

# 3 Model Development

## 3.1 Introduction

The VISSIM model is comprised of five basic components:

- Highway network (links and connectors);
- Traffic control systems (signal, stop and give-way control);
- Traffic inputs;
- Vehicle type and compositions; and,
- Vehicle routes.

VISSIM version 2020.00-06, has been used to construct and run the model.

## 3.2 Base Network Development

### 3.2.1 Highway Network

The base road network for the VISSIM models was constructed for all peaks based upon an Ordnance Survey CAD background in conjunction with aerial mapping.

### 3.2.2 Network Peak

The simulations start at 08:30 and 16:15 for the AM and PM peaks respectively with evaluation starting 15 minutes after the warm-up period. The core peak hours are 08:45-09:45 and 16:30-17:30.

The assessment of peak hours was achieved by creating a spreadsheet that extracts the relevant data from the traffic counts in a format that can be copied directly into VISSIM. The first step of this process was to create a diagram of all turning movements in the network and then compiling a table of all turning movements by time period and vehicle class. As part of the database creation we have also derived the profile of traffic into the VISSIM network in 15-minute intervals which is shown in Table 3.1 below.

An additional analysis confirmed that specific ferry times do not influence the overall network peak times.

**Table 3.1: Hourly Traffic Flows (vehicles) in 15-minute intervals**

Hour Starting	Total Flow	Hour Starting	Total Flow	Hour Starting	Total Flow
07:00	88	11:00	19	15:00	350
07:15	113	11:15	223	15:15	281
07:30	162	11:30	246	15:30	257
07:45	211	11:45	232	15:45	303
08:00	183	12:00	224	16:00	294
08:15	161	12:15	233	16:15	269
08:30	205	12:30	225	16:30	301
08:45	324	12:45	241	16:45	305
09:00	631	13:00	279	17:00	290
09:15	325	13:15	216	17:15	269
09:30	266	13:30	285	17:30	256
09:45	189	13:45	293	17:45	267
10:00	210	14:00	244	18:00	300
10:15	229	14:15	205	18:15	222
10:30	217	14:30	258	18:30	210
10:45	198	14:45	253	18:45	251

The times highlighted in green represent the peak hours within the VISSIM network.

### 3.2.3 Pedestrians

The base model contains a number of formal pedestrian facilities as listed in Table 2.2 which have been modelled as uncontrolled crossings. 20 pedestrians per hour in each direction have been added at each pedestrian crossing.

### 3.2.4 Traffic Control Systems

Priority rules were coded at all give-way locations and at roundabouts, with separate rules for HGVs with higher gap acceptance times. No stop signs or signals exist within the base year network.

### 3.2.5 Vehicle Types and Classes

VISSIM uses individual vehicle models that are grouped into vehicle types which are then grouped into vehicle classes. Vehicle classes for Car, Taxi, LGV, OGV1, OGV2, PSV, and Motorcycle were used within the model.

### 3.2.6 Vehicle Inputs and Composition

The MCTC surveys were plotted in unbalanced movement diagrams, which were then manually balanced so that upstream and downstream movements match throughout the network. This is done to correct differences between upstream and downstream surveyed counts at any point in the network. This is then used to derive the inputs at each entry point to the network in 15-minute intervals. The resulting balanced hourly flows are presented in Appendix A.

The vehicle type compositions were calculated directly from the traffic surveys.

### 3.2.7 Vehicle Routes

The vehicles were statically routed based on the balanced turning movements. All routes have been calculated for the AM and PM peaks in 15-minute intervals. Routes are coded into the model on a junction by junction basis.

### 3.2.8 Model Output

Measures of effectiveness have been coded and output from VISSIM including the following:

- Junction performance (average and maximum queue lengths and delays);
- Journey times; and,
- Network performance.

### 3.2.9 Random Seeds

As VISSIM is a stochastic model, the results differ slightly depending on the random seed assigned to each simulation run. Therefore, in order to obtain statistically significant results, the existing conditions peak hour models were simulated 16 times with different random seeds. Random seeds can be thought of as different days and therefore account for daily variation. The results presented are an average of the 16 random seed runs.

## 4 Model Calibration and Validation

### 4.1 Parameters to Calibrate Model

In order to confirm that the model is fit for the purpose of the evaluation of the development proposals and to provide credibility to results, it is necessary to calibrate and validate the model.

The calibration process involves changing the network set up and behavioural characteristics to achieve a match between observed and modelled data.

Model validation assesses the accuracy of the model by comparing traffic data from the model with independent traffic data not used in the model building process. Validation is directly linked to the calibration process as adjustments in calibration are needed to improve the model's ability to replicate field measured traffic conditions.

The Rosslare VISSIM model has been developed using default VISSIM parameters. However, during the process of calibration, some parameters were reviewed and adjusted to better fit observed driver behaviour. Key parameters and their calibration are summarised in the following paragraphs.

### 4.2 Calibration - Vehicle Following Behaviour and Link Types

The model is built on default values.

### 4.3 Calibration – Acceleration and Deceleration

Default values were assumed for rates of vehicle acceleration and deceleration, vehicle models and weight distributions.

### 4.4 Calibration - Links and Connectors

The default look back, lane change distances (200m) on turning connectors were altered to the appropriate length of the upstream links to match the advance road signs that traffic receives to enable it to move into the correct lanes in time.

### 4.5 Calibration - Priority Rules

All priority rules have been coded with default values for priority junctions.

### 4.6 Calibration - Speed Distributions

Speed distributions define the speeds at which vehicles will travel in free flow conditions. Speed distribution limits in the VISSIM network have been set to 50 kph for the majority of roads. Speed distributions when entering the Port have been decreased to 30 kph.

Reduced speed areas have been placed at all turning connectors throughout the network and on the circulatory of the roundabouts.

### 4.7 Calibration - Flows

The Geoffrey E. Havers (GEH) statistic is a standard way of comparing observed and modelled flows as defined in PAG. It is used to remove the bias that exists when comparing flows of different magnitudes using percentages. For example, a difference of 10 in a flow of 100

vehicles per hour (VPH) is less significant (GEH = 3.0) than a difference of 100 in a 1000 VPH flow (GEH = 11.5), even though they both show a percentage difference of 10%.

The GEH statistic is calculated as follows:

$$GEH = \sqrt{\frac{(M - C)^2}{(M + C)/2}}$$

Where:

GEH.....is the GEH statistic;

M.....is the modelled flow; and,

C.....is the observed flow

The accuracy of the modelled flows can also be assessed by comparing observed and modelled flows on an x-y plot and performing a linear regression analysis to calculate R<sup>2</sup>, and the slope of the regression line through the origin. Typically, a value of R<sup>2</sup> ≥ 0.95, and slope within the range 0.90 and 1.10 would imply that the modelled flows are a good fit within the observed flows. A slope exceeding unity implies that the model is over predicting flows, while a slope less than unity suggests that the model is under-predicting observed flows.

In summary the following set of acceptable ranges and limits have been used to assess model calibration based upon all turning movements within the study area where a direct comparison to count data exists:

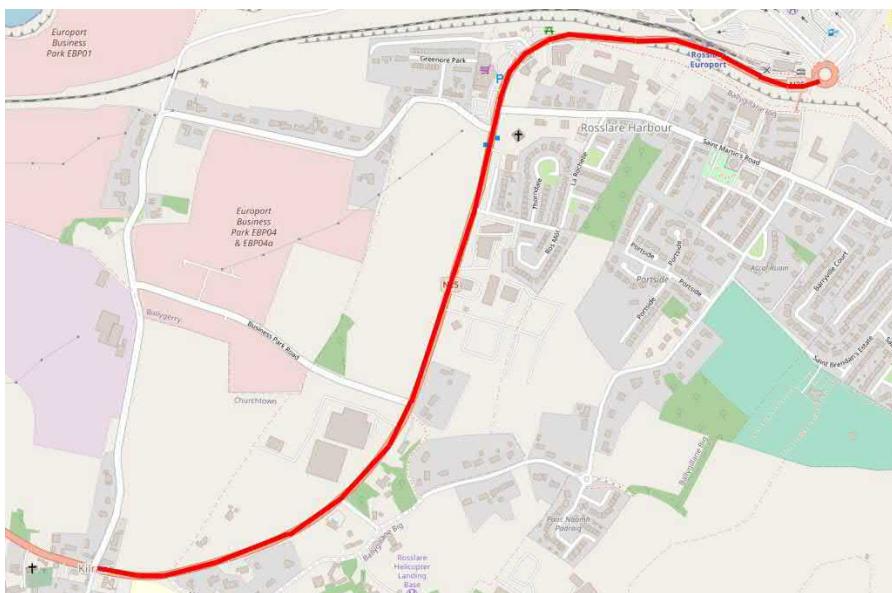
- GEH value: ≤ 5.0 in at least 85% of cases;
- R<sup>2</sup> value: greater than or equal to 0.95; and,
- Slope of linear regression: within the range 0.90 to 1.10.

Summary of compliance is shown in Sections 4.9.1 and 4.10.1

#### 4.8 Validation – Travel Times

The observed travel times from the journey time survey have been compared to the modelled travel times. All travel times have been weighted by the number of vehicles making the journey and have utilised the standard acceptance threshold of 15% from the observed average or 1 minute if higher. The travel time routes are shown in Figure 4.1 below.

**Figure 4.1: Travel Time Routes**



Source: Openstreetmap.org, 2020

The model has been validated against the journey times for the following sections:

- N25 Eastbound
- N25 Westbound

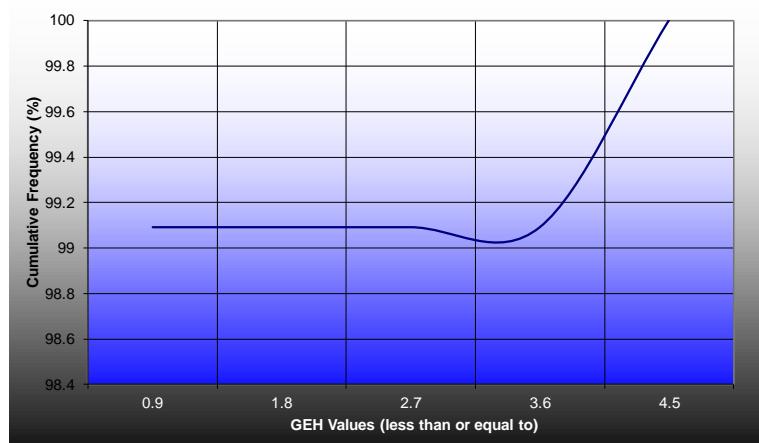
Summary of compliance is shown in Sections 4.9.2 and 4.10.2

## 4.9 2020 AM Peak Validation Results

### 4.9.1 Turning Movement Flow Validation

The GEH statistic assessments have been conducted on all turning movements at all junctions in the modelled network where an observed count was available. A cumulative frequency plot of the AM Peak GEH values is shown in Figure 4.2 below. The plot indicates that the model meets the first criteria in that 99% of cases are less than or equal to a GEH of 1.

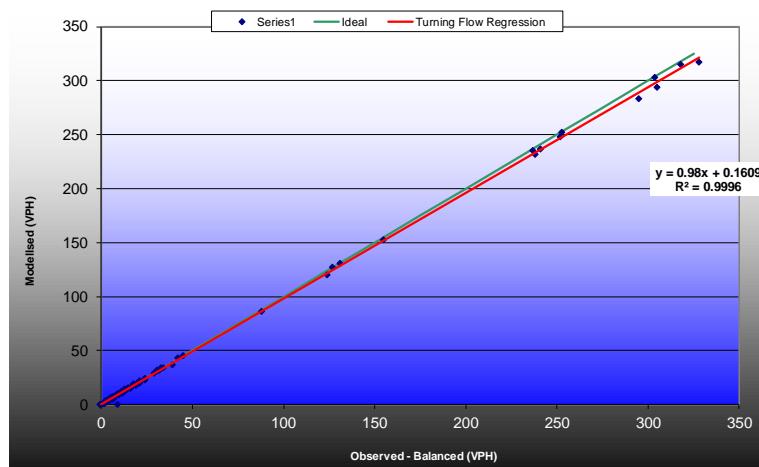
**Figure 4.2: 2020 AM Peak Cumulative Frequency of GEH Values**



The linear regression of the modelled total flows and observed total flows was also analysed. A high co-efficient correlation ( $R^2$ ) was achieved with the results shown in Figure 4.3. A value of  $R^2 = 1$  implies a perfect match while  $R^2 = 0$  an imperfect match between the observed and modelled flows.

Regression of the AM peak observed versus modelled flows showed an  $R^2$  value of 0.9996 and a slope of 0.98 demonstrating that the model also meets the second and third validation criteria.

**Figure 4.3: 2020 AM Peak Linear Regression of Traffic Flows**



In summary the AM Peak has met all three GEH validation criteria and is considered to be calibrated very well to the surveyed traffic flows.

A summary of the overall junction analysis results for the 2020 AM peak period model is shown in Table 4.1 below. The table shows the overall summary performance at each junction within the network during AM peak period. The full breakdown by approach is presented in Appendix K.

**Table 4.1: Junction Performance Results Summary 2020 AM Peak**

Node	Junction Description	Volume			Queue Length (m)		Delay (secs)	LOST
		Model	Count	Mod-Cnt % Diff*	Max	Average	Average	
101	N25 / Churchtown	612	626	-14 -2.2%	24	0	0.0	A
102	N25 / Ballyknockan	617	631	-14 -2.2%	10	0	0.0	A
103	N25 / New Road / Development	585	602	-17 -2.8%	15	0	2.0	A
104	New Road / Roche Freight	41	40	1 2.5%	0	0	0.0	A
105	New Road / Churchtown	52	52	0 0.0%	1	0	0.0	A
106	Marys Terrace / Churchtown	89	88	1 1.1%	4	0	1.0	A
107	Marys Terrace / Greenore Park	105	102	3 2.9%	2	0	0.0	A
108	N25 / Marys Terrace / St Martins	588	595	-7 -1.2%	20	0	1.0	A
109	Greenore Park T-Junction	30	29	1 3.4%	0	0	0.0	A
110	Small Boat Harbour Access	53	53	0 0.0%	0	0	0.0	A
111	Rosslare Harbour Entrance Roundabout	263	266	-3 -1.1%	28	0	2.0	A
112	N25 / Roche Freight	574	589	-15 -2.5%	2	0	1.0	A
113	N25 / Development Access	591	597	-6 -1.0%	15	0	0.0	A
<b>NETWORK TOTALS</b>								

#### 4.9.2 Travel Time Performance

Figure 4.4 shows the cumulative travel time route results in the peak hour with the modelled times in green, the observed shown in blue and 15% thresholds shown in red. We have chosen to assess using the 15% threshold as this is stricter than 1 minute for this journey time section.

**Figure 4.4: 2020 AM Peak Travel Times**

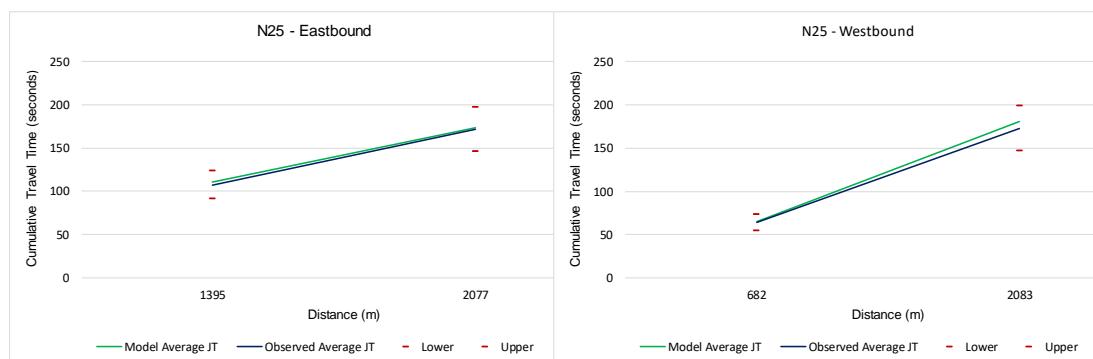


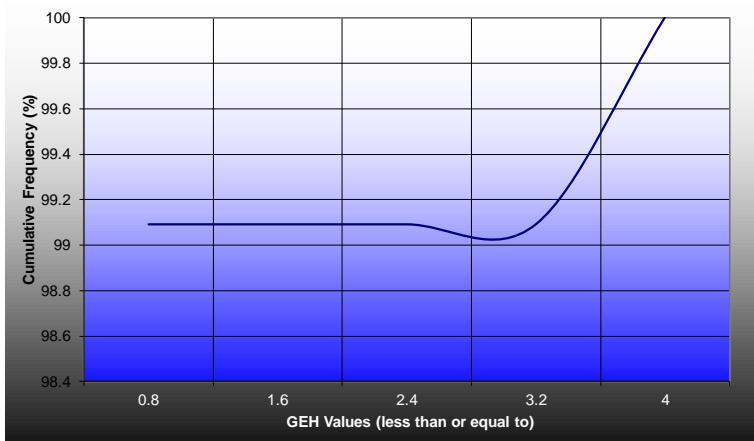
Figure 4.4 shows that all of the travel times fall within the 15% and the 1-minute validation threshold. The model is therefore considered to be validated well against the observed travel times in all directions.

## 4.10 2020 PM Peak Validation Results

### 4.10.1 Turning Movement Flow Validation

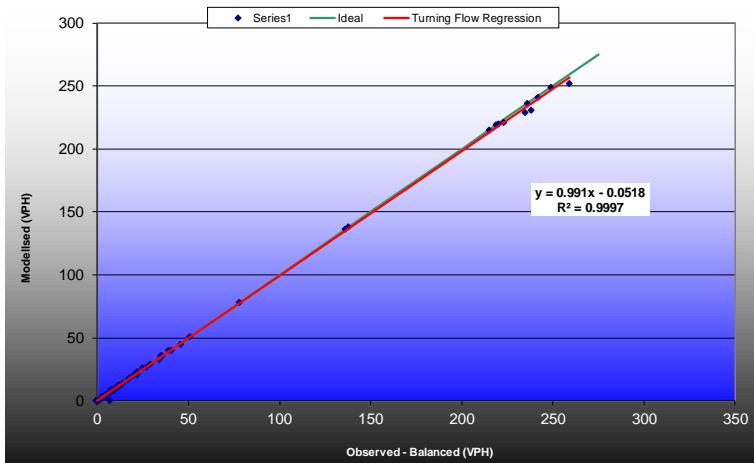
The GEH statistic assessments have been conducted on all turning movements at all junctions in the modelled network where an observed count was available. A cumulative frequency plot of the PM Peak GEH values is shown in Figure 4.5 Figure below. The plot indicates that the model meets the first criteria in that 99% of cases are less than or equal to a GEH of 1.

**Figure 4.5: 2020 PM Peak Cumulative Frequency of GEH Values**



The linear regression of the modelled total flows and observed total flows was also analysed with the results shown in Figure 4.6. Regression of the PM peak observed versus modelled flows showed an R<sup>2</sup> value of 0.9997 and a slope of 0.991 demonstrating that the model also meets the second and third validation criteria.

**Figure 4.6: 2020 PM Peak Linear Regression of Traffic Flows**



In summary the PM Peak has met all three GEH validation criteria and is considered to be calibrated very well to the surveyed traffic flows.

A summary of the overall junction analysis results for the 2020 PM peak period model is shown Table 4.2 below. The table shows the overall summary performance at each junction within the network during PM peak period. The full breakdown by approach is presented in Appendix K.

**Table 4.2: Junction Performance Results Summary 2020 PM Peak**

Junction		Volume			Queue Length (m)		Delay (secs)	LOST	
Node	Description	Model	Count	Mod-Cnt	% Diff*	Max	Average	Average	
101	N25 / Churchtown	493	502	-9	-1.8%	10	0	0.0	A
102	N25 / Ballyknockan	506	513	-7	-1.4%	8	0	0.0	A
103	N25 / New Road / Development	490	498	-8	-1.6%	11	0	1.0	A
104	New Road / Roche Freight	27	28	-1	-3.6%	0	0	0.0	A
105	New Road / Churchtown	22	22	0	0.0%	0	0	0.0	A
106	Marys Terrace / Churchtown	55	57	-2	-3.5%	1	0	1.0	A
107	Marys Terrace / Greenore Park	104	105	-1	-1.0%	3	0	0.0	A
108	N25 / Marys Terrace / St Martins	498	499	-1	-0.2%	19	0	1.0	A
109	Greenore Park T-Junction	56	54	2	3.7%	1	0	0.0	A
110	Small Boat Harbour Access	42	42	0	0.0%	1	0	0.0	A
111	Rosslare Harbour Entrance Roundabout	132	132	0	0.0%	5	0	1.0	A
112	N25 / Roche Freight	479	488	-9	-1.8%	4	0	1.0	A
113	N25 / Development Access	499	499	0	0.0%	8	0	0.0	A
<b>NETWORK TOTALS</b>									

#### 4.10.2 Travel Time Performance

Figure 4.7 shows the cumulative travel time route results in the peak hour with the modelled times in green, the observed shown in blue and 15% thresholds shown in red. We have chosen to assess using the 15% threshold as this is stricter than 1 minute for this journey time section.

**Figure 4.7: 2020 PM Peak Travel Times**

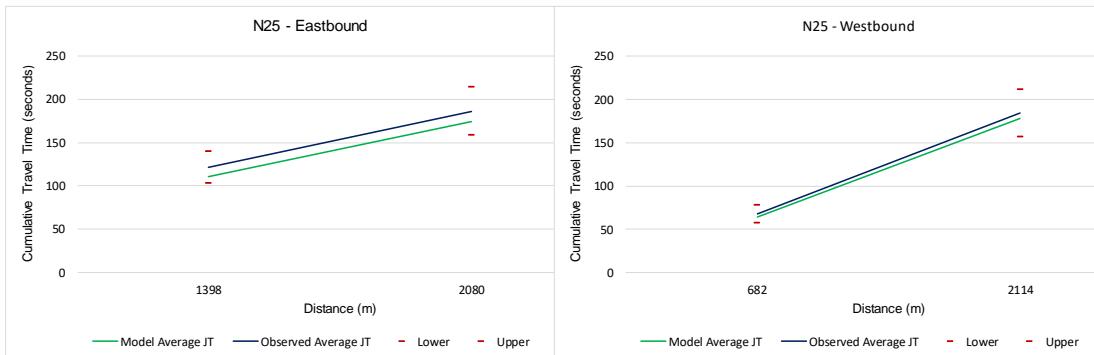


Figure 4.7 shows that all of the travel times fall within the 15% and the 1-minute validation threshold. The model is therefore considered to be validated well against the observed travel times in all directions.

# 5 Future Year Model Development

## 5.1 Introduction

The following sections summarise the changes made to the base model for the Future Year Development in network elements and flows. Results are then presented below for the network performance, junction performance and journey time sections. The results are a comparison of the average of 16 random seed runs for all options. The shaded cells, in the tables starting in section 5.4 onwards, represent the optimal performance of the forecast scenarios of each metric. The base figures are included for reference only. The forecast models are based on the calibrated and validated base models and developed for the design years 2023 (Opening Year), 2038 (Opening Year + 15 Years) and 2053 (Opening Year + 30 Years).

## 5.2 Traffic Growth Rates

The annual growth rates are based on PAG guidance (Unit 5.3) and estimated independent port growth provided by Rosslare Europort authority. Port growth of 20% has been applied from 2020 to 2025 (Based on Rosslare Europort Masterplan), PAG guidance for growth has been used thereafter. This results in the following growth rate for each year from the 2020 data.

**Table 5.1: Annual Growth Rates**

Design Year	Lights	Heavies	Port Lights	Port Heavies
2023	2.05%,	6.46%,	12%,	12%
2038	8.91%,	35.13%,	26.34%,	46.08%
2053	10.05%,	58.91%,	27.66%,	71.79%

PE-PAG-02017 Table 6.2

## 5.3 Option Testing

### 5.3.1 Option A

#### 5.3.1.1 Demand Changes

As this is the 'Do-Minimum' scenario, demand is increased in line with PAG growth and Masterplan rates as shown above in Table 5.1.

#### 5.3.1.2 Infrastructure Changes

The Ballygillane roundabout has been added at the N25/Ballygarry link road junction. This roundabout is also included for Options B and C.

**Figure 5.1: Ballygillane Roundabout**



### 5.3.2 Option B

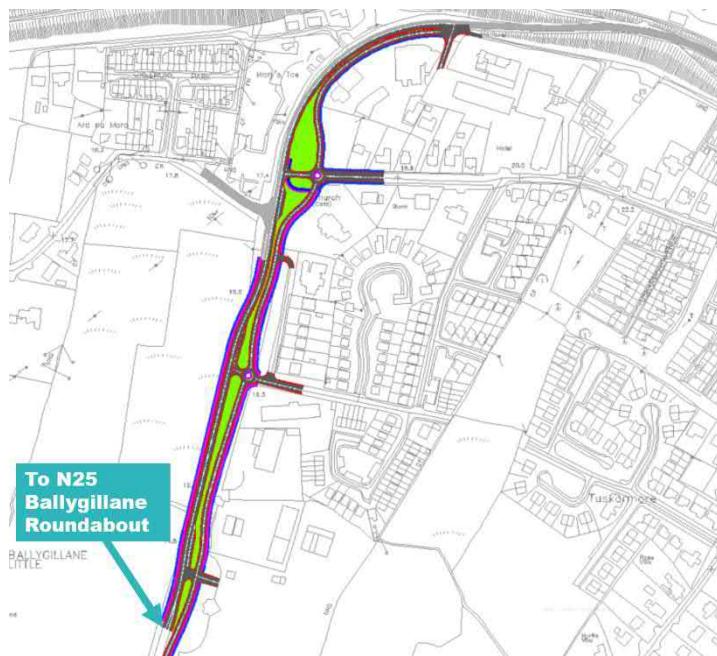
#### 5.3.2.1 Demand Changes

Demand will remain the same as Option A, with local traffic using the parallel link road wherever possible. Port traffic remains on the existing N25 road.

#### 5.3.2.2 Infrastructure Changes

A parallel link road is added along the east side of the N25 north of the Ballygillane Roundabout. This road will be utilised for local traffic wherever possible. Signals are added at the Marys Terrace/St Martins Road/N25 junction. These are coded with standard timings based on a similar location, which were then visually optimised within VISSIM, both for stage and cycle times.

**Figure 5.2: Link Road – Option B**



### 5.3.3 Option C

#### 5.3.3.1 Demand Changes

Demand will remain the same as Option A, with all port traffic being routed along the new harbour access road.

#### 5.3.3.2 Infrastructure Changes

Introduction of a new road corridor to provide an access route to Rosslare Europort. This option utilises the existing Ballygarry link road and begins at the new proposed N25 Ballygillane Roundabout on the existing N25. This can be seen in Figure 5.3. The solid line represents new infrastructure on the route, the dashed line represents use of existing infrastructure.

**Figure 5.3: New Road Corridor - Option C**



Source: Openstreetmap.org, 2020

## 5.4 Opening Year – 2023

### 5.4.1 AM Peak

#### 5.4.1.1 Network Performance

A comparison of the overall statistics for the network over the peak hour are shown in Table 5.2.

The shaded cells represent the optimal performance of the forecast scenarios of each metric.

**Table 5.2: 2023 AM Peak Network Performance Comparison**

Measure	Scenario		
	Option A	Option B	Option C
Remaining Vehicles in Network	24	26	25
Processed Vehicles	744	744	744
Total Distance Travelled (km)	2	2	2
Total Travel Time (h)	36	41	37
Total Network Delay (h)	2	6	2
Average Travel Time (mins)	2.8	3.2	2.9
Average Delay Time (mins)	0.1	0.5	0.1
Total Stopped Delay (h)	0	3	0
Average Stopped Delay (s)	0	16	0
Number of Stops	72	433	43
Average Number of Stops	0.1	0.6	0.1
Average Network Speed (kph)	45.8	40.3	47.9
Latent Demand (vehs)	0	0	0
Latent Delay (h)	0.0	0.0	0.0

Table 5.2 shows that Option A and C perform consistently better than Option B with a marginal difference between them. The average travel time is marginally better in Option A whereas the number of stops is lower in Option C. The main reason for this is the longer journey into the port in Option C, that allows port bound vehicles to pass through fewer junctions to get to the port.

#### 5.4.1.2 Junction Performance

A comparison of the overall junction performance statistics for volume, average queue length, delay and Level of Service (LOS) for junctions within the network over the peak hour are shown in Table 5.3. The comparison of the full turning movements is provided in Appendices L, M and N.

The LOS is an American concept derived from the Highway Capacity Manual (2000). It rates performance on an A to F grading based upon delay thresholds as follows:

- LOS A - 0 to 10 seconds;
- LOS B - 10 to 20 seconds (10 to 15 seconds for unsignalised);
- LOS C - 20 to 35 seconds (15 to 25 seconds for unsignalised);
- LOS D - 35 to 55 seconds (25 to 35 seconds for unsignalised);
- LOS E - 55 to 80 seconds (35 to 50 seconds for unsignalised); and,
- LOS F - Over 80 seconds (over 50 seconds for unsignalised).

A LOS grade E is considered to be at capacity whilst a LOS of F is considered to be over capacity.

**Table 5.3: 2023 AM Peak Overall Junction Performance Comparison**

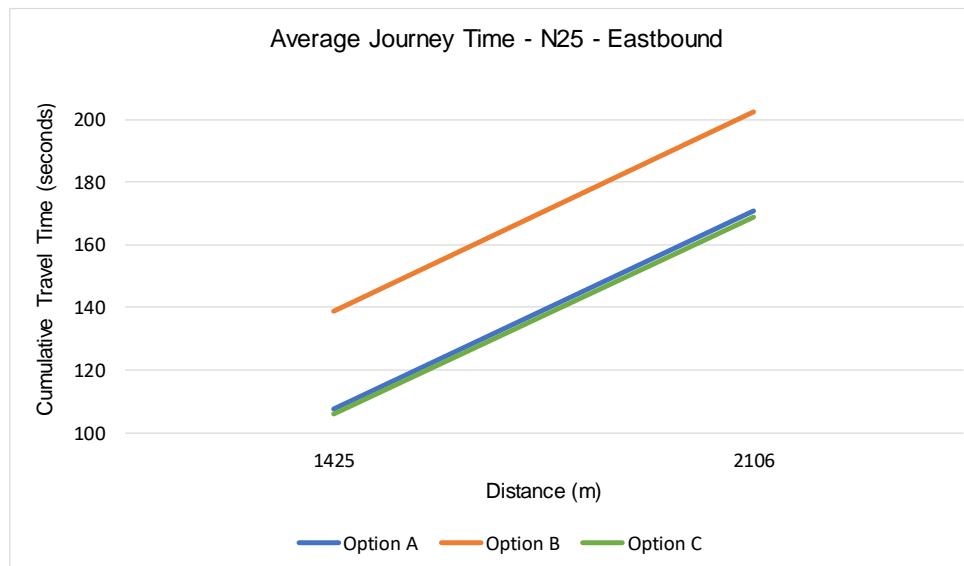
Node	Description	Volume General Traffic (GT)			Avg Q Length (m)			Delay (s)			LOS		
		A	B	C	A	B	C	A	B	C	A	B	C
101	N25 / Churchtown	632	629	672	0	0	0	0	1	1	A	A	A
102	N25 / Ballyknockan	638	636	658	0	0	0	0	0	0	A	A	A
103	N25 / New Road / Development Roundabout	608	606	628	0	0	0	2	2	2	A	A	A
104	New Road / Roche Freight	40	40	311	0	0	0	0	0	0	A	A	A
105	New Road / Churchtown	54	52	140	0	0	0	0	0	2	A	A	A
106	Marys Terrace / Churchtown	86	85	86	0	0	0	0	1	1	A	A	A
107	Marys Terrace / Greenore Park	101	99	100	0	0	0	0	0	0	A	A	A
108	N25 / Marys Terrace / St Martins	599	483	349	0	8	0	1	32	1	A	C	A
109	Greenore Park T-Junction	29	28	28	0	0	0	0	0	0	A	A	A
110	Small Boat Harbour Access	50	50	259	0	0	0	0	0	1	A	A	A
111	Rosslare Harbour Entrance Roundabout	284	283	31	0	0	0	2	2	1	A	A	A
112	N25 / Roche Freight	594	593	616	0	0	0	0	0	0	A	A	A
113	N25 / Development Access	604	477	355	0	0	0	0	0	0	A	A	A
203	N25 / Link Road South	-	585	-	-	0	-	-	0	-	-	A	-
204	Link Road / N25 South	-	110	-	-	0	-	-	1	-	-	A	-
209	N25 / St Martins Terrace / Link Road	-	291	-	-	0	-	-	1	-	-	A	-
210	N25 / Link Road North	-	259	-	-	0	-	-	0	-	-	A	-
214	N25 / Link Road / Development Roundabout	-	167	-	-	0	-	-	1	-	-	A	-
307	Ballygarry Link Road / Churchtown	-	-	258	-	-	0	-	-	0	-	-	A
<b>NETWORK TOTALS</b>		-	-	-	0.0	0.4	0.0	0.4	2.3	0.6	-	-	-

Table 5.3 shows that the results are consistent with the network performance in that overall all options perform largely the same with Option B performing slightly worse at the N25/Marys Terrace/St Martins Junction (108) with a Level of Service of C.

#### 5.4.1.3 Journey Time Comparison

A comparison of the cumulative journey times for the eastbound and westbound routes along the N25 routes are shown in Figure 5.4 and Figure 5.5 respectively.

**Figure 5.4: 2023 AM Peak Eastbound Cumulative Journey Time Comparison**



**Figure 5.5: 2023 AM Peak Westbound Cumulative Journey Time Comparison**

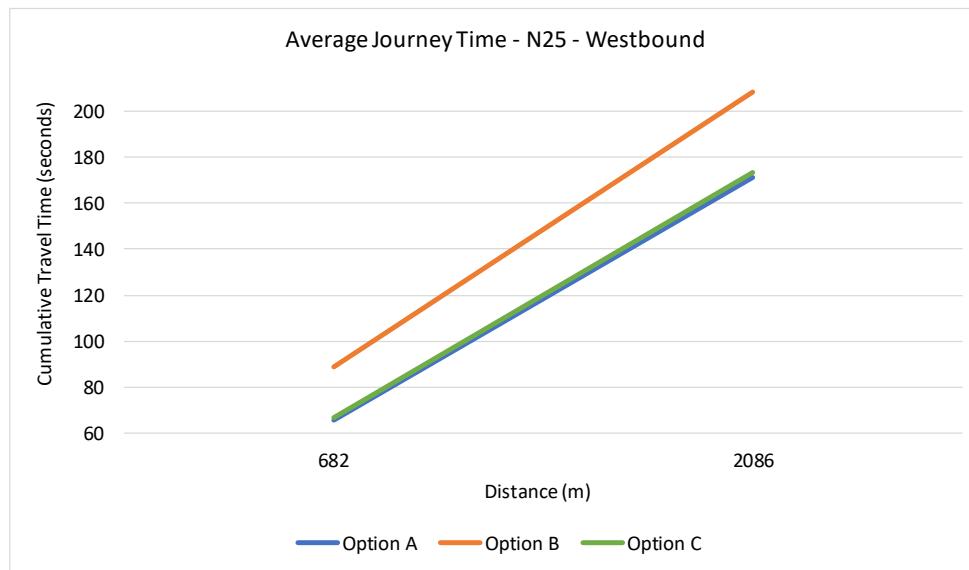


Figure 5.4 and Figure 5.5 shows that Option B is slower than Options A and C. This is due to the added signalised junction at the Marys Terrace/St Martins Road/N25 junction despite signal optimisation. This is due to the free-flowing nature of this junction in Options A and C, whereas Option B introduces delay at this location.

#### 5.4.2 PM Peak

##### 5.4.2.1 Network Performance

A comparison of the overall statistics for the network over the peak hour are shown in Table 5.4.

The shaded cells represent the optimal performance of the forecast scenarios of each metric.

**Table 5.4: 2023 PM Peak Network Performance Comparison**

Measure	Scenario		
	Option A	Option B	Option C
Remaining Vehicles in Network	25	28	26
Processed Vehicles	596	595	596
Total Distance Travelled (km)	1	1	1
Total Travel Time (h)	27	31	28
Total Network Delay (h)	1	5	1
Average Travel Time (mins)	2.6	3.0	2.7
Average Delay Time (mins)	0.1	0.4	0.1
Total Stopped Delay (h)	0	2	0
Average Stopped Delay (s)	0	14	0
Number of Stops	19	296	16
Average Number of Stops	0.0	0.5	0.0
Average Network Speed (kph)	46.9	41.1	48.0
Latent Demand (vehs)	0	0	0
Latent Delay (h)	0.0	0.0	0.0

Table 5.4 shows that Option A and C perform consistently better than Option B with a marginal difference between them. The average travel time is marginally better in Option A whereas the number of stops is lower in Option C. The main reason for this is the longer journey into the port in Option C, that allows port bound vehicles to pass through fewer junctions to get to the port.

#### 5.4.2.2 Junction Performance

A comparison of the overall junction performance statistics for junctions within the network over the peak hour are shown in Table 5.5. The comparison of the full turning movements is provided in Appendix L, M and N.

**Table 5.5: 2023 PM Peak Overall Junction Performance Comparison**

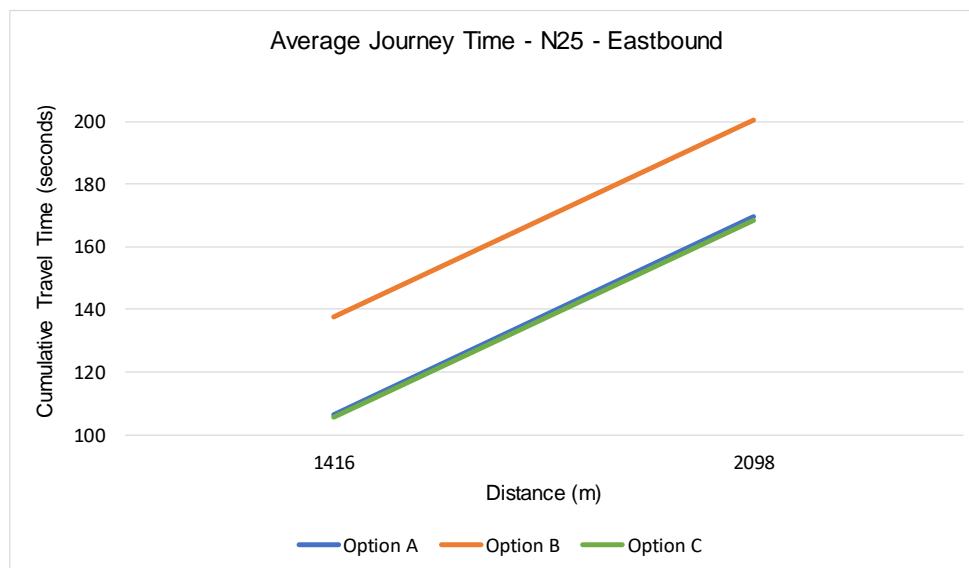
Node	Description	Volume General Traffic (GT)			Avg Q Length (m)			Delay (s)			LOS		
		A	B	C	A	B	C	A	B	C	A	B	C
101	N25 / Churchtown	505	505	524	0	0	0	0	0	0	A	A	A
102	N25 / Ballyknockan	521	521	522	0	0	0	0	0	0	A	A	A
103	N25 / New Road / Development Roundabout	505	505	507	0	0	0	1	1	1	A	A	A
104	New Road / Roche Freight	27	28	145	0	0	0	0	0	0	A	A	A
105	New Road / Churchtown	23	23	61	0	0	0	0	0	2	A	A	A
106	Marys Terrace / Churchtown	56	56	55	0	0	0	0	1	1	A	A	A
107	Marys Terrace / Greenore Park	106	105	103	0	0	0	0	0	0	A	A	A
108	N25 / Marys Terrace / St Martins	509	381	392	0	5	0	1	30	1	A	C	A
109	Greenore Park T-Junction	56	55	54	0	0	0	0	0	0	A	A	A
110	Small Boat Harbour Access	42	42	135	0	0	0	0	0	0	A	A	A
111	Rosslare Harbour Entrance Roundabout	141	141	28	0	0	0	1	1	1	A	A	A
112	N25 / Roche Freight	496	496	498	0	0	0	0	0	0	A	A	A
113	N25 / Development Access	509	375	392	0	0	0	0	0	0	A	A	A
203	N25 / Link Road South	-	496	-	-	0	-	-	0	-	-	A	-
204	Link Road / N25 South	-	121	-	-	0	-	-	1	-	-	A	-
209	N25 / St Martins Terrace / Link Road	-	316	-	-	0	-	-	1	-	-	A	-
210	N25 / Link Road North	-	134	-	-	0	-	-	0	-	-	A	-
214	N25 / Link Road / Development Roundabout	-	173	-	-	0	-	-	1	-	-	A	-
307	Ballygerry Link Road / Churchtown	-	-	134	-	-	0	-	-	0	-	-	A
<b>NETWORK TOTALS</b>		-	-	-	0.0	0.3	0.0	0.2	2.0	0.4	-	-	-

Table 5.5 shows that the results are consistent with the network performance in that overall all options perform largely the same with Option B performing slightly worse at the N25/Marys Terrace/St Martins Junction (108) with a Level of service of C.

#### 5.4.2.3 Journey Time Comparison

A comparison of the cumulative journey times for the eastbound and westbound routes along the N25 routes are shown in Figure 5.6 and Figure 5.7 respectively.

**Figure 5.6: 2023 PM Peak Eastbound Cumulative Journey Time Comparison**



**Figure 5.7: 2023 PM Peak Westbound Cumulative Journey Time Comparison**

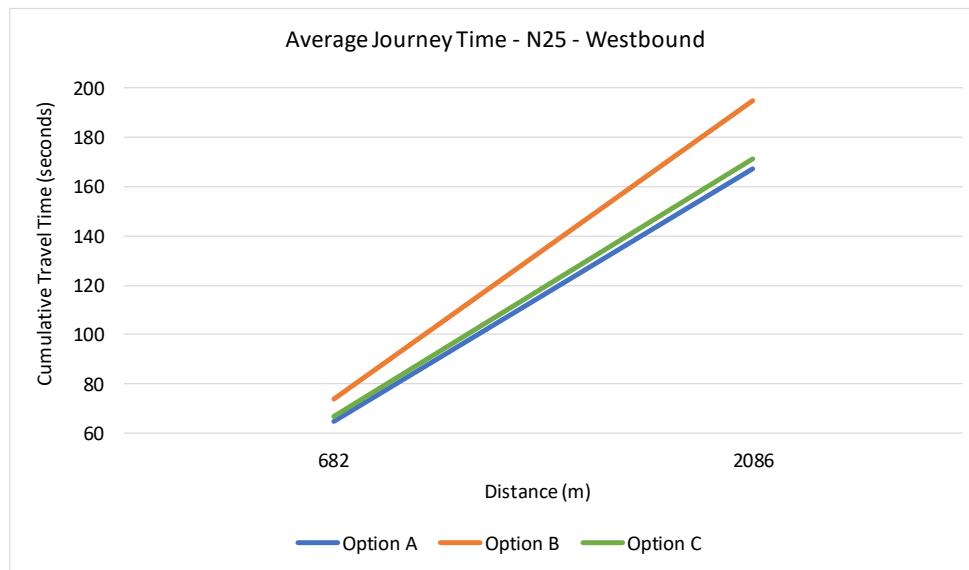


Figure 5.6 and Figure 5.7 shows that Option B is slower than Options A and C. This is due to the added signalised junction at the Marys Terrace/St Martins Road/N25 junction despite signal optimisation. This is due to the free-flowing nature of this junction in Options A and C, whereas Option B introduces delay at this location.

## 5.5 Design Year – 2038

### 5.5.1 AM Peak

#### 5.5.1.1 Network Performance

A comparison of the overall statistics for the network over the peak hour are shown in Table 5.6.

**Table 5.6: 2038 AM Peak Network Performance Comparison**

Measure	Scenario		
	Option A	Option B	Option C
Remaining Vehicles in Network	27	30	28
Processed Vehicles	806	805	805
Total Distance Travelled (km)	2	2	2
Total Travel Time (h)	40	47	41
Total Network Delay (h)	2	8	2
Average Travel Time (mins)	2.9	3.4	3.0
Average Delay Time (mins)	0.1	0.6	0.2
Total Stopped Delay (h)	0	4	0
Average Stopped Delay (s)	0	19	0
Number of Stops	88	543	52
Average Number of Stops	0.1	0.7	0.1
Average Network Speed (kph)	45.5	39.5	47.8
Latent Demand (vehs)	0	0	0
Latent Delay (h)	0.0	0.0	0.0

Table 5.6 shows that Option A and C perform consistently better than Option B with a marginal difference between them. The average travel time is marginally better in Option A whereas the number of stops is lower in Option C. The main reason for this is the longer journey into the port in Option C, that allows port bound vehicles to pass through fewer junctions to get to the port.

### 5.5.1.2 Junction Performance

A comparison of the overall junction performance statistics for junctions within the network over the peak hour are shown in Table 5.7. The comparison of the full turning movements is provided in Appendices O, P and Q.

**Table 5.7: 2038 AM Peak Overall Junction Performance Comparison**

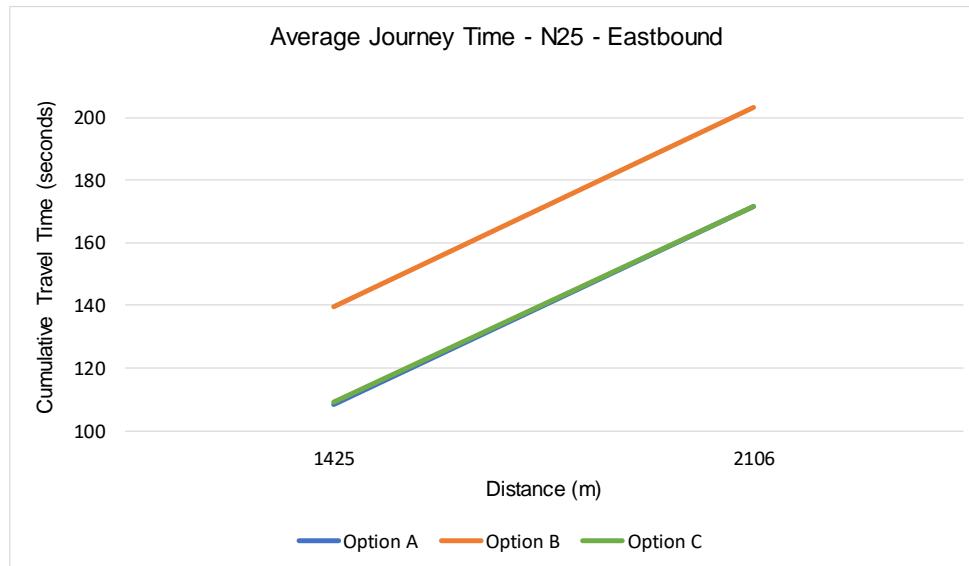
Node	Description	Volume General Traffic (GT)			Avg Q Length (m)			Delay (s)			LOS		
		A	B	C	A	B	C	A	B	C	A	B	C
101	N25 / Churchtown	688	684	735	0	0	0	0	1	1	A	A	A
102	N25 / Ballyknockan	698	695	718	0	0	0	0	0	0	A	A	A
103	N25 / New Road / Development Roundabout	669	668	688	0	0	0	2	3	2	A	A	A
104	New Road / Roche Freight	42	41	364	0	0	0	0	0	0	A	A	A
105	New Road / Churchtown	55	54	156	0	0	0	0	0	2	A	A	A
106	Marys Terrace / Churchtown	86	83	82	0	0	0	0	1	1	A	A	A
107	Marys Terrace / Greenore Park	98	98	97	0	0	0	0	0	0	A	A	A
108	N25 / Marys Terrace / St Martins	660	542	354	0	11	0	1	34	1	A	C	A
109	Greenore Park T-Junction	28	28	28	0	0	0	0	0	0	A	A	A
110	Small Boat Harbour Access	46	46	299	0	0	0	0	0	1	A	A	A
111	Rosslare Harbour Entrance Roundabout	340	341	39	0	0	0	2	2	1	A	A	A
112	N25 / Roche Freight	652	650	673	0	0	0	0	0	0	A	A	A
113	N25 / Development Access	665	537	361	0	0	0	0	0	0	A	A	A
203	N25 / Link Road South	-	646	-	-	0	-	-	0	-	-	A	-
204	Link Road / N25 South	-	111	-	-	0	-	-	1	-	-	A	-
209	N25 / St Martins Terrace / Link Road	-	295	-	-	0	-	-	1	-	-	A	-
210	N25 / Link Road North	-	314	-	-	0	-	-	1	-	-	A	-
214	N25 / Link Road / Development Roundabout	-	167	-	-	0	-	-	1	-	-	A	-
307	Ballygerry Link Road / Churchtown	-	-	298	-	-	0	-	-	0	-	-	A
<b>NETWORK TOTALS</b>		-	-	-	0.0	0.6	0.0	0.4	2.5	0.6	-	-	-

Table 5.7 shows that the results are consistent with the network performance in that overall all options perform largely the same with Option B performing slightly worse at the N25/Marys Terrace/St Martins Junction (108) with a Level of Service of C.

### 5.5.1.3 Journey Time Comparison

A comparison of the cumulative journey times for the eastbound and westbound routes along the N25 routes are shown in Figure 5.8 and Figure 5.9 respectively.

**Figure 5.8: 2038 AM Peak Eastbound Cumulative Journey Time Comparison**



**Figure 5.9: 2038 AM Peak Westbound Cumulative Journey Time Comparison**

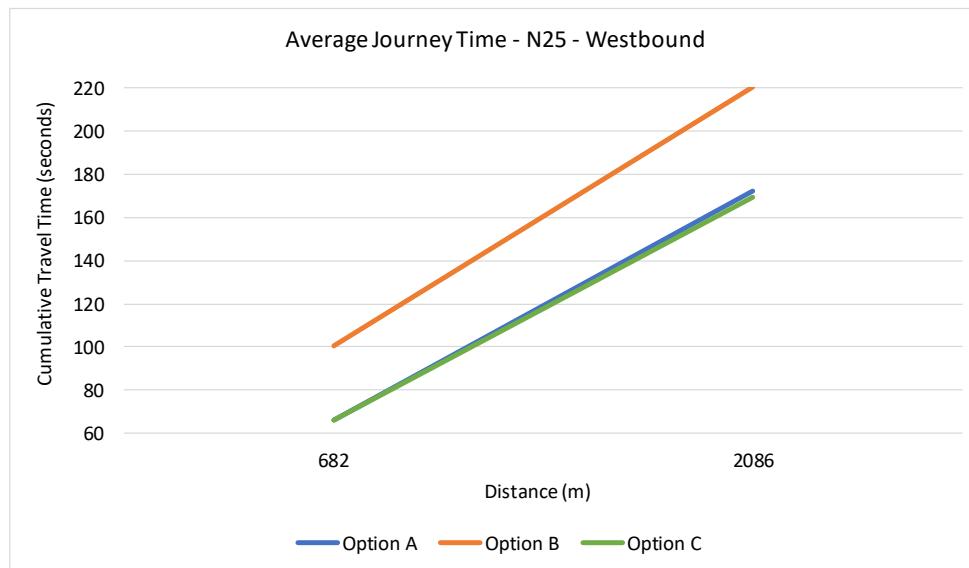


Figure 5.8 and Figure 5.9 shows that Option B is slower than Options A and C. This is due to the added signalised junction at the Marys Terrace/St Martins Road/N25 junction despite signal optimisation. This is due to the free-flowing nature of this junction in Options A and C, whereas Option B introduces delay at this location.

## 5.5.2 PM Peak

### 5.5.2.1 Network Performance

A comparison of the overall statistics for the network over the peak hour are shown in Table 5.8.

**Table 5.8: 2038 PM Peak Network Performance Comparison**

Measure	Scenario		
	Option A	Option B	Option C
Remaining Vehicles in Network	30	32	30
Processed Vehicles	651	653	653
Total Distance Travelled (km)	1	1	1
Total Travel Time (h)	30	34	31
Total Network Delay (h)	1	5	1
Average Travel Time (mins)	2.6	3.0	2.7
Average Delay Time (mins)	0.1	0.5	0.1
Total Stopped Delay (h)	0	3	0
Average Stopped Delay (s)	0	14	0
Number of Stops	28	335	22
Average Number of Stops	0.0	0.5	0.0
Average Network Speed (kph)	46.7	41.0	48.0
Latent Demand (vehs)	0	0	0
Latent Delay (h)	0.0	0.0	0.0

Table 5.8 shows that Option A and C perform consistently better than Option B with a marginal difference between them. The average travel time is marginally better in Option A whereas the number of stops is lower in Option C. The main reason for this is the longer journey into the port in Option C, that allows port bound vehicles to pass through fewer junctions to get to the port.

