junction 11 – 4-arm traffic signal-controlled junction between N6, N17 and Tuam Road (formerly the Ffont Roundabout at Flemings garage).
- Junction 12 – 4-arm traffic signal-controlled junction between N6, Ballybane Road and Ballybrit Industrial Estate (formerly the Morris Roundabout at Ballybane Road).
- Junction 13 – 4-arm traffic signal-controlled junction between N6 and R339 Monivea Road (formerly the Lynch Roundabout at Ballybrit).
- Junction 14 – 3-arm roundabout junction between N6 and M6 motorway.
- Junction 15 – 4-arm roundabout junction between N6, R338 and R446 (Martyn Roundabout).

(Note: 7 of these 15 junctions are now linked to the Urban Traffic Management Control System UTMC). This UTMC system is proving to be effective by increasing the throughput of traffic through the junctions by optimising the signal timings).

2.20 The analysis demonstrated that 12 out of 15 junctions assessed in the EIS will not be subject to any significant increase in delay or congestion as a result of the proposed Galway Harbour Extension development.

2.21 The 3 junctions that demonstrate some increase in delay or congestion as a result of adding on the proposed harbour development were:

- Junction 1 - Three arm priority junction between Lough Atalia Road, Dock Road and the Harbour (the location of the proposed development at the **Harbour Hotel**);
- Junction 2 – Three arm traffic signal-controlled junction between Lough Atalia Road and **Fairgreen Road**;
- Junction 3 – Four arm traffic signal-controlled junction between College Road, Moneenageisha Road, Wellpark Road and Dublin Road (**Moneenageisha Cross**).

2.22 The existing access to the Galway Harbour Enterprise Park is shown to be unsatisfactory, while the Lough Atalia Road / Fairgreen Road junction will be affected to a minor degree.

2.23 In order to establish the area of influence of the development on the surrounding road network a threshold approach was used. This threshold has been set for when development generated traffic exceeds 5% of the existing traffic movements; consistent with the National Roads Authorities Traffic and Transportation Assessment guidelines.

2.24 At Moneenageisha Cross, the analysis indicated that the proposed development will have minimal impact on the existing Moneenageisha junction, which is now, and will continue to operate above capacity, with or without the inclusion of development generated traffic. However, as the Moneenageisha Cross junction will experience a maximum of 3.9%, additional traffic compared to traffic flows without the proposed Galway Harbour Extension development (based on the 2011 traffic model); the junction is therefore considered to be outside the area of influence as the additional generated traffic flows is less than the 5.0% threshold as set down in NRA Traffic and Transportation Assessment Guidelines.

3 Mitigation Measures

3.1 The existing priority junction arrangement at the entrance to the Galway Harbour Extension will be upgraded to a traffic signal-controlled junction at the commencement of the project, (Stage 1, sequence 2 as per Table 4.5.1 of the EIS). The proposed upgrades as presented on EIS Errata drawing 2139-2165 Revision B, is designed, as far as is practicable, to complement Galway City Councils roads and transportation policy aims of providing dedicated facilities for pedestrians and cyclists and connection to the city's UTMC network to link and optimise the control of the junction with other adjacent junctions.

3.2 The lowering of Lough Atalia Road under Rail Bridge UBG171 was advanced via a Part 8 planning process. On 28th April 2014 Galway City Council confirmed the Part 8 approval to carry out this work. A detailed design has been undertaken for this proposed road lowering and agreed with Galway City Council. Tenders for the Construction Works have been procured and at the time of writing a recommendation for a Contractor has been presented to Galway City Council with Award of Contract imminent, subject only to funding confirmation.

3.3 Included in the proposed works for lowering of Lough Atalia Road under Rail Bridge UBG171, is the installation of ducting and traffic loops at the Fairgreen Road / Lough Atalia Road junction, which will facilitate the upgrading of that junction to the UTMC system, thus facilitating improved efficiency of traffic through the junction.

3.4 The provision of a rail link with the main Galway to Dublin rail line will future proof the development by facilitating sustainable haulage methods to and from the site. The use of the rail line for accessing the port, when economically viable, will result in a positive impact on the road network as a result of transferring some of the road freight to rail freight.

3.5 A Mobility Management Framework (see updated MMF in EIS Errata) will be implemented by the Galway Harbour Company to promote alternative modes of transport to the private car for employees or customers at the Port of Galway, consistent with Galway City Council modal shift targets, and to promote sustainable haulage related activities by avoiding peak hour traffic. In particular, haulage-related activities will be restricted, for any new or revised development within the Port of Galway, between 08:00 – 09:30 and 17:00 – 18:30. During the construction stage a Construction Traffic Management Plan will be implemented which will aim to reduce the impact of construction traffic on the surrounding road network, and also avoid conflict with peak traffic. The implementation of this Mobility Management Framework, including Construction Traffic Management Plan, will ensure that the proposed

Galway Harbour Extension development will not significantly increase delay or congestion to traffic at the Moneenageisha Cross and other junctions extending away from the port, during the AM and PM peak hours.

4 Conclusions

4.1 Traffic generated by the proposed Galway Harbour Extension development will have a localised impact at junctions in the immediate vicinity of the development. By the time traffic reaches the Moneenageisha Cross junction, the additional harbour related traffic generates less than 5% additional traffic in the AM and PM peak hours and therefore in accordance with the NRA Traffic and Transportation Assessment Guidelines, the Moneenageisha Cross junction is outside the area of influence. However, it should be recognised that the implementation of the Mobility Management Framework, with the aims of reducing the dependency on car based travel, consistent with Galway City Councils mode split targets, will further reduce harbour related generated traffic impacting on the surrounding road network during the AM and PM peak hours.

4.2 The proposed junction upgrade, at initial commencement of development, to a traffic signal-controlled junction at the harbour entrance and connection to the City's UTMC network will ensure that impacts on the local road network will be minimal.

4.3 The proposed lowering of Lough Atalia Road under Rail Bridge UBG171 will eliminate the re-occurrence of the various incidents of high sided vehicles striking the arch rib construction of the underbridge over the years, including a relatively recent incident which resulted in the road being closed for four days. It will also rectify the issue of the existing bridge height not being of suitable height for modern articulated lorries and other high sided vehicles using Lough Atalia Road and will address the road safety issue of high sided vehicles having to cross the white centre line marking of the road, to occupy the centre portion of carriageway in order to travel under the bridge and avoid the lower arched section of the bridge to either side. The proposed cross section under the bridge will also ensure that enhanced facilities for both pedestrians and cyclists will be provided.

4.4 The requirement on all new and revised tenancies to adopt the Mobility Management Framework within the harbour and the enforcement of their Mobility Management Plans will result in reductions in road based travel by promoting walking, cycling, public transport, car sharing, staggered working hours, etc. Haulage related activities that may impact on the road network during peak hours will be mitigated by ensuring all new and revised Port of Galway tenancy agreements will ensure that haulage occurs outside the network peak.

4.5 The proposed road network around the harbour development will include dedicated pedestrian and cycle facilities with direct connectivity to the city centre and the other transport hubs of Ceannt Station (Railway and CIE intercity bus service), the Coach Station as well as the city's local bus service, thus facilitating the promotion of the MMF.

4.6 Facilities for mobility of visitors arriving by cruise ship include:

- Coach Parking Bays adjacent to the Cruise Terminal Building;
- Walking and Cycling facilities as above;
- A bike rental station within the enterprise park, (ideally close to the cruise terminal and marina to promote use by visitors).

4.7 The provision on site of a rail link with the main Galway to Dublin rail line will future proof the development for when rail freight becomes economically viable, thus transferring some of the road freight to rail freight.

5 RAIL

5.1 An analysis has been undertaken of the existing infrastructure and rail lines and it has been shown that a new rail link can be readily formed by way of sloped embankment from the existing line into the Port of Galway land area and on to the level at the quayside.

5.2 The existing Galway to Dublin rail line runs adjacent to the existing GHEP and is therefore immediately accessible to the Port of Galway development.

5.3 In order to future proof the Port of Galway and to facilitate the policy objective of the Regional Planning Guidelines for the promotion of rail freight, this rail link from the existing adjacent Galway to Dublin Rail line is proposed to be included as early as possible in the scheme, i.e. Construction of rail embankment during Stage 2 and construction of rail lines within the harbour during Stage 3. The track connection with the Galway to Dublin railway line will be carried out when rail freight becomes economically viable.

POTENTIAL IMPACTS

5.4 There is potential for freight trains to be used to haul goods / materials to / from the proposed Port of Galway, possibly running at times of spare capacity on the rail network, including during the evening, weekends and / or night. As noted, use of the rail link will provide a positive impact in taking HGV's traffic from the road network onto the rail network and thus reducing CO2 emissions.

MITIGATION MEASURES

5.5 The embankments and curvature design has been carried out to reduce any impacts on the surrounding areas and increase the possibility for viable freight tonnage entering and exiting the Port. A noise barrier is proposed along the top of eastern side of the proposed rail embankment where curved and sloping.

CONCLUSIONS

5.6 From the review of track geometry, it is possible to gain access to the new port development through the construction of a rail link from the eastern side.

5.7 At present a harbour freight capacity could be accommodated on a limited basis within the existing Galway – Athenry timetable. Sufficient gaps currently exist within the current timetable to allow the safe passage of 3 full freight services along the line from the proposed port to Athenry. Any potential rail haulage would be scheduled to avoid conflict with all existing and future planned rail services.

5.8 Should more freight trains between Galway and Athenry be required during the day then a passing loop would be needed at approximately the half way point on the original twin line bed.

5.9 A Night Time freight service of up to 9 full freight trains could be facilitated outside the existing passenger train service.