### 5.5.2.2 Junction Performance

A comparison of the overall junction performance statistics for junctions within the network over the peak hour are shown in Table 5.9. The comparison of the full turning movements is provided in Appendices O, P and Q.

**Table 5.9: 2038 PM Peak Overall Junction Performance Comparison**

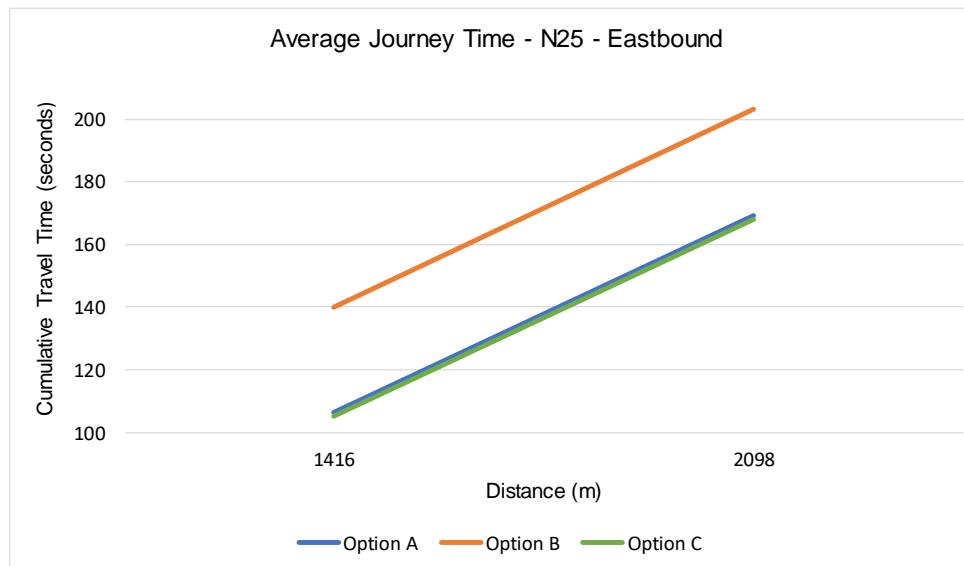
Node	Description	Volume General Traffic (GT)			Avg Q Length (m)			Delay (s)			LOS		
		A	B	C	A	B	C	A	B	C	A	B	C
101	N25 / Churchtown	557	555	581	0	0	0	0	0	0	A	A	A
102	N25 / Ballyknockan	573	572	575	0	0	0	0	0	0	A	A	A
103	N25 / New Road / Development Roundabout	556	555	555	0	0	0	1	2	1	A	A	A
104	New Road / Roche Freight	28	28	170	0	0	0	0	0	0	A	A	A
105	New Road / Churchtown	22	22	71	0	0	0	0	0	2	A	A	A
106	Marys Terrace / Churchtown	59	59	57	0	0	0	1	1	1	A	A	A
107	Marys Terrace / Greenore Park	113	113	110	0	0	0	0	0	0	A	A	A
108	N25 / Marys Terrace / St Martins	559	423	416	0	6	0	1	31	1	A	C	A
109	Greenore Park T-Junction	61	61	60	0	0	0	0	0	0	A	A	A
110	Small Boat Harbour Access	45	46	158	0	0	0	0	0	0	A	A	A
111	Rosslare Harbour Entrance Roundabout	168	169	32	0	0	0	1	1	1	A	A	A
112	N25 / Roche Freight	544	542	546	0	0	0	0	0	0	A	A	A
113	N25 / Development Access	558	417	416	0	0	0	0	0	0	A	A	A
203	N25 / Link Road South	-	543	-	-	0	-	-	0	-	-	A	-
204	Link Road / N25 South	-	125	-	-	0	-	-	1	-	-	A	-
209	N25 / St Martins Terrace / Link Road	-	338	-	-	0	-	-	1	-	-	A	-
210	N25 / Link Road North	-	159	-	-	0	-	-	0	-	-	A	-
214	N25 / Link Road / Development Roundabout	-	182	-	-	0	-	-	1	-	-	A	-
307	Ballygarry Link Road / Churchtown	-	-	158	-	-	0	-	-	0	-	-	A
<b>NETWORK TOTALS</b>		-	-	-	0.0	0.3	0.0	0.3	2.1	0.4	-	-	-

Table 5.9 shows that the results are consistent with the network performance in that overall all options perform largely the same with Option B performing slightly worse at the N25/Marys Terrace/St Martins Junction (108) with a Level of Service of C.

### 5.5.2.3 Journey Time Comparison

A comparison of the cumulative journey times for the eastbound and westbound routes along the N25 routes are shown in Figure 5.10 and Figure 5.11 respectively.

**Figure 5.10: 2038 PM Peak Eastbound Cumulative Journey Time Comparison**



**Figure 5.11: 2038 PM Peak Westbound Cumulative Journey Time Comparison**

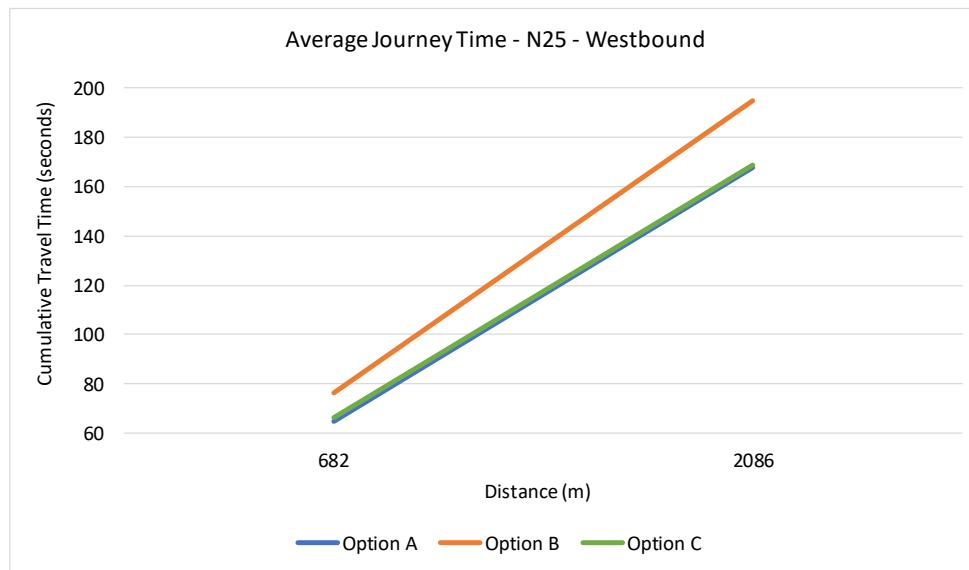


Figure 5.10 and Figure 5.11 shows that Option B is slower than Options A and C. This is due to the added signalised junction at the Marys Terrace/St Martins Road/N25 junction despite signal optimisation. This is due to the free-flowing nature of this junction in Options A and C, whereas Option B introduces delay at this location.

## 5.6 Forecast Year – 2053

### 5.6.1 AM Peak

#### 5.6.1.1 Network Performance

A comparison of the overall statistics for the network over the peak hour are shown in Table 5.10.

**Table 5.10: 2053 AM Peak Network Performance Comparison**

Measure	Scenario		
	Option A	Option B	Option C
Remaining Vehicles in Network	29	31	29
Processed Vehicles	853	853	854
Total Distance Travelled (km)	2	2	2
Total Travel Time (h)	43	50	44
Total Network Delay (h)	2	9	2
Average Travel Time (mins)	2.9	3.4	3.0
Average Delay Time (mins)	0.2	0.6	0.2
Total Stopped Delay (h)	0	5	0
Average Stopped Delay (s)	0	21	0
Number of Stops	110	642	73
Average Number of Stops	0.1	0.7	0.1
Average Network Speed (kph)	45.3	38.8	47.7
Latent Demand (vehs)	0	0	0
Latent Delay (h)	0.0	0.0	0.0

Table 5.10 shows that Option A and C perform consistently better than Option B with a marginal difference between them. The average travel time is marginally better in Option A whereas the

number of stops is lower in Option C. The main reason for this is the longer journey into the port in Option C, that allows port bound vehicles to pass through fewer junctions to get to the port.

#### 5.6.1.2 Junction Performance

A comparison of the overall junction performance statistics for junctions within the network over the peak hour are shown in Table 5.11. The comparison of the full turning movements is provided in Appendices R, S and T.

**Table 5.11: 2053 AM Peak Overall Junction Performance Comparison**

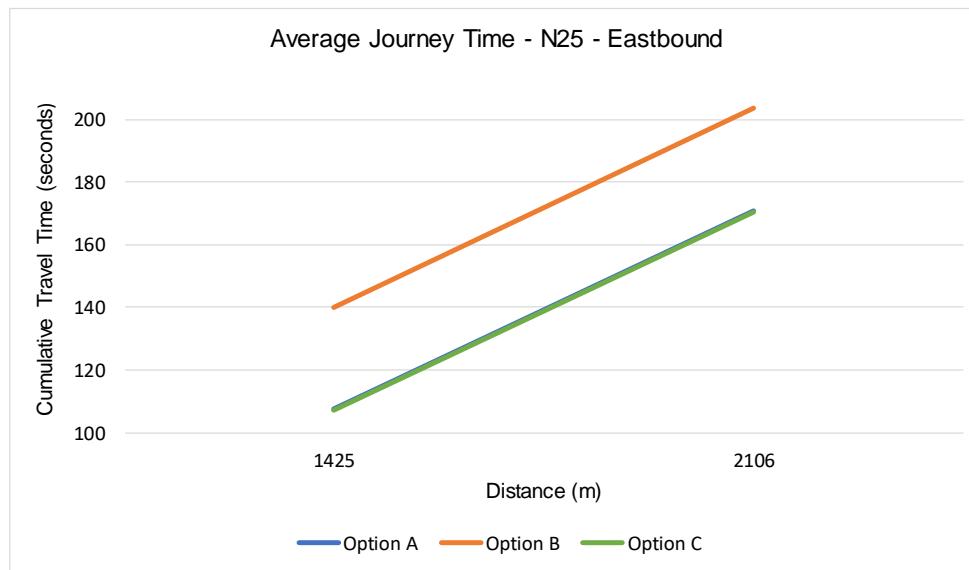
Node	Description	Volume General Traffic (GT)			Avg Q Length (m)			Delay (s)			LOS		
		A	B	C	A	B	C	A	B	C	A	B	C
101	N25 / Churchtown	722	721	776	0	0	0	1	1	1	A	A	A
102	N25 / Ballyknockan	734	732	756	0	0	0	0	0	0	A	A	A
103	N25 / New Road / Development Roundabout	701	701	724	0	0	0	2	3	2	A	A	A
104	New Road / Roche Freight	51	51	397	0	0	0	0	0	0	A	A	A
105	New Road / Churchtown	56	55	165	0	0	0	0	0	2	A	A	A
106	Marys Terrace / Churchtown	88	88	85	0	0	0	0	1	1	A	A	A
107	Marys Terrace / Greenvore Park	103	102	99	0	0	0	0	0	0	A	A	A
108	N25 / Marys Terrace / St Martins	688	570	362	0	14	0	2	35	1	A	C	A
109	Greenvore Park T-Junction	29	29	29	0	0	0	0	0	0	A	A	A
110	Small Boat Harbour Access	50	50	321	0	0	0	0	0	1	A	A	A
111	Rosslare Harbour Entrance Roundabout	368	368	46	0	0	0	2	2	1	A	A	A
112	N25 / Roche Freight	686	685	709	0	0	0	0	0	0	A	A	A
113	N25 / Development Access	692	561	369	0	0	0	0	0	0	A	A	A
203	N25 / Link Road South	-	674	-	-	0	-	-	0	-	-	A	-
204	Link Road / N25 South	-	115	-	-	0	-	-	2	-	-	A	-
209	N25 / St Martins Terrace / Link Road	-	303	-	-	0	-	-	1	-	-	A	-
210	N25 / Link Road North	-	336	-	-	1	-	-	4	-	-	A	-
214	N25 / Link Road / Development Roundabout	-	173	-	-	0	-	-	1	-	-	A	-
307	Ballygerry Link Road / Churchtown	-	-	321	-	-	0	-	-	0	-	-	A
<b>NETWORK TOTALS</b>		-	-	-	0.0	0.8	0.0	0.5	2.8	0.6	-	-	-

Table 5.11 shows that the results are consistent with the network performance in that overall all options perform largely the same with Option B performing slightly worse at the N25/Marys Terrace/St Martins Junction (108) with a Level of service of C.

#### 5.6.1.3 Journey Time Comparison

A comparison of the cumulative journey times for the eastbound and westbound routes along the N25 routes are shown in Figure 5.12 and Figure 5.13 respectively.

**Figure 5.12: 2053 AM Peak Eastbound Cumulative Journey Time Comparison**



**Figure 5.13: 2053 AM Peak Westbound Cumulative Journey Time Comparison**

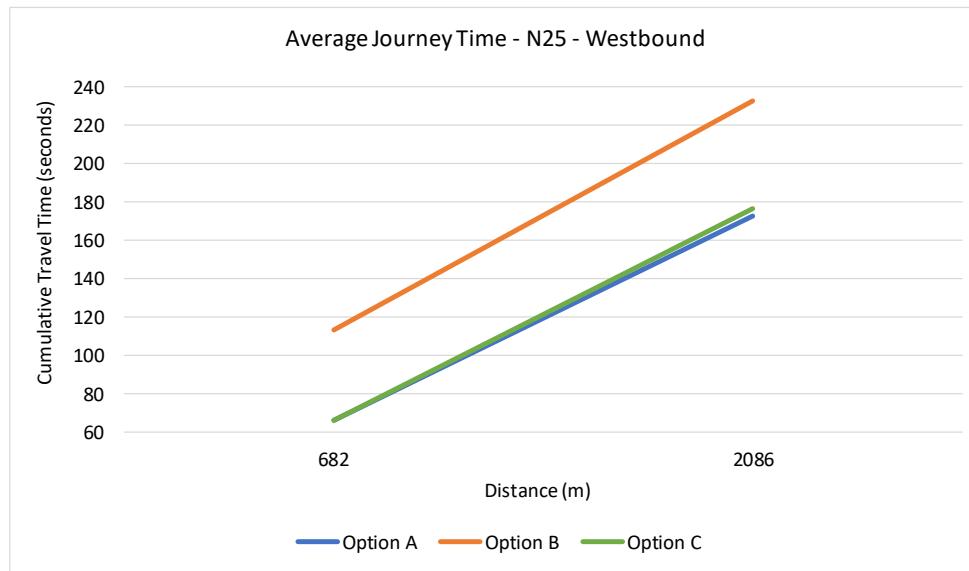


Figure 5.12 and Figure 5.13 shows that Option B is slower than Options A and C. This is due to the added signalised junction at the Marys Terrace/St Martins Road/N25 junction despite signal optimisation. This is due to the free-flowing nature of this junction in Options A and C, whereas Option B introduces delay at this location.

## 5.6.2 PM Peak

### 5.6.2.1 Network Performance

A comparison of the overall statistics for the network over the peak hour are shown in Table 5.12.

**Table 5.12: 2053 PM Peak Network Performance Comparison**

Measure	Scenario		
	Option A	Option B	Option C
Remaining Vehicles in Network	30	33	31
Processed Vehicles	693	694	693
Total Distance Travelled (km)	1	1	2
Total Travel Time (h)	32	37	33
Total Network Delay (h)	1	6	2
Average Travel Time (mins)	2.6	3.0	2.7
Average Delay Time (mins)	0.1	0.5	0.1
Total Stopped Delay (h)	0	3	0
Average Stopped Delay (s)	0	14	0
Number of Stops	33	360	26
Average Number of Stops	0.0	0.5	0.0
Average Network Speed (kph)	46.6	40.9	48.0
Latent Demand (vehs)	0	0	0
Latent Delay (h)	0.0	0.0	0.0

Table 5.12 shows that Option A and C perform consistently better than Option B with a marginal difference between them. The average travel time is marginally better in Option A whereas the number of stops is lower in Option C. The main reason for this is the longer journey into the port in Option C, that allows port bound vehicles to pass through fewer junctions to get to the port.

### 5.6.2.2 Junction Performance

A comparison of the overall junction performance statistics for junctions within the network over the peak hour are shown in Table 5.13. The comparison of the full turning movements is provided in Appendices R, S and T.

**Table 5.13: 2053 PM Peak Overall Junction Performance Comparison**

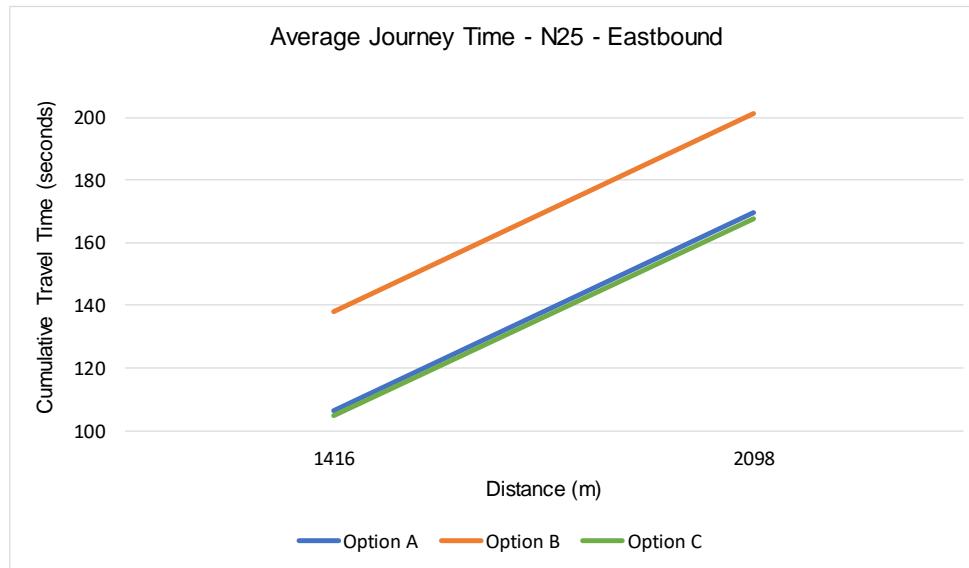
Node	Description	Volume General Traffic (GT)			Avg Q Length (m)			Delay (s)			LOS		
		A	B	C	A	B	C	A	B	C	A	B	C
101	N25 / Churchtown	586	585	613	0	0	0	0	0	0	A	A	A
102	N25 / Ballyknockan	604	604	604	0	0	0	0	0	0	A	A	A
103	N25 / New Road / Development Roundabout	583	582	583	0	0	0	1	2	2	A	A	A
104	New Road / Roche Freight	33	33	193	0	0	0	0	0	0	A	A	A
105	New Road / Churchtown	21	21	79	0	0	0	0	0	2	A	A	A
106	Marys Terrace / Churchtown	61	62	61	0	0	0	1	1	1	A	A	A
107	Marys Terrace / Greenore Park	115	116	112	0	0	0	0	0	0	A	A	A
108	N25 / Marys Terrace / St Martins	585	451	425	0	6	0	1	31	1	A	C	A
109	Greenore Park T-Junction	61	60	59	0	0	0	0	0	0	A	A	A
110	Small Boat Harbour Access	47	47	174	0	0	0	0	0	1	A	A	A
111	Rosslare Harbour Entrance Roundabout	195	196	39	0	0	0	1	1	1	A	A	A
112	N25 / Roche Freight	572	572	572	0	0	0	0	0	0	A	A	A
113	N25 / Development Access	583	442	425	0	0	0	0	0	0	A	A	A
203	N25 / Link Road South	-	568	-	-	0	-	-	0	-	-	A	-
204	Link Road / N25 South	-	126	-	-	0	-	-	1	-	-	A	-
209	N25 / St Martins Terrace / Link Road	-	344	-	-	0	-	-	1	-	-	A	-
210	N25 / Link Road North	-	181	-	-	0	-	-	0	-	-	A	-
214	N25 / Link Road / Development Roundabout	-	183	-	-	0	-	-	1	-	-	A	-
307	Ballygerry Link Road / Churchtown	-	-	175	-	-	0	-	-	0	-	-	A
<b>NETWORK TOTALS</b>		-	-	-	0.0	0.3	0.0	0.3	2.1	0.6	-	-	-

Table 5.13 shows that the results are consistent with the network performance in that overall all options perform largely the same with Option B performing slightly worse at the N25/Marys Terrace/St Martins Junction (108) with a Level of Service of C.

### 5.6.2.3 Journey Time Comparison

A comparison of the cumulative journey times for the eastbound and westbound routes along the N25 routes are shown in Figure 5.14 and Figure 5.15 respectively.

**Figure 5.14: 2053 PM Peak Eastbound Cumulative Journey Time Comparison**



**Figure 5.15: 2053 PM Peak Westbound Cumulative Journey Time Comparison**

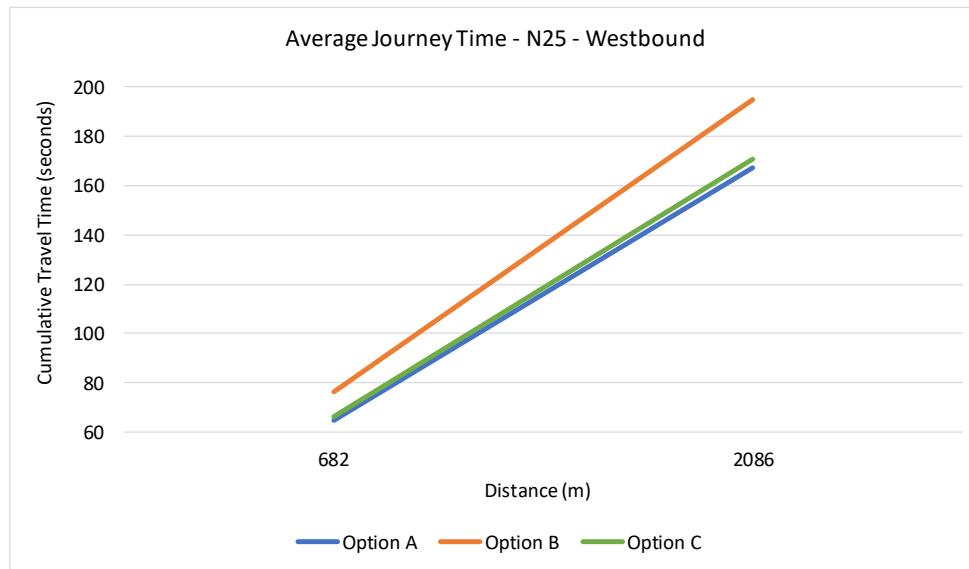


Figure 5.14 and Figure 5.15 shows that Option B is slower than Options A and C. This is due to the added signalised junction at the Marys Terrace/St Martins Road/N25 junction despite signal optimisation. This is due to the free-flowing nature of this junction in Options A and C, whereas Option B introduces delay at this location.

## 6 Summary and Conclusions

A traffic model has been developed in accordance with the requirements of TII PAG Unit 12 - Minor Projects, and Unit 5 - Transport Models. A microsimulation model using PTV VISSIM software was identified as the most appropriate model choice for use in Phase 2 and subsequent phases of the project.

The base model has been developed using Ordnance Survey (OS) drawings provided by Rosslare Harbour. Bing Maps is integrated into VISSIM 2020 and has been used to sense check supplied drawings. Therefore, the drawings have been used as the definitive location with the alignment to Bing Maps updated at a local level to assist with the model coding. VISSIM 2020 was used to develop the model.

The model was built using traffic counts from surveys undertaken in March 2016. Analysis of survey data allowed us to select the peak AM and PM periods (08:45-09:45 and 16:30-17:30). The model has been calibrated against these observed turning movement counts and validated against journey times along the N25.

The model has been validated against journey time data for sections in each direction on the N25 in accordance with PAG. In the base year the model was simulated and was validated fully with all criteria being met closely. In both base model peak periods no areas of congestion or significant delay were noted.

The forecast models are based on the calibrated and validated base models and developed for the design years 2023 (Opening Year), 2038 (Opening Year + 15 Years) and 2053 (Opening Year + 30 Years). For each of these years three options were tested:

- Option A - Base model with the Ballygillane Roundabout
- Option B - Option A with a parallel link road north of the Ballygillane Roundabout
- Option C - Option A with a new road to provide access route to Rosslare Europort that links to the West end of the existing Ballygerry link road

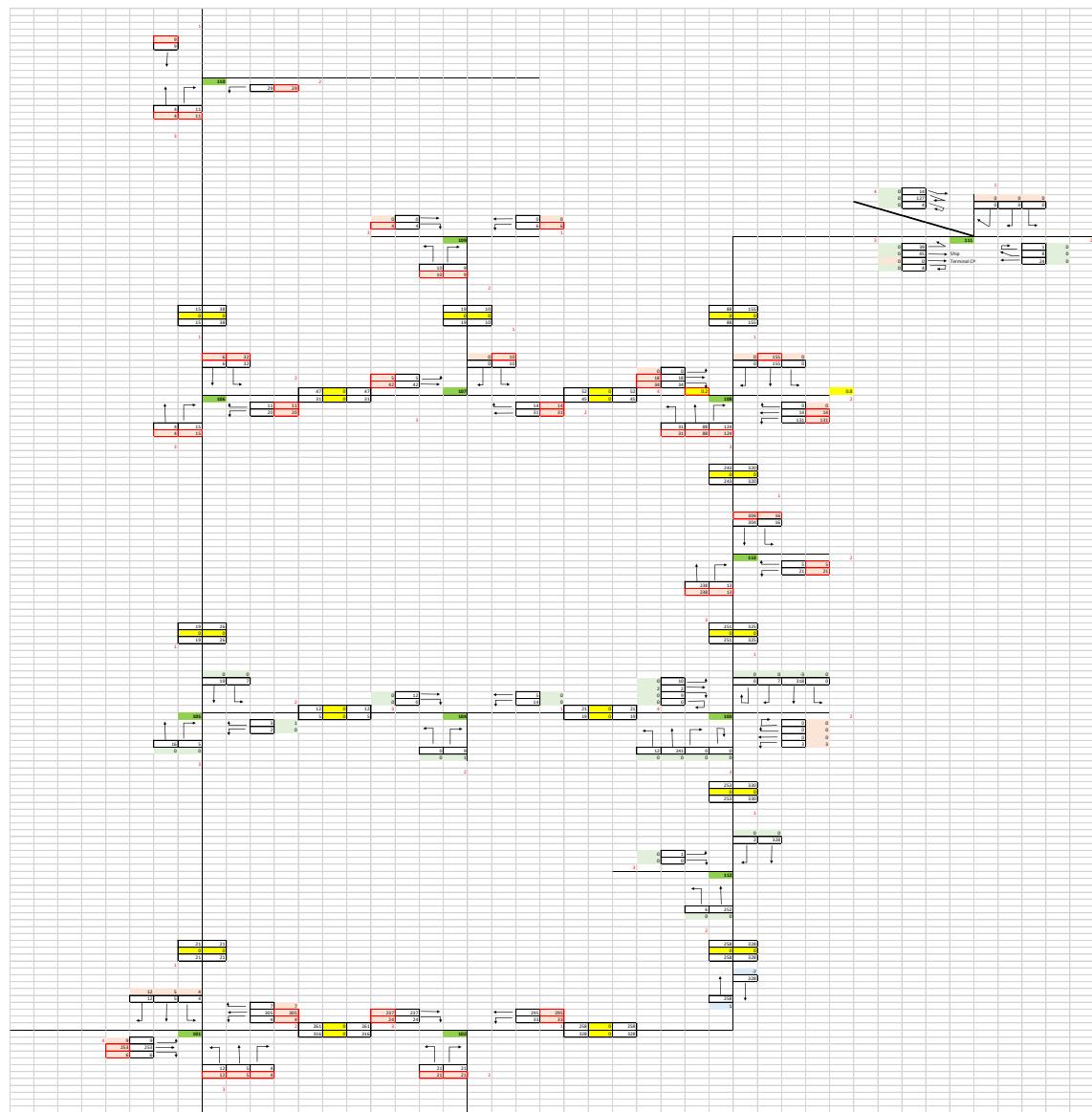
The future year option testing resulted in consistent results for all design years. All options performed well and met an acceptable standard, however they clearly showed that Option B performed the worst with longer journey times and more stops due to the signalised junction at N25/Marys Terrace/St Martins Junction. The results for both Option A and C are very similar with Option A performing slightly better overall. However, Option C does result in fewer stops, separating port demand from local access roads for Rosslare Harbour village.

# Appendices

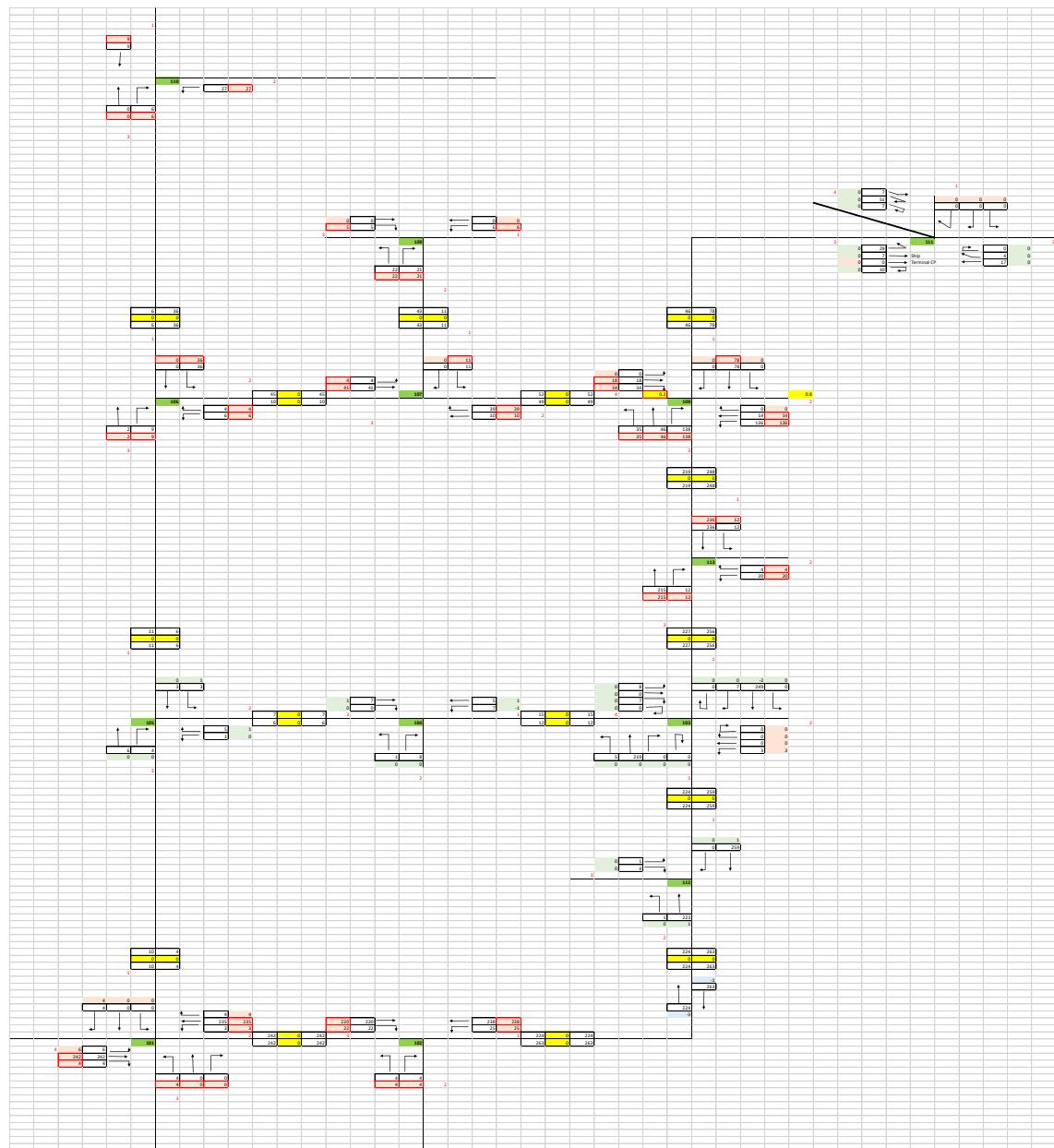
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## A. Observed Balanced Traffic Flows Base

AM Peak

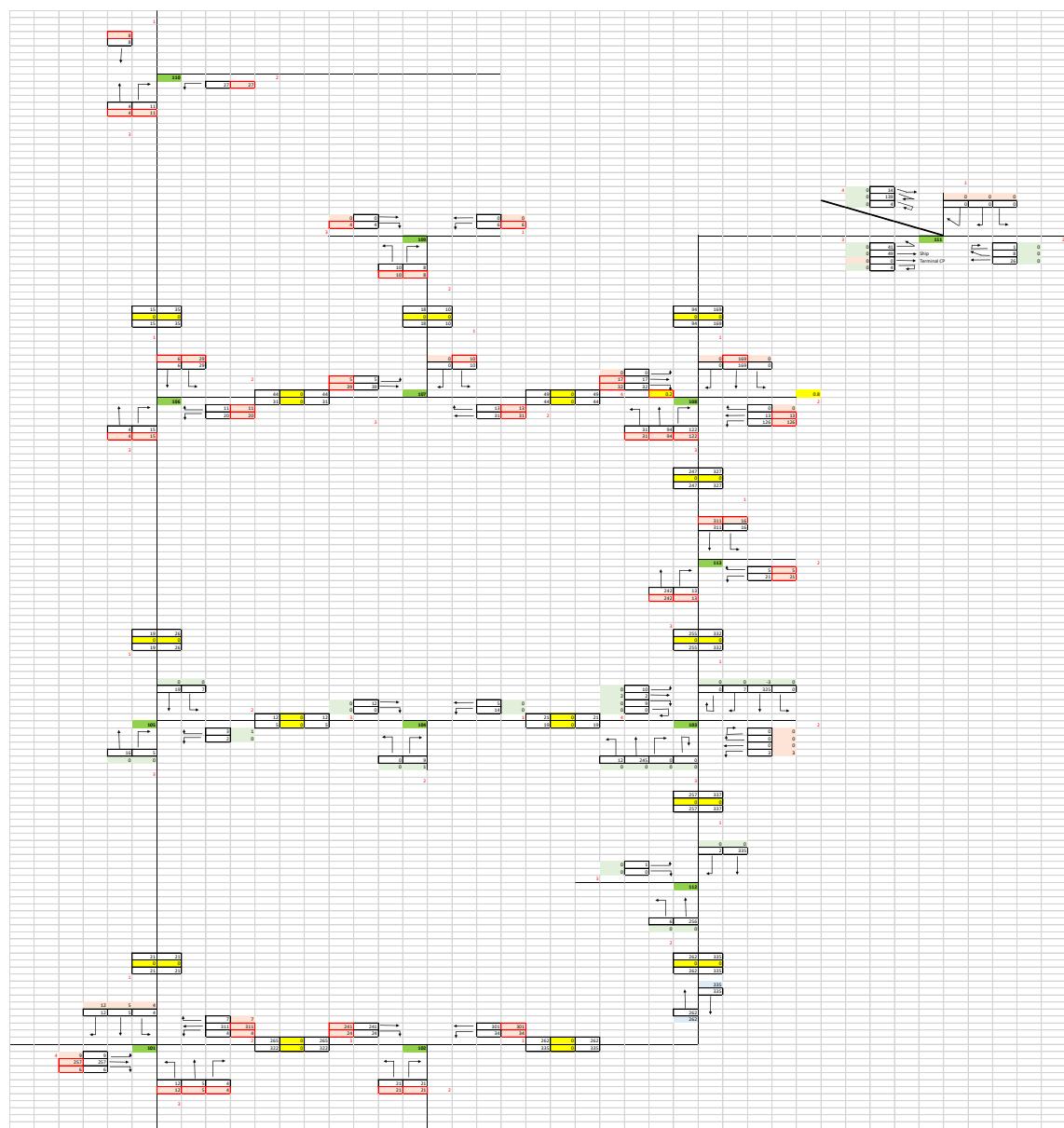


## PM Peak

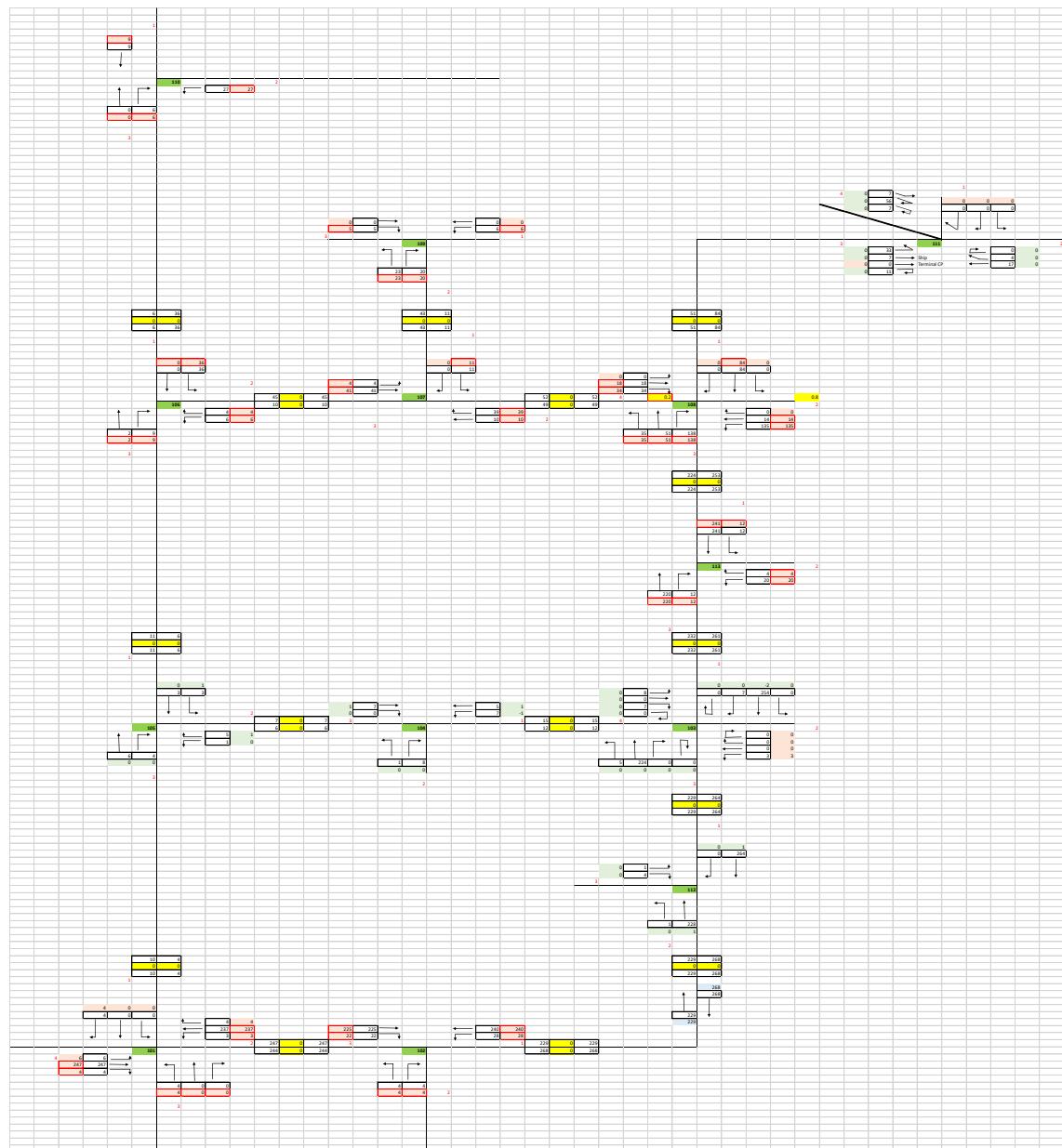


## B. Observed Balanced Traffic Flows – 2023 Option A

AM Peak

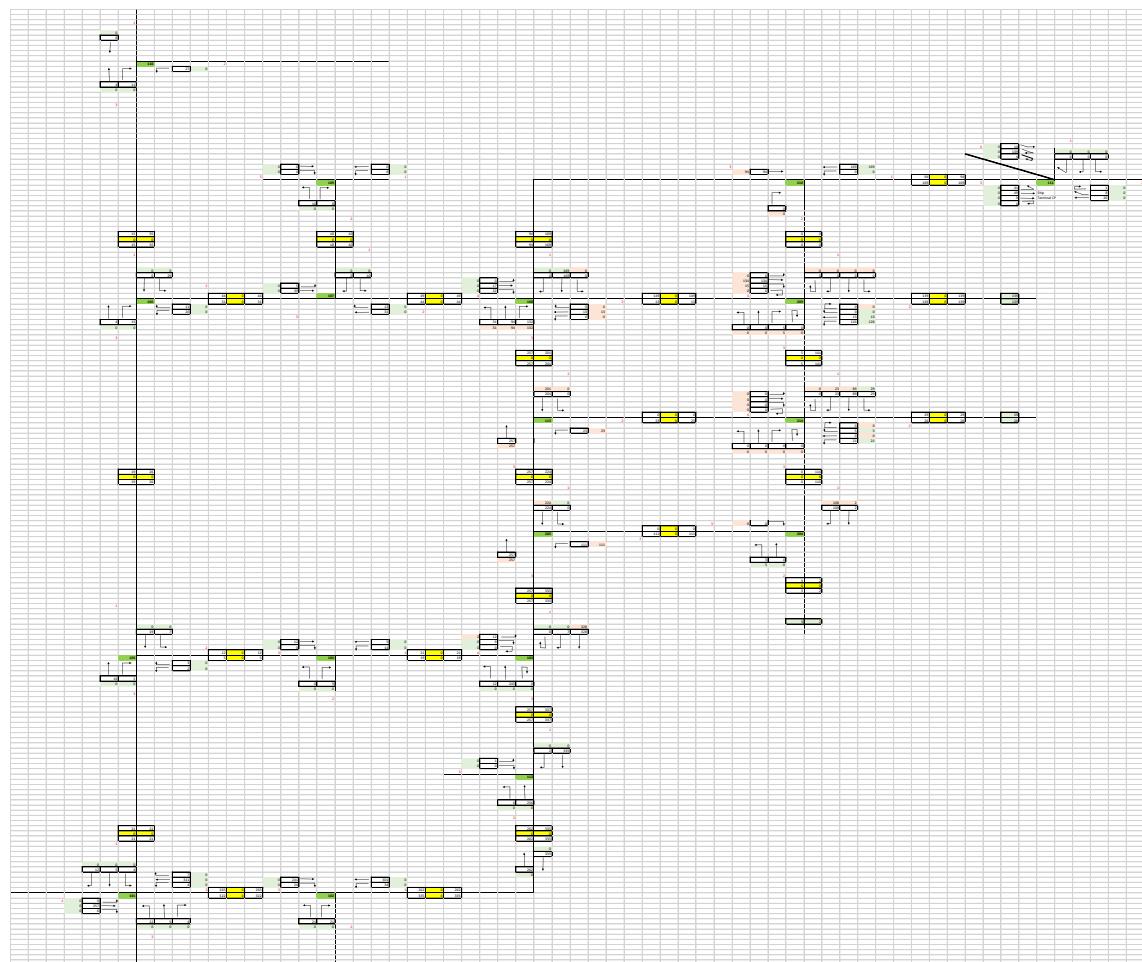


## PM Peak

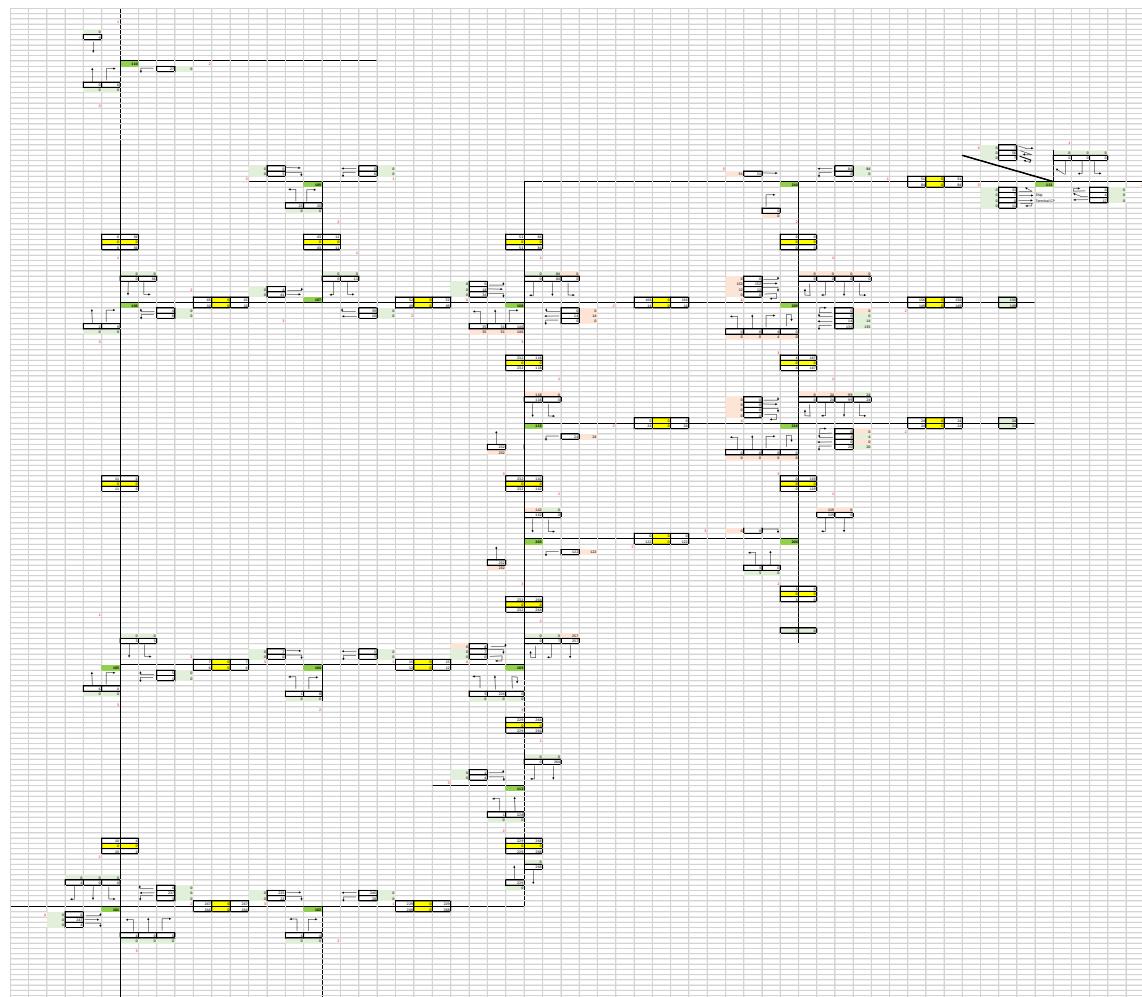


## C. Observed Balanced Traffic Flows – 2023 Option B

AM Peak



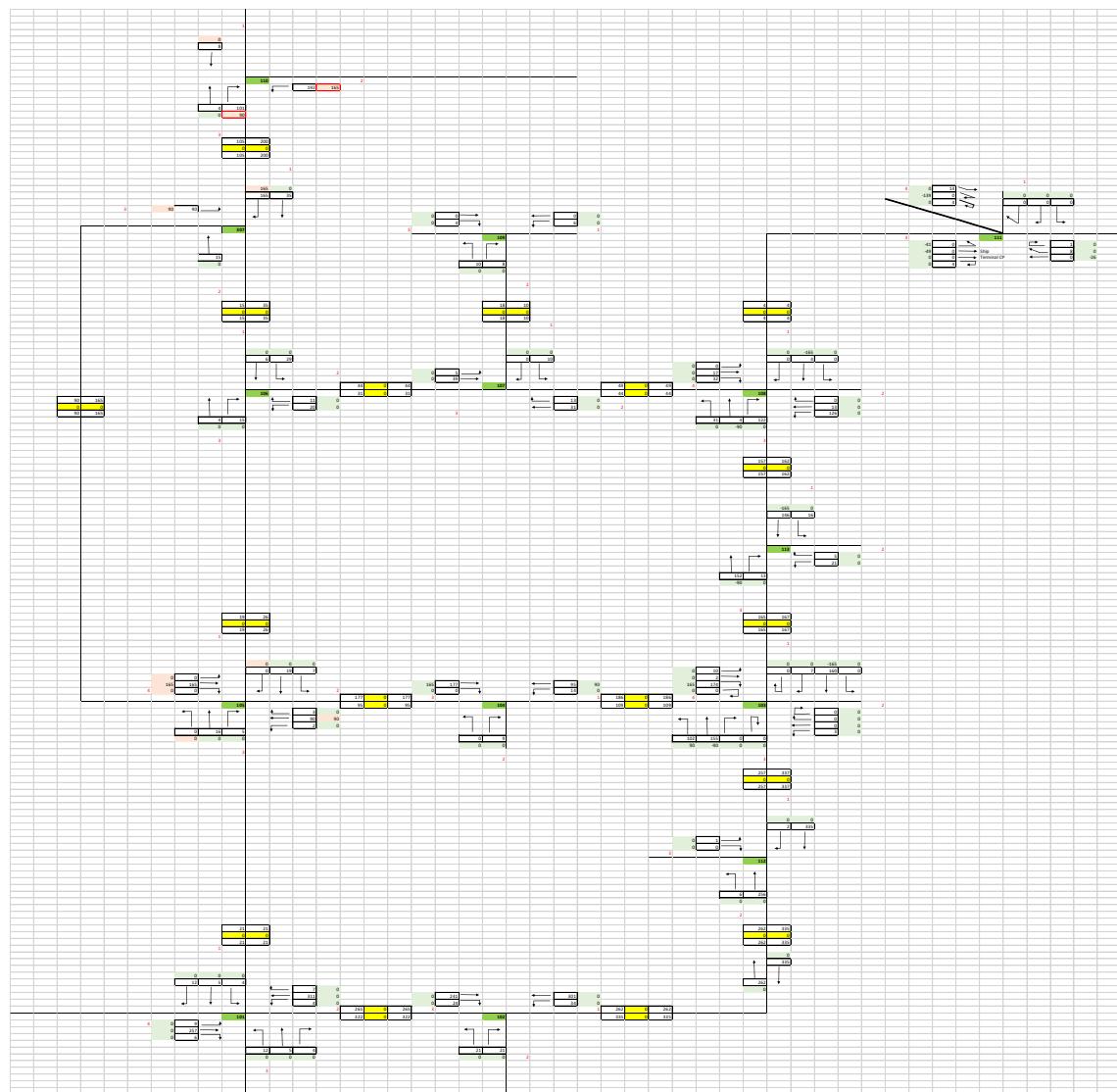
## PM Peak



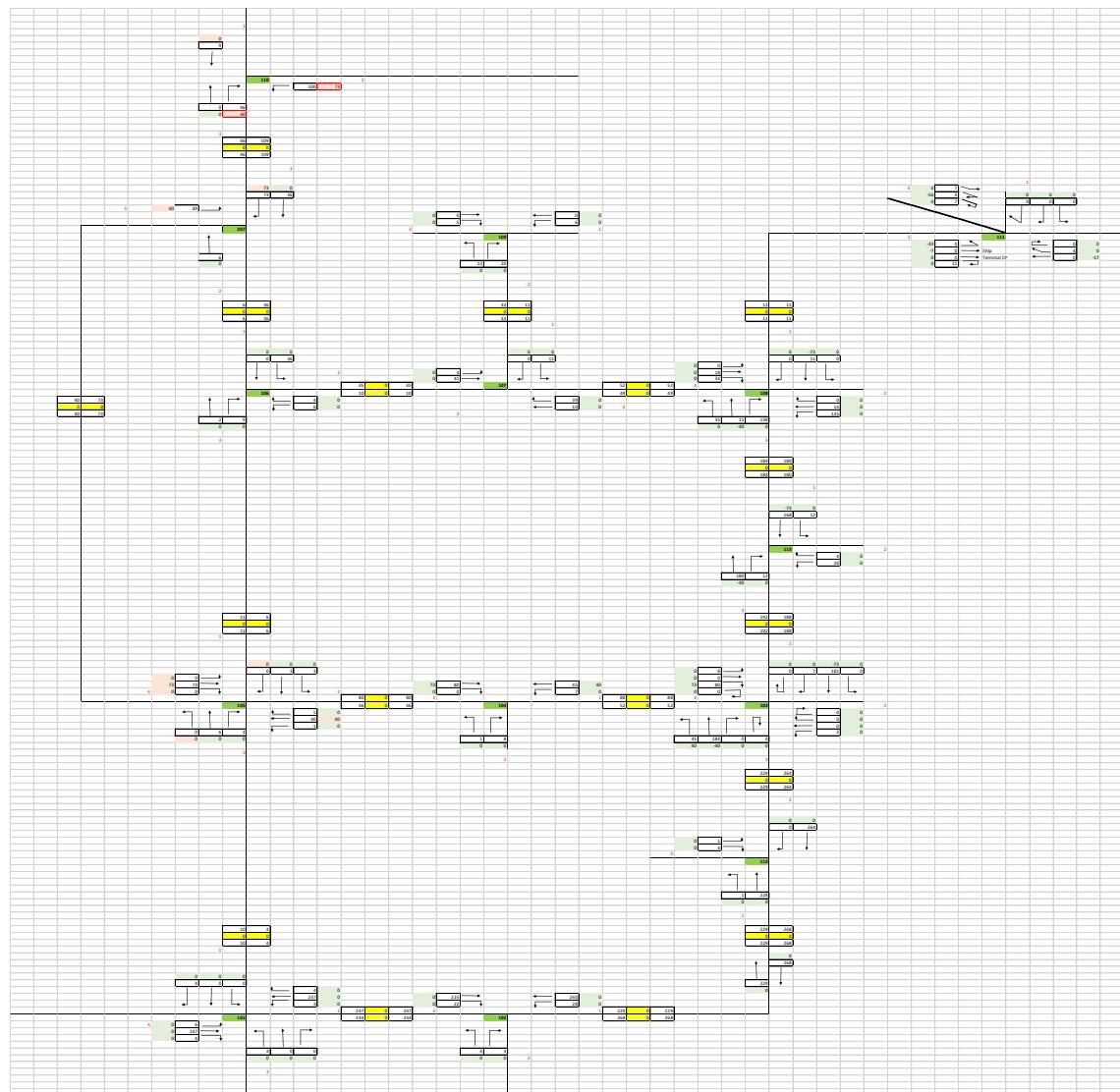
## D. Observed Balanced Traffic Flows – 2023

### Option C

## AM Peak

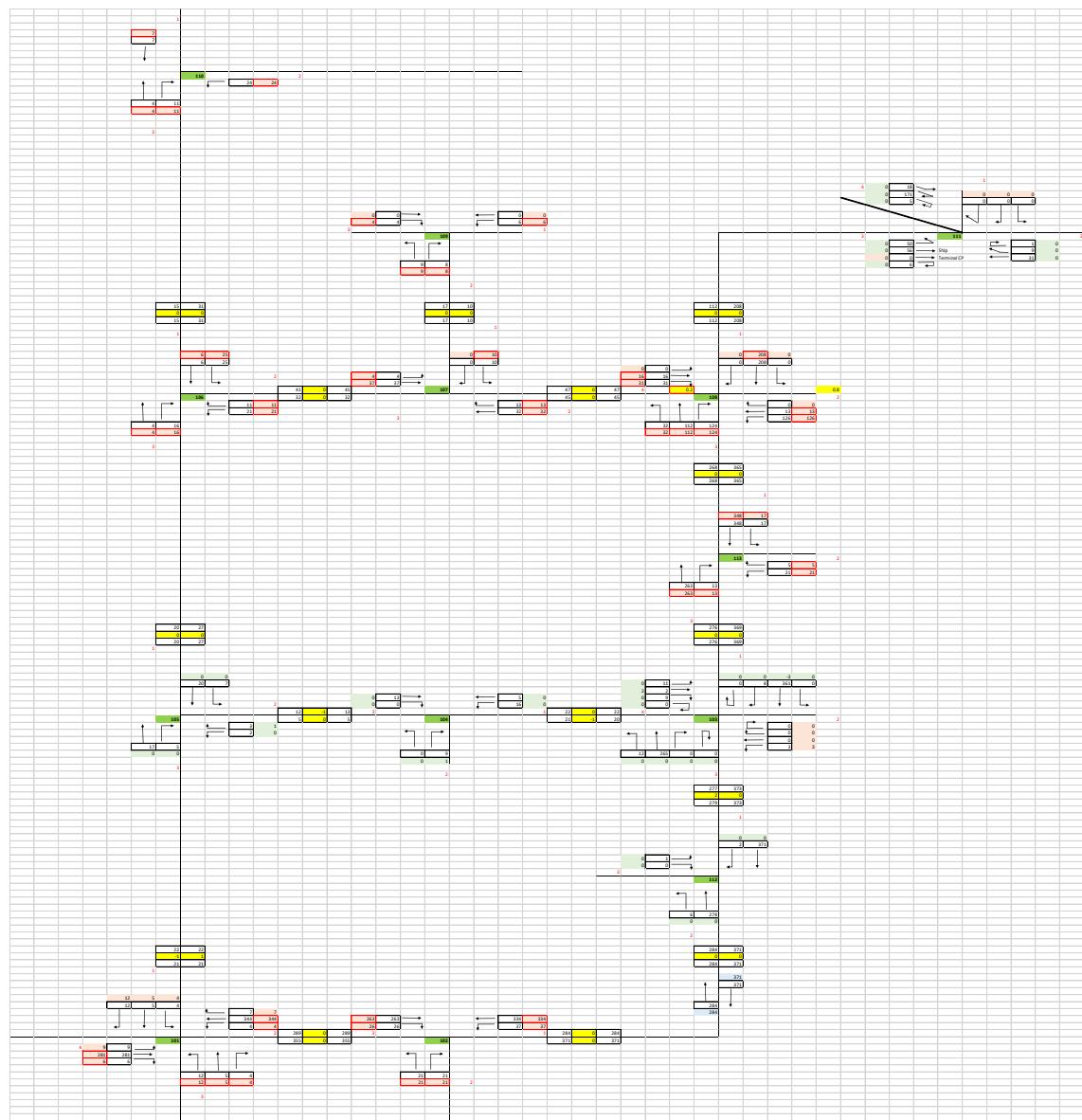


## PM Peak

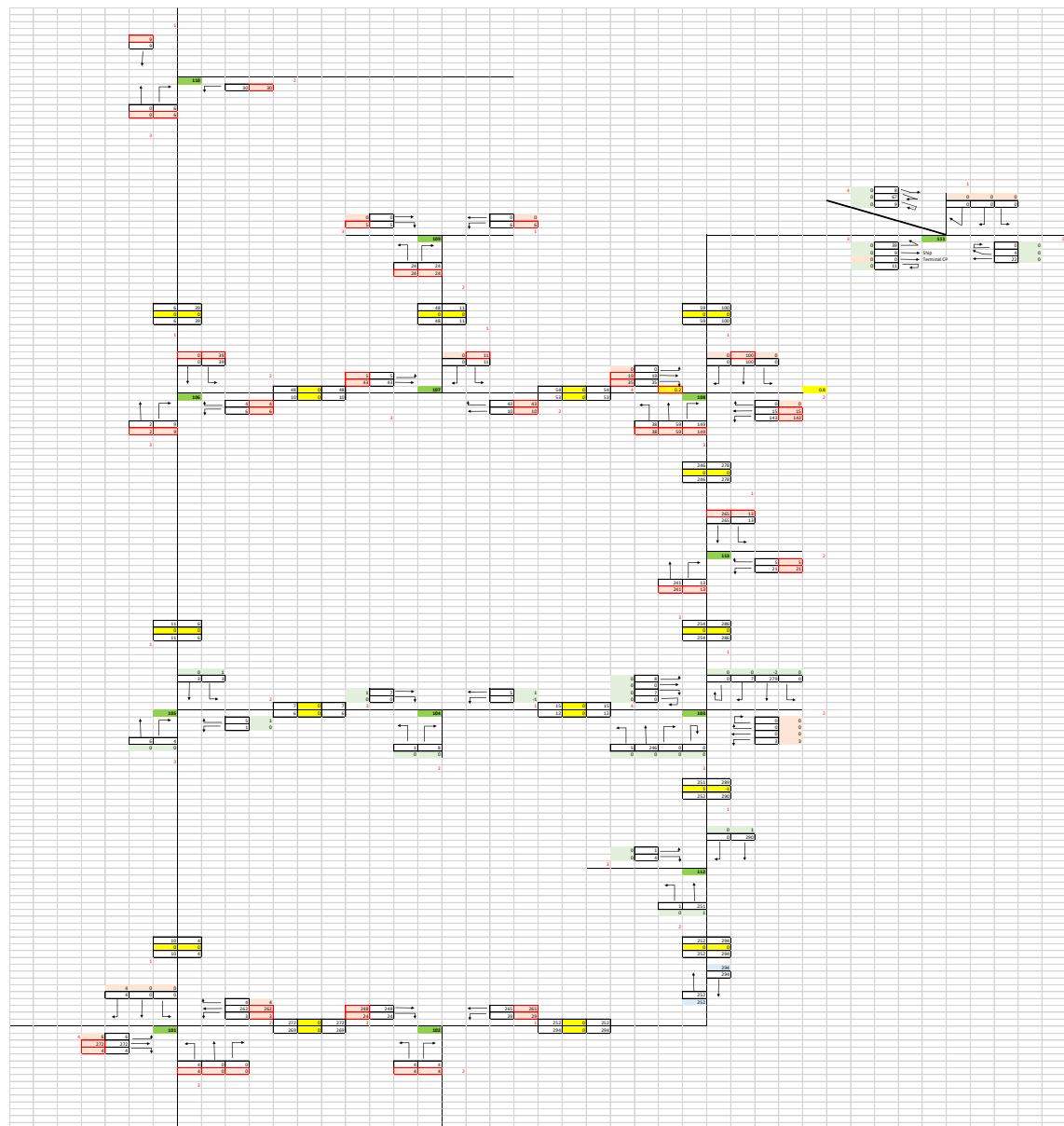


## E. Observed Balanced Traffic Flows – 2038 Option A

AM Peak

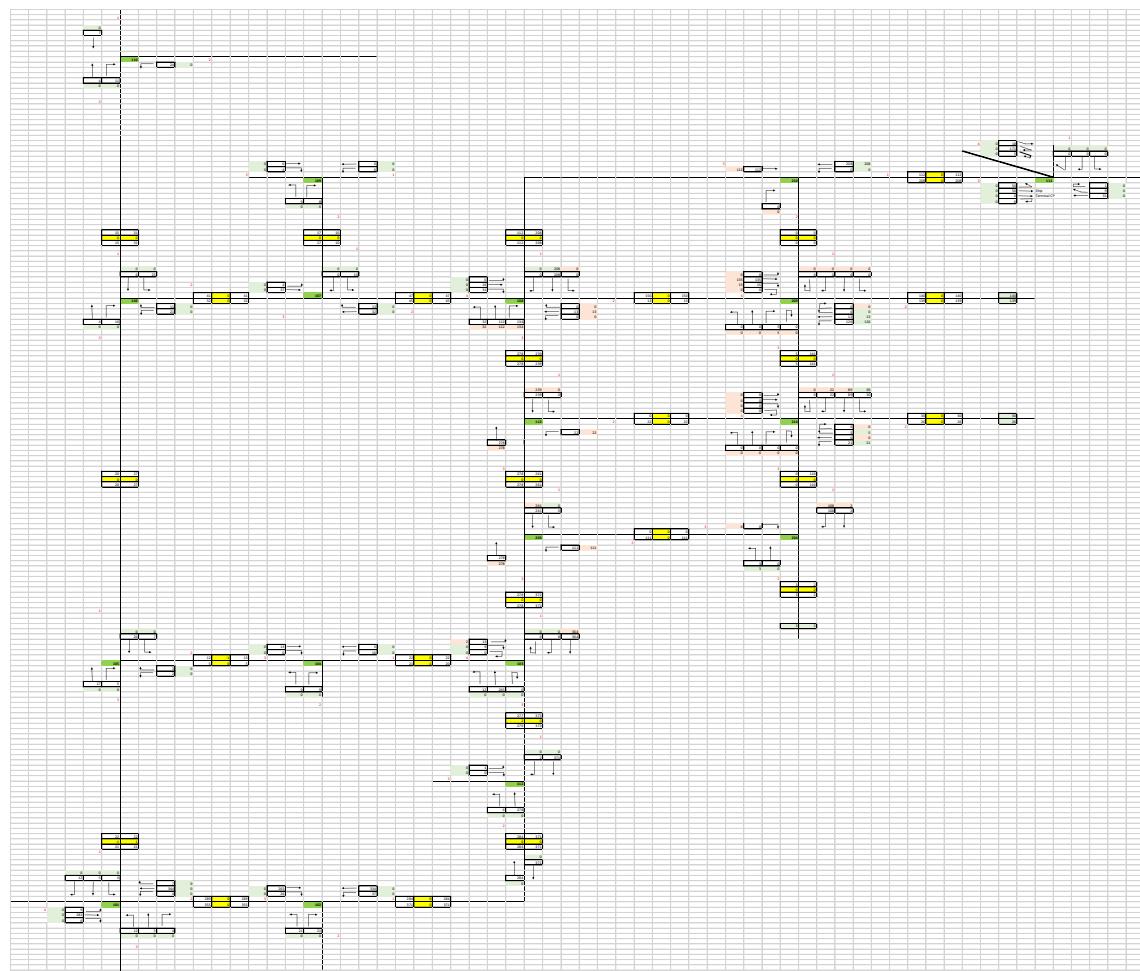


## PM Peak

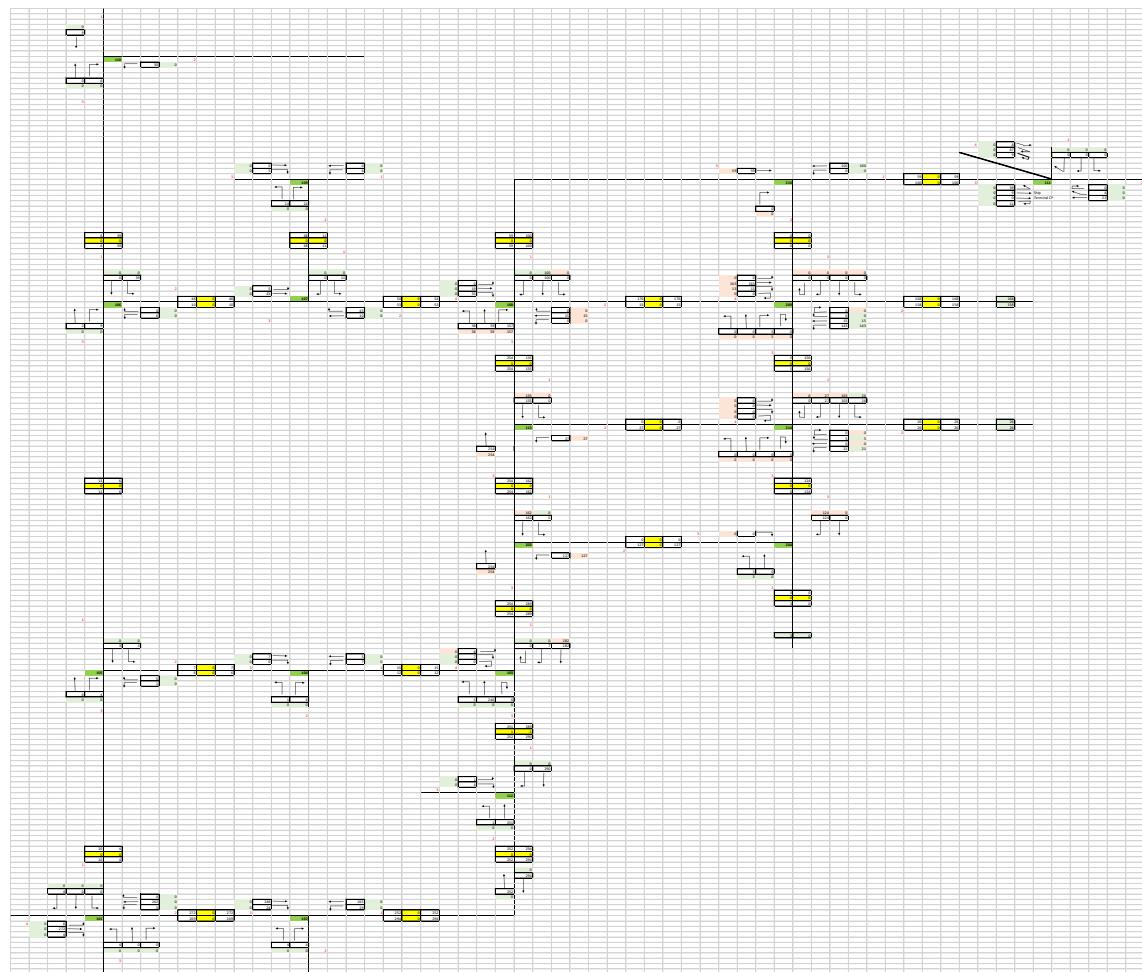


## F. Observed Balanced Traffic Flows – 2038 Option B

AM Peak

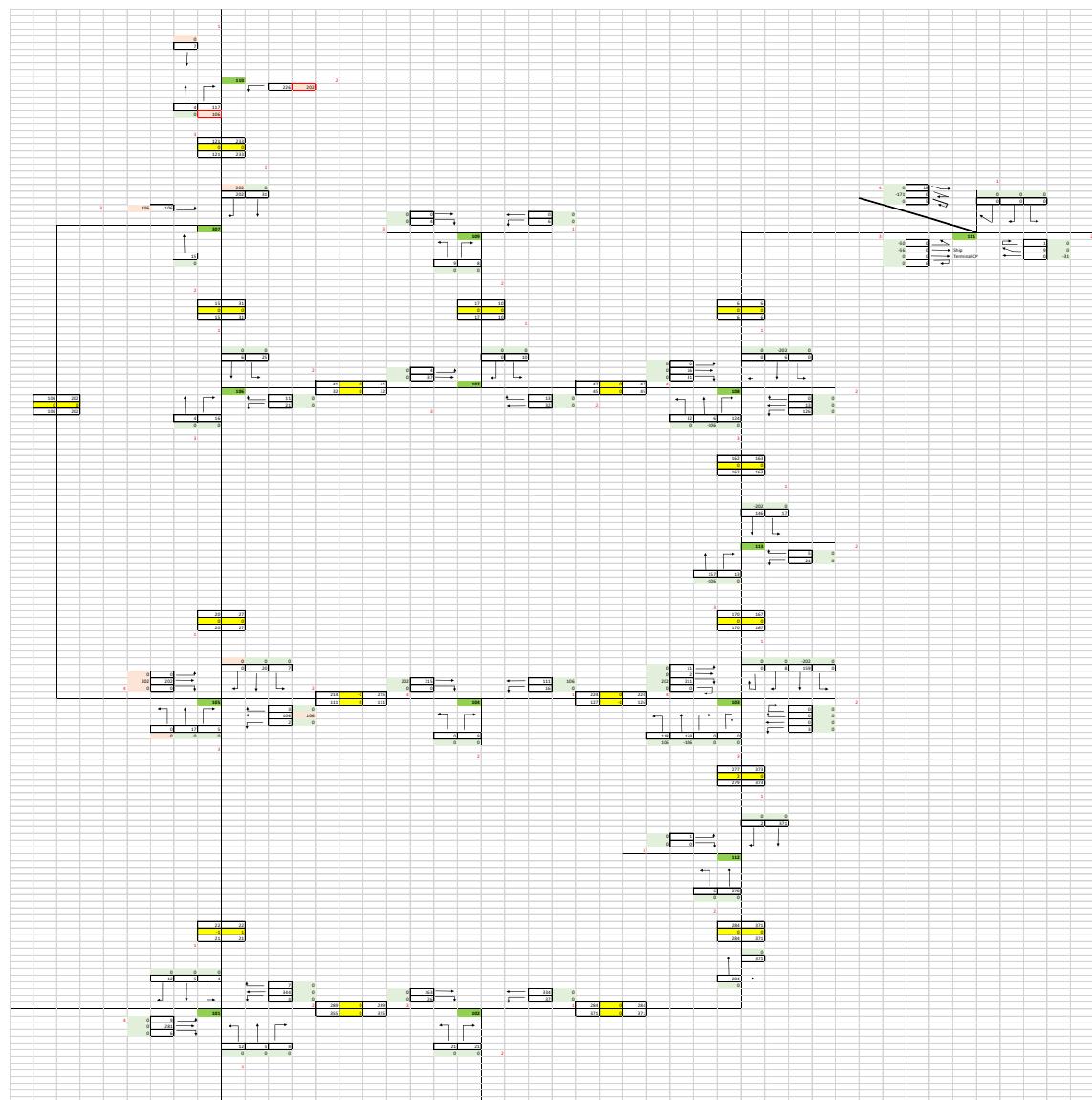


## PM Peak

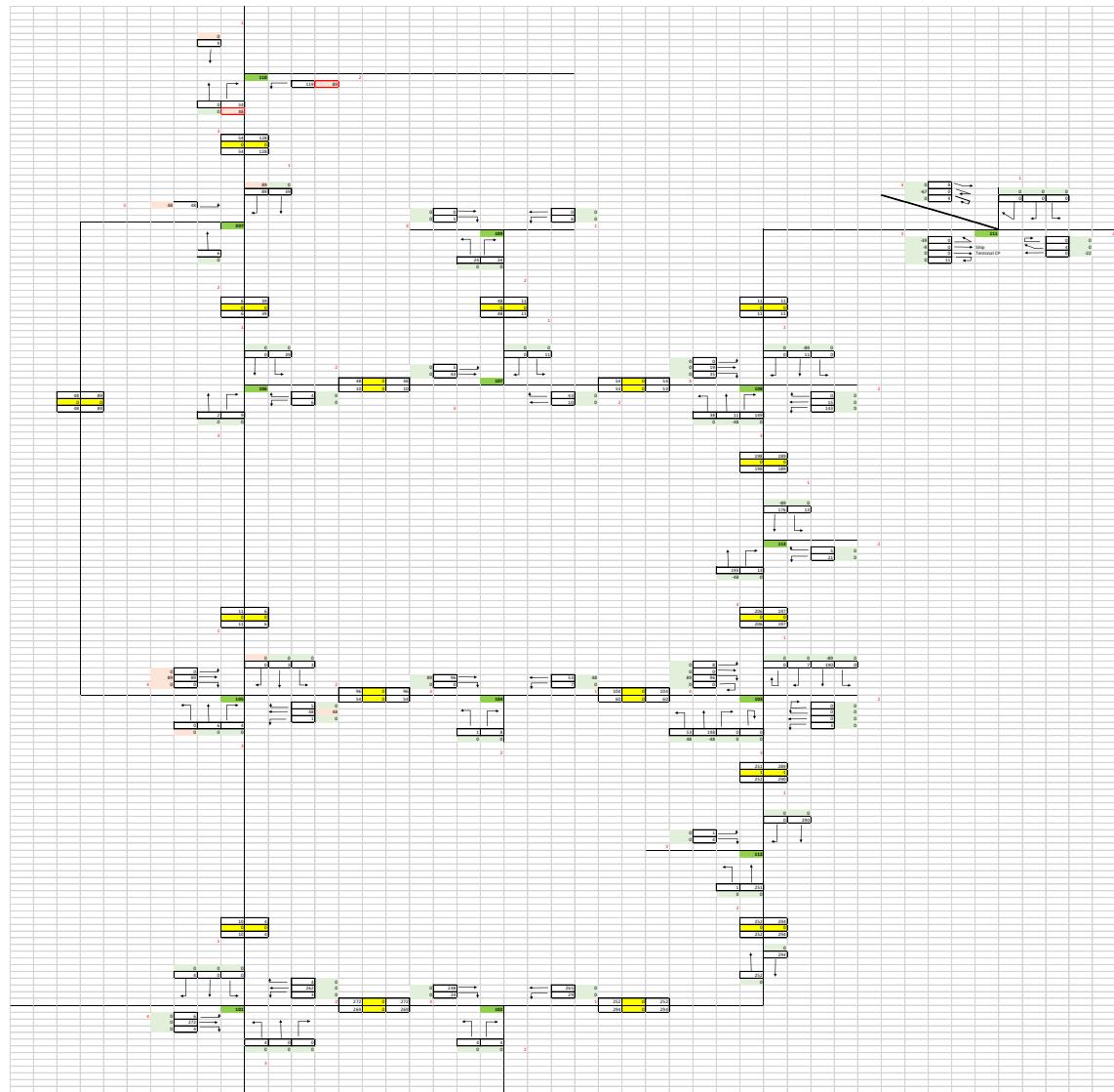


## G. Observed Balanced Traffic Flows – 2038 Option C

AM Peak

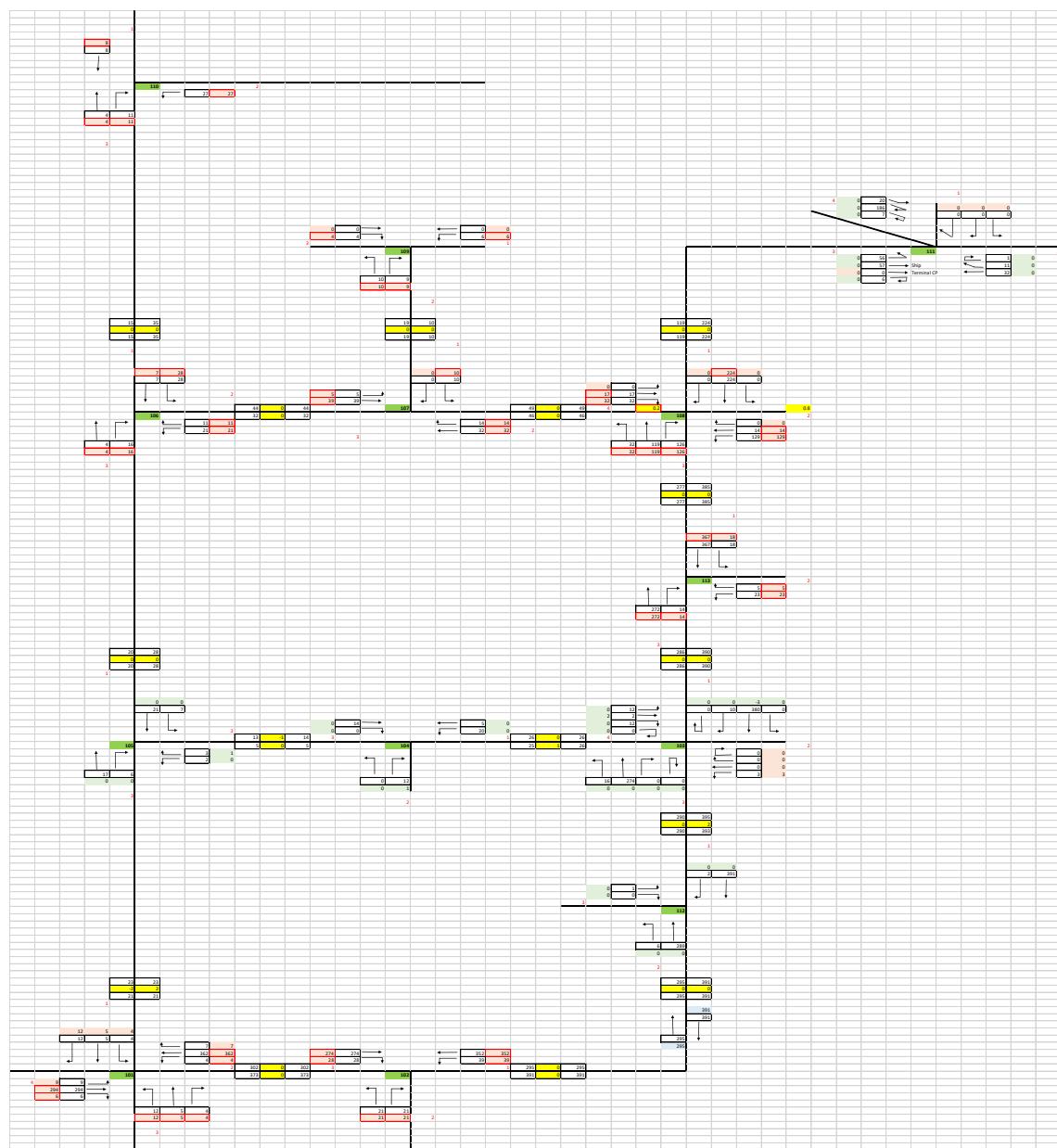


## PM Peak

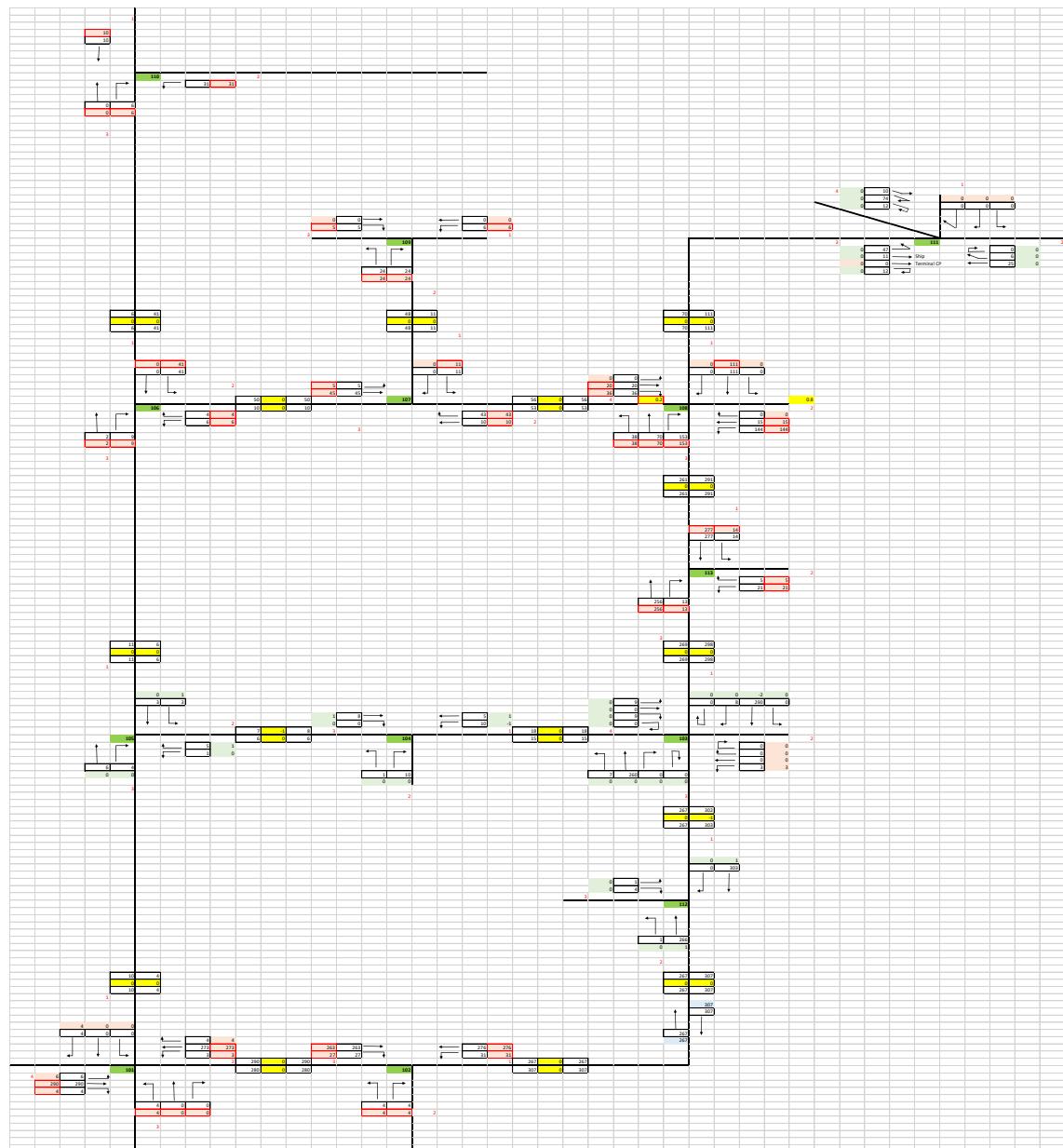


## H. Observed Balanced Traffic Flows – 2053 Option A

AM Peak



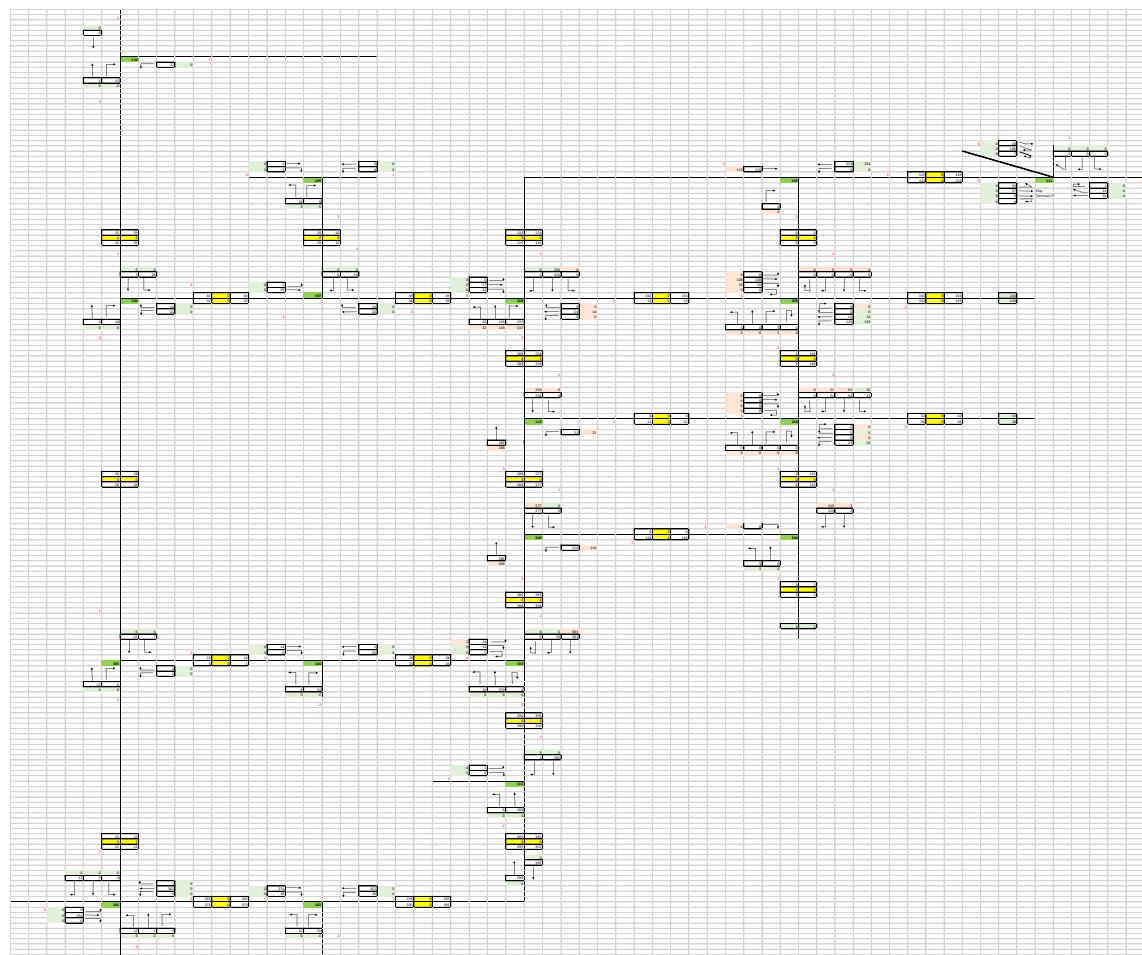
## PM Peak



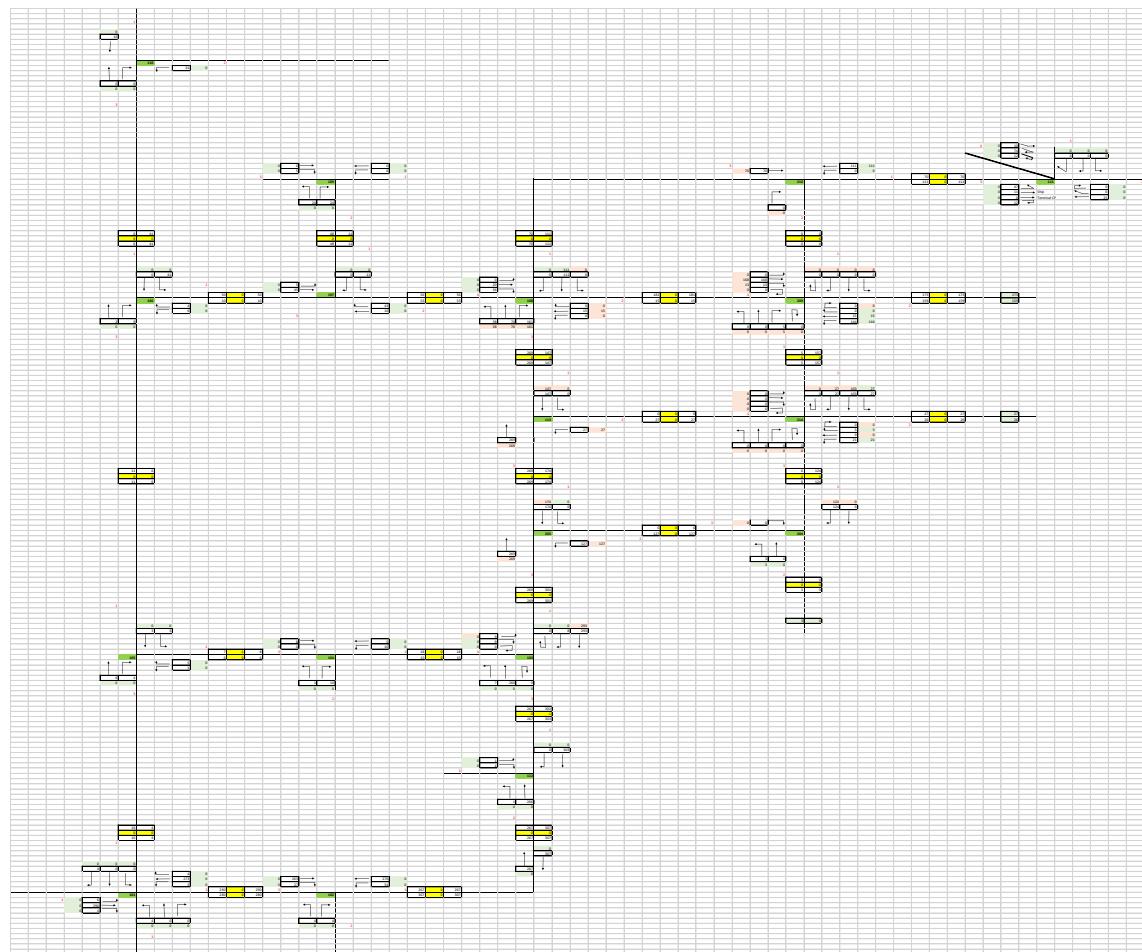
# I. Observed Balanced Traffic Flows – 2053

## Option B

AM Peak

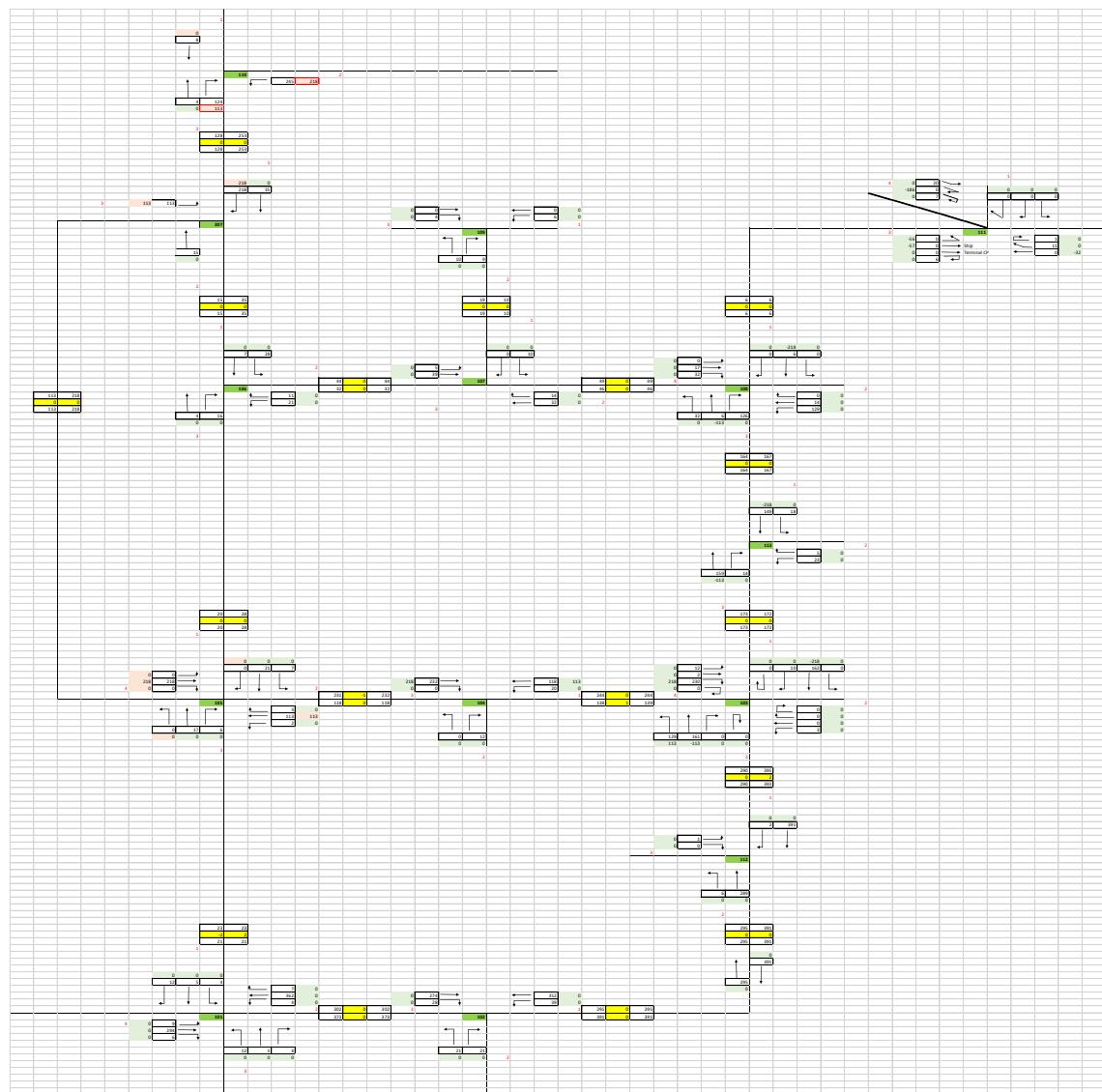


## PM Peak

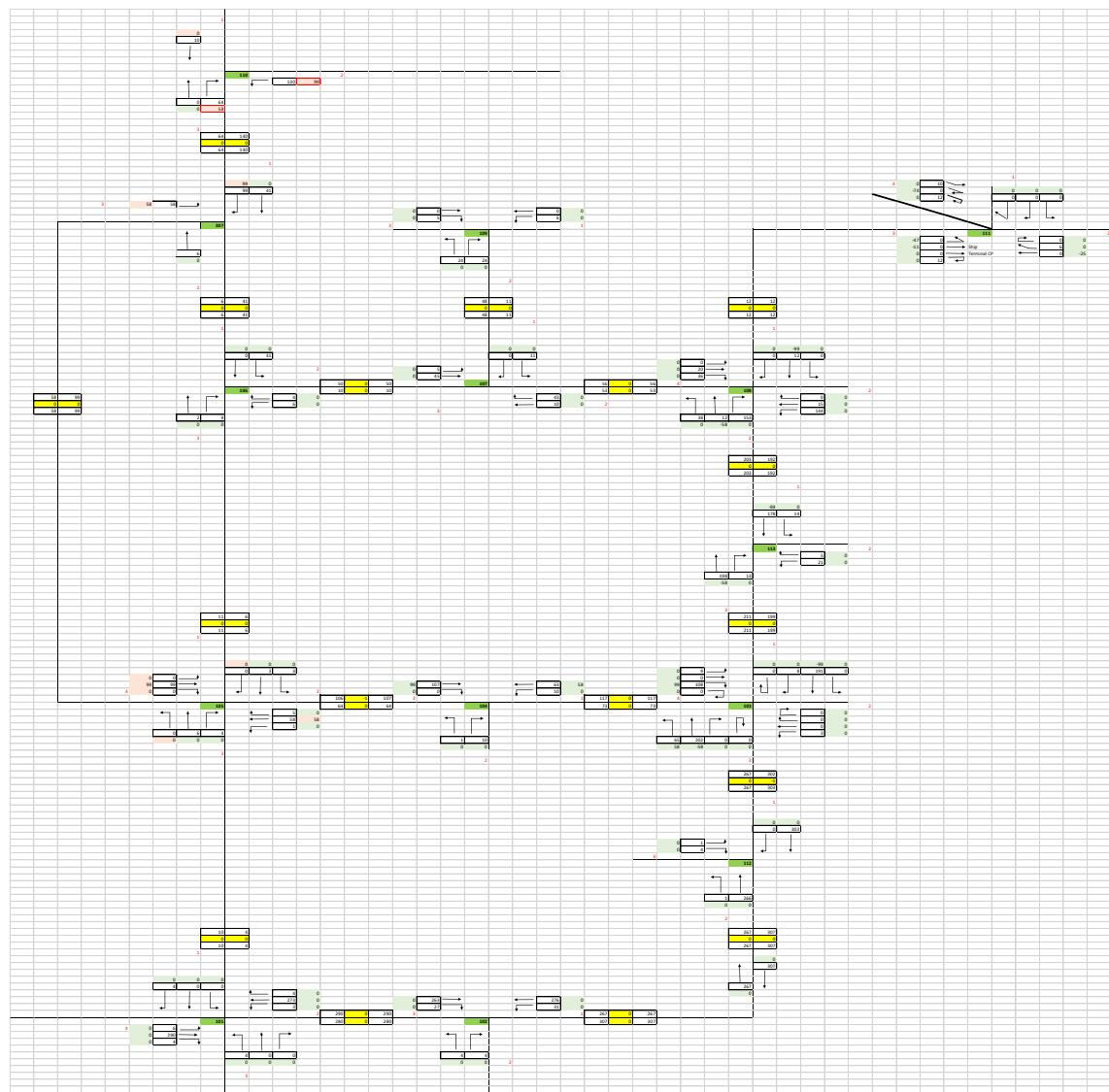


## J. Observed Balanced Traffic Flows – 2053 Option C

AM Peak



## PM Peak



## K. Junction Performance Full Approach Summary – 2020 – Base

AM Peak

Rosslare Harbour VISSIM - 2020 AM Peak			Links		Links		Volume General Traffic (GT)			General Traffic		Queue Length (m)		Delay (secs)		
Node	Description		Direction	From	To	Model	Count	Mod-Cnt	% Diff*	GEH	Accept	Max	Average	Model	Average	LOS†
101	N25 / Churchtown	Churchtown North to Churchtown South	N-S	65	69	5	5	0	0.0%	0.0	✓	5	0	2	0	A
		Churchtown North to N25 East	N-E	65	72	3	4	-1	-25.0%	0.5	✓	2	0	1	0	A
		Churchtown North to N25 West	N-W	65	98	12	12	0	0.0%	0.0	✓	8	0	2	0	A
		Churchtown South to N25 North	S-N	65	64	4	4	0	0.0%	0.0	✓	4	0	3	0	A
		Churchtown South to N25 East	S-E	65	72	4	4	0	0.0%	0.0	✓	5	0	3	0	A
		Churchtown South to N25 West	S-W	68	98	11	12	-1	-6.3%	0.3	✓	6	0	2	0	A
		N25 West to Churchtown North	W-N	72	64	9	9	0	0.0%	0.0	✓	0	0	1	0	A
		N25 West to Churchtown South	W-S	72	69	6	6	0	0.0%	0.0	✓	12	0	2	0	A
		N25 West to N25 East	W-E	72	72	252	253	-1	-0.4%	0.1	✓	7	0	0	0	A
		N25 East to Churchtown North	E-N	98	64	6	7	-1	-14.3%	0.4	✓	16	0	2	0	A
		N25 East to Churchtown South	E-S	98	69	4	4	0	0.0%	0.0	✓	0	0	1	0	A
		N25 East to N25 West	E-W	98	98	294	305	-11	-3.6%	0.6	✓	12	0	0	0	A
		Total				612	626	-14	-2.2%	8.6	✓	24	0	6	0	A
102	N20 / Ballyknockan	N25 West to N25 East	W-E	72	42	235	237	-2	-0.8%	0.1	✓	6	0	0	0	A
		N25 West to Ballyknockan South	W-SW	72	74	23	24	-1	-4.2%	0.2	✓	6	0	0	0	A
		Ballyknockan South to N25 East	W-E	72	42	20	21	-1	-4.8%	0.2	✓	7	0	1	0	A
		Ballyknockan South to N25 West	W-E	73	98	23	21	-1	-6.8%	0.2	✓	8	0	2	0	A
		N25 East to Ballyknockan South	E-S	98	74	34	33	-1	-3.0%	0.2	✓	0	0	0	0	A
		N25 East to N25 West	E-W	98	98	283	296	-12	-4.1%	0.7	✓	0	0	0	0	A
		Total				617	631	-14	-2.2%	8.6	✓	19	0	6	0	A
103	N25 / New Road / Development Roundabout	N25 South to N25 North	SW-N	42	44	237	241	-4	-1.7%	0.3	✓	0	0	1	0	A
		N25 South to Ballygarry Link Road West	SW-W	42	59	12	12	0	0.0%	0.0	✓	0	0	1	0	A
		N25 South to Development Access	SW-E	42	95	0	0	0	0.0%	0.0	✓	0	0	0	0	A
		N25 North to N25 South	N-S	55	43	315	318	-3	-0.9%	0.2	✓	1	0	3	0	A
		N25 North to Ballygarry Link Road West	N-W	55	59	7	7	0	0.0%	0.0	✓	10	0	3	0	A
		N25 North to Development Access	N-E	55	95	0	0	0	0.0%	0.0	✓	1	0	0	0	A
		Ballygarry Link Road West to N25 South	W-S	60	43	0	0	-9	-100.0%	4.2	✓	9	0	0	0	A
		Ballygarry Link Road West to N25 North	W-E	60	44	1	10	-1	-10.0%	0.3	✓	7	0	2	0	A
		Ballygarry Link Road West to Development Access	W-E	60	56	2	2	0	0.0%	0.0	✓	3	0	0	0	A
		Development Access to N25 South	E-S	94	43	3	3	0	0.0%	0.0	✓	6	0	5	0	A
		Development Access to N25 North	E-N	94	44	0	0	0	0.0%	0.0	✓	0	0	0	0	A
		Development Access to Ballygarry Link Road West	E-W	94	59	0	0	0	0.0%	0.0	✓	0	0	0	0	A
		Total				585	602	-17	-2.8%	8.7	✓	15	0	2	0	A
104	New Road / Roche Freight	Ballygarry Link Road West to Ballygarry Link Road East	NW-E	58	60	12	12	0	0.0%	0.0	✓	0	0	0	0	A
		Ballygarry Link Road West to Roche Freight Access	NW-SW	58	63	0	0	0	0.0%	0.0	✓	0	0	0	0	A
		Ballygarry Link Road East to Ballygarry Link Road West	SE-NW	59	59	6	5	1	20.0%	0.4	✓	0	0	0	0	A
		Roche Freight Access to Ballygarry Link Road West	SW-NW	62	59	0	0	0	0.0%	0.0	✓	0	0	0	0	A
		Roche Freight Access to Ballygarry Link Road East	SW-E	62	60	9	9	0	0.0%	0.0	✓	0	0	0	0	A
		Total				41	40	-2	-2.5%	8.2	✓	0	0	0	0	A
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown North	E-N	59	64	4	3	1	33.3%	0.5	✓	0	0	1	0	A
		Ballygarry Link Road East to Churchtown South	E-S	59	65	2	2	0	0.0%	0.0	✓	0	0	0	0	A
		Churchtown South to Ballygarry Link Road East	S-E	64	66	5	5	0	0.0%	0.0	✓	1	0	1	0	A
		Churchtown South to Churchtown North	S-N	64	64	16	16	0	0.0%	0.0	✓	1	0	0	0	A
		Churchtown North to Ballygarry Link Road East	N-E	65	58	7	7	0	0.0%	0.0	✓	0	0	0	0	A
		Churchtown North to Churchtown South	N-S	65	65	18	19	-1	-5.3%	0.2	✓	0	0	0	0	A
		Total				52	52	0	0.0%	8.8	✓	1	0	0	0	A
106	Mayns Terrace / Churchtown	Mayns Terrace East to Churchtown North	E-N	3	64	12	11	1	9.1%	0.3	✓	0	0	1	0	A
		Mayns Terrace East to Churchtown South	E-S	3	65	20	20	0	0.0%	0.0	✓	0	0	0	0	A
		Churchtown South to Mayns Terrace East	S-E	64	2	16	15	1	6.7%	0.3	✓	0	0	1	0	A
		Churchtown South to Churchtown North	S-N	64	64	4	4	0	0.0%	0.0	✓	0	0	0	0	A
		Churchtown North to Mayns Terrace East	E-N	65	2	32	32	0	0.0%	0.0	✓	3	0	1	0	A
		Churchtown North to Churchtown South	N-S	65	65	3	3	0	0.0%	0.0	✓	1	0	0	0	A
		Total				89	89	1	1.1%	8.1	✓	6	0	1	0	A
107	Mayns Terrace / Greenore Park	Mayns Terrace West to Mayns Terrace East	W-SW	2	2	43	43	-1	-2.4%	0.2	✓	0	0	1	0	A
		Mayns Terrace West to Greenore Park North	W-N	2	4	6	5	1	20.0%	0.4	✓	0	0	1	0	A
		Mayns Terrace East to Mayns Terrace West	SE-W	3	3	32	31	1	3.2%	0.2	✓	0	0	0	0	A
		Mayns Terrace East to Greenore Park North	SE-N	3	4	14	14	0	0.0%	0.0	✓	1	0	-1	0	N/A
		Greenore Park North to Mayns Terrace East	N-S	5	2	10	10	0	0.0%	0.0	✓	1	0	1	0	A
		Greenore Park North to Mayns Terrace West	N-W	5	3	0	0	0	0.0%	0.0	✓	0	0	0	0	A
		Total				105	102	3	2.9%	8.3	✓	2	0	0	0	A
108	N25 / Mayns Terrace / St Martins	Mayns Terrace to N25 North	NW-S	2	52	0	0	0	0.0%	0.0	✓	7	0	0	0	A
		Mayns Terrace to N25 South	NW-E	2	55	34	34	0	0.0%	0.0	✓	8	0	2	0	A
		St Martins Road to Mayns Terrace	S-N	2	56	16	16	0	5.6%	0.2	✓	7	0	3	0	A
		N25 South to N25 North	S-N	50	3	31	31	0	0.0%	0.0	✓	0	0	1	0	A
		N25 South to St Martins Road	S-E	50	56	86	88	-2	-2.3%	0.2	✓	0	0	1	0	A
		N25 North to Mayns Terrace	NNW	53	3	0	0	0	0.0%	0.0	✓	6	0	0	0	A
		N25 North to N25 South	N-S	53	55	153	155	-2	-1.3%	0.2	✓	0	0	0	0	A
		N25 North to St Martins Road	N-E	53	56	0	0	0	0.0%	0.0	✓	0	0	0	0	A
		St Martins Road to Mayns Terrace	E-N	57	3	14	14	0	0.0%	0.0	✓	17	0	3	0	A
		St Martins Road to N25 South	E-S	57	55	131	131	0	0.0%	0.0	✓	17	0	2	0	A
		Total				588	595	-7	-1.2%	8.3	✓	20	0	1	0	A
109	Glenmore Park T-Junction	Greencore Park South to Greencore Park East	S-E	4	6	10	9	1	11.1%	0.3	✓	0	0	0	0	A
		Greencore Park South to Greencore Park West	S-W	4	7	10	10	0	0.0%	0.0	✓	0	0	0	0	A
		Greencore Park West to Greencore Park East	W-S	4	3	4	4	0	0.0%	0.0	✓	0	0	0	0	A
		Greencore Park East to Greencore Park West	W-E	6	6	0	0	0	0.0%	0.0	✓	0	0	0	0	A
		Greencore Park East to Greencore Park South	E-S	7	5	6	6	0	0.0%	0.0	✓	0	0	0	0	A
		Greencore Park East to Greencore Park West	E-W	7	7	0	0	0	0.0%	0.0	✓	0	0	0	0	A
		Total				30	29	1	3.4%	8.2	✓	0	0	0	0	A
110	Small Boat Harbour Access	Churchtown West to Churchtown East	SW-NE	64	64	11	11	0	0.0%	0.0	✓	0	0	0	0	A
		Churchtown West to Small Boat Harbour	SW-NW	64	66	4	4	0	0.0%	0.0	✓	0	0	0	0	A
		Churchtown East to Churchtown West	NW-SW	65	65	29	29	0	0.0%	0.0	✓	0	0	0	0	A
		Small Boat Harbour to Churchtown West	NW-SW	67	65	9	9	0	0.0%	0.0	✓	0	0	0	0	A
		Total				53	53	0	0.0%	8.8	✓	0	0	0	0	A
111	Rosslare Harbour Entrance Roundabout	N25 to N25	W-NW	79	53	3	4	-1	-25.0%	0.5	✓	3	0	1	0	A
		N25 to Outbound Freight	W-NW	79	80	37	39	-2	-5.1%	0.3	✓	7	0	1	0	A
		N25 to Inbound Freight	NW-N	79	79	45	46	1	2.2%	0.3	✓	4	0	1	0	A
		Freight to N25	NH-W	81	53	127	127	0	0.0%	0.0	✓	28	0	2	0	A
		Freight to Outbound Freight	NW-NW	81	80	4	4	0	0.0%	0.0	✓	28	0	1	0	A
		Freight to Ship	NW-NE	81	83	14										