5.10 The proposed rail link within the site will be facilitated within the construction sequence at an early stage and will future proof the Port of Galway and be ready to have linkage commissioned to the main line as soon as commercially viable freight tonnage warrants the expenditure.

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13.5 MOBILITY MANAGEMENT FRAMEWORK

13.5.1 Introduction

13.5.1.1 Introduction

In preparing this Mobility Management Framework Report reference has been made to the following:-

- The Galway City Development Plan 2011 - 2017;
- The Galway Strategic Bus Study;
- The Galway City Council Public Transport Feasibility Study;
- Regional Planning Guidelines for the West Region 2010 – 2022;
- Smarter Travel – A Sustainable Transport Future – A New Transport Policy for Ireland 2009 – 2020;
- Smarter Travel – National Cycle Policy Framework;
- Commission of the European Communities Green Paper "Towards a New Culture for Urban Mobility";
- Dublin Transport Office Advice Note on Mobility Management Plans;
- Galway Metropolitan Smarter Travel Area Action Plan 2010-2015;
- Work Place Travel Plans – A Guide for Implementers;
- Achieving Effective Workplace Travel Plans – Guidance for Local Authorities;
- Galway City and Environs Walking and Cycling Strategy (July 2012).
- Galway Metropolitan Area Bus and Cycle Network Plan.

13.5.1.2 Objectives

The proposed Port of Galway Extension will generate an additional demand, in the short, medium and long term, on the existing and proposed transportation infrastructure in Galway City and its environs. The development of an overall transport strategy to accommodate present and future demand is therefore required to manage the proposed workforce, avoid transport infrastructure congestion due to port-related traffic and also reduce impacts on the surrounding areas.

The development proposals for the site will be accompanied by this Mobility Management Framework to demonstrate how the potential traffic impact of the development on the surrounding areas can be minimised or managed.

The development of an overall transport strategy to restrict the impact of haulage operations as well as reducing the reliance on private car is required to effectively tackle the above problems, as well as to reflect the government and regional planning authorities' sustainable policies. For this purpose, the implementation of a Mobility Framework based on a sustainable transport strategy is considered important.

The main guidelines of this Framework will be, in general terms, the improvements of all short, medium and long-distance accessibility to the proposed Port of Galway Extension by using, as much as possible, alternative means of transportation to the car, as well as aiming to minimise the impact of haulage-related activities on the surrounding road network. It is intended that the Mobility Management Framework will provide the basic structure whereby individual tenants of the port will implement their own Mobility Management Plans.

A Mobility Management Plan (MMP) or a Workplace Travel Plan is a general term for a package of measures tailored to meet the needs of individual sites and is aimed at promoting greener, cleaner travel choices and reducing reliance on car travel. It involves the development of a set of mechanisms, initiatives and targets that together can enable an organisation / development to

reduce the impact of travel and transport on the environment, whilst also facilitating a number of other benefits, for an employer as well as staff.

A MMP is a dynamic process that grows and develops with time and in accordance with the changing circumstances of the organisation and the environment in which it works. Mobility Management Plans involve changing the established habits and practices of those who travel to work. It is important that promotion of the benefits of such a plan is led and implemented from senior management of the organisation. The co-operation of those who will travel and local authorities is also essential to the success of any mobility management plan.

Study Background

13.5.1.3 Site Locations

The proposed Port of Galway Extension is located to the south of the existing Galway Harbour Enterprise Park, to the southeast of Galway City Centre. The majority of the proposed site is proposed to be reclaimed from Galway Bay through dredging and filling. Figure 13.5.1 highlights the location of the proposed port.

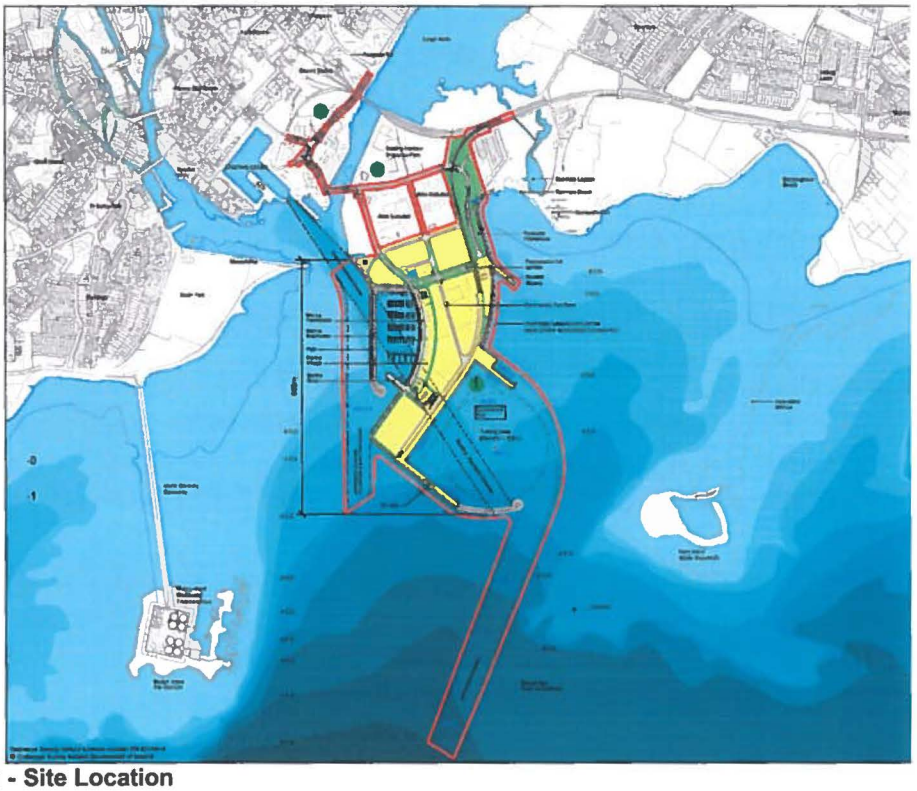

Figure 13.5.1 - Site Location

13.5.1.4 Development Access

As part of the project it is proposed to redesign the Lough Atalia / Dock Road priority junction to a signalised junction. All port-related traffic will access the site through this junction.

13.5.1.5 Local Planning & Transportation Context

The basic planning framework for the port area is set out in the Galway City Development Plan 2011 – 2017 and the Regional Planning Guidelines (RPG) for the West Region 2010 – 2022.

The Development Plan and RPG are supportive of the redevelopment and expansion of the port, and view the port as being of strategic importance to the region, particularly in terms of economic development and as a transportation link to facilitate the growth and connectivity of the region.

The RPG for the West Region seeks to support sustainable travel in the region in line with the Department of Transport "Smarter Travel – A Sustainable Transport Future – A New Transport Policy for Ireland 2009 – 2020" through a series of measures, including:

- Consolidation of population growths in existing built up areas, (Infrastructure Objective IO1);
- To locate trip-intensive developments in areas well served, or planned to be well served by public transport, (Infrastructure Objective IO1);
- Ensuring that the scale and density of new land use development is consistent with the available transport capacity (particularly public transport capacity), (Infrastructure Objective IO1); and
- Supporting Mobility Management as a useful tool to achieve higher levels of sustainable travel behaviour, (Infrastructure Objective IO4).

It is also the aim of the RPG to:

- Support the sustainable development of an integrated transportation system for Galway City and County areas, (Infrastructure Objective IO9);
- Support the construction of new railway stations to facilitate commuter and freight services, (Infrastructure Objective IO11);
- Support the installation of freight handling equipment at key rail stations to facilitate the greater usage of rail to transport freight, (Infrastructure Objective IO14);
- Promote the development of safe and convenient pedestrian and walking facilities in Galway City to minimise the dependence on private motor vehicles and to encourage an active and healthy lifestyle, (Infrastructure Objective IO32).

Galway City Council aims to promote a number of transport-related measures under their Smarter Travel proposals. With the implementation of these measures GCC aims to achieve the following modal split targets by 2015 and 2020.

Mode Split Targets 2006 to 2020[1]			
Mode	**2006**	**2015**	**Year 2020**
Walk	23%	25%	25%
Cycle	4%	12%	15%
Public Transport	9%	14%	19%
Car	61%	48%	40%
Other	3%	1%	1%

Table 13.5.1 - Mode Split Targets 2006 to 2020

The above policies and objectives will, when implemented, allow for a more sustainable overall transport system for Galway City, and will aid to the reduction in travel times currently experienced in the city.

Further to the above, Galway City Council are committed to delivering Workplace Travel Plans to all Organisations with over 100 Employees as well as promoting Travel Plans to all Educational Institutions within the city. This scheme will help to promote a city-wide change in transportation behaviour which will further improve accessibility throughout the Galway region.

[1] Galway Metropolitan Smarter Travel Area Action Plan 2010-2015.

13.5.2.1 Road Network and Accesses

Access to the development is proposed via a new traffic signal-controlled junction between Dock Road and Lough Atalia Road, which are both two-way roads and are located to the southeast of the city centre. The Dock Road extends to the west of the city, providing access to both Merchant's Road (leading to Eyre Square) and the western suburbs of Salthill and Knocknacarra and the west in general. The Dock Road links with Lough Atalia Road to the north of the proposed junction, which has an overhead rail bridge with height restriction between the site access junction and Fairgreen Road traffic signal junction. Lough Atalia Road also carries two-way traffic.

Fairgreen Road is a two-way road which links Lough Atalia Road with Forster Street (leading to Eyre Square), College Road and Bóthar Uí Eithir.

Lough Atalia Road also connects with College Road further north through a signalised junction, which in turn provides access to Moneenageisha Junction, a primary network node for the city, providing access to and from the east, north and south of the region.

Figure 13.5.2 overleaf provides an overview of the road network surrounding the proposed port.

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Figure 13.5.2 – Local Road Names

13.5.2.2 Proposed Network Improvements

Following the recent interpretation by the European Court of Justice that the N6 Galway City Outer Bypass (GCOB) project would have an adverse impact on the integrity of a European Site, Galway City and County Councils remain committed to the project, and propose to make a new application to An Bord Pleanála for a by-pass of Galway City. Accordingly, at the end of 2013, Galway County Council appointed consultants to redesign the route of the N6 Galway City Bypass and to progress the scheme through the planning process. It is anticipated that a revised application to An Bord Pleanála will be ready by 2015 with an envisaged opening year of mid 2019 at the earliest. The Galway Harbour Extension Traffic Report and this Mobility Management Framework do not depend on the development of the Galway City Bypass.

It is proposed to lower the road under Lough Atalia Bridge, which is currently subject to a height restriction, to allow for 2-way movement of large heavy vehicles. Detailed design for this road lowering has been completed and Tenders sought and at the time of writing a recommendation of a Contractor has been presented to Galway City Council with Award of Contract imminent.

The Contract for the M17 / M18 Gort to Tuam motorway scheme (PPP) was signed in May 2014 with construction works now underway. Upon completion of construction, envisaged late 2018 / early 2019, the motorway will provide a link between Galway, Dublin and Limerick. The provision of this motorway will further enhance the connectivity of the Port of Galway with its natural catchment area.

Funding has been obtained for the Bóthar na dTreabh (N6) Multi-Modal Corridor Improvement Scheme. The aims of scheme are as follows:

- Ensure the national road network within Galway protects and supports growth of the regional economy;
- Reduce the environmental impact of transport in Galway City;
- Facilitate and encourage the use of sustainable travel modes;
- Ensure future development of the N6 is integrated with a shared vision for future development of the public transport network;
- Promote integration of walking and cycling links;
- To ensure future development of the N6 is integrated with proposals for upgrading the local and regional road network;
- Improve road safety for all road users on the N6 links and junctions within Galway City;
- Improve access to Galway's vital social infrastructure such as schools, third level institutions, hospitals and large employment areas.

The scheme includes for the upgrading of all roundabouts along the N6 corridor to traffic signals junctions. GCC will be appointing consultants for the upgrade of the Kirwan junction in the near future.

Galway City Council has recently installed an Urban Traffic Management Control (UTMC) System, and is currently operating along the following corridors:

- Seamus Quirke Road / Bishop O'Donnell Road (completed);
- N6 Corridor (partially complete);
- R338 Dublin Road Corridor, including Moneenageisha Junction (partially complete).

The provision of such a UTMC system will aid in improving the efficiency of traffic signals junctions along each of the corridors, for vehicles in general and public transport in particular, allowing Galway City Council a greater degree of control over traffic movements throughout the city.

Galway City Council also wishes to develop a number of proposals for Galway City and environs as part of their Smarter Travel policy, including:

- Extension of the pedestrian area in Galway City Centre into Cross Street & Middle Street and the provision of a shared surface for public transport and pedestrians & cyclists on Eglinton Street;
- Development of a new walking and cycling route from Newtownsmith to the Docks via Abbeygate Street;
- An increase in the length of bus corridors to 18km, to serve Knocknacarra, Parkmore, Oranmore, Monivea Road and Tuam Road;
- Reduction in speed limits to 30 kph in the City Centre area;
- Fairgreen Road Cycleway / Pedestrian Facilities Scheme;
- Eyre Square Pedestrian Crossings;
- A consultant for the Claregalway to N6 Font junction bus priority scheme is intended to be awarded shortly;
- GCC intend to go to tender for consultants for a bus priority scheme between the N6 Font junction to Moneenageisha shortly;
- Development of high quality cycle routes from the City Centre to Bearna, Dangan and Oranmore;
    - Consultants were appointed to the Galway to Bearna greenway in mid 2014 and is currently at route selection stage;
    - The Dublin to Galway cycleway is progressing and was recently at public consultation.

The implementation of the above measures will help promote alternative modes of transport to the private car throughout Galway City and environs, which will in turn provide additional capacity to the road network and reduce congestion.

13.5.2.3 Car Parking

Parking provision for the proposed development will consider the proposed staging of the development over a 10 year period and the estimated car-usage as the development progresses, taking into consideration this Mobility Management Framework and the implementation of Galway City Council's Smarter Travel Plan strategy.

However, at this initial stage, it is proposed that at-grade parking areas would provide for approximately 112 spaces to service the marina development. Car parking provision will be carried out on a building-by-building basis for the proposed Enterprise Park extension. It will be a policy of Galway Harbour Company to balance car parking provision with projected demand, as it is understood that an over-provision of car parking spaces will encourage higher single car use.

It is recognised that the number of parking spaces required, within the Enterprise Park, may reduce in line with the proportion of car users and decommissioning of parking spaces therein will occur on an individual planning application basis, where appropriate.

In addition, all car parks will include a appropriate number of electric car charging stations to promote sustainable energy consumption.

13.5.2.4 Public Transport

13.5.2.4.1 Bus Services

The subject site is convenient to a number of bus routes. The proposed site is located within walking distance of Ceannt Station, the main public bus station in Galway City. A number of bus services operate from Ceannt Station, linking Galway City with major urban hubs including Dublin, Cork, Limerick, Castlebar, Sligo and Derry. Bus services also operate between Galway and its natural catchment area, including towns such as Oranmore, Tuam, Gort, Moycullen and Barna. These services operate several times daily, and provide a significant opportunity for non car-based travel for employees of the proposed port.

The proposed development is also located within walking distance of the Coach Station on Fairgreen Road, where private bus operators operate services.

- Irish City Link – travelling to/from:
  - Clifden (Letterfrak);
  - Athlone / Dublin / Dublin Airport;
  - Express service to Dublin and Dublin Airport;
  - Express service to Limerick, Cork and Cork Airport;
  - Killarney Express (Fri & Sun. only).
- GoBus.ie – travelling to/from:
  - Express service to Dublin and Dublin Airport.

The subject site is also located within close proximity to all local bus services operating in Galway City. The site is located within walking distance of Eyre Square, which acts as a terminus for all local services, and connects the city centre with all suburbs, including Salthill, Knocknacarra, Newcastle, Renmore and Doughiska. These services operate regularly throughout the day, in some cases every 10 minutes at peak periods.

Ceannt Station have recently increased the number of inter city bus bays which will increase the capacity of the station to cater for additional services and passengers.

Bus Éireann currently has a bus yard and garage within the existing Harbour Enterprise Park. The proximity of this bus yard will facilitate a possible future bus route that could potentially serve the proposed port.

The Galway Harbour Company will provide a shuttle bus service, when commercially viable, between the harbour and the main transport hubs of Ceannt Station (train and intercity bus), Coach Station and Eyre Square Bus Stops. Figure 13.5.3 below shows the proposed route the shuttle bus will take. When commercially viable, it is proposed that this shuttle bus will operate at regular intervals in the AM and PM peaks with a reduced frequency during off peak times.

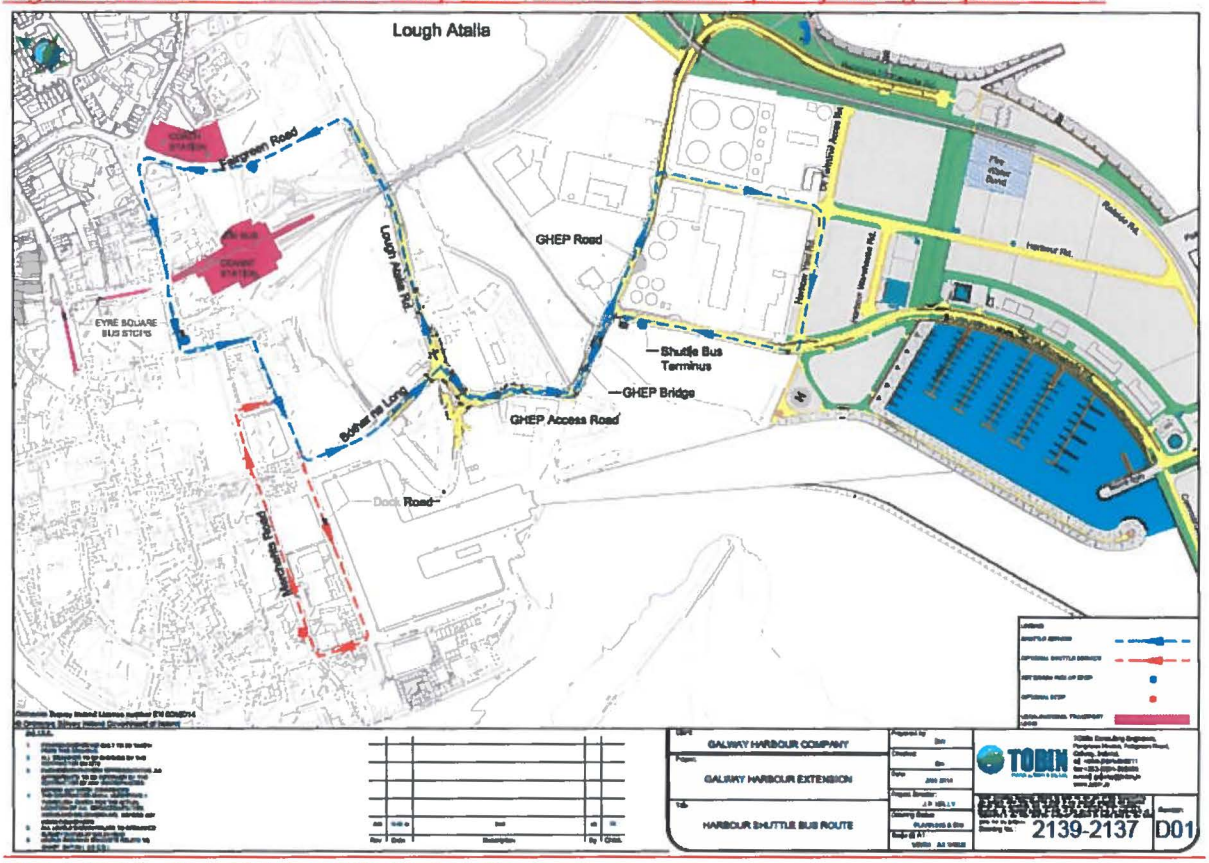


Figure 13.5.3 - Port of Galway Shuttle Bus Route

With the proposed increase in bus lanes throughout the city, all the above services have the potential to provide an efficient, reliable and sustainable alternative mode of public transport to and from the Port of Galway to the private car.