## PM Peak

Rosslare Harbour VISSIM - 2020 PM Peak													
Node	Description	Links	Links	Volume General Traffic (GT)				General Traffic		Queue Length (m) Model	Delay (secs) Model		
				Direction	From	To	Model	Count	Mod-Cnt	% Diff.			
101	N25 / Churchtown	Churchtown North to Churchtown South		N-S	65	69	0	0	0	0.0%	0	0	0.0 A
		Churchtown North to N25 East		N-E	65	72	0	0	0	0.0%	0	0	0.0 A
		Churchtown North to N25 West		N-W	65	98	3	4	-1	-25.0%	0.5	✓	2 0.0 A
		Churchtown South to Churchtown North		S-N	68	64	0	0	0	0.0%	0	✓	0 0.0 A
		Churchtown South to N25 East		S-E	68	72	0	0	0	0.0%	0.0	✓	0 0.0 A
		Churchtown South to N25 West		S-W	68	98	4	4	0	0.0%	0.0	✓	4 0.0 A
		N25 West to Churchtown North		W-NE	72	64	6	6	0	0.0%	0.0	✓	0 0.0 A
		N25 West to Churchtown South		W-S	72	69	4	4	0	0.0%	0.0	✓	5 0.0 A
		N25 West to N25 East		W-E	72	72	241	242	-1	-0.4%	0.1	✓	1 0.0 A
		N25 East to Churchtown North		E-NE	98	64	4	4	0	0.0%	0.0	✓	5 0.0 A
		N25 East to Churchtown South		E-S	98	69	2	3	-1	-33.3%	0.6	✓	0 0.0 A
		N25 East to N25 West		E-W	98	98	229	235	-6	-2.6%	0.4	✓	2 0.0 A
		Total			493	502	-9	-1.8%	0.4	✓	10	0	0.0 A
102	N20 / Ballyknockan	N25 West to N25 East		W-E	72	42	220	220	0	0.0%	0.0	✓	6 0.0 A
		N25 West to Ballyknockan South		W-SE	72	74	21	22	-1	-4.5%	0.2	✓	6 0.0 A
		Ballyknockan South to N25 East		SE-E	73	42	4	4	0	0.0%	0.0	✓	2 0.0 A
		Ballyknockan South to N25 West		SE-W	73	98	4	4	0	0.0%	0.0	✓	2 0.0 A
		N25 East to Ballyknockan South		E-SE	98	74	26	25	1	4.0%	0.2	✓	0 0.0 A
		N25 East to N25 West		E-W	98	98	231	238	-7	-2.9%	0.5	✓	0 0.0 A
		Total			506	513	-7	-1.4%	0.3	✓	8	0	0.0 A
103	N25 / New Road / Development Roundabout	N25 South to N25 North		SW-N	42	44	219	219	0	0.0%	0.0	✓	0 0.0 A
		N25 South to Ballygarry Link Road West		SW-W	42	59	4	5	-1	-20.0%	0.5	✓	1 0.0 A
		N25 South to Development Access		SW-E	42	95	0	0	0	0.0%	0.0	✓	0 0.0 A
		N25 North to N25 South		N-S	55	43	249	249	0	0.0%	0.0	✓	0 0.0 A
		N25 North to Ballygarry Link Road West		N-W	55	59	6	7	-1	-14.3%	0.4	✓	3 0.0 A
		N25 North to Development Access		N-E	55	95	0	0	0	0.0%	0.0	✓	5 0.0 A
		Ballygarry Link Road West to N25 South		W-S	60	43	0	0	0	-100.0%	0.7	✓	10 0.0 A
		Ballygarry Link Road West to N25 North		W-N	60	44	9	8	1	12.5%	0.3	✓	6 0.0 A
		Ballygarry Link Road West to Development Access		W-E	60	95	0	0	0	0.0%	0.0	✓	10 0.0 A
		Development Access to N25 South		E-S	94	43	3	3	0	0.0%	0.0	✓	3 0.0 A
		Development Access to N25 North		E-N	94	44	0	0	0	0.0%	0.0	✓	0 0.0 A
		Development Access to Ballygarry Link Road West		E-W	94	59	0	0	0	0.0%	0.0	✓	0 0.0 A
		Total			490	498	-8	-1.6%	0.4	✓	11	0	1.0 A
104	New Road / Roche Freight	Ballygarry Link Road West to Ballygarry Link Road East		NW-E	58	60	7	7	0	0.0%	0.0	✓	0 0.0 A
		Ballygarry Link Road West to Roche Freight Access		NW-SW	58	63	0	0	0	0.0%	0.0	✓	0 0.0 A
		Ballygarry Link Road East to Ballygarry Link Road West		SE-NW	59	59	4	5	-1	-20.0%	0.5	✓	0 0.0 A
		Ballygarry Link Road East to Roche Freight Access		SE-SW	59	63	7	7	0	0.0%	0.0	✓	0 0.0 A
		Roche Freight Access to Ballygarry Link Road West		SW-NW	62	59	1	1	0	0.0%	0.0	✓	0 0.0 A
		Roche Freight Access to Ballygarry Link Road East		SW-E	62	60	8	8	0	0.0%	0.0	✓	0 0.0 A
		Total			27	28	-1	-3.6%	0.2	✓	0	0	0.0 A
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown North		E-N	59	64	5	5	0	0.0%	0.0	✓	0 0.0 A
		Ballygarry Link Road East to Churchtown South		E-S	59	65	1	1	0	0.0%	0.0	✓	0 0.0 A
		Churchtown South to Ballygarry Link Road East		S-E	64	58	4	4	0	0.0%	0.0	✓	0 0.0 A
		Churchtown South to Churchtown North		S-N	64	64	6	6	0	0.0%	0.0	✓	0 0.0 A
		Churchtown North to Ballygarry Link Road East		N-E	65	58	3	3	0	0.0%	0.0	✓	0 0.0 A
		Churchtown North to Churchtown South		N-S	65	65	3	3	0	0.0%	0.0	✓	0 0.0 A
		Total			22	22	0	0.0%	0.0	✓	0	0	0.0 A
106	Marys Terrace / Churchtown	Marys Terrace East to Churchtown North		E-N	3	64	3	4	-1	-25.0%	0.5	✓	0 0.0 A
		Marys Terrace East to Churchtown South		E-S	3	65	6	6	0	0.0%	0.0	✓	0 0.0 A
		Churchtown South to Marys Terrace East		S-E	64	2	8	9	-1	-11.1%	0.3	✓	0 0.0 A
		Churchtown South to Churchtown North		S-N	64	64	2	2	0	0.0%	0.0	✓	0 0.0 A
		Churchtown North to Marys Terrace East		N-E	65	2	36	36	0	0.0%	0.0	✓	1 0.0 A
		Churchtown North to Churchtown South		N-S	65	65	0	0	0	0.0%	0.0	✓	0 0.0 A
		Total			55	57	-2	-3.5%	0.3	✓	1	0	1.0 A
107	Marys Terrace / Greenore Park	Marys Terrace West to Marys Terrace East		W-SE	2	2	40	41	-1	-2.4%	0.2	✓	0 0.0 A
		Marys Terrace East to Greenore Park North		W-N	2	4	4	4	0	0.0%	0.0	✓	0 0.0 A
		Marys Terrace East to Marys Terrace West		SE-W	3	3	9	10	-1	-10.0%	0.3	✓	0 0.0 A
		Marys Terrace East to Greenore Park North		SE-N	3	4	40	39	1	2.6%	0.2	✓	3 0.0 A
		Greenore Park North to Marys Terrace East		N-S	5	2	11	11	0	0.0%	0.0	✓	0 0.0 A
		Greenore Park North to Marys Terrace West		N-E	5	3	0	0	0	0.0%	0.0	✓	0 0.0 A
		Total			104	105	-1	-1.0%	0.1	✓	3	0	0.0 A
108	N25 / Marys Terrace / St Martins	Marys Terrace to N25 North		NH-N	2	50	3	3	0	0.0%	0.0	✓	0 0.0 A
		Marys Terrace to N25 South		NW-S	2	55	33	34	-1	-2.9%	0.2	✓	0 0.0 A
		Marys Terrace to St Martins Road		NW-E	2	56	16	16	0	0.0%	0.0	✓	5 0.0 A
		N25 South to Marys Terrace		S-NW	50	3	36	35	1	2.9%	0.2	✓	0 0.0 A
		N25 South to N25 North		S-N	50	52	45	46	-1	-2.2%	0.1	✓	0 0.0 A
		N25 South to St Martins Road		S-E	50	56	138	138	0	0.0%	0.0	✓	17 0.0 A
		N25 North to Marys Terrace		N-NW	53	3	0	0	0	0.0%	0.0	✓	4 0.0 A
		N25 North to N25 South		N-S	53	55	78	78	0	0.0%	0.0	✓	0 0.0 A
		St Martins Road to Marys Terrace		E-NW	57	3	14	14	0	0.0%	0.0	✓	9 0.0 A
		St Martins Road to N25 North		E-N	57	52	0	0	0	0.0%	0.0	✓	3 0.0 A
		St Martins Road to N25 South		E-S	57	55	136	136	0	0.0%	0.0	✓	9 0.0 A
		Total			498	499	-1	-0.2%	0.0	✓	19	0	1.0 A
109	Glenmore Park T-Junction	Glenmore Park South to Greenore Park East		S-E	4	6	22	21	1	4.8%	0.2	✓	1 0.0 A
		Glenmore Park South to Greenore Park West		S-W	4	7	23	22	1	4.5%	0.2	✓	0 0.0 A
		Glenmore Park West to Greenore Park South		W-S	6	5	5	5	0	0.0%	0.0	✓	0 0.0 A
		Glenmore Park West to Greenore Park East		W-E	6	6	0	0	0	0.0%	0.0	✓	0 0.0 A
		Greenore Park East to Greenore Park South		E-S	7	5	6	6	0	0.0%	0.0	✓	0 0.0 A
		Greenore Park East to Greenore Park West		E-W	7	7	0	0	0	0.0%	0.0	✓	0 0.0 A
		Total			56	54	2	3.7%	0.3	✓	1	0	0.0 A
110	Small Boat Harbour Access	Churchtown West to Churchtown East		SW-NE	64	64	6	6	0	0.0%	0.0	✓	0 0.0 A
		Churchtown West to Small Boat Harbour		SW-NW	64	66	0	0	0	0.0%	0.0	✓	0 0.0 A
		Churchtown East to Churchtown West		NE-SW	65	65	27	27	0	0.0%	0.0	✓	0 0.0 A
		Small Boat Harbour to Churchtown West		NW-SW	67	65	9	9	0	0.0%	0.0	✓	1 0.0 A
		Total			42	42	0	0.0%	0.0	✓	1	0	0.0 A
111	Rosslare Harbour Entrance Roundabout	N25 to N25		W-W	79	53	10	10	0	0.0%	0.0	✓	0 0.0 A
		N25 to Outbound Freight		W-NW	79	80	29	29	0	0.0%	0.0	✓	1 0.0 A
		N25 to Ship		W-NE	79	83	7	7	0	0.0%	0.0	✓	0 0.0 A
		Freight to N25		NW-NW	81	53	51	51	0	0.0%	0.0	✓	4 0.0 A
		Freight to Outbound Freight		NW-NW	81	80	7	7	0	0.0%	0.0	✓	5 0.0 A
		Freight to Ship		NW-NE	81	83	7	7	0	0.0%	0.0	✓	4 0.0 A
		Ship to N25		NW-NE	82	53	17	17	0	0.0%	0.0	✓	1 0.0 A
		Ship to Outbound Freight		NE-NW	82	80	4	4	0	0.0%	0.0	✓	1 0.0 A
		Ship to Ship		NE-NS	82	83	0	0	0	0.0%	0.0	✓	1 0.0 A
		Total			132	132	0	0.0%	0.0	✓	5	0	1.0 A
112	N25 / Roche Freight	N25 South to N25 North		SW-NE	42	42	221	220	-2	-0.6%	0.1	✓	0 0.0 A
		N25 South to Roche Freight Access		SW-W	42	92	1	1	0	0.0%	0.0	✓	0 0.0 A
		Roche Freight Access to N25 North		W-NE	93	42	1	1	0	0.0%	0.0	✓	0 0.0 A
		Roche Freight Access to N25 South		W-SW	93	98	4	4	0	0.0%	0.0	✓	4 0.0 A

## L. Junction Performance Full Approach Summary – 2023 – Option A

AM Peak

Rosslare Harbour VISSIM - AM Peak - Option A															
Node	Description	Links		Links		General Traffic (GT)			Queue Length (m)						
		Direction	From	To	Model	Count	Mod-Off	% Diff*	GEH	Accept	Max	Average	Average	Lost†	
101	N25 / Churchtown	Churchtown North to Churchtown South	N-S	65	69	5	0	0.0%	0.0	✓	0	0	3.0	A	
	Churchtown North to N25 East	N-E	65	69	5	0	0.0%	0.0	✓	0	0	0.0	A		
	Churchtown South to N25 West	N-W	65	68	13	12	1	-8.3%	0.1	✓	8	0	3.0	A	
	Churchtown South to Churchtown North	S-N	68	64	6	0	0.0%	0.0	✓	4	0	2.0	A		
	Churchtown South to N25 East	S-E	68	72	4	4	0	0.0%	0.0	✓	4	0	2.0	A	
	Churchtown South to N25 West	S-W	68	98	11	12	-1	-8.3%	0.1	✓	6	0	2.0	A	
	N25 West to Churchtown North	W-NE	72	64	9	9	0	0.0%	0.0	✓	0	0	1.0	A	
	N25 West to N25 East	W-S	72	69	6	6	0	0.0%	0.0	✓	10	0	2.0	A	
	N25 East to Churchtown North	E-NE	98	64	6	6	0	0.0%	0.0	✓	4	0	2.0	A	
	N25 East to Churchtown South	E-S	98	68	4	4	0	0.0%	0.0	✓	7	0	3.0	A	
	N25 East to N25 South	E-W	98	98	309	311	0	-0.6%	0.1	✓	13	0	0.0	A	
	Total				632	636	-4	-0.6%	0.2	✓	21	0	0.0	A	
102	N20 / Ballyknockan	N25 West to N25 East	W-E	72	42	240	241	-1	-0.4%	0.1	✓	8	0	0.0	A
	N25 West to Ballyknockan South	W-SE	72	74	23	24	-1	-4.2%	0.2	✓	8	0	2.0	A	
	Ballyknockan South to N25 East	SE-E	73	42	20	21	-1	-4.8%	0.2	✓	9	0	1.0	A	
	Ballyknockan South to N25 West	SE-W	73	98	22	21	1	4.8%	0.2	✓	7	0	1.0	A	
	N25 East to Ballyknockan South	E-S	98	74	36	35	2	5.9%	0.3	✓	0	0	1.0	A	
	N25 East to N25 West	E-W	98	98	247	248	1	0.0%	0.0	✓	31	0	1.0	A	
	Total				638	640	-4	0.0%	0.2	✓	12	0	0.0	A	
103	N25 / New Road / Development Roundabout	N25 South to N25 North	S-S	42	43	4	4	0	0.0%	0.0	✓	1	0	0.0	A
	N25 South to N25 East	S-N	42	44	242	245	-3	-1.2%	0.2	✓	5	0	1.0	A	
	N25 South to Ballygarry Link Road West	S-W	42	59	12	12	0	0.0%	0.0	✓	9	0	1.0	A	
	N25 South to Development Access	S-E	42	95	0	0	0	0.0%	0.0	✓	9	0	0.0	A	
	N25 North to N25 South	NE-S	55	43	323	322	-2	-0.6%	0.1	✓	31	0	2.0	A	
	N25 North to N25 North	NE-NE	55	44	0	0	0	0.0%	0.0	✓	31	0	0.0	A	
	N25 North to Ballygarry Link Road West	NE-W	55	59	7	7	2	0.0%	0.0	✓	31	0	2.0	A	
	N25 North to Development Access	NE-E	55	56	0	0	0	0.0%	0.0	✓	31	0	0.0	A	
	Ballygarry Link Road West to N25 South	W-S	55	49	8	8	0	0.0%	0.0	✓	1	0	3.0	A	
	Ballygarry Link Road West to N25 North	W-N	60	44	9	10	-1	-10.0%	0.1	✓	1	0	2.0	A	
	Ballygarry Link Road West to Ballygarry Link Road West	W-W	60	59	0	0	0	0.0%	0.0	✓	1	0	0.0	A	
	Ballygarry Link Road West to Development Access	W-E	60	95	3	2	1	50.0%	0.6	✓	1	0	1.0	A	
	Development Access to N25 South	E-S	94	43	3	3	0	0.0%	0.0	✓	2	0	2.0	A	
	Development Access to N25 North	E-NE	94	44	0	0	0	0.0%	0.0	✓	2	0	0.0	A	
	Development Access to Ballygarry Link Road West	E-W	94	59	0	0	0	0.0%	0.0	✓	2	0	0.0	A	
	Development Access to Development Access	E-E	94	95	0	0	0	0.0%	0.0	✓	1	0	0.0	A	
	Total				608	613	-5	-0.8%	0.2	✓	32	0	2.0	A	
104	New Road / Rocha Freight	Ballygarry Link Road West to Ballygarry Link Road East	NW-E	58	60	13	12	0	0.0%	0.0	✓	0	0	0.0	A
	Ballygarry Link Road West to Rocha Freight Access	NW-SW	58	63	0	0	0	0.0%	0.0	✓	0	0	0.0	A	
	Ballygarry Link Road East to Ballygarry Link Road West	E-AW	59	59	5	5	0	0.0%	0.0	✓	0	0	0.0	A	
	Ballygarry Link Road East to Rocha Freight Access	E-SW	59	63	14	14	0	0.0%	0.0	✓	0	0	1.0	A	
	Rocha Freight Access to Ballygarry Link Road West	SW-NW	62	69	0	0	0	0.0%	0.0	✓	0	0	0.0	A	
	Rocha Freight Access to Ballygarry Link Road East	SW-E	62	60	8	8	0	0.0%	0.0	✓	0	0	1.0	A	
	Total				40	40	0	0.0%	0.0	✓	0	0	0.0	A	
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown North	E-N	64	64	11	11	0	0.0%	0.0	✓	1	0	1.0	A
	Ballygarry Link Road East to Churchtown South	E-S	65	65	20	20	0	0.0%	0.0	✓	0	0	0.0	A	
	Churchtown South to Ballygarry Link Road East	S-E	64	58	5	5	0	0.0%	0.0	✓	0	0	1.0	A	
	Churchtown South to Ballygarry Link Road South	S-N	64	64	17	16	1	6.3%	0.2	✓	0	0	0.0	A	
	Churchtown North to Ballygarry Link Road East	N-E	65	58	7	7	0	0.0%	0.0	✓	0	0	1.0	A	
	Churchtown North to Churchtown South	N-S	65	65	19	19	0	0.0%	0.0	✓	0	0	0.0	A	
	Total				54	52	2	3.8%	0.3	✓	1	0	0.0	A	
106	Marys Terrace / Churchtown	Marys Terrace East to Churchtown North	E-N	3	64	11	11	0	0.0%	0.0	✓	1	0	1.0	A
	Marys Terrace East to Churchtown South	E-S	3	65	20	20	0	0.0%	0.0	✓	0	0	0.0	A	
	Churchtown South to Marys Terrace East	S-E	4	2	16	15	1	6.3%	0.2	✓	0	0	0.0	A	
	Churchtown South to Marys Terrace South	S-N	64	64	4	4	0	0.0%	0.0	✓	0	0	0.0	A	
	Churchtown North to Marys Terrace East	N-E	65	2	29	29	0	0.0%	0.0	✓	1	0	1.0	A	
	Churchtown North to Churchtown South	N-S	65	65	6	6	0	0.0%	0.0	✓	1	0	0.0	A	
	Total				86	85	1	1.2%	0.1	✓	3	0	0.0	A	
107	Marys Terrace / Greencore Park	Marys Terrace West to Marys Terrace East	W-S	2	40	39	39	1	2.6%	0.2	✓	0	0	1.0	A
	Marys Terrace West to Greencore Park North	W-N	2	4	5	5	0	0.0%	0.0	✓	0	0	1.0	A	
	Marys Terrace West to Marys Terrace West	W-E	3	3	32	31	1	3.2%	0.2	✓	0	0	0.0	A	
	Marys Terrace East to Greencore Park North	SE-N	3	4	14	13	1	7.7%	0.3	✓	0	0	-1.0	INVA	
	Greencore Park North to Marys Terrace East	N-E	5	2	10	10	0	0.0%	0.0	✓	1	0	1.0	A	
	Greencore Park North to Marys Terrace West	N-W	5	3	0	0	0	0.0%	0.0	✓	0	0	0.0	A	
	Total				101	96	3	3.1%	0.3	✓	2	0	0.0	A	
108	N25 / Marys Terrace / St Martins	Marys Terrace to N25 North	NW-E	2	52	0	0	0	0.0%	0.0	✓	11	0	0.0	A
	Marys Terrace to N25 South	NW-S	2	55	32	32	0	0.0%	0.0	✓	10	0	2.0	A	
	Marys Terrace to St Martins Road	NW-E	2	56	18	17	1	5.9%	0.2	✓	11	0	4.0	A	
	N25 South to Marys Terrace	S-NW	50	3	32	31	1	3.2%	0.2	✓	0	0	1.0	A	
	N25 South to N25 North	S-N	50	52	90	94	-4	-4.3%	0.4	✓	0	0	1.0	A	
	N25 South to St Martins Road	S-E	50	56	120	122	-1	-1.6%	0.2	✓	22	0	3.0	A	
	N25 North to N25 South	N-E	51	51	1	1	0	0.0%	0.0	✓	1	0	0.0	A	
	N25 North to St Martins South	N-S	53	55	169	169	-1	-0.6%	0.1	✓	0	0	0.0	A	
	St Martins Road to Marys Terrace	E-NW	57	3	13	13	0	0.0%	0.0	✓	18	0	3.0	A	
	St Martins Road to N25 North	E-N	57	52	0	0	0	0.0%	0.0	✓	13	0	0.0	A	
	St Martins Road to N25 South	E-S	57	65	126	126	0	0.0%	0.0	✓	18	0	2.0	A	
	Total				599	604	-5	-0.8%	0.2	✓	24	0	1.0	A	
109	Glenmore Park J-Tunction	Greencore Park South to Greencore Park East	S-E	4	6	10	8	2	25.0%	0.7	✓	1	0	0.0	A
	Greencore Park South to Greencore Park West	S-W	4	7	9	9	1	10.0%	0.3	✓	0	0	0.0	A	
	Greencore Park South to N25 North	S-N	4	5	1	1	0	0.0%	0.0	✓	1	0	0.0	A	
	Greencore Park West to Greencore Park East	W-E	6	6	0	0	0	0.0%	0.0	✓	0	0	0.0	A	
	Greencore Park East to Greencore Park South	E-S	7	5	6	6	0	0.0%	0.0	✓	0	0	0.0	A	
	Greencore Park East to Greencore Park West	E-W	7	7	0	0	0	0.0%	0.0	✓	0	0	0.0	A	
	Total				29	28	1	3.6%	0.2	✓	1	0	0.0	A	
110	Small Boat Harbour Access	Churchtown West to Churchtown East	SW-NE	64	64	11	11	0	0.0%	0.0	✓	0	0	0.0	A
	Churchtown East to Small Boat Harbour	SW-NW	64	66	4	4	0	0.0%	0.0	✓	0	0	0.0	A	
	Churchtown East to Churchtown West	SW-SW	65	65	27	27	0	0.0%	0.0	✓	0	0	0.0	A	
	Small Boat Harbour to Churchtown West	SW-SW	67	65	8	8	0	0.0%	0.0	✓	0	0	0.0	A	
	Total				56	56	0	0.0%	0.0	✓	0	0	0.0	A	
111	Rosslare Harbour Entrance Roundabout	N25 to N25	W-W	79	53	4	4	0	0.0%	0.0	✓	2	0	1.0	A
	N25 to Outbound Freight	W-NW	79	83	49	49	0	0.0%	0.0	✓	2	0	1.0	A	
	Freight to N25	NW-W	81	53	139	139	0	0.0%	0.0	✓	38	0	2.0	A	
	Freight to Outbound Freight	NW-NW	81	80	4	4	0	0.0%	0.0	✓	38	0	2.0	A	
	Freight to Ship	NW-NW	81	83	14	14	0	0.0%	0.0	✓	38	0	2.0	A	
	Ship to N25	NE-W	82	53	26	26	0	0.0%	0.0	✓	11	0	2.0	A	
	Ship to Outbound Freight	NE-NE	82	80	8										

## PM Peak

Rosslare Harbour VISSIM - PM Peak - Option A

Node	Description	Links	Links	Volume General Traffic (GT)			General Traffic		Queue Length (m) Model	Delay (secs) Max	Average	Loss%		
				From	To	Model	Count	Mod-Cnt	% Diff	GEH	Accapd			
101	N25 / Churchtown	Churchtown North to Churchtown South	N-S	65	69	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Churchtown North to N25 East	N-E	65	72	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Ballyknockan South to N25 East	S-N	68	66	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Churchtown South to Churchtown North	S-N	68	64	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Churchtown South to N25 East	S-E	68	72	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Churchtown South to N25 West	S-W	68	98	4	4	0	0.0%	0.0	✓	3	0	2.0 A
		N25 West to Churchtown North	W-N	72	64	6	6	0	0.0%	0.0	✓	0	0	1.0 A
		N25 West to Churchtown South	W-S	72	69	4	4	0	0.0%	0.0	✓	6	0	1.0 A
		N25 West to N25 East	W-E	72	72	246	247	-1	-0.4%	0.1	✓	2	0	0.0 A
		N25 East to Churchtown North	E-N	98	64	4	4	0	0.0%	0.0	✓	5	0	1.0 A
		N25 East to Churchtown South	E-S	98	69	1	1	1	-3.3%	0.0	✓	0	0	0.0 A
		N25 East to N25 West	E-W	98	98	24	237	-2	-0.6%	0.1	✓	3	0	0.0 A
		Total				565	569	-4	-0.6%	0.1	✓	12	0	0.0 A
102	N20 / Ballyknockan	N25 West to N25 East	W-E	72	42	226	225	0	0.0%	0.0	✓	7	0	0.0 A
		N25 West to Ballyknockan South	W-SE	72	74	21	22	-1	-4.8%	0.2	✓	7	0	1.0 A
		Ballyknockan South to N25 East	S-E	73	42	4	4	0	0.0%	0.0	✓	3	0	1.0 A
		Ballyknockan South to N25 West	S-EW	73	98	4	4	0	0.0%	0.0	✓	2	0	1.0 A
		N25 East to Ballyknockan South	E-S	98	74	30	28	2	7.1%	0.4	✓	0	0	0.0 A
		N25 East to N25 West	E-W	98	98	237	246	-3	-1.3%	0.2	✓	0	0	0.0 A
		Total				521	522	-2	-0.4%	0.1	✓	14	0	0.0 A
103	N25 / New Road / Development Roundabout	N25 South to N25 South	S-E	42	43	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		N25 South to N25 North	S-N	42	44	223	234	-1	-0.4%	0.1	✓	15	0	1.0 A
		N25 South to Ballygarry Link Road West	S-W	42	59	4	5	1	-20.0%	0.1	✓	15	0	1.0 A
		N25 South to Development Access	S-E	42	95	0	0	0	0.0%	0.0	✓	15	0	0.0 A
		N25 North to N25 South	S-N	55	43	254	254	0	0.0%	0.0	✓	6	0	1.0 A
		N25 North to N25 North	NE-S	55	44	0	0	0	0.0%	0.0	✓	6	0	0.0 A
		N25 North to Ballygarry Link Road West	NE-W	55	59	6	7	-1	-14.3%	0.4	✓	6	0	1.0 A
		N25 North to Development Access	NE-E	55	95	0	0	0	0.0%	0.0	✓	6	0	0.0 A
		Ballygarry Link Road West to N25 South	W-E	60	43	0	0	0	0.0%	0.0	✓	2	0	2.0 A
		Ballygarry Link Road West to N25 North	W-N	60	64	0	0	0	0.0%	0.0	✓	3	0	2.0 A
		Ballygarry Link Road West to Ballygarry Link Road West	W-SE	60	59	0	0	0	0.0%	0.0	✓	2	0	0.0 A
		Ballygarry Link Road West to Development Access	W-EW	60	95	0	0	0	0.0%	0.0	✓	3	0	0.0 A
		Development Access to N25 South	E-S	94	43	3	3	0	0.0%	0.0	✓	2	0	2.0 A
		Development Access to N25 North	E-N	94	44	0	0	0	0.0%	0.0	✓	2	0	0.0 A
		Development Access to Ballygarry Link Road West	E-W	94	59	0	0	0	0.0%	0.0	✓	2	0	0.0 A
		Development Access to Development Access	E-E	94	95	0	0	0	0.0%	0.0	✓	2	0	0.0 A
		Total				505	508	-3	-0.6%	0.1	✓	15	0	1.0 A
104	New Road / Roche Freight	Ballygarry Link Road West to Ballygarry Link Road East	W-E	60	60	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Ballygarry Link Road West to Roche Freight Access	W-SW	68	63	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Ballygarry Link Road East to Ballygarry Link Road West	E-NE	59	59	4	5	-1	-20.0%	0.1	✓	0	0	0.0 A
		Ballygarry Link Road East to Roche Freight Access	E-SW	59	63	7	7	0	0.0%	0.0	✓	0	0	0.0 A
		Roche Freight Access to Ballygarry Link Road West	SW-NW	62	59	1	1	0	0.0%	0.0	✓	0	0	1.0 A
		Roche Freight Access to Ballygarry Link Road East	SW-E	62	60	8	8	0	0.0%	0.0	✓	0	0	0.0 A
		Total				27	28	-1	-3.6%	0.2	✓	0	0	0.0 A
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown North	E-N	59	64	5	5	0	0.0%	0.0	✓	0	0	1.0 A
		Ballygarry Link Road East to Churchtown South	E-S	59	65	1	1	0	0.0%	0.0	✓	0	0	0.0 A
		Ballygarry Link Road East to New Road East	E-W	59	59	3	3	0	0.0%	0.0	✓	0	0	1.0 A
		Churchtown South to Churchtown North	S-N	64	64	2	2	0	0.0%	0.0	✓	0	0	0.0 A
		Churchtown North to Ballygarry Link Road East	N-E	65	58	3	3	0	0.0%	0.0	✓	0	0	1.0 A
		Churchtown North to Churchtown South	N-S	65	65	3	3	0	0.0%	0.0	✓	0	0	0.0 A
		Total				23	22	1	4.5%	0.2	✓	0	0	0.0 A
106	Manys Terrace / Churchtown	Manys Terrace East to Churchtown North	E-N	3	64	4	4	0	0.0%	0.0	✓	0	0	1.0 A
		Manys Terrace East to Churchtown South	E-S	3	65	6	6	0	0.0%	0.0	✓	0	0	0.0 A
		Churchtown South to Manys Terrace East	S-E	64	2	8	9	-1	-11.7%	0.1	✓	0	0	1.0 A
		Churchtown South to Manys Terrace West	S-N	64	64	2	2	0	0.0%	0.0	✓	0	0	0.0 A
		Churchtown North to Manys Terrace East	N-E	65	60	3	3	0	0.0%	0.0	✓	0	0	1.0 A
		Churchtown North to Manys Terrace South	N-S	65	65	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Total				96	57	-1	-1.8%	0.1	✓	1	0	0.0 A
107	Manys Terrace / Greenone Park	Manys Terrace West to Manys Terrace East	W-SE	2	2	40	41	-1	-2.4%	0.2	✓	0	0	1.0 A
		Manys Terrace East to Manys Terrace North	W-N	2	4	4	4	0	0.0%	0.0	✓	0	0	1.0 A
		Manys Terrace East to Manys Terrace West	S-EW	3	3	10	10	0	0.0%	0.0	✓	0	0	1.0 A
		Manys Terrace East to Greenone Park North	SE-N	3	4	41	39	2	5.1%	0.3	✓	4	0	-1.0 #N/A
		Greenone Park North to Manys Terrace East	N-SE	5	2	11	11	0	0.0%	0.0	✓	1	0	1.0 A
		Greenone Park North to Manys Terrace West	N-W	5	3	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Total				146	165	-1	-1.4%	0.4	✓	4	0	0.0 A
108	N25 / Manys Terrace / St Martins	Manys Terrace to N25 North	NW-R	2	52	0	0	0	0.0%	0.0	✓	2	0	0.0 A
		Manys Terrace to N25 South	NW-S	2	55	33	34	-1	-2.9%	0.2	✓	6	0	2.0 A
		Manys Terrace to St Martins Road	NW-E	2	56	18	18	0	0.0%	0.0	✓	5	0	3.0 A
		N25 South to Manys Terrace	S-NW	50	3	37	35	2	5.7%	0.3	✓	0	0	1.0 A
		N25 South to N25 North	S-N	50	52	50	51	-1	-2.0%	0.1	✓	0	0	1.0 A
		N25 North to St Martins Road	S-E	50	56	138	136	0	0.0%	0.0	✓	16	0	2.0 A
		N25 North to Manys Terrace	NW-N	53	3	0	0	0	0.0%	0.0	✓	5	0	0.0 A
		N25 North to St Martins South	NW-S	53	52	84	84	0	0.0%	0.0	✓	0	0	0.0 A
		N25 North to St Martins North	N-E	53	55	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		St Martins Road to Manys Terrace	E-NW	57	3	14	14	0	0.0%	0.0	✓	7	0	3.0 A
		St Martins Road to N25 North	E-N	57	52	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		St Martins Road to N25 South	E-S	57	55	135	135	0	0.0%	0.0	✓	7	0	1.0 A
		Total				509	509	0	0.0%	0.0	✓	16	0	1.0 A
109	Glenmore Park T-Junction	Greenone Park South to Greenone Park East	S-E	4	6	21	20	1	5.0%	0.2	✓	1	0	0.0 A
		Greenone Park South to Greenone Park West	S-W	4	7	24	23	1	4.3%	0.2	✓	0	0	0.0 A
		Greenone Park West to Greenone Park South	W-S	5	5	5	5	0	0.0%	0.0	✓	0	0	1.0 A
		Greenone Park East to Greenone Park South	E-S	5	6	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Greenone Park East to Greenone Park East	E-W	7	7	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Greenone Park East to Greenone Park West	E-W	7	7	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Total				56	54	2	3.7%	0.3	✓	1	0	0.0 A
110	Small Boat Harbour Access	Churchtown West to Churchtown East	SW-NE	64	64	6	6	0	0.0%	0.0	✓	0	0	0.0 A
		Churchtown West to Small Boat Harbour	SW-NW	64	66	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Churchtown East to Churchtown West	NE-SW	65	65	27	27	0	0.0%	0.0	✓	0	0	0.0 A
		Small Boat Harbour to Churchtown West	NW-SW	67	65	9	9	0	0.0%	0.0	✓	1	0	0.0 A
		Total				42	42	0	0.0%	0.0	✓	1	0	0.0 A
111	Rosslare Harbour Entrance Roundabout	Not In Use	E-N	73	53	11	10	0	0.0%	0.0	✓	3	0	0.0 A
		Not to Outbound Freight	W-N	73	60	10	33	0	0.0%	0.0	✓	3	0	0.0 A
		Not to Ship	W-N	73	83	7	7	0	0.0%	0.0	✓	0	0	1.0 A
		Freight to N25	NW-W	81	53	56	56	0	0.0%	0.0	✓	6	0	1.0 A
		Freight to Outbound Freight	NW-NW	81	80	7	7	0	0.0%	0.0	✓	6	0	1.0 A
		Freight to Ship	NW-NW	81										

# **M. Junction Performance Full Approach Summary – 2023 – Option B**

## AM Peak

## PM Peak

# N. Junction Performance Full Approach Summary – 2023 – Option C

AM Peak

Rosslare Harbour VISSIM - AM Peak - Option C														
Node	Description	Links		Links		Volume General Traffic (GT)			General Traffic		Queue Length (m)		Delay (secs)	
		Direction	From	To	Model	Count	Mod-Cnt	% Chgt	GEN	Accept	Max	Average	Model	LOS†
101	N05 / Churchtown	Churchtown North to Churchtown South	N-S	144	69	0	4	4	80.0%	1.5	✓	5	0	2.0 <span style="color: green;">A</span>
		Churchtown North to N05 East	N-E	144	72	6	2	50.0%	0.9	✓	4	0	1.0 <span style="color: green;">A</span>	
		Churchtown South to N05 West	N-W	144	98	31	12	19	158.3%	4.1	✓	12	0	2.0 <span style="color: green;">A</span>
		Churchtown South to Churchtown North	S-N	68	64	6	1	20.0%	0.4	✓	5	0	3.0 <span style="color: green;">A</span>	
		Churchtown South to N05 East	S-E	68	72	4	1	0.0%	0.0	✓	6	0	3.0 <span style="color: green;">A</span>	
		Churchtown South to N05 West	S-W	68	98	11	12	0.8%	0.3	✓	7	0	2.0 <span style="color: green;">A</span>	
		N05 West to Churchtown North	W-NE	72	64	0	3	0	0.0%	0.0	✓	0	0	1.0 <span style="color: green;">A</span>
		N05 West to Churchtown South	W-S	72	69	6	0	0.0%	0.0	✓	9	0	2.0 <span style="color: green;">A</span>	
		N05 West to N05 East	W-E	72	72	256	-1	-0.4%	0.1	✓	4	0	0.0 <span style="color: green;">A</span>	
		N05 East to Churchtown North	E-NE	98	64	7	1	0.0%	0.0	✓	18	0	2.0 <span style="color: green;">A</span>	
		N05 East to Churchtown South	E-S	98	69	4	1	0.0%	0.0	✓	4	0	1.0 <span style="color: green;">A</span>	
		N05 East to N05 West	E-W	98	99	259	311	15	0.0%	0.0	✓	19	0	2.0 <span style="color: green;">A</span>
		Total			672	636	36	5.7%	1.4	✓	23	0	1.0 <span style="color: green;">A</span>	
102	N20 / Ballyknockan	N20 to N05 East	W-E	72	43	243	241	2	0.8%	0.1	✓	7	0	0.0 <span style="color: green;">A</span>
		N20 West to Ballyknockan South	W-SE	72	74	23	24	-1	-4.2%	0.2	✓	7	0	2.0 <span style="color: green;">A</span>
		Ballyknockan South to N05 East	SE-E	73	42	20	21	-1	-4.8%	0.2	✓	7	0	1.0 <span style="color: green;">A</span>
		Ballyknockan South to N05 West	SE-W	73	96	24	25	-1	-4.8%	0.2	✓	8	0	1.0 <span style="color: green;">A</span>
		N05 East to Ballyknockan South	E-S	95	74	26	34	4	11.1%	0.7	✓	0	0	1.0 <span style="color: green;">A</span>
		N05 East to N05 West	E-W	95	98	312	301	11	3.7%	0.6	✓	0	0	0.0 <span style="color: green;">A</span>
		Total			658	642	16	2.5%	0.6	✓	18	0	0.0 <span style="color: green;">A</span>	
103	N25 / New Road / Development Roundabout	N20 South to N05 South	S-S	42	43	0	0	0.0%	0.0	✓	10	0	0.0 <span style="color: green;">A</span>	
		N20 South to N05 North	S-N	42	44	157	158	2	1.3%	0.2	✓	10	0	1.0 <span style="color: green;">A</span>
		N20 South to Ballyknockan Link Road West	S-SE	42	59	99	102	3	-3.9%	0.1	✓	10	0	1.0 <span style="color: green;">A</span>
		Development Access to N20 South	S-E	42	60	0	1	0.0%	0.0	✓	10	0	1.0 <span style="color: green;">A</span>	
		N05 North to N05 South	N-E	55	43	158	160	0	-1.3%	0.2	✓	10	0	2.0 <span style="color: green;">A</span>
		N20 North to N20 South	N-NE	55	44	0	0	0.0%	0.0	✓	10	0	0.0 <span style="color: green;">A</span>	
		N05 North to Ballyknockan Link Road West	N-EW	55	59	7	7	0	0.0%	0.0	✓	10	0	2.0 <span style="color: green;">A</span>
		N05 North to Development Access	N-NE	55	95	0	0	0.0%	0.0	✓	10	0	0.0 <span style="color: green;">A</span>	
		Ballyknockan Link Road West to N05 South	W-E	60	43	193	174	19	10.9%	1.4	✓	12	0	3.0 <span style="color: green;">A</span>
		Ballyknockan Link Road West to N05 North	W-SE	60	44	144	144	0	0.0%	0.0	✓	12	0	2.0 <span style="color: green;">A</span>
		Ballyknockan Link Road West to Ballyknockan Link Road West	W-W	60	69	0	0	0.0%	0.0	✓	10	0	0.0 <span style="color: green;">A</span>	
		Ballyknockan Link Road West to Development Access	W-E	60	95	2	2	0	0.0%	0.0	✓	15	0	2.0 <span style="color: green;">A</span>
		Development Access to N20 South	E-S	94	43	3	3	0	0.0%	0.0	✓	2	0	2.0 <span style="color: green;">A</span>
		Development Access to N20 North	E-E	94	44	0	0	0.0%	0.0	✓	2	0	0.0 <span style="color: green;">A</span>	
		Development Access to Ballyknockan Link Road West	E-NE	94	59	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Development Access to Development Access	E-E	94	95	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Total			629	613	15	2.4%	0.6	✓	17	0	2.0 <span style="color: green;">A</span>	
104	New Road / Roche Freight	Ballyknockan Link Road West to Ballyknockan Link Road East	NW-E	58	60	195	177	18	10.2%	1.3	✓	0	0	0.0 <span style="color: green;">A</span>
		Ballyknockan Link Road West to Roche Freight Access	NW-SW	58	63	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Ballyknockan Link Road East to Ballyknockan Link Road West	E-NW	59	62	92	95	-3	-3.2%	0.3	✓	0	0	0.0 <span style="color: green;">A</span>
		Roche Freight Access to Ballyknockan Link Road West	E-SW	59	63	15	14	1	7.1%	0.3	✓	0	0	1.0 <span style="color: green;">A</span>
		Roche Freight Access to Roche Freight Access	E-W	59	63	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Ballyknockan Link Road East to Ballyknockan Link Road East	S-E	62	60	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Ballyknockan Link Road East to Ballyknockan Link Road East	S-EW	62	60	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Total			311	295	16	5.4%	0.9	✓	5	0	0.0 <span style="color: green;">A</span>	
105	New Road / Churchtown	Ballyknockan Link Road West to Churchtown South	E-S	59	14	46	2	44	220.0%	0.6	✗	0	0	1.0 <span style="color: green;">A</span>
		Ballyknockan Link Road East to Churchtown North	E-N	59	14	2	3	-1	-33.3%	0.6	✓	0	0	1.0 <span style="color: green;">A</span>
		Ballyknockan Link Road East to Ballyknockan Link Road West	E-NW	59	141	44	90	-6	-51.1%	3.6	✓	0	0	0.0 <span style="color: green;">A</span>
		Churchtown South to N05 South	S-N	54	140	11	16	0	0.0%	0.0	✓	8	0	1.0 <span style="color: green;">A</span>
		Churchtown South to Ballyknockan Link Road East	S-E	54	59	5	3	0	0.0%	0.0	✓	5	0	1.0 <span style="color: green;">A</span>
		Churchtown North to Ballyknockan Link Road East	N-E	133	58	26	3	19	271.4%	4.7	✓	5	0	1.0 <span style="color: green;">A</span>
		Churchtown North to Churchtown South	N-S	133	144	0	19	-19	-100.0%	4.5	✗	0	0	0.0 <span style="color: green;">A</span>
		Ballyknockan Link Road West to Ballyknockan Link Road East	NW-E	140	58	164	165	-1	-0.6%	0.1	✓	0	0	3.0 <span style="color: green;">A</span>
		Total			140	142	-2	-1.4%	0.2	✓	7	0	2.0 <span style="color: green;">A</span>	
106	Mayo Terrace / Churchtown	Mayo Terrace East to Churchtown North	E-N	3	142	11	17	1	5.9%	0.2	✓	1	0	1.0 <span style="color: green;">A</span>
		Mayo Terrace East to Churchtown South	E-S	3	153	20	20	0	0.0%	0.0	✓	0	0	1.0 <span style="color: green;">A</span>
		Churchtown South to Mayo Terrace East	S-E	142	2	15	15	0	0.0%	0.0	✓	0	0	1.0 <span style="color: green;">A</span>
		Churchtown South to Churchtown North	S-N	142	142	4	4	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>
		Churchtown North to Mayo Terrace East	N-E	133	2	30	29	1	3.4%	0.2	✓	2	0	1.0 <span style="color: green;">A</span>
		Churchtown North to Churchtown South	N-S	133	133	6	0	0.0%	0.0	✓	1	0	1.0 <span style="color: green;">A</span>	
		Total			88	89	12	1.2%	0.6	✓	3	0	0.0 <span style="color: green;">A</span>	
107	Mayo Terrace / Greenore Park	Mayo Terrace West to Mayo Terrace East	W-S	2	2	40	41	-1	-2.5%	0.2	✓	4	0	1.0 <span style="color: green;">A</span>
		Mayo Terrace West to Greenore Park North	W-N	2	4	0	0	0.0%	0.0	✓	0	0	1.0 <span style="color: green;">A</span>	
		Mayo Terrace East to Mayo Terrace West	SE-W	3	3	32	31	1	3.2%	0.2	✓	0	0	0.0 <span style="color: green;">A</span>
		Mayo Terrace East to Greenore Park North	SE-N	3	4	13	13	0	0.0%	0.0	✓	1	0	1.0 <span style="color: green;">A</span>
		Greenore Park North to Mayo Terrace East	N-E	5	2	10	10	0	0.0%	0.0	✓	1	0	1.0 <span style="color: green;">A</span>
		Greenore Park North to Mayo Terrace West	N-S	5	3	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Total			100	101	-1	-0.1%	0.2	✓	4	0	0.0 <span style="color: green;">A</span>	
108	N25 / Mayo Terrace / St Martins	Mayo Terrace to N25 North	NW-N	2	52	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Mayo Terrace to N25 South	NW-S	2	55	32	32	0	0.0%	0.0	✓	7	0	1.0 <span style="color: green;">A</span>
		Mayo Terrace West to Mayo Terrace East	SE-S	2	56	18	17	1	5.9%	0.2	✓	5	0	3.0 <span style="color: green;">A</span>
		Mayo Terrace East to Mayo Terrace West	SE-W	2	56	3	10	-1	-10.0%	0.1	✓	0	0	0.0 <span style="color: green;">A</span>
		Mayo Terrace East to St Martins	W-S	4	5	4	4	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>
		Mayo Terrace West to Greenore Park East	W-E	6	6	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Greenore Park East to Mayo Terrace East	E-S	7	7	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Greenore Park East to Greenore Park West	E-W	7	7	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
		Total			28	26	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>	
110	Small Boat Harbour Access	Churchtown West to Churchtown East	NW-E	141	131	57	101	-44	-43.8%	5.0	✓	7	0	1.0 <span style="color: green;">A</span>
		Churchtown West to Small Boat Harbour	NW-NW	141	68	2	4	-2	-60.0%	1.2	✗	7	0	1.0 <span style="color: green;">A</span>
		Churchtown West to Churchtown West	NE-SW	132	140	192	192	0	0.0%	0.0	✓	1	0	1.0 <span style="color: green;">A</span>
		Total			259	265	-46	-15.1%	2.7	✗	7	0	1.0 <span style="color: green;">A</span>	
111	Rosslare Harbour Entrance Roundabout	N20 to N25	W-W	79	53	4	4	0	0.0%	0.0	✓	0	0	1.0 <span style="color: green;">A</span>
		N20 to Outbound Freight	W-NW	79	80	0	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>
		N20 to Ship	W-NE	79	83	0	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>
		Fight to N25	NW-W	81	98	0	0	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>
		Fight to Outbound Freight	NW-NW	81	80	4	4	0	0.0%	0.0	✓	0	0	0.0 <span style="color: green;">A</span>
		Fight to Ship	N											