13.5.2.4.2 Train Services

Ceannt Station also serves as the main train station for Galway City. Currently, this service operates between Galway and Dublin, and also serves a number of towns in the vicinity of Galway, including Oranmore, Athenry, Woodlawn, Ballinasloe and Athlone. This service operates 10 times daily.

The Western Rail Corridor re-opened in March 2010, linking Galway with Limerick, with stations at Ennis, Sixmilebridge, Gort, Ardrahan and Craughwell.

The proposed Ceannt Station redevelopment, on-hold at this time, will also include an increase in provision of rail platforms from 1 to 4 rail platforms, thus significantly increasing the capacity of the station to cater for additional services and passengers.

13.5.2.5 Pedestrian and Cyclist Facilities

The proposed development is committed to ensuring the accessibility for the Galway residents and the future employees who walk or cycle as their preferred means of travel. Furthermore, it is committed to improving the sustainability of the area through the provision of adequate pedestrian/cycle facilities as well as providing cross-connections to the proposed developments in the area, including the Ceannt Station Quarter, as well as facilitating future cycle links to Renmore.

Provision for cyclists, on-road and off-road, are proposed as part of this application, and adequate space has been provided in the road cross-section to enable cyclists to share the access roads with other (public transport and private) vehicles.

All proposals within the development will complement the proposals of Galway City Council for cycle and pedestrian facilities throughout the city. Furthermore, adequate and secure parking for bicycles and changing and shower facilities will be provided to encourage the use of cycling as a primary mode of transport to the port wherever possible.

A bike rental scheme is currently being introduced around Galway City. The Galway Harbour Company is committed to the provision of a bike rental scheme within the harbour development, most likely close to the Cruise Terminal and Marina. This bike rental station will be available for tourists arriving via Cruise Ships or the Marina and will also service the enterprise park for the workforce who wish to make an irregular trip around the city.

13.5.3.1 MMP Coordinator

In order to ensure that the proposals suggested in this Mobility Management Framework are implemented for all tenants within the port, a MMP coordinator will be nominated by the Galway Harbour Company. This coordinator will have a number of tasks and responsibilities, including:

- The implementation of all MMPs;
- The monitoring of progress of the MMPs with regards to set targets;
- The establishment of a Project Steering Group to oversee the implementation and ongoing development of the Framework;
- Liaison with Galway City Council;
- The promotion of alternative measures of transport to the private car for employees or customers of the development;
- The promotion of haulage-related activities by Rail, when economically viable within the existing rail corridor;
- Ensuring compliance that haulage-related activities, for any new or revised development within the Port of Galway, will operate outside of the network peak periods;
- Identification of appropriate targets for the implementation of the MMPs.

It is recognised that implementation of the Framework will be a challenging undertaking with significant resources being required to set up and administer the Framework. It is also proposed to hold events such as Travel to Work Exhibitions to create and maintain staff awareness of the Framework.

Galway Harbour Company and the MMP Coordinator will ensure that senior management of all the tenant companies openly supports the Plan and that a group of members of senior management "champion" the Framework.

Galway Harbour Company and the tenants of the Port and Enterprise Park will establish a Steering Group to oversee the implementation and ongoing development of the Framework. A representative of each of the companies should be part of this group. In addition, the Steering Group will include a member from Galway City Council.

13.5.3.2 Projected Demands

It is anticipated that a total of approximately 500 employees will work in the Port of Galway and Enterprise Park following completion of the proposed development.

From discussions with tenants within the existing Harbour and Enterprise Park, it was found that the majority of all current movements to the site were by private car, with some utilising public transport or other modes of transport. From these discussions, it was found that a significant proportion of the workforce live in areas well served by public transport, or where employees live within a relatively small distance of each other. As such there is significant potential for modal shift should adequate education and incentives be offered as well as improvements to public transport, pedestrian and cycle infrastructure.

13.5.3.3 Targets

The Framework is target driven with real identified targets against which success will be measured. The targets set are in line with fixed targets set by Galway City Council aimed at promoting alternative modes of transport to the private car, and are sufficient to make a real difference to overall habits and modal split.

Table 13.5.2 below sets out the Staff Mode Split Targets for the Port and Enterprise Park. On completion of Stage 4 of the development, the model split targets for the Port and Enterprise Park will be consistent with Galway City Council targets.

Target Modal Splits for the Port of Galway and Enterprise Park			
Mode	Year 2016	Year 2020	Year 2023
Walk	24%	25%	25%
Cycle	8%	12%	15%
Public Transport	11%	14%	19%
Car	55%	48%	40%
Other	2%	1%	1%

Table 13.5.2 - Target Modal Splits for the Port of Galway & Enterprise Park

13.5.3.4 Monitoring

A Fundamental part of any Mobility Framework is monitoring to determine progresses, identify problem areas and initiate corrective measures to ensure targets are achieved. The MMP Coordinator, in collaboration with the Mobility Framework Implementation Group, should carry out this monitoring annually.

The basic procedure will consist of:

- Reviewing the implementation of the different measures of the Mobility Framework;
- Carrying out an annual travel survey;
- Controlling the achievement of the different targets;
- Updating plans to new / proposed adjacent facilities;
- Propose corrective measures, if needed;
- Issue an annual report to Galway City Council about the implementation and progress on the Mobility Framework and Plans.

13.5.3.5 Haulage-Related Activities

The activities contained within the proposed port extension can be loosely described as being either haulage or non-haulage related. These elements have differing requirements from a transport perspective, and for the purposes of this report will be treated separately.

While it is accepted that the nature of freight haulage requires vehicular transportation, it will be the aim of this Framework and subsequent MMPs to minimise the impact that the haulage activities will have on the surrounding road network. A number of proposals aimed at minimising this impact are detailed below.

13.5.3.5.1 Rail

The proposed development includes for a rail link into the port from the main Galway to Dublin rail line. Upon completion of the port, there is the potential to transport freight by rail to a number of destinations throughout the country.

The provision of such a link would provide a significant and sustainable transport alternative for the Port of Galway. It is the aim of Galway Harbour Company to work with its customers to promote the use of rail transport so as to maximise the proportion of its future throughput that will be transported by rail.

13.5.3.5.2 Hours of Operation

The ability of the port to operate on a 24 hour basis will provide significant benefits from a transportation perspective. As such, a restriction on the hours of operation for haulage activities will not significantly impact on the port's ability to operate successfully.

It is noted that significant congestion occurs on the road network in Galway City during peak periods. The majority of junctions in the city operate satisfactorily outside of these peaks. It is therefore proposed that all new haulage-related activities will be restricted on the external road network, as far as is reasonably practicable, between the hours of 08:00 – 09:30 and 17:00 – 18:30. This restriction will ensure that haulage activities will have negligible impact on the surrounding road network at the critical periods.

The MMP coordinator will be responsible for obtaining such undertakings from the haulage-related stakeholders once they have been identified.

13.5.3.6 Non-Haulage-Related Activities

A significant amount of non-haulage-related activities are proposed within the Port of Galway. These include the extension of the existing Enterprise Park and cruise liner activities. The development of an overall transport strategy to accommodate present and future demand is required to avoid saturation of the transport infrastructure and impacts in the surrounding areas. The principles, defined by the Galway Harbour Company behind this integrated approach are as follows:

- The need to provide adequate, affordable and sustainable multi-modal access to the port;
- The will to promote and support alternative means of transport;
- The need to minimise the impact of traffic and parking generated by the port in the surrounding areas.

The Galway Harbour Company will work to implement the various modal strategies that may be put in place to deal with this demand. These are as follows:

- **Promotion of alternative modes of transport** to reduce the reliance on use of the private car in order to obtain a more sustainable travel mode split and minimise the impact of traffic and parking generated by the Port of Galway. Such strategies include public transport, cycling and walking.
- **Reduction in demand of mobility** in order to rationalise demand. Such strategies include telework (where appropriate) and the reduction of number of working days per week by increasing the number of hours worked every day.
- **Optimisation of the use of existing infrastructure** in order to balance both demand and supply of mobility. Such strategies include staggering starting/finishing hours and increasing car occupancy rate/car-sharing.

A combination of these strategies will aid in the achievement of the targets set for the modal split and to deal with the demand that the proposed development will generate.

Relying on the provision of infrastructure alone (hard measures) to meet demand would involve significant investment. It is likely however that increases in the capacity of road infrastructure would be under constant pressure from growing demand. It has been proved worldwide that reliance only on the provision of infrastructure without any other alternative measures (soft measures) causes an increase in demand, in the medium term, and congestion of the road system. These measures are therefore inefficient in themselves without support from other policies.

The preferred strategy therefore is to encourage changes in transport mode by offering opportunities for staff to use modes other than the private car and to supplement this with sympathetic infrastructure measures which will assist this objective and improve accessibility for all users.

13.5.3.6.1 Public Transport Initiatives

The transfer of car users to the public transport system will result in an important reduction in traffic congestion. Galway Harbour Company can do a great deal to promote public transport use to their employees and customers. The benefits for commuters of such a change on travel mode to the port include improvements to quality of travel and cost savings.

On the negative side of public transport, lack of services, infrequent and occasionally unreliable services, safety concerns (especially at night) and a lack of information all discourage the car user from transferring to the present public transport system. It is therefore necessary to recognise that improvements to the services are necessary to meet commuter needs.

Experience elsewhere supports the "virtuous circle" concept for public transport. This anticipates that with improvements to services, more custom and income is generated, enabling more investment to be made in services and so on.

There are a number of improvements planned / recently implemented for the public transport system that will help to improve the options available to staff:

- The recent upgrade of the Public Transport Interchange (PTI) at Ceannt Station;
- Increasing the number of quality bus corridors (QBC) in Galway (ongoing);
- Real-Time Passenger Information (RTPI) services (A number of routes around Galway City now include RTPI electronic signs at a number of bus stops); and
- The introduction of the 'Leap Card' smart card since the end of September 2014.

However, in order to improve the accessibility of the port to the public transport network it is recommended that the following proposals be considered.

Significant collaboration has been undertaken between the Galway Harbour Company and CIE with regards to accessibility between the two developments. This cooperation will ensure optimum connectivity between two prime city centre sites, and will ensure ease of access to the PTI for employees of the port.

Further to the above, the location of the existing Bus Éireann bus yard and garage within the existing Enterprise Park could facilitate a shuttle service between the Port of Galway and the main transport hubs, further improving connectivity. The Galway Harbour Company will provide a shuttle bus service, when commercially viable, between the harbour and the main transport hubs of Ceannt Station (train and intercity bus), Coach Station and Eyre Square Bus Stops. Figure 13.5.3 above shows the proposed route the shuttle bus will take. When commercially viable, it is proposed that this shuttle bus will operated at regular intervals in the AM and PM peaks with a reduced frequency during off peak times.

In addition, Galway Harbour Company and its associated stakeholders can play its part in improving the mode share of public transport, through a range of incentives for its use. The Galway Harbour Company or its Management Company will ensure all the tenants of Port of Galway:

- Register to the Taxsaver Commuter Ticker programme where employees can make significant tax and PRSI savings when they receive their Annual, Part Yearly (Bus Éireann only) or Monthly ticket as part of their remuneration package. In addition Employers will make Employer PRSI savings as a result of a reduction in the gross income of each employee receiving a Taxsaver commuter ticket;
- Provide better information on public transport service to staff.
    - Ensure current Time Tables for the various services are clearly displayed;
    - Set-up easy links to the real time information web-sites of the various bus and train services;

Staff may be required to have cars available for work purposes. Some staff members may therefore be contributing to peak time traffic congestion simply to ensure that they have a vehicle available during the working day. The availability of pool cars would provide an alternative for staff members that need a car for work purposes. An alternative is to negotiate a contract with a local taxi firm, allowing business-related trips to be invoiced to the Company. This alternative eliminates the reclaiming of expenses for the staff and results in a reduction in travel expenses. Such a facility is offered by a number of taxi firms who offer business or corporate accounts.

Galway Harbour Company or its Management Company will encourage the tenants of the port to study the feasibility of providing pool cars or entering into taxi service to cater for business-related trips during the working day. As an alternative to pool cars, Galway Harbour Company or its Management Company shall investigate the feasibility of establishing a pay-as-you-go car rental scheme offering short-term car rental from a base within the enterprise park. This system would provide a smart travel solution for those who wish to use public transport to get to / from work and then have the availability of a pay-as-you-go rental car for onward travel. All tenants within the enterprise park would be encouraged to sign up to this service, if established.

13.5.3.6.2 Car Sharing Initiatives

Car sharing (also known as lift sharing or car pooling) will be implemented and encouraged. Car sharing schemes work well where large numbers of commuters live in common locations and their attendance hours at the location are consistent. They can also be appealing as a travel option for those living in areas with infrequent public transport services or travelling long distances. Such a scheme offers a significant opportunity to reduce the proportion of staff that drive to work.

For those who do car share there are some obvious advantages and these include:

- Travel to work can still be door to door if they are picked up at home;
- There are costs savings available to sharers and participation may even eliminate the need for some families to have a second car;
- Travel to work can be a more relaxing experience, with a chance to socialise.

There are also perceived disadvantages for sharers, associated with the freedom to travel, particularly in the event of an emergency. Difficulties are also experienced within such a scheme for those who have to accommodate secondary trips throughout the course of the day (i.e. dropping children off at school).

Galway Harbour Company or its Management Company in conjunction with the tenants of the Enterprise Park will set up a Car-Sharing scheme in order to maximise the benefit of this initiative and to put potential car sharers in touch with each other. Galway Harbour Company or its Management Company will establish a central database of the journey data of its staff members.

Galway Harbour Company or its Management Company, in conjunction with the tenants of the Enterprise Park will provide incentives for car sharing. Incentives for car sharing may include preferential parking, such that the more attractive parking spaces are allocated to car sharers. Additionally, Galway Harbour Company or its Management Company and tenants of the Enterprise Park will assess the feasibility of providing a "guaranteed ride home" for car sharers should they be stranded in an emergency situation. This would mean subsidising for taxi rides.

The impact of the scheme will be improved by targeted measures including:

- Publicity within the Port of Galway and Enterprise Park, at Travel to Work exhibitions and through day-to-day staff communication channels and through the media. This publicity will encourage new members to join the scheme.
- Easy access to the Coordinator who will administer the scheme. It is recognised that sharers need to feel that there is an easily accessible contact should they experience problems.

- Helping sharers to agree the practical arrangements for sharing, such as matching car-sharers, splitting the cost of the journey to work, and addressing car insurance issues and tax implications.

13.5.3.6.3 Cycling Initiatives

The encouragement of cycle use is an important aspect of any sustainable Mobility Plan. Cycling could be taken up by a significant number of the local commuters to the Port of Galway, if adequate facilities were available. Cycling offers a widely accessible, convenient and environmentally friendly way of making local journeys.

Not all commuters will be prepared to cycle, but if the facilities are not available, those who may be prepared to give it a try may be prevented from doing so. Initially, the numbers using this mode of transport may be relatively small but other facilities can be considered over time to encourage a greater use of the bicycle.

The potential for cycling is greatest where a large number of staff commute 4km or less, where cycle routes in the area are relatively flat and where good cycle routes are provided. Encouraging cycling can lead to a healthier community, in addition to being a more reliable and convenient way to travel in peak periods. It is also cheaper than other forms of transport. The mode share targets for cycling trips have been proposed based on the proportion of trips to work which are 4km or less.

The main deterrents to this form of transport are the lack of facilities at work, lack of safe cycle routes, poor weather, the need to own a bicycle and poor facilities. Galway Harbour Company can assist with overcoming some but not all of these disadvantages.

The issue of safety for cyclists on the public road network is a real and significant one, particularly with the ongoing increase in traffic volumes on the network. In recent times, however, Galway City Council has developed cycle infrastructure on the public road network.

Therefore, Galway Harbour Company or its Management Company and tenants of the Port of Galway will endeavour to:

- Set up a Bicycle User Group (BUG) as part of the Mobility Management Plan. The Group will provide a forum for feedback and consultation;
- Provide an adequate number of cycle parking spaces on site to deal with projected demand;
- Provide bicycle purchase incentives / discounts;
- Companies to provide bicycle training;
- Provide loaner or trial bicycles;
- Ensure that all bicycle parking spaces provided on the site are secure and sheltered and close to entrances;
- Ensure that additional bicycle parking facilities can be easily facilitated should demand require it;
- Provide cyclists with access to convenient showers and lockers to store equipment and clothing;
- Raise the profile of cycling by incorporating appropriate road markings, signage and marking of cycle tracks in the port and at the interfaces with cyclist on the public road network;
- Provide continual publicity, both internally and to the general public, of the cycling initiatives;
- Consult the Bicycle Users Group before considering the implementation of the aforementioned measures.

13.5.3.6.4 Walking Initiatives

The Galway City and Environs Walking and Cycling Strategy suggests that for trips within 2km of a person's destination, walking and cycling is seen as a viable mode of transport. A number of large residential areas, including large sections of the city centre, Renmore and Claddagh fall within this catchment area. Key transportation hubs, such as Eyre Square and Ceannt Station, are also located within 2km of the proposed port. As such, with the provision of appropriate facilities, walking and cycling have the potential to be a major mode of transport to and from the proposed port, be it for those who live within close proximity of the port, or those who commute into the centre city via public transport.

The promotion of walking is difficult, but organisations can make it easier for employees who commute all or part of their journey to work by foot, by ensuring that their location/route is pedestrian friendly. Walkways should be properly maintained, well lit, well patrolled and conveniently placed for bus stops where appropriate. Negotiations with the Local Authority to improve walking routes or crossing facilities on the road network for pedestrians are also recommended.

There are advantages for staff that walk to work, primarily related to lifestyle issues, such as the opportunity to get exercise and fresh air, and make cost savings. On the negative side, walking scores poorly against the car and other modes, in terms of speed, convenience and exposure to poor weather.

Research into pedestrian behaviour shows that the propensity to walk to work is dependant largely on the walking distance, prevailing weather conditions, the availability of other modes of transport and the availability of car parking at destination. The choice to walk or not to walk to work is a pragmatic one and not easily influenced.

Therefore, Galway Harbour Company or its Management Company and tenants of the port will:

- Provide internal links to the improved pedestrian infrastructure and crossing facilities on the public roadway in conjunction with Galway City Council;
- Ensure adequate security along these routes, particularly during the hours of darkness;
- 'Wayfinding' signage will be erected at the Cruise Terminal and Marina (consistent with 'wayfinding' signs proposed by Galway City Council).