## PM Peak

Rosslare Harbour VISSIM - PM Peak - Option C

Node	Description	Links	Links	Volume General Traffic (GTV)			General Traffic		Queue Length (m)		Delay (secs)		LOS	
				Mode	Count	% Dist	Gen	Accept	Max	Average	Gen	Accept		
101	N25 / Churchtown	Churchtown North to Churchtown South	N-E	144	72	0	0	0	0	0.0%	0	0	A	
		Churchtown North to N25 East	N-E	144	72	0	0	0	0	0.0%	0	0	A	
		Churchtown South to N25 West	N-W	144	98	21	4	17	425.0%	4.8	✓	9	A	
		Churchtown South to Churchtown North	S-N	68	64	0	0	0	0	0.0%	0	0	A	
		Churchtown South to N25 East	S-E	68	72	0	0	0	0	0.0%	0	0	A	
		Churchtown South to N25 West	S-W	68	36	4	4	0	0	0.0%	0	1	A	
		N25 West to Churchtown South	W-N	68	64	0	0	0	0	0.0%	0	0	A	
		N25 West to Churchtown South	W-S	72	69	4	4	0	0	0.0%	0	4	A	
		N25 West to N25 East	W-E	72	72	246	247	-1	-0.4%	0.1	✓	1	A	
		N25 East to Churchtown North	E-N	98	64	4	4	0	0	0.0%	0	0	A	
		N25 East to Churchtown South	E-S	98	69	2	2	0	0	-0.33%	0.6	✓	0	A
		N25 East to N25 West	E-W	98	98	237	237	-1	-0.33%	0.6	✓	0	A	
		Total		524	569	15	2.8%	0	0	✓	14	2	A	
102	N20 / Ballyknockan	N25 West to N25 East	W-E	72	42	225	225	-1	-0.2%	0.0	✓	6	2	A
		N25 West to Ballyknockan South	W-S-E	72	74	21	22	-1	-4.5%	0.2	✓	6	2	A
		Ballyknockan South to N25 East	S-E	73	42	4	4	0	0	0.0%	0	3	A	
		Ballyknockan South to N25 West	S-E-W	73	98	4	4	0	0	0.0%	0	2	A	
		N25 East to Ballyknockan South	E-S-E	98	74	35	36	-1	-0.2%	0.4	✓	0	A	
		N25 East to N25 West	E-S-W	98	98	236	240	-1	-0.2%	0.4	✓	0	A	
		Total		522	523	1	-0.2%	0.0	0	✓	8	2	A	
103	N25 / New Road / Development Roundabout	S-E-S	42	43	0	0	0	0	0.0%	0	0	✓	16	A
		N25 South to N25 North	S-N-E	42	44	183	184	-1	-0.5%	0.1	✓	16	2	A
		N25 South to Ballygarry Link Road West	S-W	42	59	44	45	-1	-2.2%	0.1	✓	16	2	A
		N25 South to Development Access	S-E-E	42	95	0	0	0	0	0.0%	0	✓	16	A
		N25 South to N25 North	S-N-S	42	43	171	181	-1	-0.5%	0.1	✓	16	2	A
		N25 North to N25 North	N-E-N	55	44	1	1	0	0	0.0%	0	✓	5	A
		N25 North to Ballygarry Link Road West	N-E-W	55	59	7	7	0	0	0.0%	0	6	A	
		N25 North to Development Access	N-E-E	55	95	0	0	0	0	0.0%	0	6	A	
		Ballygarry Link Road West to N25 South	W-S	60	43	84	80	-1	-5.0%	0.4	✓	4	2	A
		Ballygarry Link Road West to N25 North	W-N-E	60	44	8	8	0	0	0.0%	0	4	A	
		Ballygarry Link Road West to N25 Link Road West	W-N-W	60	59	0	0	0	0	0.0%	0	4	A	
		Ballygarry Link Road West to Development Access	W-E	60	95	0	0	0	0	0.0%	0	4	A	
		Development Access to N25 South	E-S	94	43	3	3	0	0	0.0%	0	1	A	
		Development Access to N25 North	E-N-E	94	44	0	0	0	0	0.0%	0	1	A	
		E-W	E-V	94	59	0	0	0	0	0.0%	0	1	A	
		Development Access to Ballygarry Link Road West	E-E-E	94	95	0	0	0	0	0.0%	0	0	A	
		Development Access to Development Access	E-E-W	94	95	0	0	0	0	0.0%	0	0	A	
		Total		567	569	0	-0.2%	0.0	0	✓	17	2	A	
104	New Road / Roche Freight	Ballygarry Link Road West to Ballygarry Link Road East	N-N-E	58	60	0	0	0	0	0.0%	0	0	A	
		Ballygarry Link Road East to Roche Freight Access	N-N-W	58	63	0	0	0	0	0.0%	0	0	A	
		Ballygarry Link Road East to Ballygarry Link Road West	E-N-Y	59	44	45	45	-1	-2.2%	0.1	✓	0	A	
		Roche Freight Access to Ballygarry Link Road West	E-S-W	59	63	8	7	1	14.3%	0.4	✓	0	A	
		Roche Freight Access to Ballygarry Link Road East	W-S-W	62	59	1	0	0	0	0.0%	0	0	A	
		Roche Freight Access to Ballygarry Link Road East	W-E	62	60	0	0	0	0	0.0%	0	0	A	
		Total		145	141	4	-2.8%	0.8	✓	2	2	A		
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown South	S-E-S	59	144	21	1	1	20	200.0%	0.0	✓	0	A
		Ballygarry Link Road East to Churchtown North	S-E-N	59	142	3	5	0	-2	-40.0%	1.0	✓	0	A
		Ballygarry Link Road East to Ballygarry Link Road West	E-N-Y	59	141	20	40	-1	-50.0%	3.7	✓	0	A	
		Churchtown South to Churchtown North	S-N	64	62	0	0	0	0	0.0%	0	✓	2	A
		Churchtown South to N25 North	S-N-E	64	59	0	0	0	0	0.0%	0	✓	2	A
		Churchtown North to Ballygarry Link Road East	N-E-N	133	58	0	0	0	0	0.0%	0	✓	2	A
		Churchtown North to Ballygarry Link Road East	N-E-S	133	58	0	0	0	0	0.0%	0	✓	2	A
		Churchtown North to Ballygarry Link Road East	N-E-W	140	58	73	73	-1	-100.0%	2.4	✓	0	A	
		Total		61	62	1	-1.6%	0.1	✓	3	2	A		
106	Marys Terrace / Churchtown	Marys Terrace East to Churchtown North	E-N	3	142	4	4	0	0	0.0%	0	✓	0	A
		Marys Terrace East to Marys Terrace East	E-S	3	133	5	5	0	0	0.0%	0	✓	0	A
		Churchtown South to Marys Terrace East	S-N	142	2	0	0	0	0	0.0%	0	✓	0	A
		Churchtown South to Marys Terrace North	S-N-E	142	142	2	2	0	0	0.0%	0	✓	0	A
		Churchtown South to Marys Terrace East	S-N-W	133	2	36	36	0	0	0.0%	0	✓	1	A
		Churchtown South to Churchtown South	N-S	133	133	0	0	0	0	0.0%	0	✓	0	A
		Total		55	67	-2	-3.5%	0.3	✓	1	2	A		
107	Marys Terrace / Greenore Park	Marys Terrace West to Marys Terrace East	S-E	2	2	38	41	-1	-4.9%	0.5	✓	0	A	
		Marys Terrace West to Greenore Park East	S-E-N	4	4	4	4	0	0	0.0%	0	✓	0	A
		Marys Terrace East to Marys Terrace West	S-E-W	3	3	5	10	-1	-10.0%	0.1	✓	0	A	
		Marys Terrace East to Greenore Park North	S-E-N	3	4	40	39	-1	-2.6%	0.2	✓	3	A	
		Greenore Park North to Marys Terrace East	S-E-E	5	2	11	11	0	0	0.0%	0	✓	1	A
		Greenore Park North to Marys Terrace West	S-E-W	5	3	0	0	0	0	0.0%	0	0	A	
		Total		163	165	-2	-1.9%	0.2	✓	4	2	A		
108	N25 / Marys Terrace / St Martins	Marys Terrace to N25 North	N-E	2	52	0	0	0	0	0.0%	0	✓	0	A
		Marys Terrace to N25 South	N-N-E	2	55	30	34	-1	-2.9%	0.2	✓	1	A	
		Marys Terrace to St Martins Road	N-W-E	2	58	18	18	0	0	0.0%	0	✓	5	A
		N25 South to Marys Terrace North	S-N	60	3	36	35	0	0	0.0%	0	✓	0	A
		N25 South to N25 North	S-N-E	50	52	10	11	-1	-0.1%	0.5	✓	0	A	
		N25 South to St Martins Road	S-N-W	50	56	172	138	-1	-0.7%	0.1	✓	5	A	
		N25 South to Development Access	S-N-E	50	53	0	0	0	0	0.0%	0	✓	0	A
		N25 North to N25 South	N-S-N	53	65	10	11	-1	-0.1%	0.1	✓	0	A	
		N25 North to St Martins Road	N-S-E	53	56	0	0	0	0	0.0%	0	✓	0	A
		St Martins Road to Marys Terrace	E-N-Y	57	3	14	14	0	0	0.0%	0	✓	4	A
		St Martins Road to N25 North	E-S	57	62	0	0	0	0	0.0%	0	0	A	
		Total		262	300	-4	-1.4%	0.2	✓	4	2	A		
109	Glenmore Park T-Junction	Glenmore Park South to Glenmore Park East	S-E	4	6	20	20	0	0	0.0%	0	✓	1	A
		Glenmore Park South to Glenmore Park West	S-W	4	7	23	23	0	0	0.0%	0	✓	0	A
		Glenmore Park West to Glenmore Park South	W-S	6	5	5	5	0	0	0.0%	0	✓	1	A
		Glenmore Park West to Glenmore Park East	W-E	6	6	0	0	0	0	0.0%	0	✓	0	A
		Glenmore Park East to Glenmore Park West	W-S-E	7	5	6	6	0	0	0.0%	0	✓	0	A
		Glenmore Park East to Glenmore Park West	W-E-W	7	7	0	0	0	0	0.0%	0	✓	0	A
		Total		54	64	0	0	0.0%	0.0	✓	1	2	A	
110	Small Boat Harbour Access	Churchtown West to Churchtown East	S-W-E	141	131	26	46	-20	-43.5%	1.3	✓	1	A	
		Churchtown West to Small Boat Harbour	S-W-N	141	66	0	0	0	0	0.0%	0	✓	1	A
		Churchtown East to Churchtown West	N-S-W	132	140	103	100	0	0	0.0%	0	✓	0	A
		Small Boat Harbour to Churchtown West	N-W-Y	67	140	9	9	0	0	0.0%	0	✓	0	A
		Total		495	496	0	0	0.0%	0.0	✓	2	0	A	
111	Rossare Harbour Entrance Roundabout	N25 to N25	N-E	79	53	11	11	0	0	0.0%	0	✓	0	A
		N25 to Outbound Freight	N-W	79	90	0	0	0	0	0.0%	0	✓	0	A
		N25 to Ship	N-E-N	79	83	0	0	0	0	0.0%	0	✓	0	A
		Freight to N25	N-W-N	81	83	0	0	0	0	0.0%	0	✓	0	A
		Ship to N25	N-E-E	81	53	0	0	0	0	0.0%	0	✓	0	A
		Ship to Outbound Freight	N-E-N	82	90	4	4	0	0	0.0%	0	✓	0	A
		Ship to Ship	N-E-N-E	82	83	0	0	0	0	0.0%	0	✓	0	A
		Total		28	29	-1	-3.4%	0.2	✓	0	0	A		
112	N25 / Roche Freight	N25 South to N25 North	S-W-N	42	42	228	0	-0.4%	0.1	✓	0	0	A	
		N25 South to Roche Freight Access	S-W-E	42	52	5	0	0	0	0.0%	0	✓	0	A
		N25 South to N25 North	N-S	55	55	166	166	-1	-1.2%	0.2	✓	0		

# O. Junction Performance Full Approach Summary – 2038 – Option A

AM Peak

Rosslare Harbour VISSIM - AM Peak - Option A										
Node	Description	Links		Links		Volume General Traffic (GT)		General Traffic		
		Direction	From	To	Model	Count	Mod-Off	% Diff*	GEH	
101	N25 / Churchtown	Churchtown North to Churchtown South	N-S	65	69	5	0	0.0%	0.0	
		Churchtown North to N25 East	N-E	65	69	5	0	0.0%	0.0	
		Churchtown South to N25 West	N-W	65	68	14	12	-16.7%	0.4	
		Churchtown South to Churchtown North	S-N	68	64	6	0	20.0%	0.4	
		Churchtown South to N25 East	S-E	68	72	4	0	0.0%	0.0	
		Churchtown South to N25 West	S-W	68	98	11	12	-8.3%	0.1	
		N25 West to Churchtown North	W-NE	72	64	9	0	0.0%	0.0	
		N25 West to Churchtown South	W-S	72	69	5	0	-16.7%	0.4	
		N25 East to N25 East	E-W	72	72	280	281	-0.4%	0.1	
		N25 East to Churchtown North	E-NE	98	64	6	0	14.3%	0.4	
		N25 East to Churchtown South	E-S	98	65	4	0	-25.0%	0.1	
		N25 East to N25 West	E-W	98	98	342	344	-0.6%	0.1	
		Total			688	693	-5	-0.7%	0.2	
102	N20 / Ballyknockan	W-E	72	42	262	263	-1	-0.4%	0.1	
		N25 West to Ballyknockan South	W-SE	72	74	26	25	0	0.0%	0.0
		Ballyknockan South to N25 East	SE-E	73	42	20	21	-1	-4.8%	0.2
		Ballyknockan South to N25 West	SE-W	73	98	22	21	1	4.8%	0.2
		N25 East to Ballyknockan South	E-S	98	74	39	37	-5.4%	0.1	
		N25 East to N25 West	E-W	98	98	24	23	1	4.0%	0.1
		Total			698	700	-2	0	0.0	
103	N25 / New Road / Development Roundabout	S-S	42	43	4	0	0	0.0%	0.0	
		N25 South to N25 South	S-N	42	44	264	265	-1	-0.4%	0.1
		N25 South to Ballygarry Link Road West	S-W	42	59	12	12	0	0.0%	0.0
		N25 South to Development Access	S-E	42	95	0	0	0.0%	0.0	
		N25 North to N25 South	NE-S	55	43	360	361	-1	-0.3%	0.1
		N25 North to N25 South	NE-NE	55	44	0	0	0.0%	0.0	
		N25 North to Ballygarry Link Road West	NE-W	55	59	9	8	12.5%	0.3	
		N25 North to Development Access	NE-E	55	56	0	0	0.0%	0.0	
		Ballygarry Link Road West to N25 South	W-S	55	49	4	4	0	0.0%	0.0
		Ballygarry Link Road West to N25 North	W-N	60	44	9	11	-18.2%	0.6	
		Ballygarry Link Road West to Ballygarry Link Road West	W-W	60	59	0	0	0.0%	0.0	
		Ballygarry Link Road West to Development Access	W-E	60	95	3	2	1	50.0%	0.6
		Development Access to N25 South	E-S	94	43	3	0	0.0%	0.0	
		Development Access to N25 North	E-NE	94	44	0	0	0.0%	0.0	
		Development Access to Ballygarry Link Road West	E-W	94	59	0	0	0.0%	0.0	
		Development Access to Development Access	E-E	94	95	0	0	0.0%	0.0	
		Total			689	671	-8	1	0.1	
104	New Road / Roche Freight	NW-E	58	60	13	13	-7.7%	0.1	0	
		Ballygarry Link Road West to Roche Freight Access	NW-SW	58	63	0	0	0.0%	0.0	
		Ballygarry Link Road East to Ballygarry Link Road West	E-NW	59	59	6	5	20.0%	0.4	
		Ballygarry Link Road East to Roche Freight Access	E-SW	59	63	15	16	-1	-6.3%	0.1
		Roche Freight Access to Ballygarry Link Road West	SW-NW	62	69	0	0	0.0%	0.0	
		Roche Freight Access to Ballygarry Link Road East	SW-E	62	60	8	0	0.0%	0.0	
		Total			42	43	-1	-2.3%	0.2	
105	New Road / Churchtown	E-N	64	64	4	0	0	33.3%	0.1	
		Ballygarry Link Road East to Churchtown North	E-S	64	65	2	0	0.0%	0.0	
		Churchtown South to Ballygarry Link Road East	S-E	64	58	4	0	0.0%	0.0	
		Churchtown South to Ballygarry Link Road South	S-N	64	64	4	0	0.0%	0.0	
		Churchtown North to Ballygarry Link Road East	N-E	65	58	7	0	0.0%	0.0	
		Churchtown North to Churchtown South	N-S	65	65	20	20	0	0.0%	0.0
		Total			55	54	1	1.9%	0.1	
106	Marys Terrace / Churchtown	Marys Terrace East to Churchtown North	E-N	3	64	12	11	1	8.1%	0.3
		Marys Terrace East to Churchtown South	E-S	3	65	22	21	4	4.8%	0.2
		Churchtown South to Marys Terrace East	S-E	4	2	17	16	1	6.0%	0.1
		Churchtown South to Marys Terrace South	S-N	64	64	4	0	0.0%	0.0	
		Churchtown North to Marys Terrace East	N-E	65	2	26	25	1	4.0%	0.1
		Churchtown North to Churchtown South	N-S	65	65	5	6	-1	-16.7%	0.4
		Total			86	83	3	3.6%	0.3	
107	Marys Terrace / Greencore Park	W-S	2	2	38	37	1	2.7%	0.2	
		Marys Terrace West to Marys Terrace East	W-N	2	4	4	0	0.0%	0.0	
		Marys Terrace West to Greencore Park North	W-E	3	3	33	32	1	3.1%	0.2
		Marys Terrace East to Marys Terrace West	SE-N	3	4	13	13	0	0.0%	0.0
		Marys Terrace East to Greencore Park North	N-E	5	2	10	10	1	0.0%	0.0
		Greencore Park North to Marys Terrace West	N-W	5	3	0	0	0.0%	0.0	
		Total			96	96	3	2.1%	0.2	
108	N25 / Marys Terrace / St Martins	Marys Terrace to N25 North	NW-E	2	52	0	0	0.0%	0.0	
		Marys Terrace to N25 South	NW-S	2	55	31	0	0.0%	0.0	
		Marys Terrace to St Martins Road	NW-E	2	56	17	16	1	6.3%	0.2
		N25 South to Marys Terrace	S-NW	50	3	34	32	2	6.3%	0.3
		N25 South to N25 North	S-N	50	52	106	112	-6	-6.4%	0.6
		N25 South to St Martins Road	S-E	50	56	125	124	0	0.8%	0.1
		St Martins Road to N25 South	N-E	51	53	1	0	0.0%	0.0	
		N25 North to N25 South	N-S	53	55	209	208	0	0.0%	0.0
		St Martins Road to St Martins Road	N-F	53	56	0	0	0.0%	0.0	
		St Martins Road to Marys Terrace	E-NW	57	3	13	13	0	0.0%	0.0
		St Martins Road to N25 North	E-N	57	52	0	0	0.0%	0.0	
		St Martins Road to N25 South	E-S	57	65	126	0	0	0.0%	0.0
		Total			660	662	-2	-0.3%	0.1	
109	Glenmore Park J-Tunction	S-E	4	6	9	8	1	12.5%	0.3	
		Glenmore Park South to Glenmore Park East	S-W	4	7	9	0	0.0%	0.0	
		Glenmore Park South to Greencore Park West	S-SE	4	5	1	0	0.0%	0.0	
		Glenmore Park South to Greencore Park East	S-NE	4	6	0	0	0.0%	0.0	
		Glenmore Park West to Greencore Park East	W-E	6	6	0	0	0.0%	0.0	
		Glenmore Park East to Greencore Park South	E-S	7	5	6	0	0.0%	0.0	
		Glenmore Park East to Greencore Park West	E-W	7	7	0	0	0.0%	0.0	
		Total			28	27	1	3.7%	0.2	
110	Small Boat Harbour Access	SW-NE	64	64	11	11	0	0.0%	0.0	
		Churchtown West to Small Boat Harbour	SW-NW	64	66	4	4	0	0.0%	0.0
		Churchtown East to Churchtown West	NE-SW	65	65	24	24	0	0.0%	0.0
		Small Boat Harbour to Churchtown West	NW-SW	67	65	7	0	0	0.0%	0.0
		Total			46	46	0	0	0.0	
111	Rosslare Harbour Entrance Roundabout	W-N	79	53	6	6	0	0.0%	0.0	
		N25 to Outbound Freight	W-NW	79	83	54	56	-2	-3.6%	0.3
		Freight to N25	NW-W	81	53	171	170	1	0.0%	0.0
		Freight to Outbound Freight	NW-NW	81	80	5	5	0	0.0%	0.0
		Freight to Ship	NW-N	81	83	17	18	-1	-6.6%	0.2
		Ship to N25	NE-W	82	53	31	31	0	0.0%	0.0
		Ship to Outbound Freight	NE-N	82	80	0	0	0.0%	0.0	
		Ship to Ship	NE-N	82	83	1	0	0.0%	0.0	
		Total			249	247	-2	-2.0%	0.4	
112	N25 / Roche Freight	N25 South to N25 North	SW-N	47	274	229	0	-14.5%	0.2	
		Roche Freight Access to N25 North	SW-W	42	62	6	0	0.0%	0.0	
		Roche Freight Access to N25 South	W-N	93	42	1	0	0.0%	0.0	
		Roche Freight Access to N25 South	W-SW	93	98	0	0	0.0%	0.0	
		N25 North to Roche Freight Access	N-W	97	92	2	0	0.0%	0.0	
		N25 South to Roche Freight Access	N-SW	97	98	369	371	-2	-0.5%	0.1
		Total			652	658	-6	-0.9%	0.2	
113	N25 / Development Access	N25 South to N25 North	S-E	48	20	261	261	0	0	0.0
		N25 South to Development Access	S-E	49	89	13	0	0.0%	0.0	
		N25 South to N25 South	N-S	95	55	249	246	1	-0.3%	0.1
		N25 North to Development Access	N-E	95	89	16	17	-1	-5.9%	0.2
		Development Access to N25 North	E-N	90	50	6	5	1	20.0%	0.4
		Development Access to N25 South	E-S	90	65	21	21	0	0.0%	0.0
		Total			665	667	-2	-0.3%	0.1	
	NETWORK TOTALS	Network totals					100%			

## PM Peak

Rosslare Harbour VISSIM - PM Peak - Option A

Node	Description	Links	Links	Volume General Traffic (GT)			General Traffic		Queue Length (m) Model	Delay (secs) Max	Average	Loss		
				From	To	Model	Count	Mod-Cnt	% Diff	GEH	Accapd			
101	N25 / Churchtown	Churchtown North to Churchtown South	N-S	65	69	0	0	0	0.0%	0.0	✓	0	0	0.0 A
	Churchtown North to N25 East	N-E	65	72	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Churchtown South to N25 West	S-N	68	66	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Churchtown South to Churchtown North	S-E	68	72	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Churchtown South to N25 East	S-W	68	98	4	4	0	0.0%	0.0	✓	2	0	1.0 A	
	N25 West to Churchtown North	W-N	72	64	7	6	1	16.7%	0.4	✓	0	0	1.0 A	
	N25 West to Churchtown South	W-S	72	69	4	4	0	0.0%	0.0	✓	5	0	2.0 A	
	N25 West to N25 East	W-E	72	72	271	272	-1	-0.4%	0.1	✓	0	0	0.0 A	
	N25 East to Churchtown North	E-N	98	64	4	4	0	0.0%	0.0	✓	4	0	1.0 A	
	N25 East to Churchtown South	E-S	98	69	2	2	1	-33.3%	0.0	✓	0	0	0.0 A	
	N25 East to N25 West	E-W	98	98	241	263	-1	-8.3%	0.1	✓	1	0	0.0 A	
	Total			557	559	0	-0.4%	0.1	✓	7	0	0.0 A		
102	N20 / Ballyknockan	N25 West to N25 East	W-E	72	42	248	246	0	0.0%	0.0	✓	0	0	0.0 A
	N25 West to Ballyknockan South	W-SE	72	74	24	24	0	0.0%	0.0	✓	8	0	1.0 A	
	Ballyknockan South to N25 East	S-E	73	42	4	4	0	0.0%	0.0	✓	4	0	1.0 A	
	Ballyknockan South to N25 West	S-EW	73	98	4	4	0	0.0%	0.0	✓	4	0	1.0 A	
	N25 East to Ballyknockan South	E-S	98	74	31	29	2	6.9%	0.4	✓	0	0	0.0 A	
	N25 East to N25 West	E-W	98	98	262	265	-3	-1.1%	0.2	✓	0	0	0.0 A	
	Total			573	574	-1	-0.2%	0.0	✓	10	0	0.0 A		
103	N25 / New Road / Development Roundabout	N25 South to N25 South	S-E	42	43	0	0	0	0.0%	0.0	✓	0	0	0.0 A
	N25 South to N25 North	S-N	42	44	246	246	0	0.0%	0.0	✓	18	0	2.5 A	
	N25 South to Ballygarry Link Road West	S-W	42	59	5	5	0	0.0%	0.0	✓	18	0	1.0 A	
	N25 South to Development Access	S-E	42	95	6	6	0	0.0%	0.0	✓	18	0	0.0 A	
	N25 North to N25 South	N-S	55	43	286	273	1	-4.6%	0.1	✓	9	0	1.0 A	
	N25 North to N25 North	NE-S	55	44	6	6	0	0.0%	0.0	✓	9	0	0.0 A	
	N25 North to Ballygarry Link Road West	NE-W	55	59	6	7	-1	-14.3%	0.4	✓	9	0	1.0 A	
	N25 North to Development Access	NE-E	55	95	0	0	0	0.0%	0.0	✓	9	0	0.0 A	
	Total			596	555	1	0.2%	0.0	✓	20	0	1.0 A		
104	New Road / Roche Freight	Ballygarry Link Road West to Ballygarry Link Road East	W-E	60	60	1	0	0	0.0%	0.0	✓	0	0	0.0 A
	Ballygarry Link Road West to Roche Freight Access	W-SW	60	63	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Ballygarry Link Road East to Ballygarry Link Road West	E-W	60	59	0	0	0	0.0%	0.0	✓	1	0	0.0 A	
	Ballygarry Link Road West to Development Access	W-E	60	95	0	0	0	0.0%	0.0	✓	1	0	0.0 A	
	Development Access to N25 South	E-S	94	43	3	3	0	0.0%	0.0	✓	2	0	3.0 A	
	Development Access to N25 North	E-N	94	44	0	0	0	0.0%	0.0	✓	2	0	0.0 A	
	Development Access to Ballygarry Link Road West	E-W	94	59	0	0	0	0.0%	0.0	✓	2	0	0.0 A	
	Development Access to Development Access	E-E	94	95	0	0	0	0.0%	0.0	✓	2	0	0.0 A	
	Total			596	555	1	0.2%	0.0	✓	20	0	1.0 A		
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown North	E-N	59	64	5	5	0	0.0%	0.0	✓	0	0	1.0 A
	Ballygarry Link Road East to Churchtown South	E-S	59	65	1	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Ballygarry Link Road East to New Road East	E-S	59	58	3	3	0	0.0%	0.0	✓	1	0	1.0 A	
	Churchtown South to Churchtown North	S-N	64	64	2	3	3	0.0%	0.0	✓	0	0	0.0 A	
	Churchtown North to Ballygarry Link Road East	N-E	65	58	3	3	0	0.0%	0.0	✓	0	0	0.0 A	
	Churchtown North to Churchtown South	N-S	65	65	3	3	0	0.0%	0.0	✓	0	0	0.0 A	
	Total			22	22	0	0.0%	0.0	✓	9	0	0.0 A		
106	Manys Terrace / Churchtown	Manys Terrace East to Churchtown North	E-N	3	64	4	4	0	0.0%	0.0	✓	0	0	1.0 A
	Manys Terrace East to Churchtown South	E-S	3	65	6	6	0	0.0%	0.0	✓	0	0	0.0 A	
	Churchtown South to Manys Terrace East	S-E	64	2	8	9	-1	-11.1%	0.1	✓	0	0	1.0 A	
	Churchtown South to Manys Terrace West	S-N	64	64	2	3	0	0.0%	0.0	✓	0	0	0.0 A	
	Churchtown North to Manys Terrace East	N-E	65	60	2	3	0	0.0%	0.0	✓	1	0	1.0 A	
	Churchtown North to Churchtown South	N-S	65	65	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Total			99	66	-1	-1.7%	0.1	✓	2	0	1.0 A		
107	Manys Terrace / Greenore Park	Manys Terrace West to Manys Terrace East	W-S	2	2	42	43	-1	-2.3%	0.2	✓	0	0	1.0 A
	Manys Terrace West to Greenore Park North	W-N	2	4	6	5	0	0.0%	0.0	✓	0	0	0.0 A	
	Manys Terrace East to Manys Terrace West	S-EW	3	3	10	10	0	0.0%	0.0	✓	0	0	0.0 A	
	Manys Terrace East to Greenore Park North	S-E	3	4	45	43	2	4.7%	0.3	✓	3	0	-1.0 #N/A	
	Greenore Park North to Manys Terrace East	N-S	5	2	11	11	0	0.0%	0.0	✓	0	0	1.0 A	
	Greenore Park North to Manys Terrace West	N-W	5	3	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Total			101	112	1	0.9%	0.1	✓	3	0	0.0 A		
108	N25 / Manys Terrace / St Martins	Manys Terrace to N25 North	N-W	2	52	0	0	0	0.0%	0.0	✓	6	0	0.5 A
	Manys Terrace to N25 South	N-W	2	55	34	35	-1	-2.9%	0.2	✓	6	0	2.0 A	
	Manys Terrace to St Martins Road	N-W	2	56	18	19	0	0.0%	0.0	✓	6	0	3.0 A	
	N25 South to Manys Terrace	S-NW	50	3	40	38	2	5.3%	0.3	✓	0	0	1.0 A	
	N25 South to N25 North	S-N	50	52	58	59	-1	-1.7%	0.1	✓	0	0	1.0 A	
	N25 South to St Martins Road	S-E	50	56	149	140	0	0.0%	0.0	✓	22	0	3.0 A	
	N25 North to Manys Terrace	N-W	53	3	0	0	0	0.0%	0.0	✓	6	0	0.0 A	
	N25 North to N25 South	N-S	53	53	100	100	0	0.0%	0.0	✓	0	0	0.0 A	
	N25 North to St Martins	N-E	53	55	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	St Martins Road to Manys Terrace	E-NW	57	3	15	15	0	0.0%	0.0	✓	6	0	3.0 A	
	St Martins Road to N25 North	E-N	57	52	0	0	0	0.0%	0.0	✓	1	0	0.0 A	
	St Martins Road to N25 South	E-S	57	55	143	143	0	0.0%	0.0	✓	8	0	1.0 A	
	Total			599	558	1	0.2%	0.0	✓	23	0	1.0 A		
109	Glenmore Park T-Junction	Glenmore Park South to Glenmore Park East	S-E	4	6	25	24	1	4.2%	0.2	✓	2	0	0.0 A
	Glenmore Park South to Greenore Park West	S-W	4	7	25	24	1	4.2%	0.2	✓	1	0	0.0 A	
	Glenmore Park West to Glenmore Park South	W-S	6	5	5	5	0	0.0%	0.0	✓	0	0	1.0 A	
	Glenmore Park East to Glenmore Park South	E-S	6	7	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Glenmore Park East to Greenore Park West	E-W	7	7	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Greenore Park East to Greenore Park West	E-W	7	7	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Total			61	59	2	3.4%	0.3	✓	2	0	0.0 A		
110	Small Boat Harbour Access	Churchtown West to Churchtown East	SW-NE	64	64	6	6	0	0.0%	0.0	✓	0	0	0.0 A
	Churchtown West to Small Boat Harbour	SW-NW	64	66	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	Churchtown East to Churchtown West	NE-SW	65	65	30	30	0	0.0%	0.0	✓	0	0	0.0 A	
	Small Boat Harbour to Churchtown West	NW-SW	67	65	9	9	0	0.0%	0.0	✓	0	0	0.0 A	
	Total			45	45	0	0.0%	0.0	✓	0	0	0.0 A		
111	Rosslare Harbour Entrance Roundabout	Not In Use	E-N	73	53	12	12	0	0.0%	0.1	✓	13	0	1.0 A
	Not to Outbound Freight	W-N	73	60	39	39	-1	-2.6%	0.1	✓	0	0	1.0 A	
	Not to Ship	W-N	79	83	8	8	-1	-11.1%	0.1	✓	1	0	1.0 A	
	Freight to N25	NW-W	81	53	67	67	0	0.0%	0.0	✓	11	0	1.0 A	
	Freight to Outbound Freight	NW-NW	81	80	10	9	1	11.1%	0.1	✓	11	0	1.0 A	
	Freight to Ship	NW-NW	81	83	7	8	-1	-12.5%	0.4	✓	11	0	1.0 A	
	Ship to N25	NW-E	82	53	22	22	0	0.0%	0.0	✓	3	0	1.0 A	
	Ship to Outbound Freight	NE-NW	82	80	4	4	0	0.0%	0.0	✓	3	0	1.0 A	
	Ship to Ship	NE-NW	82	83	0	0	0	0.0%	0.0	✓	3	0	0.0 A	
	Total			121	120	100	1	0.0%	0.1	✓	13	0	1.0 A	
112	N25 / Roche Freight	N25 South to N25 North	SW-E	42	42	246	251	-1	-2.0%	0.1	✓	0	0	0.0 A
	Not to Roche Freight Access	SW-W	42	92	1	1	0	0.0%	0.0	✓	0	0	0.0 A	
	Roche Freight Access to N25 North	W-N	93	42	1	1	0	0.0%	0.0	✓	1	0	1.0 A	
	Roche Freight Access to N25 South	W-SW	93	98	4	4	0	0.0%	0.0	✓	1	0	2.0 A	
	N25 North to Roche Freight Access	N-W	97	92	0	0	0	0.0%	0.0	✓	0	0	0.0 A	
	N25 North to N25 South	N-SW	97	98	289	290	-1	-0.3%	0.1	✓	0	0	0.0 A	
	Total			544	547	-3	-0.5%	0.1	✓	1	0	0.0 A		

## P. Junction Performance Full Approach Summary – 2038 – Option B

## AM Peak

## PM Peak

Rosslare Harbour VISSIM - PM Peak - Option B										
Node	Description	Weeks		Weeks		VISSIM General Traffic (20)		VISSIM Results		
		Start	End	Start	End	Vehicle Count	Time	Queue Length (m)	Wait (secs)	
100	N20 / Churchtown	NS-5	65	69	0	0	0.0%	0.0	0.0 A	
	Churchtown North to Churchtown South	NS-5	65	72	0	0	0.0%	0.0	0.0 A	
	Churchtown North to N20 East	NS-5	65	72	0	0	0.0%	0.0	0.0 A	
	Churchtown South to Churchtown North	NS-5	68	64	0	0	0.0%	0.0	0.0 A	
	Churchtown South to N20 East	NS-5	68	72	0	0	0.0%	0.0	0.0 A	
	Churchtown South to N20 West	NS-5	68	72	0	0	0.0%	0.0	0.0 A	
	N20 West to Churchtown North	NS-5	72	64	0	0	0.0%	0.0	0.0 A	
	US2 West to Churchtown South	NS-5	72	68	0	0	0.0%	0.0	0.0 A	
	US2 East to Churchtown South	NS-5	72	68	0	0	0.0%	0.0	0.0 A	
	US2 West to Churchtown North	NS-5	72	68	0	0	0.0%	0.0	0.0 A	
	US2 East to Churchtown South	NS-5	72	68	0	0	0.0%	0.0	0.0 A	
	US2 East to N20 West	NS-5	72	68	0	0	0.0%	0.0	0.0 A	
	Total	NS-5	555	555	0	-0.7%	0.2	✓	0.0 A	
102	N20 / Balbrackane									
	US2 West to N20 East	NS-6	72	42	240	0	0.0%	0.0	0.0 A	
	US2 East to N20 South	NS-6	72	42	240	0	0.0%	0.0	0.0 A	
	Balbrackane South to N20 East	NS-6	73	42	0	0	0.0%	0.0	0.0 A	
	Balbrackane South to N20 West	NS-6	73	48	0	0	0.0%	0.0	0.0 A	
	US2 West to Balbrackane South	NS-6	73	42	240	0	0.0%	0.0	0.0 A	
	US2 East to N20 West	NS-6	73	48	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	555	555	0	-0.7%	0.2	✓	0.0 A	
103	N20 / New Road / Development Roundabout									
	E20 South to N20 South	NS-6	42	43	0	0	0.0%	0.0	0.0 A	
	E20 South to N20 North	NS-6	42	44	340	0	0.0%	0.0	0.0 A	
	US2 South to Ballagarry Link Road West	NS-6	42	58	0	0	0.0%	0.0	0.0 A	
	US2 South to Ballagarry Link Road East	NS-6	42	58	0	0	0.0%	0.0	0.0 A	
	US2 North to N20 North	NS-6	71	44	0	0	0.0%	0.0	0.0 A	
	US2 North to Ballagarry Link Road West	NS-6	71	48	0	0	0.0%	0.0	0.0 A	
	US2 North to Ballagarry Link Road East	NS-6	71	48	0	0	0.0%	0.0	0.0 A	
	US2 East to N20 North	NS-6	71	44	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	575	575	0	-0.2%	0.1	✓	0.0 A	
104	New Road / Roche Freight									
	Balbrackane Link Road West to Ballagarry Link Road East	NS-6	58	60	0	0	0.0%	0.0	0.0 A	
	Balbrackane Link Road West to Roche Freight Access	NS-6	58	63	0	0	0.0%	0.0	0.0 A	
	Roche Freight Access to Ballagarry Link Road West	NS-6	58	63	0	0	0.0%	0.0	0.0 A	
	Roche Freight Access to Ballagarry Link Road East	NS-6	58	63	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	555	555	0	-0.7%	0.2	✓	0.0 A	
105	New Road / Churchtown									
	Balbrackane Link Road West to Churchtown North	NS-6	58	64	0	0	0.0%	0.0	0.0 A	
	Churchtown South to Balbrackane Link Road East	NS-6	58	64	0	0	0.0%	0.0	0.0 A	
	Churchtown South to Churchtown North	NS-6	58	64	0	0	0.0%	0.0	0.0 A	
	Churchtown South to N20 North	NS-6	58	64	0	0	0.0%	0.0	0.0 A	
	Churchtown South to N20 South	NS-6	58	64	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	555	555	0	-0.7%	0.2	✓	0.0 A	
106	New Road / Churchtown									
	Maria Terence East to Churchtown North	NS-6	3	64	0	0	0.0%	0.0	0.0 A	
	Maria Terence East to Churchtown South	NS-6	3	65	0	0	0.0%	0.0	0.0 A	
	Churchtown South to Maria Terence East	NS-6	4	64	0	0	0.0%	0.0	0.0 A	
	Churchtown South to Maria Terence West	NS-6	4	64	0	0	0.0%	0.0	0.0 A	
	Churchtown North to Maria Terence East	NS-6	65	2	30	0	0.0%	0.0	0.0 A	
	Churchtown North to Maria Terence South	NS-6	65	65	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	555	555	0	-0.7%	0.2	✓	0.0 A	
107	Maria Terence / Greenore Park									
	Maria Terence West to Maria Terence East	NS-6	2	42	42	0	-0.2%	0.1	✓	0.0 A
	Maria Terence West to Greenore Park North	NS-6	2	4	0	0	0.0%	0.0	0.0 A	
	Maria Terence West to Greenore Park South	NS-6	2	5	0	0	0.0%	0.0	0.0 A	
	Maria Terence East to Greenore Park North	NS-6	3	4	0	0	0.0%	0.0	0.0 A	
	Maria Terence East to Greenore Park South	NS-6	3	5	0	0	0.0%	0.0	0.0 A	
	Greenore Park North to Maria Terence East	NS-6	5	2	11	0	0.0%	0.0	0.0 A	
	Greenore Park North to Maria Terence West	NS-6	5	3	11	0	0.0%	0.0	0.0 A	
	Total	NS-6	555	555	0	-0.7%	0.2	✓	0.0 A	
108	N20 / Maria Terence / Link Road									
	Maria Terence North to N20 North	NS-6	2	22	0	0	0.0%	0.0	0.0 A	
	Maria Terence North to N20 South	NS-6	2	23	0	0	0.0%	0.0	0.0 A	
	Link Road to Maria Terence	NS-6	2	23	0	0	0.0%	0.0	0.0 A	
	Link Road to Maria Terence	NS-6	2	23	0	0	0.0%	0.0	0.0 A	
	Link Road to N20 North	NS-6	2	23	0	0	0.0%	0.0	0.0 A	
	Link Road to N20 South	NS-6	2	23	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	555	555	0	-0.7%	0.2	✓	0.0 A	
109	Glenore Park / Link Road									
	Glenore Park South to Glenore Park East	NS-6	4	6	0	0	0.0%	0.0	0.0 A	
	Glenore Park South to Glenore Park West	NS-6	4	7	25	0	0.2%	0.1	✓	0.0 A
	Glenore Park East to Glenore Park South	NS-6	5	6	0	0	0.0%	0.0	0.0 A	
	Glenore Park East to Glenore Park West	NS-6	5	7	0	0	0.0%	0.0	0.0 A	
	Glenore Park West to Glenore Park South	NS-6	6	7	0	0	0.0%	0.0	0.0 A	
	Glenore Park West to Glenore Park East	NS-6	6	7	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	555	555	0	-0.7%	0.2	✓	0.0 A	
110	Small Boat Harbour Access									
	Churchtown West to Small Boat Harbour	NS-6	24	69	0	0	0.0%	0.0	0.0 A	
	Churchtown East to Small Boat Harbour	NS-6	24	69	0	0	0.0%	0.0	0.0 A	
	Small Boat Harbour to Churchtown West	NS-6	67	24	0	0	0.0%	0.0	0.0 A	
	Small Boat Harbour to Churchtown East	NS-6	67	24	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	555	555	0	-0.7%	0.2	✓	0.0 A	
111	Rostrava Harbour Entrance Roundabout									
	N20 to NS2	NS-6	79	53	31	0	0.1%	0.1	✓	0.0 A
	NS2 to Outbound Freight	NS-6	79	80	30	0	-0.6%	0.1	✓	0.0 A
	NS2 to Inbound Freight	NS-6	79	83	30	0	0.0%	0.0	0.0 A	
	Outbound Freight to NS2	NS-6	80	81	30	0	0.0%	0.0	0.0 A	
	Outbound Freight to N20	NS-6	80	81	30	0	0.0%	0.0	0.0 A	
	Inbound Freight to NS2	NS-6	81	82	30	0	0.0%	0.0	0.0 A	
	Inbound Freight to N20	NS-6	81	82	30	0	0.0%	0.0	0.0 A	
	Total	NS-6	555	555	0	-0.7%	0.2	✓	0.0 A	
112	N20 / Roche Freight									
	US2 South to N20 North	NS-6	42	42	25	0	-0.8%	0.2	✓	0.0 A
	US2 South to N20 South	NS-6	42	42	25	0	-0.8%	0.2	✓	0.0 A
	Roche Freight Access to N20 North	NS-6	43	42	0	0	0.0%	0.0	0.0 A	
	Roche Freight Access to N20 South	NS-6	43	42	0	0	0.0%	0.0	0.0 A	
	N20 North to Roche Freight Access	NS-6	43	42	0	0	0.0%	0.0	0.0 A	
	N20 South to Roche Freight Access	NS-6	43	42	0	0	0.0%	0.0	0.0 A	
	N20 North to N20 South	NS-6	43	48	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	545	545	0	-0.2%	0.0	✓	0.0 A	
203	N20 / Link Road South									
	N20 South to Link Road	NS-6	117	146	123	0	0.4%	0.2	✓	0.0 A
	Link Road South to N20 South	NS-6	117	146	123	0	0.4%	0.2	✓	0.0 A
	Link Road South to Link Road North	NS-6	117	145	123	0	0.4%	0.2	✓	0.0 A
	Link Road South to N20 North	NS-6	117	145	123	0	0.4%	0.2	✓	0.0 A
	Link Road North to Link Road South	NS-6	117	145	123	0	0.4%	0.2	✓	0.0 A
	Link Road North to N20 South	NS-6	117	145	123	0	0.4%	0.2	✓	0.0 A
	Link Road North to N20 North	NS-6	117	145	123	0	0.4%	0.2	✓	0.0 A
	Link Road North to Link Road North	NS-6	117	145	123	0	0.4%	0.2	✓	0.0 A
	Total	NS-6	455	455	0	-0.2%	0.0	✓	0.0 A	
204	Link Road / N20 South									
	Link Road North to Link Road South	NS-6	116	116	0	0	0.0%	0.0	0.0 A	
	Link Road North to N20 South	NS-6	116	116	0	0	0.0%	0.0	0.0 A	
	Link Road South to Link Road North	NS-6	116	116	0	0	0.0%	0.0	0.0 A	
	Link Road South to N20 South	NS-6	116	116	0	0	0.0%	0.0	0.0 A	
	Link Road South to N20 North	NS-6	116	116	0	0	0.0%	0.0	0.0 A	
	Link Road North to Link Road South	NS-6	116	116	0	0	0.0%	0.0	0.0 A	
	Link Road North to N20 South	NS-6	116	116	0	0	0.0%	0.0	0.0 A	
	Link Road North to N20 North	NS-6	116	116	0	0	0.0%	0.0	0.0 A	
	Total	NS-6	455	455	0	-0.2%	0.0	✓	0.0 A	
205	N20 / Link Road North									
	N20 North to Link Road North	NS-6	53	112	100	0	0.0%	0.1	✓	0.0 A
	Link Road North to N20 North	NS-6	53	112	100	0	0.0%	0.1	✓	0.0 A
	Link Road North to Link Road South	NS-6	53	112	100	0	0.0%	0.1	✓	0.0 A
	Link Road North to N20 South	NS-6	53	112	100	0	0.0%	0.1	✓	0.0 A
	Link Road South to Link Road North	NS-6	53	112	100	0	0.0%	0.1	✓	0.0 A
	Link Road South to N20 North	NS-6	53	112	100	0	0.0%	0.1	✓	0.0 A
	Link Road South to N20 South	NS-6	53	112	100	0	0.0%	0.1	✓	0.0 A
	Total	NS-6	455	455	0	-0.2%	0.0	✓	0.0 A	
214	N20 / Link Road / Development Roundabout									
	Link Road North to Link Road North	NS-6</td								