Galway Harbour Company or its Management Company and tenants of the port will also establish soft walking initiatives, such as:

- Walking Challenges, eg pedometer challenges;
- Provide umbrellas / and or rain wear to employees (Harbour or company branding could be incorporated).

13.5.3.7 Smarter Working

It will be recommended that tenants of the Port and Enterprise Park should investigate the feasibility of including smarter working practices in order to increase the effectiveness of their Mobility Management Plans.

13.5.3.7.1 Staggering Starting/Finishing Hours / Flexi Time

This can be a difficult part of a mobility plan to implement. However, staggering starting times in different periods can significantly mitigate the impact of traffic generated on the road network and accesses at peak times.

13.5.3.7.2 Telework

Telework is not a job in its own right, but a different way of working. From the transportation point of view telework is the partial or total substitution of telecommunication, with or without the assistance of computers, for the twice-daily commute to / from work[2].

A number of studies have shown improvements arising directly from the introduction of teleworking. These have included improved staff performances, lower overheads, expanded customer service, markets and sales.

The National Advisory Committee on Teleworking, which brought together industry, trade unions, governments, research and public sector groups, proposed in 1999 a number of key action points that would ensure that Ireland becomes "telework friendly" from a fiscal and environment point of view. There has been a significant amount of infrastructural investment in this area over the past 10 years, which has helped to ensure that the Irish communications environment facilitates the adoption of teleworking as a mainstream method of working.

A total telework is practically not achievable in reality. However, there is a large proportion of staff that would be able to telework once a week.

13.5.3.7.3 Compressed Working Week

Allowing employees to work a four day week or nine day fortnight, but working longer days, will reduce the number of employees travelling on-site on any given day. This will reduce their time and costs associated with the commute, while also reducing pressure on car parks for employees who drive to work. This could mean a reduction in the mobility demand up to 20% and therefore significantly reduce congestion in the surrounding areas.

13.5.3.7.4 Promote Video and Tele-conferencing

Employees are often aware of the existence of video- or tele-conferencing facilitates in an organisation, but aren't familiar with how to operate them or how to resolve technical problems.

The Galway Harbour Company or its Management Company will recommend to tenants to set-up video / tele-conferencing in their organisation, and if applicable to their type of business, make it company policy that video / tele-conferencing should replace face-to-face meetings where appropriate.

13.5.3.8 Cruise Liner-Related Activities

An investigation into cruise liner statistics for other representative ports in Ireland indicated that there were on average approximately 845 passengers per cruise. The breakdown of anticipated daily passenger activities is highlighted below in Table 13.5.3.

Projected Passenger Activities	
Activity	**Percentage**
Tours	70%
City Walks	15%
No Shore Leave	15%

Table 13.5.3 - Projected Passenger Activities

[2] Jack M. Nilles, "Traffic Reduction by Telecommuting: A Status Review and Selected Bibliography", Transportation Research.

The application of the above rates equates to a total of 12 buses required for tours to sites such as Connemara and the Cliffs of Moher.

Such tours currently operate in Galway, and leave Galway City between 09:30 – 10:00. It is proposed that the cruise liner tours will operate in a similar fashion, and will generally not conflict with network peak periods when traffic congestion is experienced.

It is also proposed that all servicing activities relating to the cruise liners will take place outside of network peaks to further ensure as minimal an impact on the surrounding road network as possible.

Galway Harbour Company or its Management Company and tenants of the Port and Enterprise Park will encourage the implementation of the above measures (Staggering Starting/Finishing hours, Teleworking, compressed working week, and promote video and tele-conferencing) within the individual mobility management plans in order to reduce the demand for travel to the site.

13.5.3.9 Construction Activities

During the early stages of the project, a significant amount of construction activities, with associated vehicular movements, will be experienced on site.

It is proposed to implement a Construction Traffic Management Plan, which will aim to reduce the impact of construction traffic on the surrounding road network. This Construction Traffic Management Plan will be developed by the contractor appointed by Galway Harbour Company; however it is recommended that measures such as mini-bus transport, car pooling (targeting a minimum of 3 occupied seats) and incentivising public transport use be promoted for construction workers accessing the site. Walking and cycling will also be promoted, especially for employees within 4km of the site. It is further recommended that deliveries and other potential HGV movements to and from the site be managed outside of network peak periods. (Exceptions to this are to be expected, such as a case of a large concrete pour, that will receive lorries over a prolonged period of a day. However the peak period can still be managed by staggering the concrete lorries by a suitable amount of time). The Construction Traffic Management Plan will also include measures to extend restrictions to deliveries during the busy shopping period approaching Christmas, typically from 5th December to 28th December. Deliveries and other HGV movements to and from the site, shall be managed outside an extended network peak of 08:00 – 09:30 and 16:30 – 19:00. Deliveries shall avoid a Saturday afternoon from 12 noon, where feasible.

13.5.4 Conclusions

The proposed Mobility Management Framework aims to provide a sustainable, safe and environmentally-friendly alternative to private car use for employees and visitors to the Port of Galway.

This Framework will form the basis for all Mobility Management Plans that will be developed by individual tenants of the port, which will themselves evolve as background conditions change, and the end users' needs become clearer.

The ability of a MMP to succeed in its stated objectives is highly dependent on the cooperation of all stakeholders, including Galway City Council. Galway Harbour Company is committed to ensuring that this cooperation is maintained at all levels to ensure that the impact of the development on the surrounding road network is minimised.

13.5.5 Summary of Mobility Management Framework Recommendations

Galway Harbour Company will ensure the following:

- Appointment of a Mobility Management Plan Coordinator.
    - The co-ordinator will ensure that all existing tenants and any future tenants develop a Mobility Management Plan to comply with the requirements of the Mobility Management Framework;
    - Planning applications for future enterprises within the site shall include a Mobility Management Plan and comply with the requirements of the Mobility Management Framework,
- Establish Steering Group to oversee implementation and development of Framework.
    - The Steering Group shall include a member from Galway City Council;
- Senior management of all tenants to support and champion the Framework;
- Annual monitoring of Framework, including:
    - Travel Survey;
    - Reviewing implementation of different measures;
    - Controlling achievement of targets;
    - Taking account of any new/proposed adjacent facilities;
    - Propose corrective measures if required;
    - Report to Galway City Council re. implementation and progress of Framework.
- Balance car parking provision and demand having cognisance on the target modal shift;
    - Combined parking facilities shall be incorporated around the site, where appropriate;
    - Parking space requirements will be considered within the Enterprise Park on an individual Planning Application basis as per target modal shift;
    - Electric car charging stations to be established around the enterprise park.
- Hold events such as Travel to Work Exhibitions to create and maintain staff awareness of the Framework;
- Establish a monthly competition whereby staff using sustainable modes of travel other than a car are entered into a draw for a prize.

Galway Harbour Company will promote alternative modes of travel to achieve the Galway City Council targets of Model Split by the completion of Stage 4 of the harbour development. During Stage 1 and 2 Construction, the Harbour Company will target a modal split of an approximate mean of the existing modal split and GCC's 2020 targets.

Target Modal Splits for the Port of Galway of Galway and Enterprise Park			
Mode	Year 2016	Year 2020	Year 2023
Walk	24%	25%	25%
Cycle	8%	12%	15%
Public Transport	11%	14%	19%
Car	55%	48%	40%
Other	2%	1%	1%

Table 13.5.4 - Target Modal Splits for the Port of Galway & Enterprise Park

Construction

During the Construction Stages, Galway Harbour Company will:

- Implement a Construction Traffic Management Plan with the aim of reducing the impact of construction traffic on the surrounding road network;
  - The Construction Traffic Management Plan shall ensure construction workers accessing the site are transported by mini-bus and incentivised to use public transport, walk or cycle to the site. Car pooling shall be considered as an further measure, but targeting a pool of at least 3 occupied seats;
  - Deliveries and other HGV movements to and from the site, be managed outside of network peak periods.
    - Exceptions to this are to be expected, such as a case of a large concrete pour, that will received lorries over a prolonged period of a day. However the peak period can still be managed by staggering the concrete lorries a suitable amount of time.
  - During the busy shopping period approaching Christmas, from 5th December to 28th December, deliveries and other HGV movements to and from the site, shall be managed outside an extended network peak of 08:00 – 09:30 and 16:30 – 19:00. Deliveries shall avoid a Saturday afternoon from 12 noon, where feasible.

Haulage-Related Recommendations

Following the opening of the new harbour, Galway Harbour Company will ensure the following is adopted

- Restriction of haulage-related activities, for any new or revised development within the port of Galway, between 08:00 – 09:30 and 17:00 – 18:30;
- The promotion of haulage-related activities by Rail, when economically viable within the existing rail corridor.

Non-Haulage-Related Recommendations

Galway Harbour Company will promote alternative models of travel for non-haulage related travel. The harbour will therefore establish the following:

- Establishment of shuttle service, when commercially viable, between the transport hubs of Ceannt Station / Coach Station and Eyre Square and the Harbour;
- All organisations within the enterprise park to register with the public transport taxsaver scheme;
- Provide information on public transport service to staff:
  - Ensure current Time Tables for the various services are clearly displayed;
  - set-up easy links to the real time information web-sites of the various bus and train services).
- Provision of pool cars or establish a pay-as-you-go use of a car for the enterprise park;
- Negotiate a contract with local taxi firm;

- Establishment of Car Sharing scheme:
  - Car Sharing data base to be established for the entire enterprise park;
  - Incentivising car sharing by:
    - Preferential Parking;
      - Closer parking to be made available to car sharing of 3 or more occupants.
    - Assess the provision of guaranteed ride home.
- Promoting Cycling:
  - Setting up a Bicycle User Group to provide forum for feedback and consultation;
  - Provision of adequate number of secure and sheltered bicycle parking spaces;
  - Ensure that additional spaces can be provided if demand increases;
  - Provision of changing, shower and storage facilities for cyclists;
  - Provide bicycle purchase incentives / discounts;
  - Provide bicycle training;
  - Provide loaner / trial bicycles;
  - Provide continuous publicity, internally and to general public, of cycling initiatives;
  - Establish a bike rental station within the enterprise park, (ideally close to the cruise terminal and marina to promote use by visitors).
- Promoting Walking:
  - Provision of internal links to the improved pedestrian infrastructure and crossing facilities on the public roadway (in conjunction with GCC);
  - Ensure adequate security and good lighting along all pedestrian routes;
  - 'Wayfinding' signage will be erected at the Cruise Terminal and Marina (consistent with 'wayfinding' signs proposed by Galway City Council).