# Q. Junction Performance Full Approach Summary – 2038 – Option C

AM Peak

Rosslare Harbour VISSIM - AM Peak - Option C														
Node	Description	Links		Links		Volume General Traffic (GT)			General Traffic		Queue Length (m)		Delay (secs)	
		Direction	From	To	Model	Count	Mod-Cnt	% Chgt	GEH	Accept	Max	Average		
101	N05 / Churchtown	Churchtown North to Churchtown South	N-S	144	69	10	5	5	100.0%	1.8	✓	10	0	3.0 A
		Churchtown North to N05 East	N-E	144	72	7	4	3	75.0%	1.3	✓	11	0	1.0 A
		Churchtown South to N05 West	N-W	144	98	38	12	26	216.7%	8.2	✗	12	0	2.0 A
		Churchtown South to Churchtown North	S-N	68	64	6	1	1	20.0%	0.4	✓	4	0	3.2 A
		Churchtown South to N05 East	S-E	68	72	4	1	1	0.0%	0.0	✓	4	0	4.0 A
		Churchtown South to N05 West	S-W	68	98	11	12	12	28.0%	0.4	✓	6	0	4.0 A
		N05 West to Churchtown North	W-NE	72	64	0	3	0	0.0%	0.0	✓	0	0	1.0 A
		N05 West to Churchtown South	W-S	72	69	5	6	-1	-16.7%	0.4	✓	10	0	2.0 A
		N05 West to N05 East	W-E	72	72	280	281	-1	-0.4%	0.1	✓	4	0	0.0 A
		N05 East to Churchtown North	E-N	98	64	6	7	-1	-14.3%	0.4	✓	17	0	2.0 A
		N05 East to Churchtown South	E-S	98	69	0	3	0	25.0%	0.5	✓	4	0	1.0 A
		N05 East to N05 West	E-W	98	99	358	344	-1	-11.1%	0.4	✓	12	0	2.0 A
		Total			795	693	42	6.1%	1.6	✓	22	0	1.0 A	
102	N20 / Ballyknockan	N05 West to N05 East	W-E	72	42	265	263	2	0.8%	0.1	✓	6	0	0.0 A
		N05 West to Ballyknockan South	W-SE	72	74	26	26	0	0.0%	0.0	✓	8	0	1.0 A
		Ballyknockan South to N05 East	SE-E	73	42	20	21	-1	-4.8%	0.2	✓	7	0	2.0 A
		Ballyknockan South to N05 West	SE-W	73	95	22	23	-1	-4.8%	0.1	✓	4	0	1.0 A
		N05 East to Ballyknockan South	E-S	95	91	14	41	-1	-4.8%	0.1	✓	0	0	1.0 A
		N05 East to Ballyknockan North	E-W	95	98	344	334	-1	-3.0%	0.1	✓	0	0	0.0 A
		Total			718	702	16	2.3%	0.6	✓	18	0	0.0 A	
103	N05 / New Road / Development Roundabout	N05 South to N05 South	S-S	42	43	0	0	0	0.0%	0.0	✓	10	0	0.0 A
		N05 South to N05 North	S-N	42	44	182	158	3	1.9%	0.2	✓	10	0	1.0 A
		N05 South to Ballyknockan Link Road West	S-SE	42	59	117	118	-1	-0.8%	0.1	✓	10	0	1.0 A
		Development Access to N05 South	S-E	42	45	0	1	1	0.0%	0.0	✓	10	0	1.0 A
		N05 North to N05 South	N-S	55	43	151	150	-1	-1.3%	0.2	✓	8	0	2.0 A
		N05 North to N05 North	N-E	55	44	0	0	0	0.0%	0.0	✓	8	0	0.0 A
		N05 North to Ballyknockan Link Road West	N-EW	55	58	8	8	0	0.0%	0.0	✓	8	0	2.0 A
		N05 North to Development Access	N-E	55	95	0	0	0	0.0%	0.0	✓	8	0	0.0 A
		Ballyknockan Link Road West to N05 South	W-E	60	43	280	211	17	8.1%	1.1	✓	18	0	3.0 A
		Ballyknockan Link Road West to N05 North	W-SE	60	44	183	183	1	0.0%	0.1	✓	18	0	2.0 A
		Ballyknockan Link Road West to Ballyknockan Link Road West	W-W	60	69	0	0	0	0.0%	0.0	✓	18	0	0.0 A
		Ballyknockan Link Road West to Development Access	W-E	60	95	3	2	1	60.0%	0.6	✓	18	0	3.0 A
		Development Access to N05 South	E-S	94	43	3	3	0	0.0%	0.0	✓	3	0	2.0 A
		Development Access to N05 North	E-E	94	44	0	0	0	0.0%	0.0	✓	3	0	0.0 A
		Development Access to Ballyknockan Link Road West	E-N	94	59	0	0	0	0.0%	0.0	✓	3	0	0.0 A
		Development Access to Development Access	E-E	94	95	0	0	0	0.0%	0.0	✓	3	0	0.0 A
		Total			688	671	17	2.9%	0.7	✓	18	0	2.0 A	
104	New Road / Roche Freight	Ballyknockan Link Road West to Ballyknockan Link Road East	NW-E	58	60	231	216	16	7.4%	1.1	✓	0	0	0.0 A
		Ballyknockan Link Road West to Roche Freight Access	NW-SW	58	63	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Ballyknockan Link Road East to Ballyknockan Link Road West	E-NW	59	63	108	111	-1	-2.7%	0.3	✓	0	0	0.0 A
		Roche Freight Access to Ballyknockan Link Road West	E-SW	59	63	16	16	0	0.0%	0.0	✓	0	0	0.0 A
		Roche Freight Access to Roche Freight Link Road East	S-EW	62	60	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Roche Freight Access to Ballyknockan Link Road East	S-E	62	60	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Total			364	351	13	3.7%	0.7	✓	6	0	0.0 A	
105	New Road / Churchtown	Ballyknockan Link Road West to Churchtown South	E-S	59	144	55	2	53	260.0%	0.6	✗	0	0	1.0 A
		Ballyknockan Link Road West to Churchtown North	E-N	59	141	1	3	-2	-66.7%	1.4	✓	0	0	0.0 A
		Ballyknockan Link Road East to Ballyknockan Link Road West	E-NW	59	141	51	106	-53	-51.9%	0.2	✓	0	0	0.0 A
		Churchtown South to N05 South	S-N	64	142	17	17	0	0.0%	0.0	✓	0	0	1.0 A
		Churchtown South to Ballyknockan Link Road East	S-E	64	142	5	5	0	0.0%	0.0	✓	0	0	1.0 A
		Churchtown North to Ballyknockan Link Road East	N-E	133	58	27	3	20	285.7%	4.9	✗	0	0	1.0 A
		Churchtown North to Churchtown South	N-S	133	144	0	20	-25	-100.0%	0.1	✗	0	0	0.0 A
		Ballyknockan Link Road West to Ballyknockan Link Road East	NW-E	140	58	200	202	-2	-1.0%	0.1	✓	0	0	3.0 A
		Total			156	160	4	-2.1%	0.3	✓	18	0	2.0 A	
106	Marly's Terrace / Churchtown	Marly's Terrace East to Churchtown North	E-N	3	142	11	11	0	0.0%	0.0	✓	1	0	1.0 A
		Marly's Terrace East to Churchtown South	E-S	3	153	21	21	0	0.0%	0.0	✓	0	0	1.0 A
		Churchtown South to Marly's Terrace East	S-E	142	2	15	16	-1	-6.3%	0.1	✓	0	0	1.0 A
		Churchtown South to Churchtown North	S-N	142	142	3	4	-1	-25.0%	0.5	✓	0	0	0.0 A
		Churchtown North to Marly's Terrace East	N-E	133	2	26	25	1	4.0%	0.2	✓	2	0	1.0 A
		Churchtown North to Churchtown South	N-S	133	133	6	6	0	0.0%	0.0	✓	1	0	0.0 A
		Total			87	87	4	-1.4%	0.4	✓	4	0	0.0 A	
107	Marly's Terrace / Greenore Park	Marly's Terrace West to Marly's Terrace East	W-S	2	2	0	0	0	0.0%	0.0	✓	1	0	0.0 A
		Marly's Terrace West to Greenore Park North	W-N	2	4	4	4	0	0.0%	0.0	✓	0	0	0.0 A
		Marly's Terrace East to Marly's Terrace West	SE-W	3	3	32	32	1	3.1%	0.2	✓	0	0	1.0 A
		Marly's Terrace East to Greenore Park North	SE-N	3	4	14	13	1	7.7%	0.1	✓	1	0	1.0 A
		Greenore Park North to Marly's Terrace East	N-S	5	2	10	10	0	0.0%	0.0	✓	2	0	1.0 A
		Greenore Park North to Marly's Terrace West	N-E	5	3	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Total			87	87	4	-1.4%	0.4	✓	4	0	0.0 A	
108	N25 / Marly's Terrace / St Martins	Marly's Terrace to N25 North	NW-E	2	52	0	0	0	0.0%	0.0	✓	1	0	0.0 A
		Marly's Terrace to N25 South	NW-S	2	55	31	31	0	0.0%	0.0	✓	6	0	1.0 A
		Marly's Terrace to St Martins Road	NW-N	2	56	16	16	0	0.0%	0.0	✓	3	0	2.0 A
		N25 South to Marly's Terrace	S-NW	50	3	33	32	1	3.1%	0.2	✓	0	0	1.0 A
		N25 South to N25 North	S-N	50	52	124	124	0	0.0%	0.0	✓	4	0	1.0 A
		N25 North to Marly's Terrace	S-E	53	3	0	0	0	0.0%	0.0	✓	4	0	2.0 A
		N25 North to N25 South	N-S	53	55	6	6	0	0.0%	0.0	✓	0	0	0.0 A
		N25 North to St Martins Road	N-E	53	58	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		St Martins Road to Marly's Terrace	E-NW	57	3	13	13	0	0.0%	0.0	✓	1	0	2.0 A
		St Martins Road to N25 North	E-N	57	52	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Total			354	354	0	0.0%	0.8	✓	8	0	1.0 A	
109	Glenmore Park T-Junction	Glenmore Park South to Glenmore Park East	S-E	4	6	8	8	1	12.5%	0.3	✓	0	0	0.0 A
		Glenmore Park South to Glenmore Park West	S-W	4	7	5	5	0	0.0%	0.0	✓	0	0	0.0 A
		Glenmore Park West to Glenmore Park South	W-S	6	5	4	4	0	0.0%	0.0	✓	0	0	0.0 A
		Glenmore Park West to Glenmore Park East	W-E	6	6	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Glenmore Park West to Glenmore Park South	W-N	6	7	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Total			28	27	1	3.7%	0.2	✓	0	0	0.0 A	
110	Small Boat Harbour Access	Churchtown West to Churchtown East	NW-E	141	131	64	117	-53	-45.3%	5.6	✗	8	0	1.0 A
		Churchtown West to Small Boat Harbour	NW-NW	141	68	2	4	-1	-60.0%	1.2	✓	8	0	1.0 A
		Churchtown West to Churchtown West	NE-SW	132	140	226	226	0	0.0%	0.0	✓	2	0	1.0 A
		Total			299	354	-55	-15.5%	3.9	✗	8	0	1.0 A	
111	Rosslare Harbour Entrance Roundabout	N25 to N25	W-W	79	53	1	1	-1	-16.7%	0.4	✓	0	0	1.0 A
		N25 to Outbound Freight	W-NW	79	80	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		N25 to Ship	W-NE	79	83	0	0	0	0.0%	0.0	✓	0	0	0.0 A
		Fight to N25	NW-W	81	63	0	0	0	0.0%	0.0	✓	3	0	0.0 A
		Fight to Outbound Freight	NW-NW	81	80	4	4	0	0.0%	0.0	✓	0	0	0.0 A
		Fight to Ship	NW-E	81	80	1	1</td							

## PM Peak

Rosslare Harbour VISSIM - PM Peak - Option C															
Node	Description	Links	Links	Volume General Traffic (GT)			General Traffic		Queue Length (m) Model	Delay (secs) Avg					
				Direction	From	To	Model	Count	Mod.Ctr	% Del.	GEN	Accept	Map	Average	Length
101	N2S / Churchtown	Churchtown North to Churchtown South	N-S	144	72	0	0	0	0	0.0%	✓	✓	2	0.0	A
		Churchtown North to N2S East	N-E	144	72	0	0	0	0	0.0%	✓	✓	2	0.0	A
		Churchtown North to N2S West	N-W	144	98	27	4	23	575.00	-1.50	*	*	11	2.0	A
		Churchtown South to Churchtown North	S-N	68	64	0	0	0	0	0.0%	✓	✓	0	0.0	A
		Churchtown South to N2S East	S-E	68	72	0	0	0	0	0.0%	✓	✓	0	0.0	A
		Churchtown South to N2S West	S-W	68	98	4	4	0	0	0.0%	✓	✓	4	2.0	A
		Churchtown West to Churchtown North	W-N	68	72	0	0	0	0	0.0%	✓	✓	2	0.0	A
		N2S West to Churchtown South	W-S	72	69	4	0	0	0	0.0%	✓	✓	5	2.0	A
		N2S West to N2S East	W-E	72	72	27	272	-1	-0.47	0.1	✓	✓	1	2.0	A
		N2S East to Churchtown North	E-N	98	64	4	4	0	0	0.0%	✓	✓	7	1.0	A
		N2S East to Churchtown South	E-S	98	69	2	3	-1	-33.3%	0.6	✓	✓	0	1.0	A
		N2S East to N2S West	E-W	98	98	262	262	0	0	0.0%	✓	✓	0	0.0	A
		Total		144	144	22	22	22	22	0.0%	✓	✓	12	2.0	A
102	N2D / Ballykneockan	N2S West to N2S East	W-E	72	42	248	248	0	0	0.0%	✓	✓	0	0.0	A
		N2S West to Ballykneockan South	W-SE	72	74	24	24	0	0	0.0%	✓	✓	0	1.0	A
		Ballykneockan South to N2S East	SE-E	73	42	4	4	0	0	0.0%	✓	✓	6	2.0	A
		Ballykneockan South to N2S West	SE-W	73	98	4	4	0	0	0.0%	✓	✓	4	1.0	A
		N2S East to Ballykneockan South	E-S	98	74	31	29	2	6.9%	0.4	✓	✓	0	0.0	A
		N2S East to N2S West	E-W	98	98	248	248	0	0	0.0%	✓	✓	0	0.0	A
		Total		144	144	22	22	22	22	0.0%	✓	✓	12	2.0	A
103	N2S / New Road / Development Roundabout	N2S South to N2S South	S-S	42	43	0	0	0	0	0.0%	✓	✓	16	2.0	A
		N2S South to N2S North	S-N	42	44	197	198	-1	-0.57	0.1	✓	✓	16	1.0	A
		N2S South to Ballygarry Link Road West	S-W	42	59	53	53	0	0	0.0%	✓	✓	16	2.0	A
		N2S North to Development Access	S-E	42	95	0	0	0	0	0.0%	✓	✓	16	0.0	A
		N2S North to N2S North	S-N	42	44	198	198	0	0	0.0%	✓	✓	16	1.0	A
		N2S North to N2S North	N-S	44	44	0	0	0	0	0.0%	✓	✓	0	0.0	A
		N2S North to Ballygarry Link Road West	N-W	59	59	7	7	0	0	0.0%	✓	✓	5	2.0	A
		N2S North to Development Access	N-E	55	95	0	0	0	0	0.0%	✓	✓	5	0.0	A
		Ballygarry Link Road West to N2S South	W-S	60	43	102	98	6	6.3%	0.6	✓	✓	3	2.0	A
		Ballygarry Link Road West to N2S North	W-N	60	44	7	8	-1	-12.5%	0.4	✓	✓	3	2.0	A
		Ballygarry Link Road West to Ballygarry Link Road West	W-W	60	59	0	0	0	0	0.0%	✓	✓	5	0.0	A
		Ballygarry Link Road West to Development Access	E-S	60	59	0	0	0	0	0.0%	✓	✓	5	0.0	A
		Development Access to N2S South	S-S	94	43	3	3	0	0	0.0%	✓	✓	1	2.0	A
		Development Access to N2S North	E-N	94	44	0	0	0	0	0.0%	✓	✓	1	0.0	A
		Development Access to Ballygarry Link Road West	E-W	94	59	0	0	0	0	0.0%	✓	✓	1	0.0	A
		Development Access to Development Access	E-E	94	95	0	0	0	0	0.0%	✓	✓	1	0.0	A
		Total		144	144	22	22	22	22	0.0%	✓	✓	12	2.0	A
104	New Road / Roche Freight	Ballygarry Link Road West to Ballygarry Link Road East	NH-E	58	60	101	100	0	0	0.0%	✓	✓	0	0.0	A
		Ballygarry Link Road West to Roche Freight Access	NH-SW	58	63	0	0	0	0	0.0%	✓	✓	0	0.0	A
		Ballygarry Link Road East to Ballygarry Link Road West	E-NW	59	53	83	83	0	0	0.0%	✓	✓	0	0.0	A
		Ballygarry Link Road East to Roche Freight Access	E-SW	59	63	7	7	0	0	0.0%	✓	✓	0	1.0	A
		Roche Freight Access to Ballygarry Link Road West	S-NW	62	59	1	1	0	0	0.0%	✓	✓	0	0.0	A
		Roche Freight Access to Ballygarry Link Road East	S-EW	62	60	0	0	0	0	0.0%	✓	✓	0	0.0	A
		Total		146	146	22	22	22	22	0.0%	✓	✓	12	2.0	A
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown South	S-E	50	144	27	1	26	260.00	0.00	*	*	0	0.0	A
		Ballygarry Link Road East to Churchtown North	E-N	59	142	3	5	-2	-40.0%	1.0	✓	✓	2	1.0	A
		Ballygarry Link Road East to Ballygarry Link Road West	E-NW	59	141	24	48	-24	-65.0%	4.0	✓	✓	0	0.0	A
		Churchtown South to Churchtown North	S-N	64	142	6	6	0	0	0.0%	✓	✓	3	1.0	A
		Churchtown North to Ballygarry Link Road East	N-E	64	58	5	4	-2	-2.0%	0.5	✓	✓	5	1.0	A
		Churchtown North to Ballygarry Link Road West	N-EW	64	58	5	4	-2	-2.0%	0.5	✓	✓	5	1.0	A
		Churchtown North to Churchtown South	N-S	133	144	0	0	0	0	0.0%	✓	✓	0	0.0	A
		Ballygarry Link Road West to Ballygarry Link Road East	NW-E	140	58	90	89	1	1.1%	0.1	✓	✓	0	0.0	A
		Total		71	70	1	1	1.4%	0.1	✓	✓	3	2.0	A	
106	Marys Terrace / Churchtown	Marys Terrace East to Marys Terrace North	E-N	3	142	4	4	0	0	0.0%	✓	✓	0	1.0	A
		Marys Terrace East to Churchtown South	E-S	3	133	6	6	0	0	0.0%	✓	✓	0	0.0	A
		Churchtown South to Marys Terrace East	S-E	2	142	3	2	0	0	0.0%	✓	✓	0	1.0	A
		Churchtown South to Marys Terrace North	S-N	142	142	3	2	0	0	0.0%	✓	✓	0	0.0	A
		Churchtown North to Marys Terrace East	N-E	133	2	38	38	-1	-2.6%	0.2	✓	✓	1	1.0	A
		Churchtown North to Churchtown South	N-S	133	144	0	0	0	0	0.0%	✓	✓	0	0.0	A
		Ballygarry Link Road West to Ballygarry Link Road East	NW-E	140	58	90	89	1	1.0%	0.2	✓	✓	0	0.0	A
		Total		71	70	1	1	1.4%	0.1	✓	✓	3	2.0	A	
107	Marys Terrace / Greenore Park	Marys Terrace West to Marys Terrace East	W-E	2	4	40	43	-3	-7.0%	0.5	✓	✓	0	1.0	A
		Marys Terrace West to Greenore Park West	W-S	2	5	4	4	0	0	0.0%	✓	✓	0	1.0	A
		Marys Terrace East to Marys Terrace West	S-E	3	3	10	10	0	0	0.0%	✓	✓	0	1.0	A
		Marys Terrace East to Greenore Park North	N-E	3	4	44	43	1	2.2%	0.2	✓	✓	1	1.0	A
		Greenore Park North to Marys Terrace East	N-S	5	2	11	11	0	0	0.0%	✓	✓	1	1.0	A
		Greenore Park North to Marys Terrace West	NW-E	6	5	0	0	0	0	0.0%	✓	✓	0	0.0	A
		Total		110	112	-2	-1.8%	0.2	✓	✓	4	2.0	A		
108	N2S / Marys Terrace / St Martins	Marys Terrace to N2S North	N-H	2	52	0	0	0	0	0.0%	✓	✓	5	1.0	A
		Marys Terrace to N2S South	N-H	2	53	0	0	0	0	0.0%	✓	✓	5	1.0	A
		Marys Terrace to St Martins Road	NW-E	2	56	18	18	-5	-5.2%	0.2	✓	✓	5	3.0	A
		N2S South to Marys Terrace	S-NW	50	3	38	38	-1	-2.6%	0.2	✓	✓	0	1.0	A
		N2S South to N2S North	S-N	50	52	10	11	0	0	0.0%	✓	✓	0	1.0	A
		N2S North to St Martins Road	S-E	50	56	147	149	-2	-1.3%	0.2	✓	✓	6	2.0	A
		N2S North to Marys Terrace	NW-N	53	3	11	11	0	0	0.0%	✓	✓	5	1.0	A
		N2S North to St Martins Road	N-E	53	56	0	0	0	0	0.0%	✓	✓	0	0.0	A
		St Martins Road to Marys Terrace	E-NW	57	3	15	16	0	0	0.0%	✓	✓	3	2.0	A
		St Martins Road to N2S North	E-N	57	52	0	0	0	0	0.0%	✓	✓	0	0.0	A
		St Martins Road to N2S South	E-S	57	65	143	0	0	0	0.0%	✓	✓	3	1.0	A
		Total		416	421	-5	-1.2%	0.2	✓	✓	5	2.0	A		
109	Glenmore Park Junction	Glenmore Park West to Glenmore Park East	S-E	4	6	24	24	-1	-4.2%	0.2	✓	✓	0	1.0	A
		Glenmore Park South to Glenmore Park West	S-W	4	7	25	24	-1	-4.2%	0.2	✓	✓	1	1.0	A
		Glenmore Park West to Glenmore Park South	W-S	6	5	5	5	0	0	0.0%	✓	✓	0	1.0	A
		Glenmore Park West to Glenmore Park East	W-E	6	6	0	0	0	0	0.0%	✓	✓	0	0.0	A
		Glenmore Park East to Glenmore Park South	E-W	7	7	0	0	0	0	0.0%	✓	✓	0	0.0	A
		Total		69	69	0	0	0	0	0.0%	✓	✓	2	0.0	A
110	Small Boat Harbour Access	Churchtown West to Churchtown East	S-EW	141	131	34	54	-24	-44.4%	1.7	✓	✓	5	1.0	A
		Churchtown West to Small Boat Harbour	S-NW	141	68	0	0	0	0	0.0%	✓	✓	5	2.0	A
		Churchtown East to Churchtown West	NE-SW	132	140	119	118	0	0	0.0%	✓	✓	0	1.0	A
		Small Boat Harbour to Churchtown West	NW-SW	67	140	8	0	0	0	0.0%	✓	✓	0	0.0	A
		Total		158	182	-24	-13.2%	1.8	✓	✓	5	2.0	A		
111	N2S / Rosslare Harbour Entrance Roundabout	N2S to N2S	N-E	70	53	11	13	0	0	0.0%	✓	✓	0	0.0	A
		N2S to Outbound Freight</													

# R. Junction Performance Full Approach Summary – 2053 – Option A

AM Peak

Rosslare Harbour VISSIM - AM Peak - Option A															
Node	Description	Links		Links		Volume General Traffic (GT)			General Traffic		Queue Length (m) Model		Delay (secs)	Average	Lost
		Direction	From	To	Model	Count	Mod-Off	% Diff*	GEH	Accept	Max	Average			
101	N25 / Churchtown	Churchtown North to Churchtown South	N-S	65	69	5	0	0.0%	0.0	✓	0	0	3.0	A	
		Churchtown North to N25 East	N-E	65	69	5	0	0.0%	0.0	✓	0	0	0.0	A	
		Churchtown North to N25 West	N-W	65	69	14	12	-3.16.7%	0.4	✓	0	0	4.0	A	
		Churchtown South to Churchtown North	S-N	68	64	6	0	1	20.0%	0.4	✓	0	0	3.0	A
		Churchtown South to N25 East	S-E	68	72	4	4	0	0.0%	0.0	✓	5	0	5.0	A
		Churchtown South to N25 West	S-W	68	98	11	12	-1.6.3%	0.1	✓	8	0	2.0	A	
		N25 West to Churchtown North	W-NE	72	64	9	9	0	0.0%	0.0	✓	0	0	1.0	A
		N25 West to Churchtown South	W-S	72	69	5	6	-1.-16.7%	0.4	✓	11	0	2.0	A	
		N25 East to Churchtown North	E-NE	98	64	6	0	1	14.0%	0.4	✓	27	0	2.0	A
		N25 East to Churchtown South	E-S	98	65	10	10	-1.25.0%	0.1	✓	24	0	3.0	A	
		N25 East to N25 West	E-W	98	99	360	362	0	0.0%	0.0	✓	22	0	0.0	A
		Total			722	724	-2	-0.3%	0.1	✓	32	0	1.8	A	
102	N20 / Ballyknockan	N25 West to N25 East	W-E	72	42	273	274	-1.-0.4%	0.1	✓	10	0	0.0	A	
		Ballyknockan South to N25 East	W-SE	72	74	28	29	0	0.0%	0.0	✓	10	0	2.0	A
		Ballyknockan South to N25 West	SE-E	73	42	20	21	-1.-4.8%	0.2	✓	10	0	2.0	A	
		N25 East to Ballyknockan South	SE-W	73	98	22	21	1.4.8%	0.2	✓	11	0	2.0	A	
		N25 East to Ballyknockan South	E-S	98	74	41	39	-1.5.1%	0.1	✓	0	0	1.0	A	
		N25 East to N25 West	E-W	98	98	203	203	0	0.0%	0.0	✓	10	0	1.0	A
		Total			724	726	-4	-0.6%	0.0	✓	14	0	0.0	A	
103	N25 / New Road / Development Roundabout	S-G	42	43	14	14	0	0.0%	0.0	✓	42	0	0.0	A	
		N25 South to N25 North	S-N	42	44	270	274	-4.-1.5%	0.2	✓	12	0	1.0	A	
		N25 South to Ballygarry Link Road West	S-W	42	59	16	16	0	0.0%	0.0	✓	12	0	1.0	A
		N25 South to Development Access	S-E	42	95	0	0	0.0%	0.0	✓	12	0	0.0	A	
		N25 North to N25 South	NE-S	55	43	378	380	-2.-0.5%	0.1	✓	53	0	2.0	A	
		N25 North to N25 North	NE-NE	55	44	0	0	0.0%	0.0	✓	53	0	0.0	A	
		N25 North to Ballygarry Link Road West	NE-W	55	59	11	10	10.0%	0.3	✓	53	0	3.0	A	
		N25 North to Development Access	NE-E	55	56	0	0	0.0%	0.0	✓	53	0	0.0	A	
		Ballygarry Link Road West to N25 South	W-S	55	43	11	12	-1.2.3%	0.1	✓	1	0	2.0	A	
		Ballygarry Link Road West to N25 North	W-N	60	44	10	12	-1.-16.7%	0.6	✓	1	0	2.0	A	
		Ballygarry Link Road West to Ballygarry Link Road West	W-W	60	59	0	0	0.0%	0.0	✓	1	0	0.0	A	
		Ballygarry Link Road West to Development Access	W-E	60	95	2	2	0	0.0%	0.0	✓	1	0	2.0	A
		Development Access to N25 South	E-S	94	43	3	3	0	0.0%	0.0	✓	2	0	3.0	A
		Development Access to N25 North	E-NE	94	44	0	0	0.0%	0.0	✓	2	0	0.0	A	
		Development Access to Ballygarry Link Road West	E-W	94	59	0	0	0.0%	0.0	✓	2	0	0.0	A	
		Development Access to Development Access	E-E	94	95	0	0	0.0%	0.0	✓	1	0	1.0	A	
		Total			701	700	-4	-0.1%	0.3	✓	54	0	2.0	A	
104	New Road / Rocha Freight	Ballygarry Link Road West to Ballygarry Link Road East	NW-E	58	60	13	14	-1.-14.3%	0.4	✓	0	0	0.0	A	
		Ballygarry Link Road West to Rocha Freight Access	NW-SW	58	63	0	0	0.0%	0.0	✓	0	0	0.0	A	
		Ballygarry Link Road East to Ballygarry Link Road West	E-NW	59	59	6	5	1	20.0%	0.4	✓	0	0	0.0	A
		Ballygarry Link Road East to Rocha Freight Access	E-SW	59	63	21	20	1.5.0%	0.1	✓	0	0	1.0	A	
		Rocha Freight Access to Ballygarry Link Road West	SW-NW	62	69	0	0	0.0%	0.0	✓	0	0	0.0	A	
		Rocha Freight Access to N25 Link Road East	SW-E	62	60	12	12	0	0.0%	0.0	✓	1	0	1.0	A
		Total			51	51	0	0.0%	0.0	✓	1	0	0.0	A	
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown North	E-N	64	64	4	4	0	0.0%	0.0	✓	33	0	0.0	A
		Ballygarry Link Road East to Churchtown South	E-S	65	65	3	2	0	0.0%	0.0	✓	1	0	0.0	A
		Churchtown South to Ballygarry Link Road East	S-G	64	58	5	6	-1.-16.7%	0.4	✓	0	0	1.0	A	
		Churchtown South to Churchtown North	S-N	64	64	16	17	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown North to Ballygarry Link Road East	N-E	65	58	7	7	0	0.0%	0.0	✓	0	0	1.0	A
		Churchtown North to Churchtown South	N-S	65	65	23	21	1.4.8%	0.2	✓	0	0	0.0	A	
		Total			56	56	0	0.0%	0.0	✓	1	0	0.0	A	
106	Marys Terrace / Churchtown	Marys Terrace East to Churchtown North	E-N	3	64	11	11	0	0.0%	0.0	✓	1	0	1.0	A
		Marys Terrace East to Churchtown South	E-S	3	65	21	21	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown South to Marys Terrace East	S-E	4	2	17	18	0	0.0%	0.0	✓	1	0	0.0	A
		Churchtown South to Churchtown North	S-N	64	64	4	4	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown North to Marys Terrace East	N-E	65	2	28	29	0	0.0%	0.0	✓	0	0	1.0	A
		Churchtown North to Churchtown South	N-S	65	65	7	7	0	0.0%	0.0	✓	0	0	0.0	A
		Total			88	87	1	1.1%	0.1	✓	3	0	0.0	A	
107	Marys Terrace / Greencore Park	Marys Terrace West to Marys Terrace East	W-S	2	40	39	41	1.2.6%	0.2	✓	0	0	1.0	A	
		Marys Terrace West to Greencore Park North	W-N	2	4	5	5	0	0.0%	0.0	✓	0	0	1.0	A
		Marys Terrace West to Marys Terrace West	W-E	3	33	32	32	1.3.1%	0.2	✓	0	0	0.0	A	
		Marys Terrace East to Greencore Park North	S-E	3	4	15	14	7.7.1%	0.1	✓	1	0	-1.0	INVA	
		Greencore Park North to Marys Terrace East	N-E	5	2	10	10	0	0.0%	0.0	✓	1	0	0.0	A
		Greencore Park North to Marys Terrace West	N-W	5	3	0	0	0.0%	0.0	✓	0	0	0.0	A	
		Total			103	100	3	3.3%	0.1	✓	2	0	0.0	A	
108	N25 / Marys Terrace / St Martins	Marys Terrace to N25 North	NW-E	2	52	0	0	0.0%	0.0	✓	7	0	0.0	A	
		Marys Terrace to N25 South	NW-S	2	55	32	32	0	0.0%	0.0	✓	13	0	3.0	A
		Marys Terrace to St Martins Road	NW-E	2	56	18	17	1.5.9%	0.2	✓	7	0	4.0	A	
		N25 South to Marys Terrace	S-NW	50	3	33	32	1.3.1%	0.2	✓	0	0	1.0	A	
		N25 South to N25 North	S-N	50	52	112	119	-1.-6.9%	0.7	✓	0	0	1.0	A	
		N25 South to St Martins Road	S-E	50	56	126	126	0	0.0%	0.0	✓	22	0	3.0	A
		N25 North to N25 South	N-E	50	53	1	1	0	0.0%	0.0	✓	1	0	0.0	A
		N25 North to N25 North	N-S	53	55	234	234	0	0.0%	0.0	✓	0	0	0.0	A
		St Martins Road to Marys Terrace	E-NW	57	57	13	14	0	0.0%	0.0	✓	18	0	4.0	A
		St Martins Road to N25 North	E-N	57	52	0	0	0.0%	0.0	✓	12	0	0.0	A	
		St Martins Road to N25 South	E-S	57	65	129	129	0	0.0%	0.0	✓	18	0	2.0	A
		Total			688	693	-5	-0.7%	0.2	✓	24	0	2.0	A	
109	Glenmore Park J-Tunction	Greencore Park South to Greencore Park East	S-E	4	6	10	9	1.11.1%	0.3	✓	0	0	0.0	A	
		Greencore Park South to Greencore Park West	S-W	4	7	9	10	-1.-10.0%	0.3	✓	0	0	0.0	A	
		Greencore Park South to N25 South	S-N	4	5	1	1	0	0.0%	0.0	✓	1	0	0.0	A
		Greencore Park West to Greencore Park East	W-E	6	6	0	0	0.0%	0.0	✓	0	0	0.0	A	
		Greencore Park East to Greencore Park South	E-S	7	5	6	6	0	0.0%	0.0	✓	0	0	0.0	A
		Greencore Park East to Greencore Park West	E-W	7	7	0	0	0.0%	0.0	✓	0	0	0.0	A	
		Total			29	29	0	0.0%	0.0	✓	0	0	0.0	A	
110	Small Boat Harbour Access	Churchtown West to Churchtown East	SW-NE	64	64	111	111	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown West to Small Boat Harbour	SW-NW	64	66	4	4	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown East to Churchtown West	NE-SW	65	65	27	27	0	0.0%	0.0	✓	0	0	0.0	A
		Small Boat Harbour to Churchtown West	NE-SW	67	65	0	0	0.0%	0.0	✓	0	0	0.0	A	
		Total			66	66	0	0.0%	0.0	✓	0	0	0.0	A	
111	Rosslare Harbour Entrance Roundabout	N25 to N25	W-N	79	83	6	6	-1.-5.3%	0.4	✓	1	0	1.0	A	
		N25 to Outbound Freight	W-NW	81	83	186	186	0	0.0%	0.0	✓	51	0	3.0	A
		Freight to N25	NW-N	81	80	7	7	0	0.0%	0.0	✓	51	0	2.0	A
		Freight to Outbound Freight	NW-NW	81	83	19	20	-1.-5.0%	0.2	✓	51	0	2.0	A	
		Freight to Ship	NW-N	8											

## PM Peak

Rosslare Harbour VISSIM - PM Peak - Option A

Node	Description	Direction	Links		Links		Volume General Traffic (GT)			General Traffic		Queue Length (m) Model		Delay (secs)	
			From	To	Model	Count	Mod-Cnt	% Diff	GEH	Accept	Max	Average	Average	LOS+	Max
101	N25 / Churchtown	Churchtown North to Churchtown South	N-S	65	69	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown North to N25 East	N-E	65	72	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown North to N25 West	N-W	65	98	0	0	0	0.0%	0.0	✓	4	0	2.0	A
		Churchtown South to Churchtown North	S-E	68	64	0	0	0	0.0%	0.0	✓	4	0	0.0	A
		Churchtown South to N25 East	S-E	68	72	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown South to N25 West	S-W	68	98	0	0	0	0.0%	0.0	✓	3	0	2.0	A
		N25 West to Churchtown North	W-N	72	64	6	6	0	0.0%	0.0	✓	0	0	1.0	A
		N25 West to Churchtown South	W-S	72	69	4	4	0	0.0%	0.0	✓	3	0	2.0	A
		N25 West to N25 East	W-E	72	72	290	0	0.0%	0.0	✓	1	0	0.0	A	
		N25 East to Churchtown North	E-N	98	69	2	2	-1	-33.3%	0.4	✓	0	0	1.0	A
		N25 East to Churchtown South	E-S	98	98	244	277	-1	-11.7%	0.4	✓	1	0	0.0	A
		N25 East to N25 West	E-W	98	98	244	276	-3	-1.7%	0.2	✓	0	0	0.0	A
		Total				588	586	-2	-0.3%	0.1	✓	8	0	0.0	A
102	N25 / Ballyknockan	N25 West to N25 East	W-E	72	42	260	263	0	0.0%	0.0	✓	11	0	0.0	A
		N25 West to Ballyknockan South	W-S	72	74	27	27	0	0.0%	0.0	✓	11	0	2.0	A
		Ballyknockan South to N25 East	S-E	73	42	4	4	0	0.0%	0.0	✓	4	0	1.0	A
		Ballyknockan South to N25 West	S-E	73	98	4	4	0	0.0%	0.0	✓	5	0	1.0	A
		N25 East to Ballyknockan South	E-S	98	74	33	31	2	6.5%	0.4	✓	0	0	0.0	A
		N25 East to N25 West	E-W	98	98	273	276	-3	-1.1%	0.2	✓	0	0	0.0	A
		Total				604	605	-1	-0.2%	0.0	✓	14	0	0.0	A
103	N25 / New Road / Development Roundabout	N25 South to N25 South	S-E	42	43	0	0	0	0.0%	0.0	✓	1	0	0.0	A
		N25 South to N25 North	S-E	42	44	265	269	0	0.0%	0.1	✓	13	0	2.0	A
		N25 South to Ballygarry Link Road West	S-W	42	59	7	7	0	0.0%	0.0	✓	13	0	0.0	A
		N25 South to Development Access	S-E	42	95	0	0	0	0.0%	0.0	✓	13	0	0.0	A
		N25 North to N25 South	S-E-S	55	43	290	290	0	0.0%	0.0	✓	8	0	1.0	A
		N25 North to N25 North	NE-S	55	44	0	0	0	0.0%	0.0	✓	8	0	0.0	A
		N25 North to Ballygarry Link Road West	NE-W	55	59	8	8	0	0.0%	0.0	✓	8	0	1.0	A
		N25 North to Development Access	NE-E	55	95	0	0	0	0.0%	0.0	✓	8	0	0.0	A
		Ballygarry Link Road West to N25 South	W-S	60	43	8	8	-1	-11.1%	0.1	✓	3	0	2.0	A
		Ballygarry Link Road West to Ballygarry Link Road West	W-N	60	59	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Ballygarry Link Road West to Development Access	W-E	60	95	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Development Access to N25 South	E-S	94	43	3	3	0	0.0%	0.0	✓	4	0	3.0	A
		Development Access to N25 North	E-N	94	44	0	0	0	0.0%	0.0	✓	4	0	0.0	A
		Development Access to Ballygarry Link Road West	E-W	94	59	0	0	0	0.0%	0.0	✓	4	0	0.0	A
		Development Access to Development Access	E-E	94	95	0	0	0	0.0%	0.0	✓	4	0	0.0	A
		Total				583	586	-3	-0.5%	0.1	✓	15	0	1.0	A
104	New Road / Roche Freight	Ballygarry Link Road West to Ballygarry Link Road East	W-N	6	60	2	2	-1	-12.5%	0.4	✓	0	0	0.0	A
		Ballygarry Link Road West to Pocahontas Access	W-S	6	60	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Ballygarry Link Road East to Ballygarry Link Road West	W-E	69	59	5	5	0	0.0%	0.0	✓	0	0	0.0	A
		Ballygarry Link Road East to Roche Freight Access	E-SW	59	63	10	10	0	0.0%	0.0	✓	0	0	1.0	A
		Roche Freight Access to Ballygarry Link Road West	SW-NW	62	59	1	1	0	0.0%	0.0	✓	0	0	0.0	A
		Roche Freight Access to Ballygarry Link Road East	SW-E	62	60	10	10	0	0.0%	0.0	✓	1	0	1.0	A
		Total				33	34	-1	-1.0%	0.2	✓	1	0	0.0	A
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown North	E-N	59	64	6	5	0	0.0%	0.0	✓	0	0	1.0	A
		Ballygarry Link Road East to Churchtown South	E-S	59	65	1	1	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown South to Marys Terrace East	S-E	61	58	5	5	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown South to Churchtown North	S-N	64	64	5	5	-1	-2.0%	0.1	✓	0	0	0.0	A
		Churchtown North to Marys Terrace East	N-E	65	58	3	3	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown North to Churchtown South	N-S	65	65	3	3	0	0.0%	0.0	✓	0	0	0.0	A
		Total				21	22	-1	-4.5%	0.2	✓	0	0	0.0	A
106	Manys Terrace / Churchtown	Manys Terrace East to Churchtown North	E-N	3	64	4	4	0	0.0%	0.0	✓	0	0	1.0	A
		Manys Terrace East to Churchtown South	E-S	3	65	6	6	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown South to Manys Terrace East	S-E	42	44	8	9	-1	-11.1%	0.3	✓	0	0	1.0	A
		Churchtown South to Churchtown North	S-N	64	64	2	2	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown North to Marys Terrace East	N-E	65	62	1	1	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown North to Churchtown South	N-S	65	65	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Total				61	62	-1	-1.6%	0.1	✓	1	0	1.0	A
107	Manys Terrace / Greenore Park	Manys Terrace West to Manys Terrace East	W-S	2	2	44	45	-1	-2.5%	0.1	✓	0	0	1.0	A
		Manys Terrace West to Greenore Park North	W-N	2	4	5	5	0	0.0%	0.0	✓	0	0	1.0	A
		Manys Terrace East to Manys Terrace West	SE-W	3	3	10	10	0	0.0%	0.0	✓	0	0	0.0	A
		Manys Terrace East to Greenore Park North	SE-N	3	4	45	43	2	4.7%	0.3	✓	4	0	-1.0	#N/A
		Greenore Park North to Manys Terrace East	N-S	5	2	11	11	0	0.0%	0.0	✓	0	0	1.0	A
		Greenore Park North to Manys Terrace West	N-W	5	3	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Total				185	184	-1	-0.5%	0.1	✓	4	0	0.0	A
108	N25 / Manys Terrace / St Martins	Manys Terrace to N25 North	N-W	2	52	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Manys Terrace to N25 South	N-W-S	2	55	34	36	0	0.0%	0.1	✓	7	0	2.0	A
		St Martins Road to Manys Terrace	N-W-E	2	56	21	20	1	5.0%	0.2	✓	0	0	3.0	A
		N25 South to Manys Terrace	S-NW	50	3	40	38	2	5.3%	0.3	✓	0	0	1.0	A
		N25 South to N25 North	S-N	50	52	68	70	-2	-2.9%	0.2	✓	0	0	1.0	A
		N25 South to St Martins Road	S-E	50	56	151	153	-2	-1.3%	0.2	✓	19	0	3.0	A
		N25 North to Manys Terrace	N-S	53	55	112	111	1	0.9%	0.1	✓	0	0	0.0	A
		N25 North to St Martins Road	N-E	53	56	4	4	0	0.0%	0.1	✓	0	0	0.0	A
		St Martins Road to Manys Terrace	E-NW	57	53	15	15	0	0.0%	0.0	✓	0	0	0.0	A
		St Martins Road to N25 North	E-N	57	52	0	0	0	0.0%	0.0	✓	1	0	0.0	A
		St Martins Road to N25 South	E-S	57	55	144	144	0	0.0%	0.0	✓	8	0	1.0	A
		Total				585	587	-2	-0.3%	0.1	✓	20	0	1.0	A
109	Glenmore Park T-Junction	Glenmore Park South to Glenmore Park East	S-E	4	6	25	24	1	4.2%	0.2	✓	0	0	0.0	A
		Glenmore Park South to Greenore Park West	S-W	4	7	25	24	1	4.2%	0.2	✓	0	0	0.0	A
		Glenmore Park West to Glenmore Park East	W-S	6	5	5	5	0	0.0%	0.0	✓	0	0	1.0	A
		Glenmore Park West to Greenore Park East	W-E	6	6	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Glenmore Park East to Glenmore Park South	E-S	6	7	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Glenmore Park East to Greenore Park West	E-W	7	7	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Total				47	47	0	0.0%	0.0	✓	1	0	0.0	A
110	Small Boat Harbour Access	Churchtown West to Churchtown East	SW-NE	64	64	6	5	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown West to Small Boat Harbour	SW-NW	64	66	0	0	0	0.0%	0.0	✓	0	0	0.0	A
		Churchtown East to Churchtown West	NE-SW	65	65	31	31	0	0.0%	0.0	✓	0	0	0.0	A
		Small Boat Harbour to Churchtown West	NW-SW	67	65	10	10	0	0.0%	0.0	✓	1	0	0.0	A
		Total				47	47	0	0.0%	0.0	✓	1	0	0.0	A
111	N25 / Rosslare Harbour Roundabout	N25 South to N25 North	W-N	79	53	12	12	0	0.0%	0.0	✓	1	0	1.0	A
		N25 South to Rosslare Harbour Freight	W-E	79	80	4	4	0	0.0%	0.1	✓	1	0	1.0	A
		N25 North to Rosslare Harbour Freight	NW-E	81	53	75	74	1	1.4%	0.1	✓	11	0	1.0	A
		Rosslare Harbour Freight to Outbound Freight	NW-NW	81											

# S. Junction Performance Full Approach Summary – 2053 – Option B

AM Peak

Rosslare Harbour VISSIM - AM Peak - Option B												
Node	Description	Links	Links	Volume General Traffic (GDT)			General Traffic			Queue Length (m) Model	Delay (seconds) Model	
				Direction	From	To	Model	Actual	% Diff			
101 NDS / Churchtown	Churchtown North to Churchtown South	N-E 65	65	0	0	0	20,200	0.4	-	0	3.0 A	
	Churchtown North to NDS East	N-E 65	72	0	0	0	0,000	0.0	-	0	0.0 A	
	Churchtown South to NDS West	N-E 65	64	0	0	0	0,000	0.0	-	0	0.0 A	
	Churchtown South to Churchtown North	N-E 65	64	0	0	0	20,200	0.4	-	0	4.0 A	
	Churchtown South to NDS East	N-E 65	72	0	0	0	0,000	0.0	-	0	0.0 A	
	Churchtown South to NDS West	N-E 65	64	0	0	0	20,200	0.4	-	0	4.0 A	
	KDS West to Churchtown North	N-E 65	72	0	0	0	0,000	0.0	-	0	0.0 A	
	KDS West to NDS East	N-E 65	72	0	0	0	14,175	0.4	-	0	2.0 A	
	KDS West to NDS South	N-E 65	64	0	0	0	20,200	0.4	-	0	4.0 A	
	KDS West to Churchtown South	N-E 65	64	0	0	0	14,175	0.4	-	0	2.0 A	
	KDS West to NDS West	N-E 65	64	0	0	0	20,200	0.4	-	0	4.0 A	
	KDS West to NDS East	N-E 65	72	0	0	0	14,175	0.4	-	0	2.0 A	
	KDS West to Churchtown South	N-E 65	64	0	0	0	14,175	0.4	-	0	2.0 A	
	KDS West to NDS West	N-E 65	64	0	0	0	14,175	0.4	-	0	2.0 A	
	Total		721	720	-	-	4,874	0.4	✓	12	0 1.0 A	
102 NDS / Ballygarry	KDS West to NDS East	N-E 65	72	42	227	227	0,000	0.0	-	0	0.0 A	
	KDS West to Ballygarry South	N-E 65	64	42	227	227	0,000	0.0	-	0	0.0 A	
	Ballygarry South to NDS East	N-E 65	72	42	227	227	0,000	0.0	-	0	0.0 A	
	Ballygarry South to NDS West	N-E 65	64	42	227	227	0,000	0.0	-	0	0.0 A	
	KDS West to NDS West	N-E 65	64	42	227	227	0,000	0.0	-	0	0.0 A	
	KDS West to NDS South	N-E 65	64	42	227	227	0,000	0.0	-	0	0.0 A	
	KDS West to NDS East	N-E 65	72	42	227	227	0,000	0.0	-	0	0.0 A	
	Total		721	720	-	-	4,874	0.4	✓	12	0 1.0 A	
103 NDS / New Road / Development Roundabout	KDS South to NDS North	N-E 65	42	43	251	271	-	0,000	0.2	12	0 1.0 A	
	KDS South to NDS South	N-E 65	42	43	251	271	-	0,000	0.2	12	0 1.0 A	
	KDS South to Ballygarry Link Road West	N-E 65	42	23	271	0,000	-	0,000	0.0	12	0 1.0 A	
	KDS South to NDS West	N-E 65	42	43	251	280	-	0,000	0.4	12	0 1.0 A	
	KDS South to NDS North	N-E 65	42	43	251	271	-	0,000	0.2	12	0 1.0 A	
	KDS South to NDS South	N-E 65	42	43	251	271	-	0,000	0.2	12	0 1.0 A	
	KDS South to NDS East	N-E 65	42	43	251	271	-	0,000	0.2	12	0 1.0 A	
	KDS South to NDS West	N-E 65	42	43	251	271	-	0,000	0.2	12	0 1.0 A	
	Total		721	720	-	-	4,874	0.4	✓	12	0 1.0 A	
104 New Road / Roche Freight	Ballygarry Link Road West to Ballygarry Link Road East	N-E 65	58	60	120	140	-	14,175	0.4	✓	70 0 3.0 A	
	Ballygarry Link Road West to Ballygarry Link Road West	N-E 65	58	60	120	140	-	14,175	0.4	✓	70 0 3.0 A	
	Ballygarry Link Road West to Ballygarry Link Road West	N-E 65	58	60	120	140	-	14,175	0.4	✓	70 0 3.0 A	
	Ballygarry Link Road West to Roche Freight Access	N-E 65	58	60	120	140	-	14,175	0.4	✓	70 0 3.0 A	
	Roche Freight Access to Ballygarry Link Road West	N-E 65	58	60	120	140	-	14,175	0.4	✓	70 0 3.0 A	
	Ballygarry Link Road West to Ballygarry Link Road East	N-E 65	58	60	120	140	-	14,175	0.4	✓	70 0 3.0 A	
	Ballygarry Link Road West to NDS North	N-E 65	58	60	120	140	-	14,175	0.4	✓	70 0 3.0 A	
	Ballygarry Link Road West to Ballygarry Link Road West	N-E 65	58	60	120	140	-	14,175	0.4	✓	70 0 3.0 A	
	Total		58	60	120	140	-	14,175	0.4	✓	70 0 3.0 A	
105 New Road / Churchtown	Ballygarry Link Road East to Churchtown North	N-E 65	58	64	11	0	0,000	0.0	-	0	0.0 A	
	Ballygarry Link Road East to Churchtown South	N-E 65	58	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown South to Ballygarry Link Road East	N-E 65	58	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown South to NDS South	N-E 65	58	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown North to Ballygarry Link Road East	N-E 65	58	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown North to Churchtown South	N-E 65	58	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown North to NDS South	N-E 65	58	64	11	0	0,000	0.0	-	0	0.0 A	
	Total		58	64	11	0	0,000	0.0	✓	0	0.0 A	
106 Mayo Terceira / Churchtown	Mayo Terceira East to Churchtown North	N-E 65	3	64	11	0	0,000	0.0	-	0	0.0 A	
	Mayo Terceira East to Churchtown South	N-E 65	3	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown South to Mayo Terceira East	N-E 65	3	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown South to Mayo Terceira West	N-E 65	3	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown South to NDS North	N-E 65	3	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown North to Mayo Terceira East	N-E 65	3	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown North to Mayo Terceira West	N-E 65	3	64	11	0	0,000	0.0	-	0	0.0 A	
	Total		3	64	11	0	0,000	0.0	✓	0	0.0 A	
107 Mayo Terceira / Greenvale Park	Mayo Terceira West to Mayo Terceira East	N-E 65	2	2	40	30	-	0,000	0.2	0	0.0 A	
	Mayo Terceira West to Greenvale Park West	N-E 65	2	2	40	30	-	0,000	0.2	0	0.0 A	
	Greenvale Park West to Mayo Terceira West	N-E 65	2	2	40	30	-	0,000	0.2	0	0.0 A	
	Greenvale Park West to Greenvale Park North	N-E 65	2	2	40	30	-	0,000	0.2	0	0.0 A	
	Greenvale Park East to Greenvale Park West	N-E 65	7	5	40	30	-	0,000	0.2	0	0.0 A	
	Greenvale Park East to Greenvale Park South	N-E 65	7	5	40	30	-	0,000	0.2	0	0.0 A	
	Greenvale Park North to Greenvale Park West	N-E 65	5	3	40	30	-	0,000	0.2	0	0.0 A	
	Total		40	30	20	20	-	0,000	0.2	0	0.0 A	
108 NDS / Mayo Terceira / Link Road	Mayo Terceira NDS North	N-E 65	2	12	11	0	0,000	0.0	-	0	0.0 A	
	Mayo Terceira NDS South	N-E 65	2	15	11	0	0,000	0.0	-	0	0.0 A	
	Mayo Terceira NDS to Link Road	N-E 65	2	15	11	0	0,000	0.0	-	0	0.0 A	
	Link Road to Mayo Terceira NDS	N-E 65	2	15	11	0	0,000	0.0	-	0	0.0 A	
	Link Road to Mayo Terceira South	N-E 65	2	15	11	0	0,000	0.0	-	0	0.0 A	
	Link Road to NDS South	N-E 65	2	15	11	0	0,000	0.0	-	0	0.0 A	
	Link Road to NDS North	N-E 65	2	15	11	0	0,000	0.0	-	0	0.0 A	
	Total		25	25	0	0,000	0.0	✓	0	0.0 A		
109 Glanmore Park / Junction	Glanmore Park South to Greenvale Park East	N-E 65	4	6	11	0	0,000	0.0	-	0	0.0 A	
	Glanmore Park South to Greenvale Park West	N-E 65	4	7	10	0	10,200	0.1	✓	0	0.0 A	
	Glanmore Park West to Greenvale Park East	N-E 65	4	6	11	0	0,000	0.0	-	0	0.0 A	
	Glanmore Park West to Greenvale Park West	N-E 65	4	6	11	0	0,000	0.0	-	0	0.0 A	
	Greenvale Park East to Greenvale Park West	N-E 65	7	5	10	0	0,000	0.0	-	0	0.0 A	
	Greenvale Park West to Greenvale Park East	N-E 65	5	7	10	0	0,000	0.0	-	0	0.0 A	
	Greenvale Park East to Greenvale Park South	N-E 65	5	6	10	0	0,000	0.0	-	0	0.0 A	
	Greenvale Park South to Greenvale Park East	N-E 65	5	6	10	0	0,000	0.0	-	0	0.0 A	
	Total		20	20	0	0,000	0.0	✓	0	0.0 A		
110 Small Boat Harbour Access	Churchtown West to Churchtown East	N-E 65	64	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown East to Churchtown West	N-E 65	64	64	11	0	0,000	0.0	-	0	0.0 A	
	Churchtown East to Greenvale Park West	N-E 65	65	22	27	0	0,000	0.0	-	0	0.0 A	
	Churchtown East to NDS South	N-E 65	67	65	22	27	0	0,000	0.0	-	0	0.0 A
	Link Road to NDS South	N-E 65	65	65	22	27	0	0,000	0.0	-	0	0.0 A
	Link Road to NDS North	N-E 65	65	65	22	27	0	0,000	0.0	-	0	0.0 A
	Total		59	59	59	59	-	0,000	0.0	✓	0	0.0 A
111 Roche Harbour Entrance Roundabout	KDS NDS to NDS NDS	N-E 65	79	73	1	0	0,000	0.0	-	0	1.0 A	
	KDS NDS to Outbound Freight	N-E 65	79	80	11	0	0,000	0.0	-	0	1.0 A	
	KDS NDS to Inbound Freight	N-E 65	79	80	11	0	0,000	0.0	-	0	1.0 A	
	KDS NDS to Freight	N-E 65	79	80	11	0	0,000	0.0	-	0	1.0 A	
	KDS NDS to Freight	N-E 65	79	80	11	0	0,000	0.0	-	0	1.0 A	
	KDS NDS to Stop	N-E 65	79	80	11	0	0,000	0.0	-	0	1.0 A	
	KDS NDS to Stop	N-E 65	79	80	11	0	0,000	0.0	-	0	1.0 A	
	Total		360	370	-	-	-	-	-	0	2.0 A	
112 NDS / Roche Freight	KDS South to NDS North	N-E 65	42	280	280	-	-1,415	0.2	✓	0	0.0 A	
	KDS South to Roche Freight Access	N-E 65	42	280	280	-	-1,415	0.2	✓	0	0.0 A	
	Roche Freight Access to NDS South	N-E 65	35	92	1	0	0,000	0.0	-	0	1.0 A	
	Roche Freight Access to NDS North	N-E 65	35	92	1	0	0,000	0.0	-	0	1.0 A	
	KDS South to NDS South	N-E 65	37	98	301	301	-	0,000	0.0	-	0	0.0 A
	KDS South to NDS North	N-E 65	37	98	301	301	-	0,000	0.0	-	0	0.0 A
	Total		37	98	301	301	-	0,000	0.0	✓	0	0.0 A
113 NDS / Development Access	KDS South to NDS North	N-E 65	44	44	11	0	0,000	0.0	-	0	0.0 A	
	KDS South to NDS South	N-E 65	44	44	11	0	0,000	0.0	-	0	0.0 A</	

## PM Peak

Rosslare Harbour VISSIM - PM Peak - Option B												
Node	Description	Lanes	Lanes	Volume	Length (m)	Capacity	% Util.	Arrival	Wav.	Average	Peak	LOS
101	N2S / Churchtown											
	Churchtown North to Churchtown South	0-5	5	69	100	100	0.0%	0.0%	-	0.0	0.0	A
	Churchtown North to N2S East	0-4	5	72	100	100	0.0%	0.0%	-	0.0	0.0	A
	Churchtown North to N2S West	0-4	5	54	100	100	0.0%	0.0%	-	0.0	0.0	A
	Churchtown North to Churchtown North	0-4	5	54	100	100	0.0%	0.0%	-	0.0	0.0	A
	Churchtown South to N2S East	0-4	5	69	100	100	0.0%	0.0%	-	0.0	0.0	A
	Churchtown South to N2S West	0-4	5	54	100	100	0.0%	0.0%	-	0.0	0.0	A
	N2S East to Churchtown North	0-4	5	72	100	100	0.0%	0.0%	-	0.0	0.0	A
	N2S West to Churchtown South	0-5	5	72	100	100	0.0%	0.0%	-	0.0	0.0	A
	N2S West to N2S West	0-5	5	54	100	100	0.0%	0.0%	-	0.0	0.0	A
	Total	0-5	5	585	585	585	0.0%	0.0%	-	0.0	0.0	A
102	N2O / Balbriggan											
	EUS West to N2S West	0-4	2	42	265	265	0.0%	0.0%	-	0.0	0.0	A
	EUS South to Balbriggan Link Road West	0-4	2	58	265	265	0.0%	0.0%	-	0.0	0.0	A
	Balbriggan South to N2S West	0-4	2	42	265	265	0.0%	0.0%	-	0.0	0.0	A
	Balbriggan South to N2S West	0-4	2	58	265	265	0.0%	0.0%	-	0.0	0.0	A
	EUS East to Balbriggan Link Road West	0-4	2	58	265	265	0.0%	0.0%	-	0.0	0.0	A
	EUS East to N2S West	0-4	2	58	265	265	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	658	658	658	0.0%	0.0%	-	0.0	0.0	A
103	N2C / New Road / Development Roundabout											
	EUS South to N2S North	0-4	2	42	265	265	0.0%	0.0%	-	0.0	0.0	A
	EUS South to Balbriggan Link Road West	0-4	2	58	265	265	0.0%	0.0%	-	0.0	0.0	A
	Balbriggan South to N2S West	0-4	2	42	265	265	0.0%	0.0%	-	0.0	0.0	A
	Balbriggan South to N2S West	0-4	2	58	265	265	0.0%	0.0%	-	0.0	0.0	A
	EUS North to Balbriggan Link Road West	0-4	2	58	265	265	0.0%	0.0%	-	0.0	0.0	A
	EUS North to N2S West	0-4	2	58	265	265	0.0%	0.0%	-	0.0	0.0	A
	Balbriggan Link Road West to Balbriggan Link Road West	0-4	2	58	265	265	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	658	658	658	0.0%	0.0%	-	0.0	0.0	A
104	New Road / Roche Freight											
	Balbriggan Link Road West to Balbriggan Link Road East	0-4	2	58	80	80	0.0%	0.0%	-	0.0	0.0	A
	Roche Freight Access to Roche Freight Access	0-4	2	58	80	80	0.0%	0.0%	-	0.0	0.0	A
	Balbriggan Link Road East to Roche Freight Access	0-4	2	58	80	80	0.0%	0.0%	-	0.0	0.0	A
	Roche Freight Access to Balbriggan Link Road West	0-4	2	58	80	80	0.0%	0.0%	-	0.0	0.0	A
	Roche Freight Access to Balbriggan Link Road East	0-4	2	58	80	80	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	320	320	320	0.0%	0.0%	-	0.0	0.0	A
105	New Road / Churchtown											
	Churchtown North to Churchtown North	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	Churchtown North to N2S North	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	Churchtown South to Balbriggan Link Road West	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	Balbriggan South to N2S North	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	Churchtown South to Churchtown North	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	Churchtown North to Churchtown South	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	21	21	21	0.0%	0.0%	-	0.0	0.0	A
106	Mayo Terceira / Churchtown											
	Churchtown North to Mayo Terceira East	0-4	2	58	64	64	0.0%	0.0%	-	0.0	0.0	A
	Churchtown South to Mayo Terceira East	0-4	2	58	64	64	0.0%	0.0%	-	0.0	0.0	A
	Churchtown North to Mayo Terceira West	0-4	2	58	64	64	0.0%	0.0%	-	0.0	0.0	A
	Churchtown South to Mayo Terceira West	0-4	2	58	64	64	0.0%	0.0%	-	0.0	0.0	A
	Mayo Terceira East to Mayo Terceira South	0-4	2	58	64	64	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	195	195	195	0.0%	0.0%	-	0.0	0.0	A
107	Mayo Terceira / Greenore Park											
	Mayo Terceira West to Mayo Terceira East	0-4	2	58	42	42	0.0%	0.0%	-	0.0	0.0	A
	Mayo Terceira West to Greenore Park North	0-4	2	4	42	42	0.0%	0.0%	-	0.0	0.0	A
	Mayo Terceira West to Greenore Park South	0-4	2	4	42	42	0.0%	0.0%	-	0.0	0.0	A
	Mayo Terceira East to Greenore Park North	0-4	2	58	42	42	0.0%	0.0%	-	0.0	0.0	A
	Mayo Terceira East to Greenore Park South	0-4	2	58	42	42	0.0%	0.0%	-	0.0	0.0	A
	Greenore Park North to Mayo Terceira East	0-4	2	58	42	42	0.0%	0.0%	-	0.0	0.0	A
	Greenore Park North to Mayo Terceira West	0-4	2	58	42	42	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	401	401	401	0.0%	0.0%	-	0.0	0.0	A
108	N2S / Mayo Terceira / Link Road											
	Mayo Terceira to N2S North	0-4	2	58	52	52	0.0%	0.0%	-	0.0	0.0	A
	Mayo Terceira to Mayo Terceira	0-4	2	58	52	52	0.0%	0.0%	-	0.0	0.0	A
	Mayo Terceira to Link Road	0-4	2	58	52	52	0.0%	0.0%	-	0.0	0.0	A
	Link Road to Mayo Terceira	0-4	2	58	52	52	0.0%	0.0%	-	0.0	0.0	A
	Link Road to N2S North	0-4	2	58	52	52	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	195	195	195	0.0%	0.0%	-	0.0	0.0	A
109	Glenore Park / Link Road Junction											
	Glenore Park South to Glenore Park East	0-4	2	4	21	21	0.0%	0.0%	-	0.0	0.0	A
	Glenore Park South to Glenore Park West	0-4	2	7	21	21	0.0%	0.0%	-	0.0	0.0	A
	Glenore Park West to Glenore Park South	0-4	2	4	11	11	0.0%	0.0%	-	0.0	0.0	A
	Glenore Park West to Glenore Park East	0-4	2	7	11	11	0.0%	0.0%	-	0.0	0.0	A
	Glenore Park East to Glenore Park South	0-4	2	4	11	11	0.0%	0.0%	-	0.0	0.0	A
	Glenore Park East to Glenore Park West	0-4	2	7	11	11	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	401	401	401	0.0%	0.0%	-	0.0	0.0	A
110	Small Boat Harbour Access											
	Churchtown North to Small Boat Harbour	0-4	2	58	64	64	0.0%	0.0%	-	0.0	0.0	A
	Churchtown South to Small Boat Harbour	0-4	2	58	64	64	0.0%	0.0%	-	0.0	0.0	A
	Small Boat Harbour to Churchtown North	0-4	2	58	64	64	0.0%	0.0%	-	0.0	0.0	A
	Small Boat Harbour to Churchtown South	0-4	2	58	64	64	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	47	47	47	0.0%	0.0%	-	0.0	0.0	A
111	Rosslare Harbour Entrance Roundabout											
	N2C to N2C	0-4	2	58	73	73	0.0%	0.0%	-	0.0	0.0	A
	Link to Dated Freight	0-4	2	58	40	40	0.0%	0.0%	-	0.0	0.0	A
	Link to Stop	0-4	2	58	23	23	0.0%	0.0%	-	0.0	0.0	A
	Link to Stop	0-4	2	58	23	23	0.0%	0.0%	-	0.0	0.0	A
	Link to Dated Freight	0-4	2	58	23	23	0.0%	0.0%	-	0.0	0.0	A
	Link to Stop	0-4	2	58	23	23	0.0%	0.0%	-	0.0	0.0	A
	Link to Stop	0-4	2	58	23	23	0.0%	0.0%	-	0.0	0.0	A
	Link to Dated Freight	0-4	2	58	23	23	0.0%	0.0%	-	0.0	0.0	A
	Link to Stop	0-4	2	58	23	23	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	195	195	195	0.0%	0.0%	-	0.0	0.0	A
112	N2S / Roche Freight											
	N2S South to N2S North	0-4	2	58	42	42	0.0%	0.0%	-	0.0	0.0	A
	N2S North to N2S South	0-4	2	58	42	42	0.0%	0.0%	-	0.0	0.0	A
	Roche Freight Access to N2S South	0-4	2	58	35	35	0.0%	0.0%	-	0.0	0.0	A
	Roche Freight Access to N2S North	0-4	2	58	35	35	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	575	575	575	0.0%	0.0%	-	0.0	0.0	A
113	N2S / Development Access											
	N2S South to N2S North	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	N2S North to N2S South	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	Development Access to N2S South	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	Development Access to N2S North	0-4	2	58	44	44	0.0%	0.0%	-	0.0	0.0	A
	Total	0-4	2	445	445	445	0.0%	0.0%	-	0.0	0.0	A
204	N2S / Link Road / N2S South											
	Link Road North to Link Road South	0-4	2	106	115	115	0.0%	0.0%	-	0.0	0.0	A
	Link Road North to N2S South	0-4	2	106	115	115	0.0%	0.0%	-	0.0	0.0	A
	Link Road South to Link Road North	0-4	2	106	115	115	0.0%	0.0%	-	0.0	0.0	A
	Link Road South to N2S South	0-4	2	106	115	115	0.0%	0.0%	-	0.0	0.0	A
	Link Road North to Link Road South	0-4	2	106	115	115	0.0%	0.0%	-	0.0	0.0	A
	Link Road South to Link Road North	0-4	2	106	115	115	0.0%	0.0%	-	0.0	0.0	A
	Link Road North to N2S South	0-4	2									

# T. Junction Performance Full Approach Summary – 2053 – Option C

AM Peak

Rosslare Harbour VISSIM - AM Peak - Option C												
Node	Description	Links		Links		Volume General Traffic (GT)			General Traffic		Queue Length (m) Model	Delay (secs) Model
		Direction	From	To	Model	Count	Mod-Cnt	% Chgt	GEN	Accept	Max Average	
101	N05 / Churchtown	Churchtown North to Churchtown South	N-S	144	69	11	5	6	120.0%	2.1	✓	11 0 3.0 A
	Churchtown North to N05 East	N-E	144	72	7	4	5	75.0%	1.3	✓	11 0 2.0 A	
	Churchtown South to N05 West	N-W	144	98	41	12	29	241.7%	6.6	✗	16 0 3.0 A	
	Churchtown South to Churchtown North	S-N	68	64	6	1	20	0.0%	0.4	✓	8 0 4.0 A	
	Churchtown South to N05 East	S-E	68	72	4	1	0	-0.0%	0.0	✓	8 0 4.0 A	
	Churchtown South to N05 West	S-W	68	98	11	12	29	-28.0%	0.3	✓	8 0 4.0 A	
	N05 West to Churchtown North	W-NE	72	64	6	3	0	0.0%	0.0	✓	0 0 1.0 A	
	N05 West to Churchtown South	W-S	72	69	6	6	-1	-16.7%	0.4	✓	10 0 1.0 A	
	N05 West to N05 East	W-E	72	72	293	294	-1	-0.3%	0.1	✓	8 0 0.0 A	
	N05 East to Churchtown North	E-NE	98	64	7	7	0	0.0%	0.0	✓	24 0 2.0 A	
	N05 East to Churchtown South	E-S	98	69	3	1	25.0%	0.5	✓	8 0 1.0 A		
	N05 East to N05 West	E-W	98	99	379	363	17	-2.0%	0.3	✓	18 0 1.0 A	
	Total				778	724	52	7.2%	1.9	✓	28 0 1.0 A	
102	N20 / Ballyknockan	N05 West to N05 East	W-E	72	42	278	274	2	0.7%	0.1	✓	7 0 0.0 A
	N05 West to Ballyknockan South	W-SE	72	74	28	26	0	0.0%	0.0	✓	7 0 2.0 A	
	Ballyknockan South to N05 East	SE-E	73	42	20	21	-1	-4.8%	0.2	✓	7 0 1.0 A	
	Ballyknockan South to N05 West	SE-W	73	96	22	21	-1	-4.8%	0.2	✓	11 0 1.0 A	
	N05 East to Ballyknockan South	E-S	95	96	14	43	29	-16.7%	0.3	✓	0 0 1.0 A	
	N05 East to Ballyknockan North	E-W	95	98	367	350	15	4.2%	0.3	✓	0 0 0.0 A	
	Total				756	735	21	2.9%	0.8	✓	12 0 0.0 A	
103	N25 / New Road / Development Roundabout	N05 South to N05 South	S-S	42	43	0	0	0	0.0%	0.0	✓	11 0 0.0 A
	N05 South to N05 North	S-N	42	44	183	181	2	-1.2%	0.2	✓	11 0 1.0 A	
	N05 South to Ballygunny Link Road West	S-SE	42	59	153	128	3	-3.3%	0.1	✓	11 0 1.0 A	
	Development Access to N05 South	S-E	42	55	15	1	0	0.0%	0.0	✓	11 0 1.0 A	
	N05 North to N05 South	N-S	55	43	160	160	0	-1.2%	0.2	✓	12 0 3.0 A	
	N05 North to N05 North	N-E	55	44	0	0	0	0.0%	0.0	✓	12 0 0.0 A	
	N05 North to Ballygunny Link Road West	N-W	55	59	9	10	-1	-10.0%	0.1	✓	12 0 3.0 A	
	N05 North to Development Access	N-E	55	95	0	0	0	0.0%	0.0	✓	12 0 0.0 A	
	Ballygunny Link Road West to N05 South	W-E	60	43	260	230	20	8.7%	1.3	✓	24 0 3.0 A	
	Ballygunny Link Road West to N05 North	W-S	60	44	144	144	1	-0.3%	0.1	✓	14 0 1.0 A	
	Ballygunny Link Road West to Ballygunny Link Road West	W-W	60	69	0	0	0	0.0%	0.0	✓	34 0 0.0 A	
	Ballygunny Link Road West to Development Access	W-E	60	95	2	2	0	0.0%	0.0	✓	24 0 3.0 A	
	Development Access to N05 South	E-S	94	43	3	3	0	0.0%	0.0	✓	3 0 3.0 A	
	Development Access to N05 North	E-E	94	44	0	0	0	0.0%	0.0	✓	3 0 0.0 A	
	Development Access to Ballygunny Link Road West	E-W	94	59	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	Development Access to Development Access	E-E	94	95	0	0	0	0	0.0%	0.0	✓	0 0 0.0 A
	Total				724	709	15	2.1%	0.6	✓	27 0 2.0 A	
104	New Road / Roche Freight	Ballygunny Link Road West to Ballygunny Link Road East	NW-E	58	60	260	232	18	7.8%	1.2	✓	0 0 0.0 A
	Ballygunny Link Road West to Roche Freight Access	NW-SW	58	63	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	Ballygunny Link Road East to Ballygunny Link Road West	E-NW	59	59	114	118	-4	-3.4%	0.4	✓	0 0 0.0 A	
	Roche Freight Access to Ballygunny Link Road West	E-SW	59	63	21	20	1	5.0%	0.2	✓	0 0 1.0 A	
	Roche Freight Access to Ballygunny Link Road East	E-W	62	60	13	13	0	0.0%	0.0	✓	8 0 0.0 A	
	Roche Freight Access to Ballygunny Link Road East	S-E	62	60	13	13	0	0.0%	0.0	✓	8 0 0.0 A	
	Total				397	382	15	3.9%	0.8	✓	8 0 0.0 A	
105	New Road / Churchtown	Ballygunny Link Road West to Churchtown South	E-S	59	14	59	2	57	280.0%	0.6	✗	1 0 1.0 A
	Ballygunny Link Road East to Churchtown North	E-N	59	14	1	3	-2	-66.7%	1.4	✓	0 0 0.0 A	
	Ballygunny Link Road East to Ballygunny Link Road West	E-NW	59	141	55	113	-58	-51.3%	0.3	✓	0 0 0.0 A	
	Churchtown South to N05 South	S-N	64	142	17	17	0	0.0%	0.0	✓	0 0 2.0 A	
	Churchtown South to Ballygunny Link Road East	S-E	64	59	5	16	-1	-4.3%	0.1	✓	0 0 1.0 A	
	Churchtown North to Ballygunny Link Road East	N-E	133	58	28	2	23	-100.0%	0.5	✓	2 0 1.0 A	
	Churchtown North to Churchtown South	N-S	133	144	0	21	-21	-100.0%	0.5	✓	1 0 0.0 A	
	Ballygunny Link Road West to Ballygunny Link Road East	NW-E	140	58	217	215	-1	-0.5%	0.1	✓	0 0 0.0 A	
	Total				165	169	4	-2.3%	0.3	✓	18 0 2.0 A	
106	Marly's Terrace / Churchtown	Marly's Terrace East to Churchtown North	E-N	3	142	1	17	0	0.0%	0.0	✓	0 0 1.0 A
	Marly's Terrace East to Churchtown South	E-S	3	153	21	20	0	0.0%	0.0	✓	0 0 1.0 A	
	Churchtown South to Marly's Terrace East	S-E	42	2	15	16	-1	-4.3%	0.1	✓	0 0 1.0 A	
	Churchtown South to Churchtown North	S-N	142	142	3	4	-1	-25.0%	0.5	✓	0 0 0.0 A	
	Churchtown North to Marly's Terrace East	N-E	133	2	28	28	0	0.0%	0.0	✓	2 0 1.0 A	
	Churchtown North to Churchtown South	N-S	133	133	7	7	0	0.0%	0.0	✓	0 0 0.0 A	
	Total				85	87	4	-2.3%	0.3	✓	5 0 0.0 A	
107	Marly's Terrace / Greene Park	Marly's Terrace West to Marly's Terrace East	W-S	2	2	0	0	0	0.0%	0.0	✓	0 0 1.0 A
	Marly's Terrace West to Greene Park North	W-N	2	4	4	5	-1	-20.0%	0.5	✓	0 0 0.0 A	
	Marly's Terrace East to Marly's Terrace West	SE-W	3	3	32	32	0	0.0%	0.0	✓	0 0 0.0 A	
	Marly's Terrace East to Greene Park North	SE-N	3	4	15	14	1	7.1%	0.1	✓	1 0 1.0 A	
	Greene Park North to Marly's Terrace East	N-S	5	2	10	10	0	0.0%	0.0	✓	1 0 0.0 A	
	Greene Park North to Marly's Terrace West	N-E	5	3	4	4	0	0.0%	0.0	✓	0 0 0.0 A	
	Total				89	100	4	-2.3%	0.3	✓	2 0 0.0 A	
108	N25 / Marly's Terrace / St Martins	Marly's Terrace to N25 North	NW-N	2	52	0	0	0	0.0%	0.0	✓	6 0 0.0 A
	Marly's Terrace to N25 South	NW-S	2	55	32	32	0	0.0%	0.0	✓	6 0 1.0 A	
	Marly's Terrace to St Martins Road	NW-E	2	56	17	17	0	0.0%	0.0	✓	6 0 3.0 A	
	N25 South to Marly's Terrace	S-NW	50	3	32	32	0	0.0%	0.0	✓	0 0 1.0 A	
	N25 South to N25 North	S-N	50	52	8	2	23	33.3%	0.8	✓	0 0 1.0 A	
	N25 South to Ballygunny Link Road East	S-E	50	55	12	12	1	16.7%	0.2	✓	4 0 1.0 A	
	N25 North to Marly's Terrace	NW-M	53	3	0	0	0	0.0%	0.0	✓	6 0 0.0 A	
	N25 North to N25 South	N-S	53	55	7	6	1	16.7%	0.4	✓	0 0 0.0 A	
	N25 North to St Martins Road	N-E	53	58	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	St Martins Road to Marly's Terrace	E-NW	57	3	14	14	0	0.0%	0.0	✓	1 0 2.0 A	
	St Martins Road to N25 North	E-N	57	52	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	Total				362	362	0	0.0%	0.0	✓	8 0 1.0 A	
109	Glenmore Park T-Junction	Glenmore Park South to Greene Park East	S-E	4	6	10	9	1	11.1%	0.3	✓	0 0 0.0 A
	Glenmore Park South to Greene Park West	S-W	4	7	5	10	-1	-10.0%	0.1	✓	0 0 0.0 A	
	Glenmore Park West to Greene Park South	W-S	6	5	4	4	0	0.0%	0.0	✓	0 0 0.0 A	
	Glenmore Park West to Greene Park East	W-E	6	6	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	Glenmore Park East to Greene Park South	E-S	7	7	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	Glenmore Park East to Greene Park West	E-W	7	7	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	Total				29	29	0	0.0%	0.0	✓	0 0 0.0 A	
110	Small Boat Harbour Access	Churchtown West to Churchtown East	NW-E	141	131	68	124	-68.8%	0.6	✗	8 0 1.0 A	
	Churchtown West to Small Boat Harbour	NW-SW	141	68	2	4	-2	-60.0%	1.2	✓	8 0 1.0 A	
	Churchtown West to Churchtown West	NE-SW	132	140	245	245	0	0.0%	0.0	✓	3 0 1.0 A	
	Total				321	381	-60	-15.7%	3.2	✗	8 0 1.0 A	
111	Rosslare Harbour Entrance Roundabout	N05 to N05	W-W	79	53	7	6	1	16.7%	0.4	✓	0 0 1.0 A
	N05 to Outbound Freight	W-NW	79	80	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	N05 to Ship	W-NE	79	83	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	Fight to N05	NW-W	81	83	0	0	0	0.0%	0.0	✓	5 0 0.0 A	
	Fight to Outbound Freight	NW-NW	81	80	5	4	-1	-14.3%	0.4	✓	0 0 1.0 A	
	Fight to Ship	NW-S	81	80	26	26	0	0.0%	0.0	✓	4 0 1.0 A	
	Ship to N05	N-EW	82	83	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	Ship to Outbound Freight	NE-NW	82	80	11	11	0	0.0%	0.0	✓	0 0 1.0 A	
	Ship to Ship	NE-NE	82	83	1	1	0	0.0%	0.0	✓	0 0 0.0 A	
	Total				46	45	1	2.2%	0.1	✓	5 0 1.0 A	
112	N25 / Roche Freight	N25 South to N25 North	SW-N	42	42	260	260	0	0.0%	0.0	✓	0 0 0.0 A
	N25 South to Roche Freight Access	SW-NW	42	43	16	14	-2	-14.3%	0.5	✓	4 0 2.0 A	
	Roche Freight Access to N25 North	W-BW	93	98	0	0	0	0.0%	0.0	✓	0 0 0.0 A	
	N25 North to Roche Freight Access	N-W	97	92	2	2	0	0.0%	0.0	✓	1 0 1.0 A	
	N25 North to N25 South	N-SW	97	98	411	391	20	5.1%	1			

## PM Peak

Rosslare Harbour VISSIM - PM Peak - Option C													
Node	Description	Links	Links	Volume General Traffic (GT)			General Traffic		Queue Length (m)		Delay (secs)		
				Direction	From	To	Model	Count	Mod.Ctr	% Del.			
101	N2S / Churchtown	Churchtown North to Churchtown South	N-S	144	72	0	0	0	0	0.0%	✓	0	0.0 A
		Churchtown North to N2S East	N-E	144	72	0	0	0	0	0.0%	✓	0	0.0 A
		Churchtown North to N2S West	N-W	144	98	32	4	28	700.00	4.00	*	17	2.0 A
		Churchtown South to Churchtown North	S-N	68	64	0	0	0	0	0.0%	✓	0	0.0 A
		Churchtown South to N2S East	S-E	68	72	0	0	0	0	0.0%	✓	0	0.0 A
		Churchtown South to N2S West	S-W	68	98	4	4	0	0	0.0%	✓	5	2.0 A
		N2S West to Churchtown North	W-N	68	64	0	0	0	0	0.0%	✓	0	0.0 A
		N2S West to Churchtown South	W-S	72	69	0	0	0	0	0.0%	✓	4	1.0 A
		N2S West to N2S East	W-E	72	72	290	290	0	0	0.0%	✓	1	2.0 A
		N2S East to Churchtown North	E-N	98	64	4	4	0	0	0.0%	✓	9	2.0 A
		N2S East to Churchtown South	E-S	98	69	2	3	-1	-33.3%	0.6	✓	0	1.0 A
		N2S East to N2S West	E-W	98	98	271	271	-2	0.7%	0.1	✓	5	0.0 A
		Total		416	368	268	268	25	4.7%	1.1	✓	19	2.0 A
102	N2D / Ballykneockan	N2S West to N2S East	W-E	72	42	26	26	0	0	0.0%	✓	0	0.0 A
		N2S West to Ballykneockan South	W-SE	72	74	27	27	0	0	0.0%	✓	9	2.0 A
		Ballykneockan South to N2S East	SE-E	73	42	4	4	0	0	0.0%	✓	6	2.0 A
		Ballykneockan South to N2S West	SE-W	73	98	4	4	0	0	0.0%	✓	4	1.0 A
		N2S East to Ballykneockan South	E-S	98	74	33	31	2	6.9%	0.4	✓	0	1.0 A
		N2S East to N2S West	E-W	98	98	271	271	-1	0.3%	0.1	✓	5	0.0 A
		Total		604	605	-1	-0.2%	6.6	✓	12	2.0 A		
103	N2S / New Road / Development Roundabout	N2S South to N2S South	S-S	42	43	0	0	0	0	0.0%	✓	12	2.0 A
		N2S South to N2S North	S-N	42	44	200	200	-2	-1.0%	0.1	✓	12	1.0 A
		N2S South to Ballygarry Link Road West	S-W	42	59	65	65	0	0	0.0%	✓	12	2.0 A
		N2S South to Development Access	S-E	42	95	0	0	0	0	0.0%	✓	12	2.0 A
		N2S South to N2S North	S-N	42	44	188	188	-1	-0.5%	0.1	✓	12	2.0 A
		N2S North to N2S North	N-N	44	44	0	0	0	0	0.0%	✓	7	2.0 A
		N2S North to Ballygarry Link Road West	N-W	59	59	8	8	0	0	0.0%	✓	7	1.0 A
		N2S North to Development Access	N-E	55	95	0	0	0	0	0.0%	✓	7	0.0 A
		Ballygarry Link Road West to N2S South	W-S	60	43	111	108	3	2.8%	0.5	✓	6	2.0 A
		Ballygarry Link Road West to N2S North	W-N	60	44	8	8	-1	-11.1%	0.5	✓	6	2.0 A
		Ballygarry Link Road East to Ballygarry Link Road West	W-W	60	59	0	0	0	0	0.0%	✓	6	0.0 A
		Development Access to N2S South	S-S	94	43	3	3	0	0	0.0%	✓	2	2.0 A
		Development Access to N2S North	E-N	94	44	0	0	0	0	0.0%	✓	2	0.0 A
		Development Access to Ballygarry Link Road West	E-W	94	59	0	0	0	0	0.0%	✓	2	0.0 A
		Development Access to Development Access	E-E	94	95	0	0	0	0	0.0%	✓	2	0.0 A
		Total		651	580	-1	-0.2%	8.1	✓	13	2.0 A		
104	New Road / Roche Freight	Ballygarry Link Road West to Ballygarry Link Road East	NH1-E	59	60	108	107	-1	-0.9%	0.0	✓	0	2.0 A
		Ballygarry Link Road East to Roche Freight Access	NH1-SW	59	63	0	0	0	0	0.0%	✓	0	0.0 A
		Ballygarry Link Road East to Ballygarry Link Road West	E-NW	59	59	63	63	0	0	0.0%	✓	0	0.0 A
		Ballygarry Link Road East to Roche Freight Access	E-SW	59	63	10	10	0	0	0.0%	✓	0	1.0 A
		Roche Freight Access to Ballygarry Link Road West	S-NW	62	59	1	1	0	0	0.0%	✓	0	0.0 A
		Roche Freight Access to Ballygarry Link Road East	S-EW	62	60	0	0	0	0	0.0%	✓	0	0.0 A
		Total		189	191	-2	-1.0%	0.0	✓	2	0.0 A		
105	New Road / Churchtown	Ballygarry Link Road East to Churchtown South	S-S	50	144	15	15	-1	-31.0%	7.0	✓	1	2.0 A
		Ballygarry Link Road East to Churchtown North	E-N	59	142	3	5	-2	-40.0%	1.0	✓	0	2.0 A
		Ballygarry Link Road East to Ballygarry Link Road West	E-NW	59	141	26	58	-29	-50.0%	4.6	✓	0	2.0 A
		Churchtown South to Churchtown North	S-N	64	62	6	-1	-16.7%	0.4	✓	4	1.0 A	
		Churchtown North to Ballygarry Link Road East	N-E	56	58	4	4	0	0	0.0%	✓	4	2.0 A
		Churchtown North to Ballygarry Link Road West	N-EW	56	58	4	4	0	0	0.0%	✓	4	1.0 A
		Churchtown North to Churchtown South	N-S	133	144	0	3	-3	-100.0%	2.4	✓	0	0.0 A
		Ballygarry Link Road West to Ballygarry Link Road East	NW-E	140	58	98	99	-1	-1.0%	0.1	✓	0	2.0 A
		Total		79	80	-1	-1.3%	8.1	✓	6	2.0 A		
106	Marys Terrace / Churchtown	Marys Terrace East to Churchtown North	E-N	3	142	4	4	0	0	0.0%	✓	0	1.0 A
		Marys Terrace East to Churchtown South	E-S	3	133	6	6	0	0	0.0%	✓	0	0.0 A
		Churchtown South to Marys Terrace East	S-E	2	142	3	3	0	0	0.0%	✓	0	0.0 A
		Churchtown South to Marys Terrace South	S-N	142	142	3	2	0	0	0.0%	✓	0	0.0 A
		Churchtown North to Marys Terrace East	N-E	133	2	42	41	1	2.4%	0.2	✓	1	2.0 A
		Churchtown North to Churchtown South	N-S	133	144	0	0	0	0	0.0%	✓	0	0.0 A
		Ballygarry Link Road West to Ballygarry Link Road East	NW-E	140	58	98	99	-1	-100.0%	2.4	✓	0	2.0 A
		Total		61	62	-1	-1.6%	8.1	✓	1	1.0 A		
107	Marys Terrace / Greenore Park	Marys Terrace West to Marys Terrace East	W-E	2	2	43	45	-2	-4.4%	0.5	✓	0	2.0 A
		Marys Terrace West to Greenore Park North	W-S	2	4	4	4	0	0	0.0%	✓	0	1.0 A
		Marys Terrace East to Marys Terrace West	W-SW	3	3	10	10	0	0	0.0%	✓	0	0.0 A
		Marys Terrace East to Greenore Park North	SE-N	3	4	43	43	0	0	0.0%	✓	3	1.0 A
		Greenore Park North to Marys Terrace East	N-SE	5	2	11	11	0	0	0.0%	✓	1	0.0 A
		Greenore Park North to Marys Terrace West	N-W	5	3	0	0	0	0	0.0%	✓	0	0.0 A
		Total		112	114	-2	-1.8%	8.2	✓	4	0.0 A		
108	N2S / Marys Terrace / St Martins	Marys Terrace to N2S North	N-H	2	52	4	4	0	0	0.0%	✓	6	2.0 A
		Marys Terrace to N2S South	N-HW	2	56	36	36	0	0	0.0%	✓	6	2.0 A
		Marys Terrace to St Martins Road	N-EW	2	56	20	20	0	0	0.0%	✓	6	3.0 A
		N2S South to Marys Terrace	S-NW	50	3	38	38	0	0	0.0%	✓	0	1.0 A
		N2S South to N2S North	S-N	50	52	11	12	-1	-8.3%	0.5	✓	0	1.0 A
		N2S North to St Martins Road	S-E	50	56	152	153	-1	-0.7%	0.1	✓	4	2.0 A
		N2S North to Marys Terrace	N-NW	53	3	10	10	0	0	0.0%	✓	0	2.0 A
		N2S North to N2S South	N-NW	53	55	11	12	0	0	0.0%	✓	0	2.0 A
		N2S North to St Martins Road	N-E	53	56	0	0	0	0	0.0%	✓	0	0.0 A
		St Martins Road to Marys Terrace	E-NW	57	3	15	16	0	0	0.0%	✓	3	2.0 A
		St Martins Road to N2S North	E-N	57	52	0	0	0	0	0.0%	✓	0	0.0 A
		St Martins Road to N2S South	E-S	57	55	144	144	0	0	0.0%	✓	3	1.0 A
		Total		425	424	-1	-0.2%	8.2	✓	6	0.0 A		
109	Glenmore Park T-Junction	Glenmore Park West to Glenmore Park East	S-E	4	6	24	24	0	0	0.0%	✓	0	0.0 A
		Glenmore Park South to Glenmore Park West	S-W	4	7	24	24	0	0	0.0%	✓	0	0.0 A
		Glenmore Park West to Glenmore Park South	W-S	6	5	8	5	0	0	0.0%	✓	0	1.0 A
		Glenmore Park West to Glenmore Park East	W-E	6	6	0	0	0	0	0.0%	✓	0	0.0 A
		Glenmore Park East to Glenmore Park South	W-EW	7	7	0	0	0	0	0.0%	✓	0	0.0 A
		Total		59	59	0	0	0	0	0.0%	✓	0	0.0 A
110	Small Boat Harbour Access	Churchtown West to Churchtown East	S-EW	141	131	34	64	-30	-46.0%	4.1	✓	5	1.0 A
		Small Boat Harbour Access	S-NW	141	68	0	0	0	0	0.0%	✓	5	2.0 A
		Churchtown East to Churchtown West	NE-SW	132	140	136	130	0	0	0.0%	✓	0	1.0 A
		Small Boat Harbour to Small Boat Harbour	NE-SW	67	140	10	10	0	0	0.0%	✓	1	0.0 A
		Total		174	204	-38	-14.7%	2.0	✓	6	0.0 A		
111	Rosslare Harbour Entrance Roundabout	N2S to N2S	N-H	70	53	11	12	0	0	0.0%	✓	0	2.0 A
		N2S to Outbound Freight	N-HW	70	80	1	1	0	0	0.0%	✓	0	2.0 A
		N2S to Ship	N-EW	79	83	0	0	0	0	0.0%	✓	0	2.0 A
		Freight to N2S	NW-NW	91	53	0	0	0	0	0.0%	✓	5	1.0 A
		Freight to Outbound Freight	NW-NW	81	80	12	12	0	0	0.0%	✓	3	1.0 A
		Freight to Ship	N-EW	81	83	10	10	0	0	0.0%	✓	3	1.0 A
		Ship to N2S	N-EW	82	53	0	0	0	0	0.0%	✓	0	0.0 A
		Ship to Outbound Freight	NW-NW	82	80	0	0	0	0	0.0%	✓	1	1.0 A
		Ship to Ship	N-EW	82	83	0	0	0	0	0.0%	✓	0	0.0 A
		Total		39	40	-1	-2.5%	8.2	✓	3	1.0 A		
112	N2S / Roche Freight	N2S South to N2S North	SW-N	42	42	268	-1	-0.4%	0.1	✓	0	0.0 A	
		Roche Freight Access	SW-W	42	92								

# U. Technical Note: Selection of Transport Model Type and Economic Appraisal Tool

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## N25 Rosslare Europort Access Road Transport Model Type and Economic Appraisal Tool

Project:	N25 Rosslare Europort Access Road		
Our reference:	229100548-MMD-0000-RE-TN-C-0006	Your reference:	N/A
Prepared by:	Clodagh Hourihane	Date:	30/06/2020
Approved by:	Joe Shinkwin	Checked by:	John O'Riordan
Subject:	Selection of Transport Model Type and Economic Appraisal Tool		

## 1 Technical Note: Selection of Transport Model Type and Economic Appraisal Tool

### 1.1 Introduction

This technical note describes the methodology for the selection and development of the traffic model and economic appraisal tool for the N25 Rosslare Europort Access Road project.

### 1.2 Traffic Model

The proposed traffic model type to be applied was not specified in the N25 Rosslare Europort Access Road Phase 1 Project Appraisal Plan, and the selection of the model type has been informed by the Project Appraisal Guidelines (PAG) Unit 5.1 (Construction of Transport Models) and PAG Unit 12 (Minor Project). Table 5.1.1 of PAG Unit 5.1 advises that simple models or microsimulation models are most appropriate for minor projects and assignment models are most appropriate for major projects. Items which have informed the selection of the most appropriate model type include the following:

- The area of influence for the model is very localised and well defined,
- The area of influence is located at the end point of the transport corridor which simplifies reassignment,
- Route choices are relatively simple with no intermediate junctions,
- There is a clear delineation between Europort traffic and 'village' traffic for modelling purposes,
- Europort traffic has specific peaks and platooning characteristics corresponding to the arrival and departure of ferries,
- At phase 3 of the project, the transport model will need to be interfaced with the N11/N25 Oilgate to Rosslare Harbour scheme model to reflect the links between the respective selected scheme options.

#### 1.2.1 Microsimulation approach

Following a review of the Project Appraisal Guidelines, we recommended the use of a microsimulation model using PTV VISSIM software as the preferred choice to assess the proposed N25 Rosslare Europort Access Road scheme and the following summarised the rationale for this approach:

- It would add value to the study as the model would be able to provide the required outputs for Phase 2 as well as Phase 3 of the study, thus providing a more efficient approach.

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- Specifically, as well as facilitating the assessment of the route options, it would also be able to support the design development process given the greater detail of simulation.
- Use of the new offline access road section will be Europort related trips, and an assignment model is not required to assess the displacement of trips to this new corridor. If it is required, the VISSIM software package has the ability to undertake dynamic assignment i.e. assess route choice within the model.
- Europort trips may be dependent on operations at the port and traffic may be more accurately simulated as arriving/exiting in a specific form rather than a continuous stream across the hour e.g. traffic leaving the port may be platoons of vehicles dependent on ferry arrivals – this can be simulated in VISSIM but not in a highway assignment model.
- A VISSIM model would allow for the simulation of longer simulation intervals rather than just a peak hour.
- Interface with N11/N25 Oilgate to Rosslare Harbour scheme VISUM model – forecast demand can be estimated from Europort data and background growth from national model initially and then verified against Oilgate model when available.
- The VISSIM model would be able to provide required outputs to the air quality and noise assessments similar to a highway assignment model.

It is noted that the above recommendation and rationale is consistent with the guidance provided in the Project Appraisal Guidelines (PAG) for National Roads, Units 5.1 (Construction of Transport Models - PE-PAG-02015) and Units 12 (Minor Projects – PE-PAG-02035). A simple model (manual assignment calculations) would not have sufficient complexity to replicate the site-specific characteristics outlined above. An assignment model is considered to be unnecessarily complex and disproportionate for the relatively straightforward route choices to be modelled. A microsimulation model has the capability of simulating the behaviour of individual vehicles which will be useful to model the distinctive behaviour patterns of ferry traffic, whereas assignment models assume the same conditions apply to all vehicles and cannot simulate particular behavioural choices. A microsimulation model is also capable of modelling the online management options that are currently under development (e.g. changing existing junctions to left in/left out only etc.) and will be useful for the design of junctions at Phase 3 (e.g. queue lengths at roundabouts). The PTV VISSIM model proposed is also fully compatible with the PTV VISUM assignment model being developed for the N11/N25 Oilgate to Rosslare Harbour scheme.

### 1.3 Economic Appraisal - TII Simple Appraisal Tool

The selection of the transport model type also influences the selection of the economic appraisal tool for the project (TUBA or TII Simple Appraisal Tool), and PTV VISSIM is compatible with both.

It is noted that Section 8 of the Project Appraisal Guidelines for National Roads Unit 12.0 - Minor Projects (PE-PAG-02035 Oct 16) states that for Minor Projects (€5m to €20m) the route options must be assessed under the Common Appraisal Framework appraisal criteria headings (Economy; Safety; Environment; Accessibility & Social Inclusion; Integration; and Physical Activity (if applicable). In this regard, we refer to section 8.1 of the guidelines (PE-PAG-02035) which refers to two different tools/approaches to be used when undertaking the Cost Benefit Analysis (CBA) (Economy):

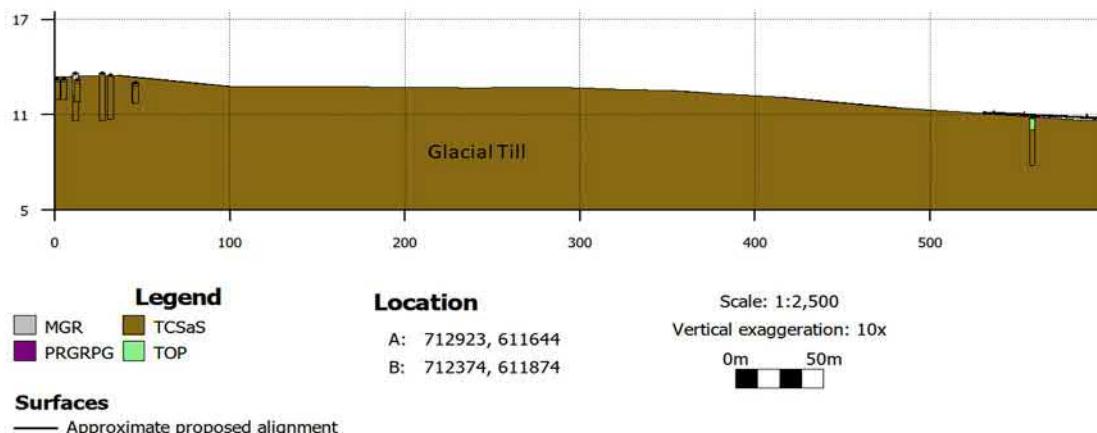
- TII Simple Appraisal Tool
- TUBA

The Project Appraisal Guidelines (section 8.1 of PE-PAG-02035) indicate that TUBA should be used for more complex projects that require the development of an assignment model. In this regard, as we have developed a microsimulation model for the scheme, we therefore recommend that the 'TII Simple Appraisal Tool' approach be used for the Economic assessment for the N25 Rosslare Europort Access Road scheme.

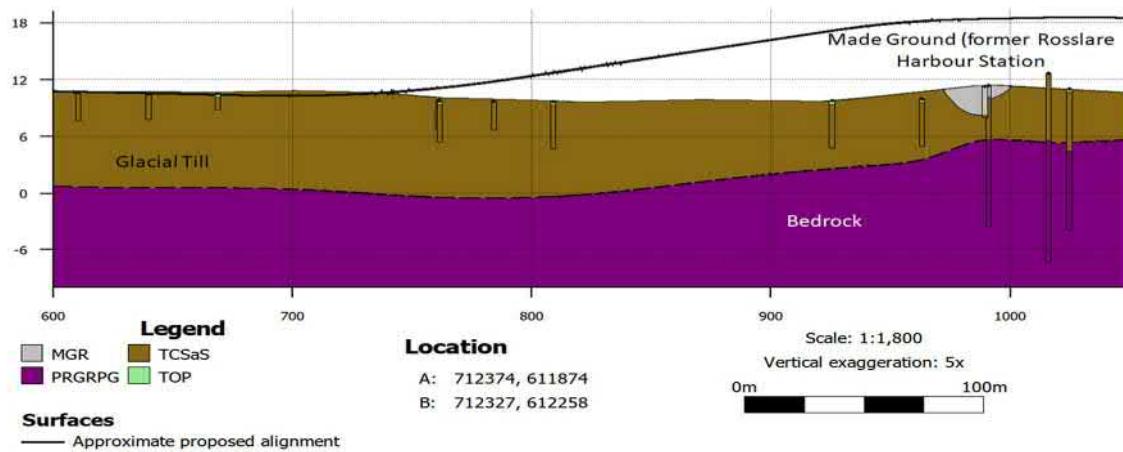


## K - Option C Preliminary Ground Model

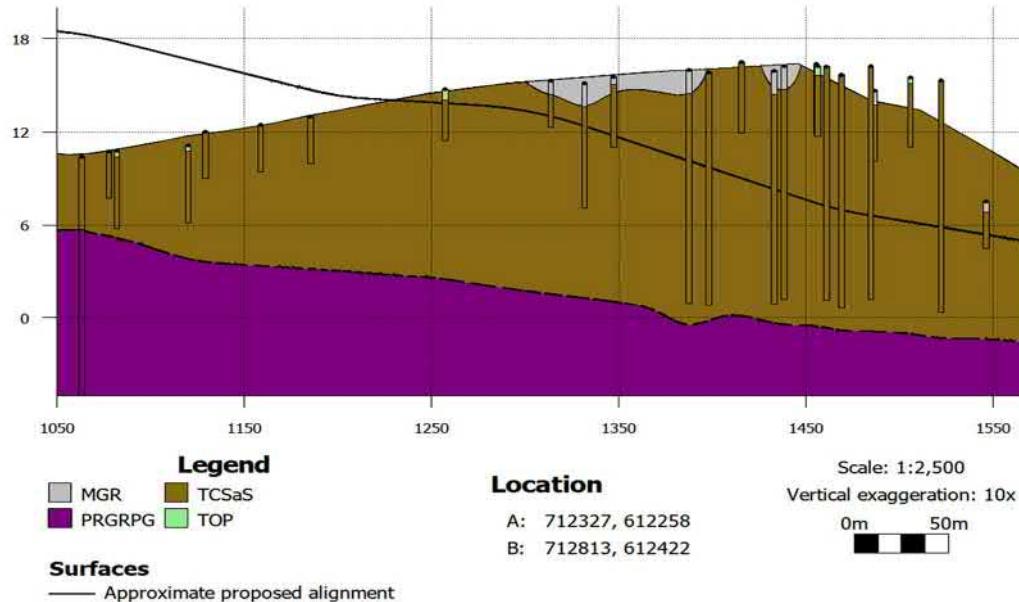
**Figure 0.1: Option C Preliminary Ground Model (CH 0 – 600)**



**Figure 0.2: Option C Preliminary Ground Model (CH 600 – 1050)**



**Figure 0.3: Option C Preliminary Ground Model (CH 1050 – End)**



## L – Rosslare Europort internal road layout

Notes

1. Original drawing size is A1, DONOT SCALE, use figured dimensions only, if in doubt ask your supervisor.
  2. All dimensions are in mm.
  3. All components are to fit Transverse Mercator.
  4. This Scheme is at Preliminary Stage and may change at a Detail Design Stage and may change as design progresses.
  5. Preliminary layout may change during Detail Design.
  6. All access will be maintained and accommodated during the Detail Design.

Proposed Rosslare Europa Development (New Internal road layout)

- Scheme Option A
- Scheme Option B
- Scheme Option C
- Scheme Option D

Reference drawings

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**Wexford County Council**  
**Roads Department**  
**Wexford County Council**  
**Carricklawn**

Title N25 Rosslare Europort Access Road  
Section Scheme Option Selection  
Page Rosslare Europort's New Internal Road Layout  
Page Interaction with Scheme Options  
Page Sheet 01 of 01

Drawing Description						Rev.
Designated Drawing Number	Approved Drawing Number	ISI Code/Location	ISI Check	J.R/Roster	ISI	
R-Shivam Dwivedi DW-001 DW-001	J.R/Shivam J.R/Shivam J.R/Shivam J.R/Shivam	Approved Approved Approved Approved	ISI ISI ISI ISI	Shrawan Shrawan Shrawan Shrawan	Security Security Security Security	STU STU STU STU
MUD Project Number 2291005448	1:2500					

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# **M – Rosslare Europort Stakeholder Consultation Submission**

## N25 Rosslare Europort Access Road & N11/N25 Oilgate to Rosslare Harbour

Rosslare Europort welcomes the opportunity to submit a response for the planned road developments as set out above. Rosslare Europort would like to thank both Wexford County Council and the National Roads Authority for the above road projects planned which are absolutely essential to support the future ambitious plans for Rosslare Europort and the role the port can play both regionally and nationally.

Rosslare Europort is a key engine driver for the Southeast region and is a critical strategic port for the Irish economy that provides vital links to the UK and mainland Europe. Rosslare Europort is also one of the two key ports in Ireland associated with Brexit preparedness for the country.

Rosslare Europort is the fourth largest port in Ireland in terms of overall tonnage handled, and the State's second largest Ro-Ro traffic and passenger port. The port is operated as a division of Iarnród Éireann, who are the Port Authority for Rosslare Europort. Rosslare current operates four daily services to the UK (via Pembroke & Fishguard), twice weekly services to Spain (via Bilbao) and up-to four services per week to France (via Cherbourg). Current average annual volumes through Rosslare (pre COVID) are;

- 800,000 Passengers
- 140,000 Freight Units
- 25,000 Trade Cars
- 50,000 Bulk Tonne

Following a strategic review of Rosslare Europort, Iarnród Éireann is committed to significantly invest in the development of the port over the next 5 years and has identified opportunities for growth within the Ro-Ro / Pax, Bulk and Off-Shore Wind Energy markets. The Rosslare Europort business plan has 4 key focus areas namely, Growing Revenue, Building the Infrastructure Masterplan, Creating a Smart Port and Delivering Operational Efficiency.

While investment inside of the port will support the opportunity for growth, Rosslare Europort requires the N25 Rosslare Europort Access Road and the N11/N25 Oilgate to Rosslare Harbour roads planned to be completed in order for the port to be developed to its full potential. The following developments are heavily reliant on these road developments and without them the port will not be able to maximise the opportunities that can be achieved;

1. **Rosslare Europort Masterplan 2025** – Rosslare Europort has recently received its planning permission for its Masterplan which will see an investment of circa €35M+ over the next five years. The main part of the masterplan has been designed with a new entrance into the port linking directly with the new proposed N25 Rosslare Europort Access Road. If this road is not developed the key objectives of the Rosslare Masterplan 2025 will be compromised. This will lead to future significant problems at the port in terms of capacity, space, traffic management and ability to grow. Access to and from a port is critical for the freight industry and if Rosslare Europort is to be capable of meeting future market needs the new access link road to a carriageway standard is a critical piece of infrastructure needed to support the port. The new access road connecting to the port will also ensure that freight vehicles are directed away from Kilrane village and facilitate the separation of freight and passenger traffic. It should be noted that the current entry and exit at the port cannot facilitate the separation of passenger and freight traffic and is inadequate to the long term potential of the port.
2. **Ability to attract Traffic from Dublin Port** – It is a stated ambition as part of the country's future port capacity vision that regional ports such as Rosslare be developed to provide relief for other ports which are/will face congestion problems in the future. Dublin Port currently handles around 84% of the RoRo market (approx.1M units) with Rosslare

Europort handling approximately 15%. Dublin Port currently faces significant congestion problems which will only increase in the coming years. Congestion at Dublin port has a major impact on exports and imports and the general logistics supply chain in the country. Rosslare Europort is ideally positioned and has the capacity to handle 10%-15% of current/future RoRo volumes in Dublin moving to Rosslare. This is not only a benefit to regional development but also contributes to decongesting the most important port in the country for the benefit of the national economy. In order to attract RoRo traffic from Dublin and surrounding areas to Rosslare, the road network must be of motorway standard all the way to Rosslare Europort. While good improvements have occurred to Oilgate the continuation of the N11/N25 motorway is required in order to have competitive journey times from the key Industrial hubs to Rosslare Europort. This has been supported by the recent introduction of the new Brittany Ferry service out of Rosslare where it was stated that the future road connections to and from the port was a key determining factor for them moving the service to Rosslare. It should not be underestimated the importance of road connectivity to the port and how much that can influence the logistics supply chain. Without a motorway to Rosslare Europort it is difficult to see how the port can really attract the full potential of new shipping routes, additional volumes and new potential revenue streams. Connecting the motorway to Rosslare is not just a benefit for the region but also benefits the economy as a whole and this needs to be factored into the business case for the road investment.

3. **Brexit** – Brexit presents significant challenges for the country and the current and future trade flows in and out of the state. Rosslare Europort has been recommended for significant facility up-grade as part of the government central case to meet Customs, Revenue, Agriculture and Immigration controls post January 1<sup>st</sup> 2021. The long term landscape of trade with the UK will change in the coming years and this offers an opportunity for a port like Rosslare for additional direct routes to mainland Europe. The Rosslare Europort Masterplan 2025 takes account from inside the port's infrastructure capability for future growth but it is equally essential that road developments outside of the port also support this growth. Quality road connectivity to and from Rosslare Europort will be a key factor when shipping lines are assessing market opportunities for new routes. Rosslare will be competing with both existing ports in Ireland and international ports for these new routes, the completion of both the N25 Rosslare Europort Access Road and the N11/N25 Oilgate to Rosslare Harbour road will greatly enhance the attractiveness and business case to bring new viable commercial sailing routes to Rosslare Europort.
4. **New Business Opportunities** – Rosslare Europort will be pursuing opportunities outside of the RoRo Pax business, with a particular focus on the future Offshore wind sector market. The Offshore wind sector represents the largest new opportunity for the port industry in Ireland in the last century. At present, no port in Ireland can accommodate the needs of the Offshore wind sector and therefore there is a clear opportunity for a port to step forward to service the demands of this emerging industry. A recent study has concluded that Rosslare is ideally located to service the demands of the wind energy projects being developed along the East coast and subject to appropriate infrastructure upgrades could be the leading port servicing this emerging sector. The Offshore wind sector presents significant regional development opportunities for jobs and start up associated industries being created alongside the major developers that will be constructing and maintaining the various Offshore sites along the Southeast and West coasts. These projects will not only require additional port infrastructure but will also require road development and connectivity that both the N25 Rosslare Europort Access Road and the N11/N25 Oilgate to Rosslare Harbour will bring for the efficient movement of people and components to support the industry. Rosslare Europort and Wexford County have a real opportunity to create Ireland's Offshore Wind Energy Hub which has the potential to be transformational for the region. Having the right port and road connectivity infrastructure will be essential in securing this development. Both the N25 Rosslare Europort Access Road and the N11/N25 Oilgate to Rosslare Harbour roads along with additional port development plans will strongly support the business case for Rosslare being made the Offshore Wind Hub for Ireland.