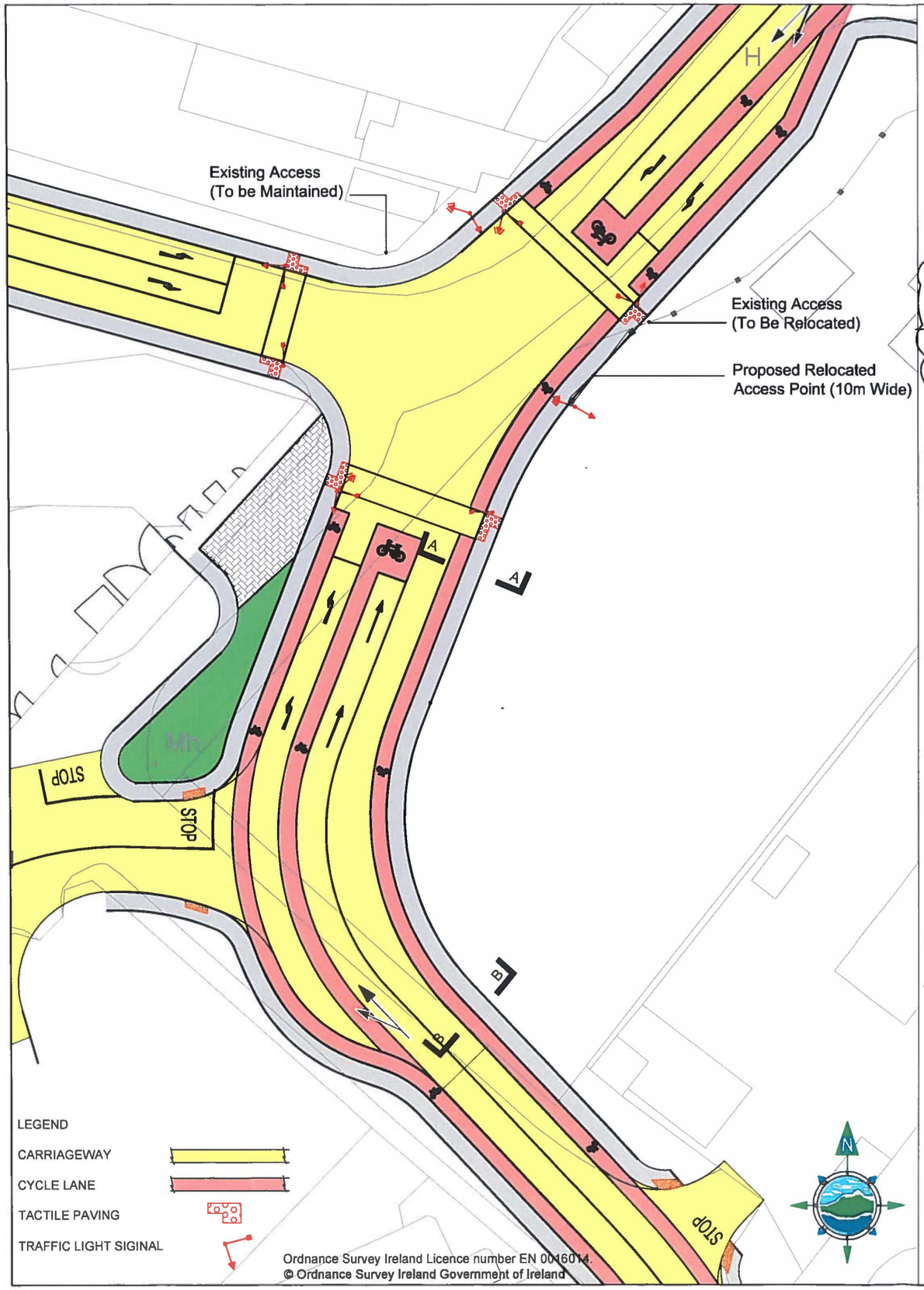
Galway Harbour Company will also promote the following, where feasible:

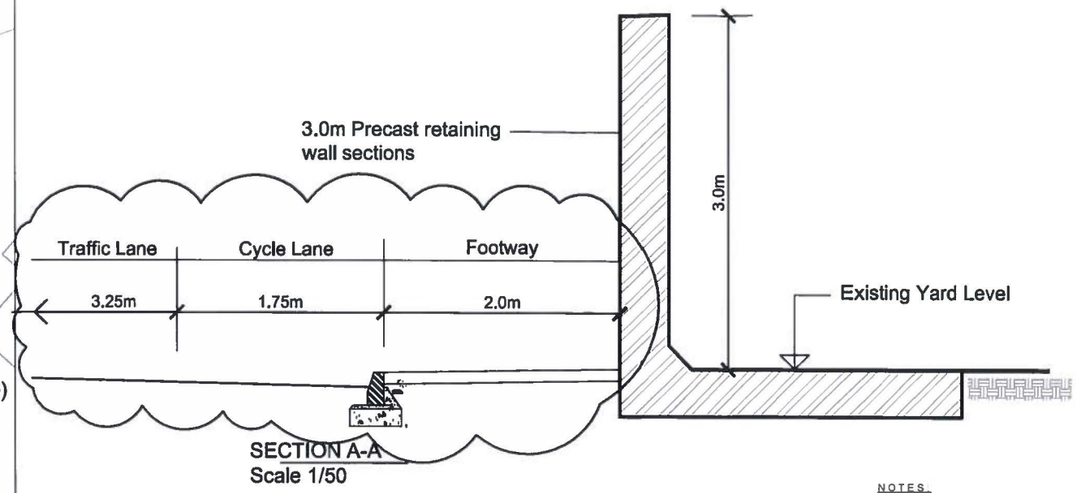
- Staggering starting / finishing times;
- Telework;
- Compressed working week;
- Video / teleconference facilities.

Cruise Liner Recommendations

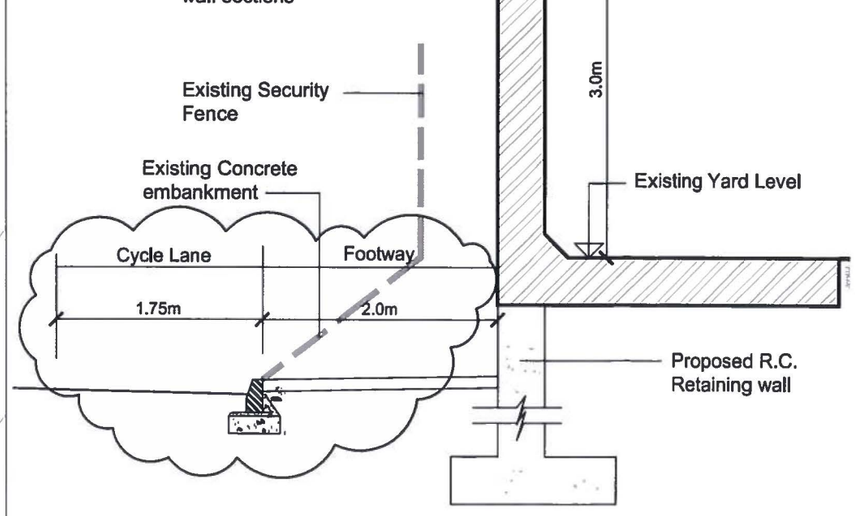
Galway Harbour Company will also establish the following:

- Coach tours to avoid network peaks, when possible;
- Servicing activities to be carried out outside of network peaks.





SECTION A-A
Scale 1/50



SECTION B-B
Scale 1/50

NOTES.

1. FIGURED DIMENSIONS ONLY TO BE TAKEN FROM THIS DRAWING.
2. ALL DRAWINGS TO BE CHECKED BY THE CONTRACTOR ON SITE
3. ENGINEER/EMPLOYERS REPRESENTATIVE, AS APPROPRIATE, TO BE INFORMED BY THE CONTRACTOR OF ANY DISCREPANCIES BEFORE ANY WORK COMMENCES
4. THE CONTRACTOR SHALL UNDERTAKE A THOROUGH CHECK FOR THE ACTUAL LOCATION OF ALL SERVICES/UTILITIES, ABOVE AND BELOW GROUND, BEFORE ANY WORK COMMENCES
5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Rev	Date	Description	By	Chkd.
D				
B	JAN 2015	CROSS SECTIONS CORRECTED	KL	TC
A	JAN 2014	FIRST ISSUE	JOM	JPK

Client:
Galway Harbour Company

Project:
Galway Harbour Extension

Title:
Layout of Access Junction

Scale @ A3:	1:500	
Prepared by: JOM	Checked: JPK	Date: JAN 2014
Project Director:	J.P. Kelly	
Drawing Status:	Planning & EIS	

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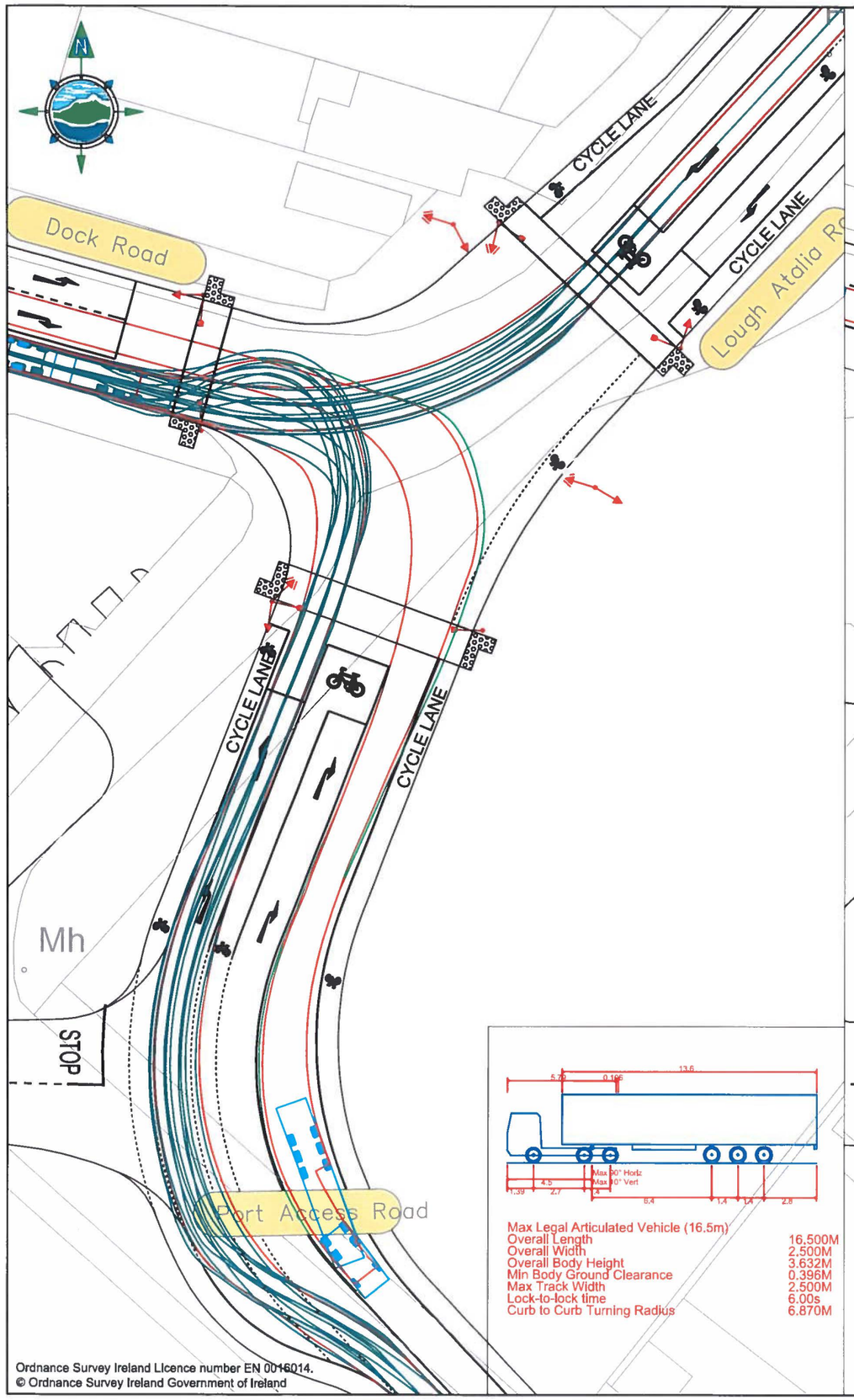
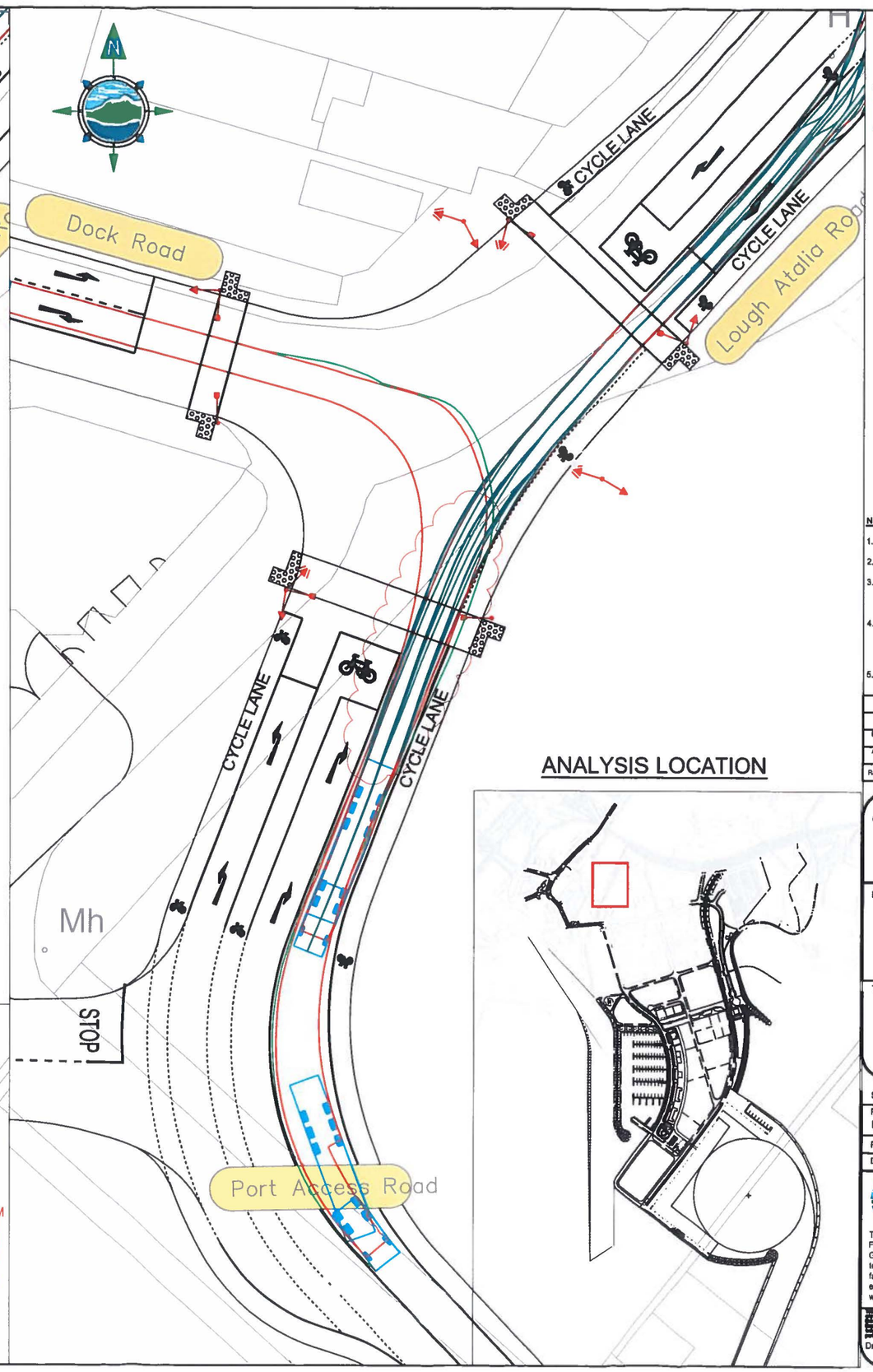
Drawing No.: 2139-2165 | Revision: B



Max Legal Articulated Vehicle (16.5m)

Overall Length	16.500M
Overall Width	2.500M
Overall Body Height	3.632M
Min Body Ground Clearance	0.396M
Max Track Width	2.500M
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	6.870M



LEGEND

VEHICLE WHEELTRACK

VEHICLE OVERHANG

NOTES:

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5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Rev	Date	Description	By	Chkd.
B	JAN 2015	AUTOTRACK AMENDED FROM DOCK ROAD INTO PORT ACCESS	LG	YC
A	JAN 2014	FIRST ISSUE	JOM	JPK

ANALYSIS LOCATION

Client:
GALWAY HARBOUR COMPANY

Project:
GALWAY HARBOUR EXTENSION

Title:
AUTOTRACK ANALYSIS SITE ACCESS JUNCTION

Scale @ A1: 1/250 A3 1/ 500

Prepared by:	Checked:	Date:
DW	BH	JAN 2014

Project Director: J.P. KELLY

Drawing Status: PLANNING

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Drawing No.: 2139-2173

Revision: B

Key

- Primary Haul Route
- R339 / M6 / N18 Haul Route
- N17 Haul Route
- N84 Haul Route
- N59 Haul Route
- R338/R337/R336 Haul Route

CITY CENTER CATCHMENT

NOTE:
HAULAGE TRAFFIC TO CITY CENTRE CATCHMENT WILL USE APPROPRIATE MAIN CITY ROADS

NOTES:

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5. ALL LEVELS SHOWN RELATE TO ORDNANCE SURVEY DATUM AT MALIN HEAD

Rev	Date	Description	By	Chkd.
B	Jan 15	HAUL ROUTES REVISED TO EXCLUDE R336 WITHIN CITY AND DEFINING CITY CENTRE CATCHMENT	KL	TC
A	JAN 2014	FIRST ISSUE	GR	TC

Client: Galway Harbour Company

Project: Galway Harbour Extension

Title: Operational Traffic - Proposed Haul Routes

Prepared by: GR
Checked: TC
Date: JAN 2014
Project Director: J.P. Kelly
Drawing Status: Planning & EIS
Scale @ A3: NTS A1: NTS

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Drawing No.: 2139-2180

Revision: B