I look forward to working with Wexford County Council and other key stakeholders regarding the development of Rosslare Europort and sincerely hope that the N25 Rosslare Europort Access Road and the N11/N25 Oilgate to Rosslare Harbour roads will be completed to enable the port to grow to its full potential for the benefit of both the region and the country.

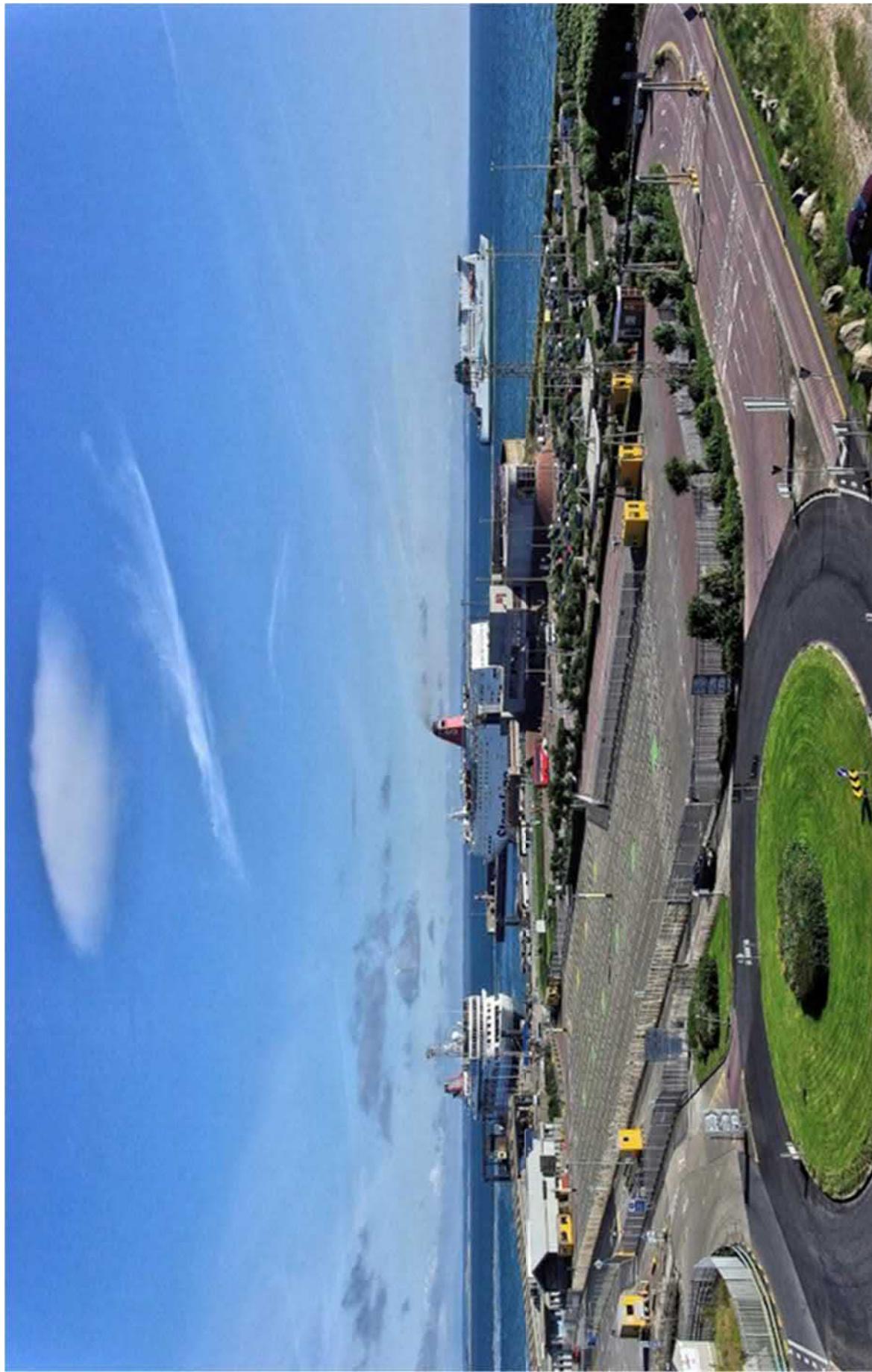
Yours sincerely,



Glenn Carr

General Manager, Rosslare Europort

# N –Rosslare Europort Infrastructure Masterplan



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## Executive Summary

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## Executive Summary

The 2020 *Infrastructure Masterplan* described in this report outlines how Rosslare Europort can expand its capacity, address some of the current inefficiencies and develop a port that can cater for the changes in the next 5-10 years. It will allow Rosslare Europort to develop the infrastructure, phase by phase whilst remaining in operation, towards a future layout of the port incorporating desired improvements and allowing for known and anticipated developments in the future.

Rosslare Europort is the key Irish Seaports on the Southern Corridor of the Irish Sea and serves a number of major shipping lines operating services between Rosslare and South Wales, and it also handles services between Rosslare and a variety of locations on the European mainland. The port specialises in RO/RO and ROPAX, trade vehicles and bulk markets.

The proposal to develop an Infrastructure Masterplan for Rosslare was part of the Strategic Plan for Rosslare Port, by EY dated October 2018 which recommended a number of issues to be addressed at Rosslare including:

- Improvements in operational efficiencies and investment, giving staggered revenue growth reaching 20% by 2025, as a reasonable growth target;
- An IT upgrade, to increase operational efficiency;
- Combine Berths 3 & 4 and add a double deck linkspan;
- To reconfigure the Port infrastructure.

There are also proposals in relation to the following which were influencing the requirements for alteration and upgrade such as:

- A new OPW design Customs & Immigration facilities and a Border Inspection Post.
- New N25 Rosslare Europort Access Road.

To address these proposed imminent changes, the requirements for efficiency and the potential expansion of the port in the future this Infrastructure Masterplan was developed.

From initial sketch layout proposals four primary solutions were developed and assessed under a number of criteria including budget costs, areas for operation, reduction in conflicts with traffic types, minimising impact on operations during construction, and providing a solution which would enable further expansion of the port if required in the long term.



Figure 0-1 Rosslare Europort Berthing

From these primary options a final masterplan materialised which encompassed the positive elements of the primary options.

The main design functions of the Infrastructure Masterplan can be summarised as follows

1. Provision of new perimeter access road to new roundabout linking the new link road.
2. New central access route from the freight entrance to the port providing ease of access and reduced conflicts
3. Area to the north of the central access route to be flexible in use and laid out as paving.
4. Area to the south of the central access route to contain fixed buildings and a modified OPW design Customs & Immigration facilities and the establishment of a Border Inspection Post
5. Removal of existing unused rail track to increase access points through the port.

- 6. Utilisation of non-fixed furniture and barriers to provide flexibility both in the storage areas and around the berths.**
- 7. The masterplan includes the Berth 3 Upgrade project and that it takes into account other future developments such as Offshore Wind Energy, Capital Dredging, Reclamation, New Berth Development.**
- A programme has been prepared for the proposed infrastructural Masterplan to be delivered over a period of 6 years.
- This Infrastructure Masterplan addresses the main critical issues and potential future developments as identified that will enable Rosslare Europort to provide the required infrastructure that is needed in the medium term, increase the operational efficiency of the port and ensure there is capacity within the port to provide expansion in the long term.**

1 Introduction

Rosslare Europort is the only Irish Seaport on the Southern Corridor of the Irish Sea and serves a number of major shipping lines operating services between Rosslare and South Wales. It also handles services between Rosslare and a number of locations on the European mainland. The Rosslare Europort specialises in RO/RO and ROPAX, trade vehicles and bulk markets.

Rosslare Europort is owned by the Fishguard and Rosslare Railways and Harbour Company and operated by Iarnród Éireann - Irish Rail ("IR").

It is understood there was major investment in infrastructure in Rosslare Europort during the 1990s and the early 2000s, and has subsequently been developing on an ad hoc basis, in response to specific demands. While the current port layout and functions reasonably well, there are areas for improvement identified, in particular the inefficient use of the landside areas of the Rosslare Europort.

IIR have engaged Nicholas O'Dwyer (NOD), with specialist input from NIRAS, to prepare an infrastructure masterplan for the Rossaire Europa based on the foregoing.

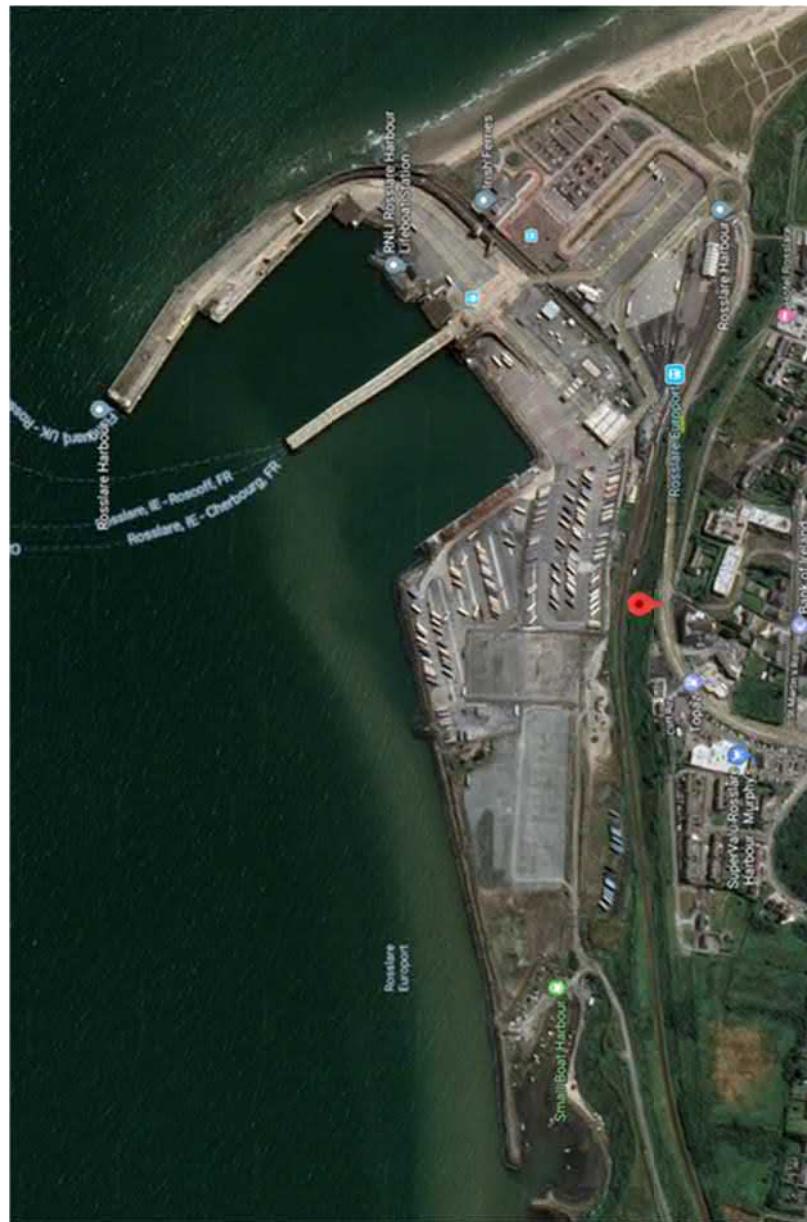
## 1.1 Objectives

The objectives of the Infrastructure Masterplan are defined in the "Technical Specification and Scope of Services for Framework Agreement and including the Scope of Services for the First Call Off" [1] as follows:

- Forecast the future traffic for the port, with particular reference to trends in vessel sizes and types;
  - Review the existing facilities and identify their respective capacities;
  - Establish what additional facilities are required;
  - Reconsider the port layout in the light of the proposed and possible developments by IR;
  - Prepare an infrastructure masterplan for the future development of the port in line with the strategic plan for Rossaire Europort.

- Section 3.2.1 below lists the references used in the development of the Master-

- Section 3.2.1 below lists the references used in the development of the Master-plan



**Figure 1.1** Port location and existing layout

## 2 Strategic Plan for Rosslare Europort

This Infrastructure Masterplan has been developed in line with the Strategic Plan for Rosslare Port [2].

The key elements of the Strategic Plan which inform the Infrastructure Masterplan are identified below.

### 2.1 RORO/ROPAX Traffic Trends

Dublin and Rosslare are the two principal RORO/ROPAX ports in the Republic of Ireland.

In recent years RORO/ROPAX tonnage handled by Rosslare is reported as having remained static, while the tonnage handled by Dublin has increased. Consequently, Rosslare's market share has decreased.

### 2.2 Growth Plan

The principal recommendation in the Strategic Plan is a medium-term growth plan for Rosslare, the key points relevant to this Infrastructure Masterplan are:

- Improvements in operational efficiencies and investment, giving staggered revenue growth reaching 20% by 2025, as a reasonable growth target;
- An IT upgrade in 2021-2022, to increase operational efficiency;
- Combine Berths 3 & 4 and add a double deck linkspan;
- Reconfigure the landside infrastructure.

### 2.3 Key Issues

In addition to investment in the Port infrastructure, the strategic plan identifies a number of other key issues:

- The Rosslare Europort is highly dependent on its two main customers, who both also operate in Dublin;
- An industry trend towards new larger RORO/ROPAX vessels, which require longer (but not necessarily deeper) berths;
- The Port is currently unable to accommodate CONRO vessels and ever-increasing vessel sizes;
- A number of the vessels currently using Rosslare Europort are nearing the end of their operational life;
- Port utilisation is low with a considerable amount of downtime during the day;
- Completion of the N25 Rosslare Europort Access Road to the M11;
- Possible downturn in trade due to a negative impact from Brexit.

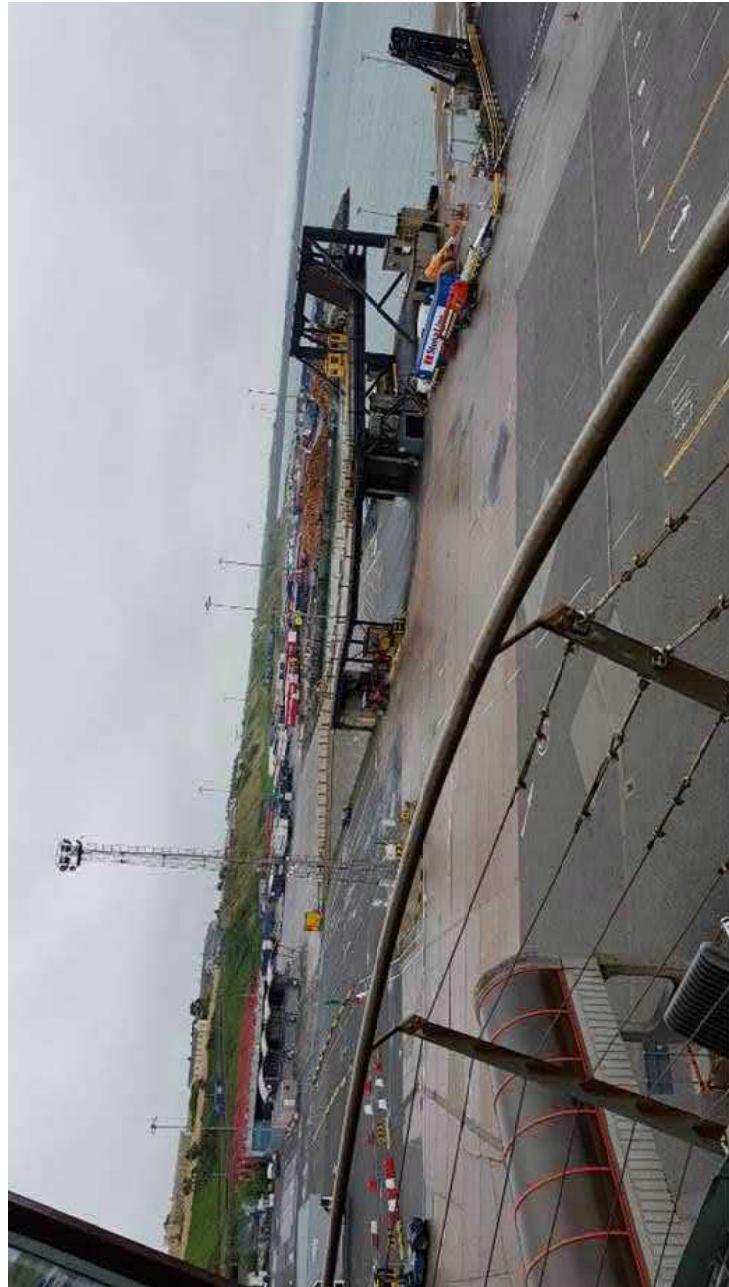
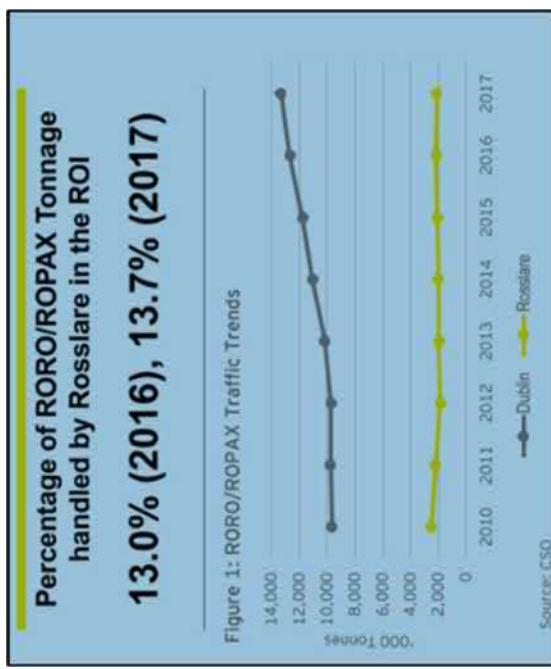


Figure 2-2 Rosslare Europort

## 3 Functional requirements and Basis of the Masterplan

The following sections describe the functional requirements and planning basis adopted and their sources during the development of the Masterplan.

### 3.1 Functional requirements

The main functional requirements that have been identified from discussions held with IR are:

- Improve traffic efficiency and safety (i.e. less clashes and bottle necks)
- Increase trade car storage area
- Increase trailer storage area
- Increase freight check-in area
- Separation of freight and car check-in areas
- Increase bulk storage area
- Allow for new (additional) Port access on the west side of the Port
- Incorporate a new OPW development consisting of upgraded Customs & Immigration facilities and the establishment of a Border Inspection Post for sanitary and phytosanitary checks on animals and products of animal origin.
- Maintain access to the existing passenger rail link platform.
- Removal of the old railway line traversing the harbour area
- Possible future use of the potential land on the west of the Port that IR may acquire in the future

9. Draft Plan for Port Existing Screening for Vehicles, Rosslare Harbour Masterplan, Drawing no. SK\_1, by OPW, September 2018.
10. MarineTraffic database, <https://www.marinetraffic.com/> accessed on July and August 2019.
11. International Maritime Organization (IMO) - Global Integrated Shipping Information System (GISIS), <https://gisis.intio.org/Public/>.
12. Preliminary research on the size of the potential market for fuel cells amongst ropax ferries, HySeasIII, <https://www.hyseas3.eu/news-media/ropax-ferry-statistics/>, April 2019.
13. Holistic Optimisation of Ship Design and Operation for Life Cycle – Market Analysis, Holship, January 2018.

### 3.2.2 Assumptions

From a review of the foregoing the following key assumptions have been adopted during the development of the masterplan:

- Minimal disruption to the operations of existing ferry services during the port development.
- The Port will be developed in line with the growth plan recommended in the Strategic Plan.
- Not to be a "home port" i.e. fuel bunkering/water supply/waste/etc for vessels is to be undertaken at alternative destination ports.
- Phased landside development to be considered.
- OPW Facility requirements of upgraded Customs & Immigration facilities and the establishment of a Border Inspection Post as provided in their preliminary layout.

### 3.2.3 Tide levels

The tide levels are taken from the Admiralty Tide Tables 2019 and are presented in and are presented in **Error!**  
**Reference source not found** in metres Chart Datum (mCD).

## 3.2 Basis of Masterplan

### 3.2.1 References

In addition to 3.1 above, the masterplanning process has considered t, but not been limited to, the following documents and industry standard guidelines:

1. Rosslare Europort: Marine Port Engineering Consultancy Services, Technical Specification and Scope of Services for Framework Agreement and including the Scope of Services for the First Call Off, Irish Rail Rosslare Europort, May 2019.
2. Strategic Plan for Rosslare Port, by EY, October 2018.
3. Rosslare Europort Framework Development Plan, Arup, July 2009.
4. Rosslare Europort Deepening Phase 1 Report, Royal Haskoning, October 2000.
5. Rosslare Europort Feasibility Study, RPS, February 2009.
6. Rosslare Reclamation Study Feasibility Report, RPS, September 2014.
7. Guidance on the Preparation of Port Master Plans, Department for Transport, 2008.
8. Masterplans for the Development of Existing Ports, PIANC, Report No 158, 2014.

Table 3-1 Tide Tables

Chart Datum is 1.02m below Ordnance Datum at Rosslare..

## 4 Existing Layout, Facilities and Services

The layout of the existing Rosslare Europort is shown in 4.2 and the drawings in the appendix.

There are four RORO/ROPAX berths. Berth No.1 and Berth No.2 are located on either side of a finger pier and Berth No.3 and Berth No.4 are sited in the lee of the Outer Breakwater.

In addition, there is a layby berth and a lifeboat station.

The following sections describe the existing facilities and Port operations.



Figure 4-1 Existing layout

### 4.1 Existing Layout

The Rosslare Europort currently has a single entrance/exit at the South, which is accessed via the N25, with one lane in and one lane out and which concentrates all the traffic flows at a single roundabout. The roundabout segregates freight traffic from cars and other non-commercial vehicles. After the roundabout the access expands to two lanes-in for freight and four lanes for cars (three for check-in access, one for terminal building access). Both freight and cars only have one exit lane that leads to the roundabout before accessing the N25.

There is also a service access to the West of the Port, via Churchtown Road, that is currently used to access the existing fishing and leisure harbour.

In addition, foot passengers can use the Irish Rail train service to reach the Port. The station is approximately 500 metres walking distance from the passenger terminal building.

The West side of the Port contains all the freight storage that Rosslare Europort handles. The trade car storage area is fenced, while the trailer

import and export standage areas are segregated by lane marking. Bulk materials are stored adjacent the fisherman quay.

Currently, Rosslare Europort is acknowledged by IR as having inefficiencies in its layout and conditions that hinder the operations. Among the main existing issues identified by discussion and observation are:

- **No segregation of incoming traffic flow**

Currently, all access in and out of the terminal occurs via the N25 and roundabout at the current Port entrance where the vehicle check-in areas are also located. During vessel loading and discharging, the location of the check-in areas and Port entrance/exit makes the traffic flow congested resulting in clashes which reduce the efficiency of the traffic movement within the Port.



Figure 4-2 Freight Entrance

- **Crossing flows (clashes)**

The existing landside layout makes it difficult to avoid crossings between traffic of vehicles arriving from one vessel and vehicles departing from another vessel (see Figure 4.2). Only at times when there is a single vessel berthed do traffic movements occur without vehicle crossings.

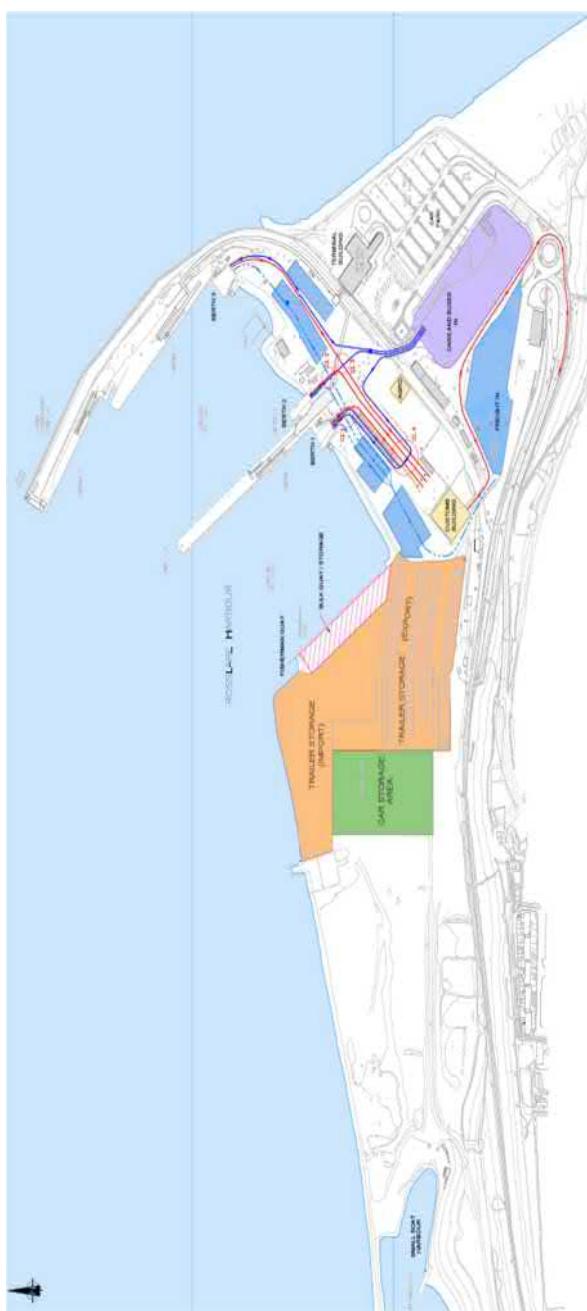
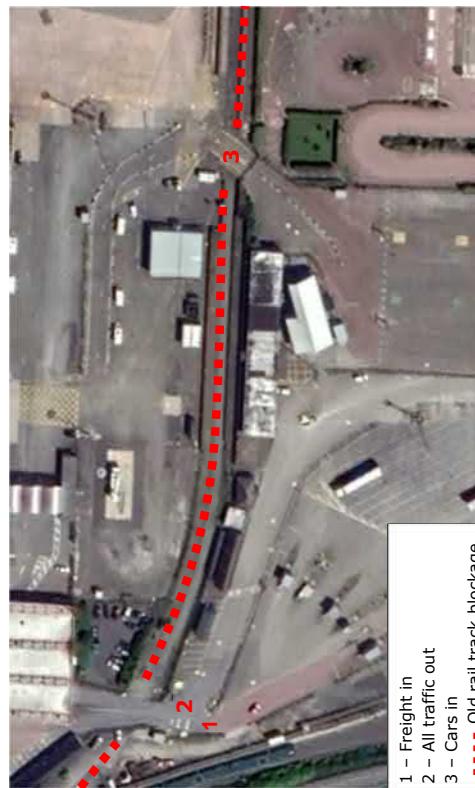


Figure 4-3 Existing Layout

- **No buffer for vessel arrival traffic**
- The existing OPW and security check facility is located very close to the berths and consequently, when a vessel arrives, due to the peak traffic flow as vehicles disembark from the vessel, queues rapidly build-up at the OPW/security check facility, often blocking other traffic flows around the berth area. This issue is particularly critical with disembarking traffic from Berth 1 upper tier links span (Berth 1 top deck ramp is located less than 30 metres from the security check facility) causing queues on the links span shortly after disembarkation starts.

Figure 4-4 View of the checkpoint and the berth 1 links span from the OPW building

- **Access bottleneck**  
Both freight and cars can only enter the terminal area going through a narrow exit road between the check-in areas (see **Error! Reference source not found.**5). This forms a bottleneck for exiting traffic leaving the port that can hold traffic and cause delays.



#### • Location of buildings and auxiliary facilities

Some of the Port buildings and auxiliary facilities (e.g. Customs, Agriculture, check points, maintenance, truck wash, etc.) are located close to the berth areas reducing the efficiency of traffic flow in the Port (see **Error! Reference source not found.**6 below).



- **Storage areas**  
There are several different types of pavement in the terminal (asphalt, concrete, concrete blocks, unpaved areas) and from discussion with IR it is understood that some of the standage areas for both freight and trade cars have a deteriorated pavement condition, hindering operations and also increasing the risk of cargo damage (see Figure 4.7).



Moreover, the bulk operations and trailer storage areas are in close proximity to each other and this increases the likelihood risk of cargo damage and of accidents occurring (see **Error! Reference source not found.**8 below)



## 4.2 Current RORO/ROPAX Services

The services currently operating from the Port are given in Table 2 below.

Company	Vessel	Arrive	Depart	Destination
Stena Line	Stena Europe	04:00	08:00	Fishguard (daily)
Stena Line	Stena Horizon	16:25	18:10	Cherbourg (3 sailings a week)
Irish Ferries	Isle of Inishmore	06:46	08:45	Pembroke (daily)
Brittany Ferries	Kerry	18:46	20:45	Bilbao (2 sailings a week)
Brittany Ferries	-		23:30 (Fri)	Roscoff (1 sailing a week- summer only)
Neptune Lines	-		23:30 (Mon)	Santander-Rossaire-Poit- bury-Zeebrugge-Le Havre-Southampton
				Weekly Service

Table 4-1 : RO/RO/ROPAX/Cargo Services Source: Shipping company websites

The two main services have broadly similar timetables, giving a significant downtime period each day.

## 4.3 Existing Marine Facilities

The photos indicatively capture the marine structures observed during the walkover and site visit undertaken by NOD and NIRAS on 10<sup>th</sup> July 2019. **Error! Reference source not found.** summarises the existing marine facilities and their capacity.

Berth	Berth Length (m)	Water Depth (m)	Max. Vessel Length (m)	Max. Vessel Beam (m)	Comment
1	221	7.2	215	30	Double-deck linkspan
2	221	7.2	215	35	Single-deck linkspan
3	186	7.2	180	30	Single-deck linkspan; passenger access currently not in use
4	148	4.0	130	30	Currently not in use
Fisherman's Quay	140	7.2	100	30	Lay-by berth; bulk cargo storage

Table 4-2 Existing marine facilities

Source: Rossaire Europort



Figure 4-10 Berth 3 passenger access (currently not in use)



Figure 4-9 Berth 3 linkspan



Figure 4-12 Berth 1 linkspan



Figure 4-13 Berth 2 linkspan

## 4.4 Existing Landside Facilities

The following are the main elements of landside infrastructure features:

- Freight and passenger vehicles check-in areas
- Customs facilities
- Terminal building and car park
- Workshops and maintenance facilities
- Marshalling Areas.
- Car trade storage area
- Trailer storage area

The walkover undertaken by NOD and NIRAS also captured the landside facilities as indicated by the below photos.

**Figure 4-15 Trailer storage area**



Figure 4-15 Trailer storage area



Figure 4-16 Freight drivers' facilities



Figure 4-17 Port maintenance facilities



Figure 4-18 Customs facilities



Figure 4-19 Freight check-in facilities



Figure 4-20 Vehicle check-in area



Figure 4-22 Terminal building and parking



Figure 4-23 Trade car area



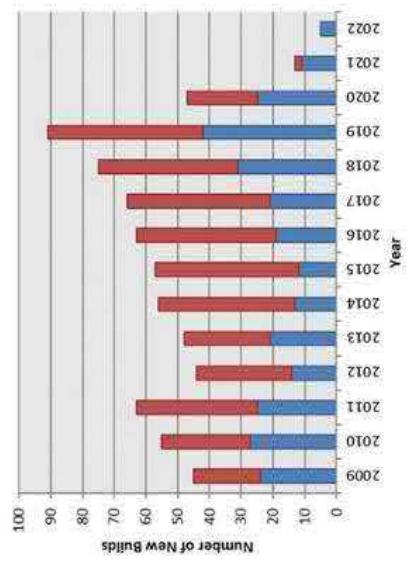
Figure 4-21 Vehicle check-in area



Figure 4-19 Freight check-in area

## 5 Future Trends in Vessel Types and Sizes

According to MarineTraffic<sup>[10]</sup> and GISIS<sup>[11]</sup>, currently, Europe accounts for almost 50% of the global ROPAX ferry operations showing that Europe is the largest market, and according to the new build trend presented in Figure 5.1 below, this will likely remain the case over the coming years.



The majority of ROPAX new builds are fairly small, with less than 140 metres Length Overall (LOA) and 7,000 gross tonnage on average. However, based on Holiship 2018 [13], it is possible that these figures may increase over the coming years with vessels having LOAs of greater than 140 metres and gross tonnage averaging 40,000 tons.

On a broader view, by taking a sample of some of the largest existing ROPAX and selected RoRo cargo vessels operating in Europe, particularly on Irish Sea routes, it is possible to see that larger vessels have steadily increased their gross tonnage capacity over recent years, whilst maintaining broadly similar drafts. There are notable exceptions such as CLDN and Neptune lines, liners with a vessel fleet largely comprising RoRo Cargo vessels rather than ROPAX ferries (refer to Figure 5-3). This suggests that Rosslare may be able to accommodate most of larger ROPAX vessels with the current maintained dredge levels at the Port. The current dredge depth of -7.2mCD can already cope with the majority of the existing ferries fleet.

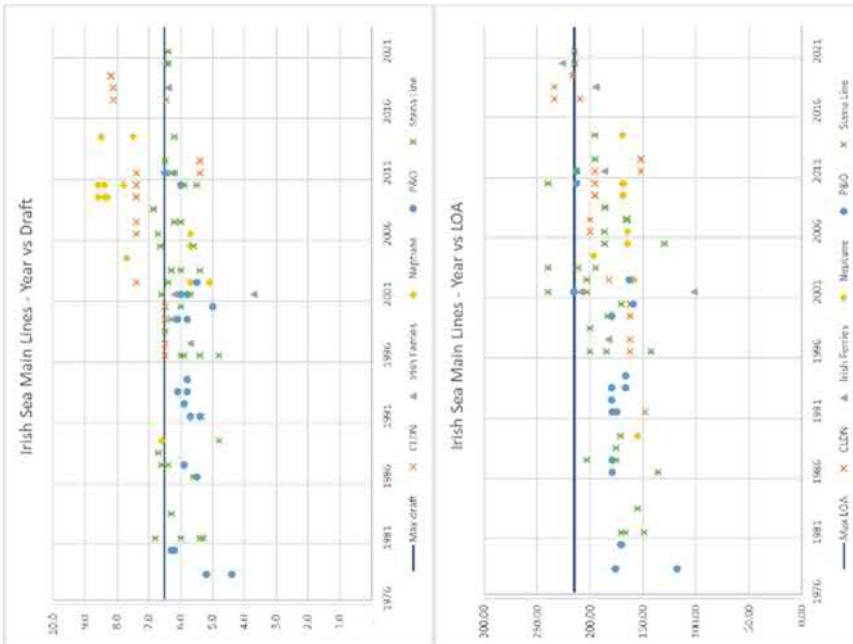


Figure 5-2 – Irish sea main lines Draft vs LOA (Source: HySeasIII [12])

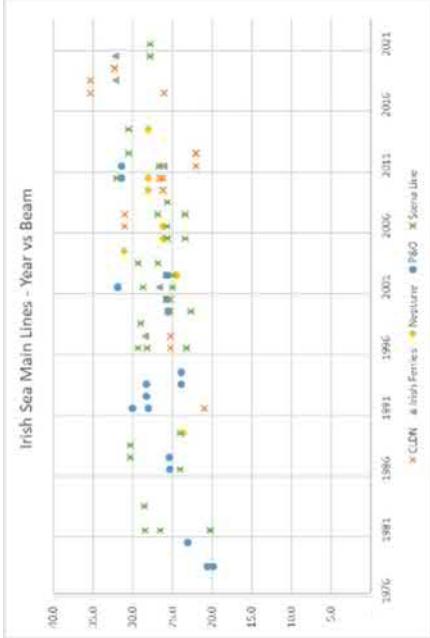


Figure 5-3: Irish sea main lines Beam vs year built (Source: MarineTraffic<sup>[10]</sup>)

	Stena, IF, P&O	Irish Sea Main Fleet
Draft	68	110
>6.5m	9	35
<=6.5m	59	87%
>7.0m	0	0%
<=7.0m	68	100%
>7.5m	0	0%
<=7.5m	68	100%
>8.0m	0	0%
<=8.0m	68	100%
>8.5m	0	0%
<=8.5m	68	100%

Table 5-1 - Draft of the main Irish sea fleet and the main ferry operators in the region

It is noted that when considering the 3 main ferry shipping companies operating in the region, the vast majority of their vessels can be accommodated at Rosslare (see Table 5-1). It is further noted, that among the 9 vessels with max draft greater than 6.5 metres, 5 are already calling at Irish and UK ports with a slightly restricted draft, while the remaining 4 are currently deployed in the Baltic Sea.

The third column of Table 5-1 shows a higher number of vessels with bigger draft due to the inclusion of RoRo cargo carriers as noted above.

	Irish Sea Main Fleet	European Fleet
LOA	110	160
>215.5m	11	10%
<=215.5m	99	90%

Table 5-2 - LOA of the main European Ferries and RoRo carriers in Europe

Notably, vessel length isn't as restricted, allowing Rosslare's current infrastructure to accommodate approximately 90% of the targeted vessels of the region, including RoRo vessels (see Table 5-2).

Irish Sea Main Fleet		
Beam	110	
>32.1m	7	6%
<=32.1m	103	94%

Table 5-3 - Beam of the main Irish sea shipping lines fleet

In 2019, Irish Ferries introduced a new vessel, W. B. Yeats, on the Dublin-Holyhead route. The vessel has undergone successful berthing trials at Rosslare. The W. B. Yeats' beam (32.1m) is used as a reference dimension, since for consideration of limiting beam, a berth fit study would have to be carried out on a case by case basis to examine the suitability of individual vessels, for example, whether or not the ramps of the vessel sit satisfactorily on the linkspan and/or the linkspan finger flaps sit satisfactorily on the vessel. It is noted that more than 90% of the fleet analysed have a smaller beam than the W.B. Yeats.

Therefore, it is possible that no major changes will come with the new builds and the order book for the ROPAX ferries in terms of LOA and draft, however these vessels are likely to increase their carrying capacity and will also likely have to incorporate some innovations in order to meet the new Emission Control Areas (ECAs) requirements, which might include LNG powered vessels, dual-fuelled (LNG), hybrid or electric, as well as the exploration of shore power usage to cut emissions while berthed. Sustainability and cost-efficient engineering solutions may be the key for the next generation of ferries, rather than major changes in terms of vessel dimensions.

On a local perspective, it is understood that Stena currently has three new ROPAX vessels under construction, which are destined for Irish Sea routes. The first is planned to enter service on the Dublin-Holyhead route in early 2020. The other two vessels are planned to be assigned to the Belfast-Liverpool route in spring 2020 and early 2021.

These vessels indicate an industry trend for the region towards new larger RORO/ROPAX vessels, which are longer than the current generation, but without a significantly bigger beam or draft. As indicated in Table 5-4 and Table 5-5 below, this new generation of vessels have a significantly greater vehicle capacity.

- Beam: 32.1m (refer to Figure 5-3 - To be confirmed on an individual vessel basis)

However, the strategic plan for Rosslare Europa states that the port is heavily dependent on two main customers, that both also operate from Dublin and that a number of the vessels operating from Rosslare are nearing the end of their operational life. Rosslare could choose to use this to trigger an enhancement of its facilities. One option could be to enhance flexibility, allowing other types of vessel to call, such as larger RoRo carriers. Should the port choose that strategy, the indicative vessel parameters that could be considered are:

- LOA: 240m (refer to Figure 5-2)
- Draft: 7.5m (refer to Table 5-1 - It's possible to see the diminishing return with drafts above 7.5m. The feasibility of dredging existing berths deeper to be established)
- Beam: 32.3m (refer to Figure 5-3 - To be confirmed on an individual vessel basis)

As presented on Figure 5-2, Figure 5-3, Table 5-1, Table 5-2 and Table 5-3, Rosslare Europa can already accommodate the vast majority of the 3 major Irish sea operators as well as most of the general Irish sea fleet.

Considering that the port utilization is low, there is room for growth in volume by attracting other similar ROPAX services with no major investment. Nevertheless, Rosslare might opt to increase even more their capacity to accommodate larger vessels, leveraging the port against the ROPAX competition. On those bases, the indicative vessel parameters that could be considered for the ROPAX ferries are:

- LOA: 240m (refer to Figure 5-2)
- Draft: 6.5m (refer to Table 5-1)



Table 5-5: New Generation Vessels

Vessel	Length (m)	Beam (m)	Draft (m)	Capacity	Passengers	Cabins
Stena E-Flexer Series	214.5	27.8	6.4	3,100 lanes + 120 cars	927	175
W B Yeats	194.8	32.12	6.4	3,500 lanes (=1,216 cars)	1,800	-

Table 5-5: New Generation Vessels

Vessel	Length (m)	Beam (m)	Draft (m)	Capacity	Passengers	Cabins
Stena Europe	149	26.5	6.1	1,120 lanes (=480 cars)	1,400	452
Isle of Inishmore	182.5	27.8	5.8	2,060 lanes (=856 cars)	2,200	-

Table 5-4: Primary Existing Vessels

Figure 5-4 Irish Ferries

## 6 Future Infrastructure Developments

### 6.1 Proposed New Link Road

Transport Infrastructure Ireland in conjunction Wexford County Council have recently appointed Mott MacDonald Consulting Engineers to develop the design of the proposed N25 Rosslare Europort Access Road project.

The condition and suitability of the existing main port access road on Delap's Hill has been a concern since the early 2000's and there have been a number of incidents since then where works have been required to ensure the continued operation of the port. The existing access road has been identified as a hazard on the port's risk register, however a do minimum approach was always taken for any remedial works on the basis that the N25 Rosslare Europort Access Road project would be delivered in the short to medium term.

The proposed route commences with a roundabout mid-way between Kilane and Rosslare Europa, following the line of the existing link road to Station Road to another major roundabout at Ballygarry. The proposed road then bridges the railway line and continues to its termination point in the Rosslare Europa with a third roundabout. The final route has not been confirmed yet.

The road scheme provides for the diversion of traffic from the town on to a new link road and access to the Port from the Western direction.

This scheme is important for the future expansion and upgrading of the Port as it enables utilisation of port land to the west of the current site.

We are developing the Masterplan Scheme on the current design proposals.

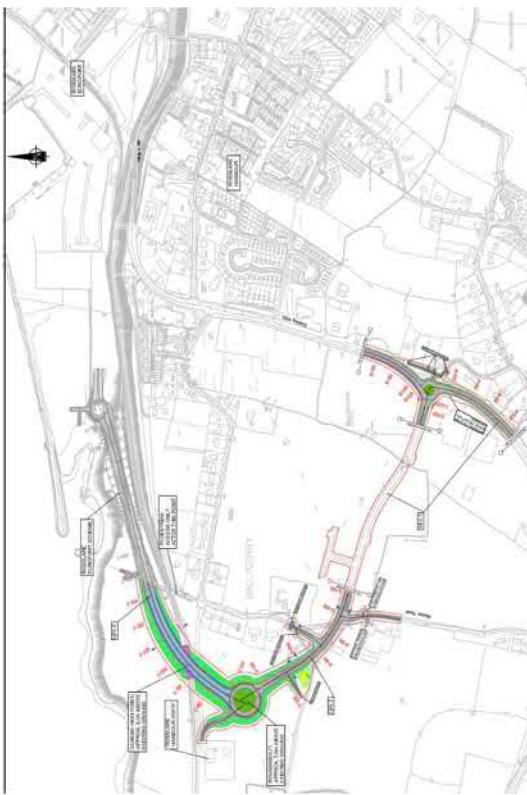


Figure 6.1 Proposed New Link Road

### 6.2 Proposed OPW Facilities

The new proposed OPW development consists of upgraded Customs & Immigration facilities and the establishment of a Border Inspection Post for sanitary and phytosanitary checks on animals and products of animal origin was prepared by the OPW based on the draft location provide from our Option E.

The Facility includes a number of designated building uses, parking requirements and access points and stretches to around 43,000 sq m.

The initial proposal was further developed to integrate into the Masterplan scheme as the final layouts will demonstrate.

### 6.3 Proposed Berth 3 Upgrade

A feasibility study on the Berth 3 Upgrade project has been completed and it recommends the delivery of the following works to ensure that the port can cater for the new larger vessels that are expected to enter the market in the short to medium term thereby maintaining the port's existing market share:

Extension of Berth 3 by combining it with;

- Provision of a double tier linkspan;
- Upgrade of the existing mooring and fendering on the berth;
- Provision of new quay side working areas.

The proposed upgrade works can be phased to meet the business requirement and the cost of delivery of the proposed upgrade works is estimated at between €19M and €25M.

### 6.4 Future Proposals

The Strategic Plan for Rosslare Port, by EY dated October 2018 proposed a number of infrastructural developments for the future development of the port including

Capital Dredging, reclamation

New Berth Development

Offshore Wind Energy Developments

**7 Rosslare Europort Masterplan Layout Options**

The existing port layout is described in section 4. The following section describes the options considered and how the proposed preferred option has been developed.

## 7.1 Initial Options Considered

A number of initial preliminary layout options were developed in sketch form to examine all possibilities and potential development strategies.

These options included, amongst other aspects, reviews of potential Port entrances and exits, off site storage for the trade cars and access routes for passenger vehicles.

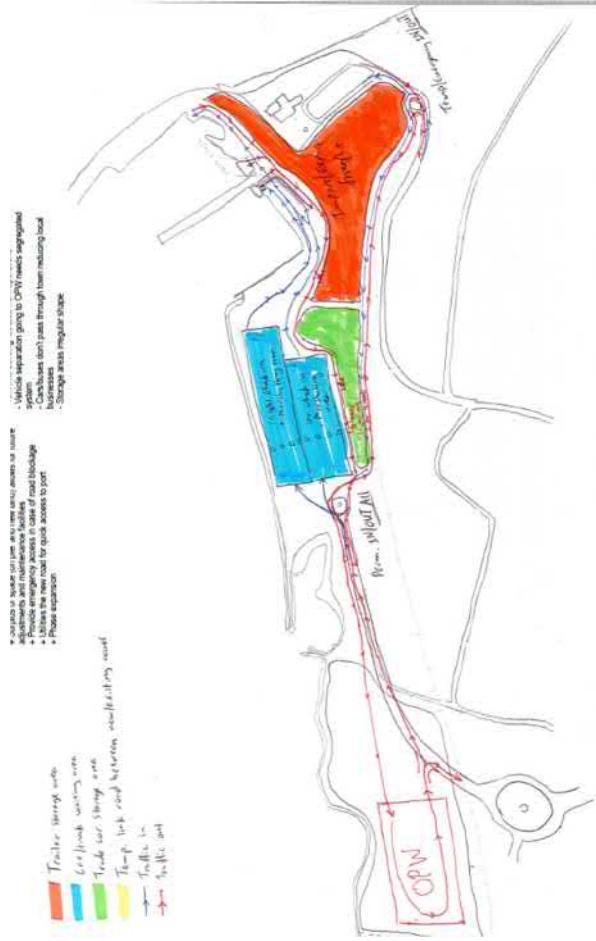
A qualitative assessment of the positive and negative aspects of each option was undertaken.

## 7.2 Primary Options

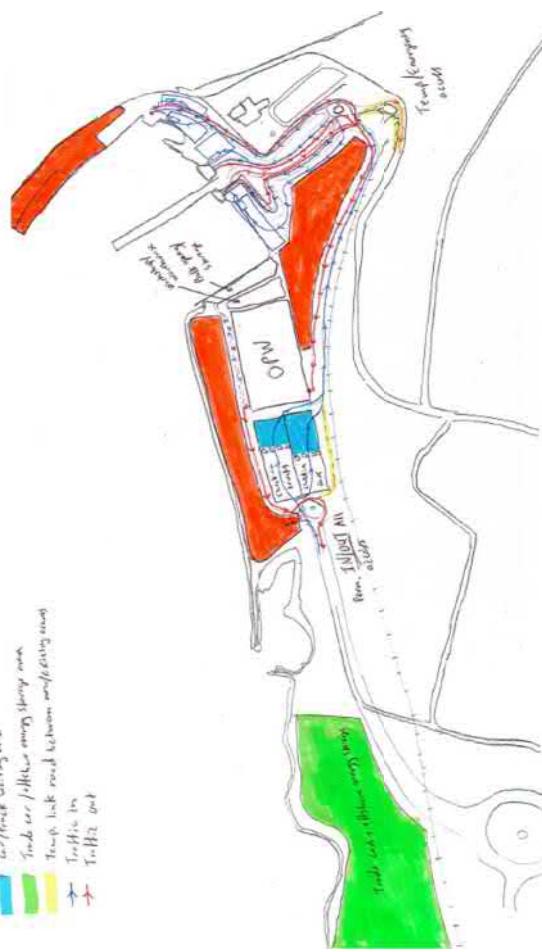
Following discussions with IIR four primary options out of the ten initial options where selected to go forward for further development. These options were developed on the basis of the functional requirements summarised in section 3.1.

## 7.2.1 Options Considered

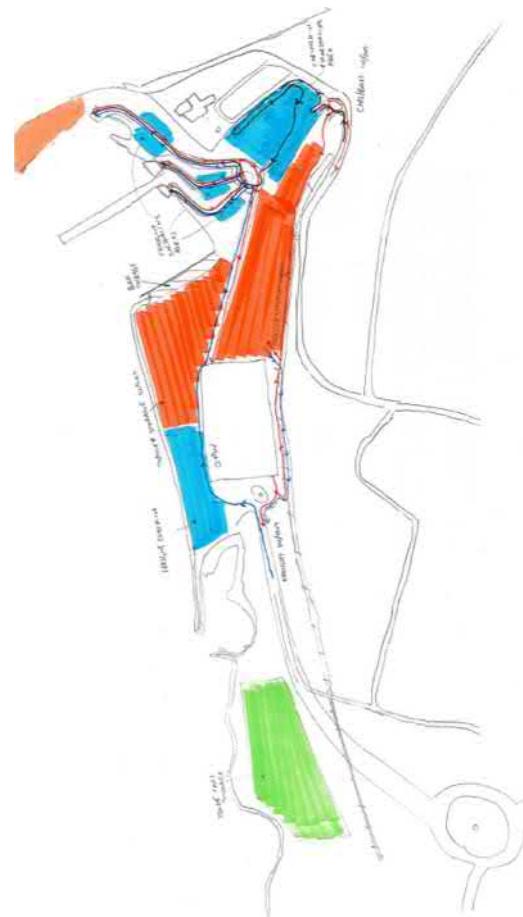
The primary options are described in the following sections.



Sketch Bronson 4



Sketch proposal C



Sketch Proposal B

## 7.2.2 Description of Option A

Option A has the fewest modifications to the existing landside layout and utilises those areas of the Port estate which are currently unused.

### 7.2.2.1 Trade Car Area

The trade car storage area is relocated to the west side of the Port and its capacity increased by approximately 40%. Space is created for the new OPW facilities and an increased trailer storage area.

### 7.2.2.2 Trailer Storage Area

The trailer storage area has increased by approximately 15%. The location of the trailer storage area is largely similar to the existing layout and provides one large area for both import and export trailers.

### 7.2.2.3 Bulk Storage Area

The bulk storage area is increased by approximately 30%. The bulk storage area remains in the same location as the existing layout i.e. adjacent to Fisherman Quay.

### 7.2.2.4 Freight Check-in Area

The freight check-in area has been increased by approximately 40%. It remains in its existing location, with its area increased by removing the disused railway line crossing through the Port.

### 7.2.2.5 Car Check-in Area

The car check-in area remains largely. Its capacity is understood to currently be sufficient. If required, future expansion can be accommodated by expanding into the currently unused part of the terminal building car park.

### 7.2.2.6 OPW Facility

The OPW area and footprint adopted is in accordance with OPW's current requirements. The OPW facilities have been moved further away from the berths to provide space for more efficient Port traffic flows and to provide a greater buffer distance from the berths, allowing more efficient vessel unloading.

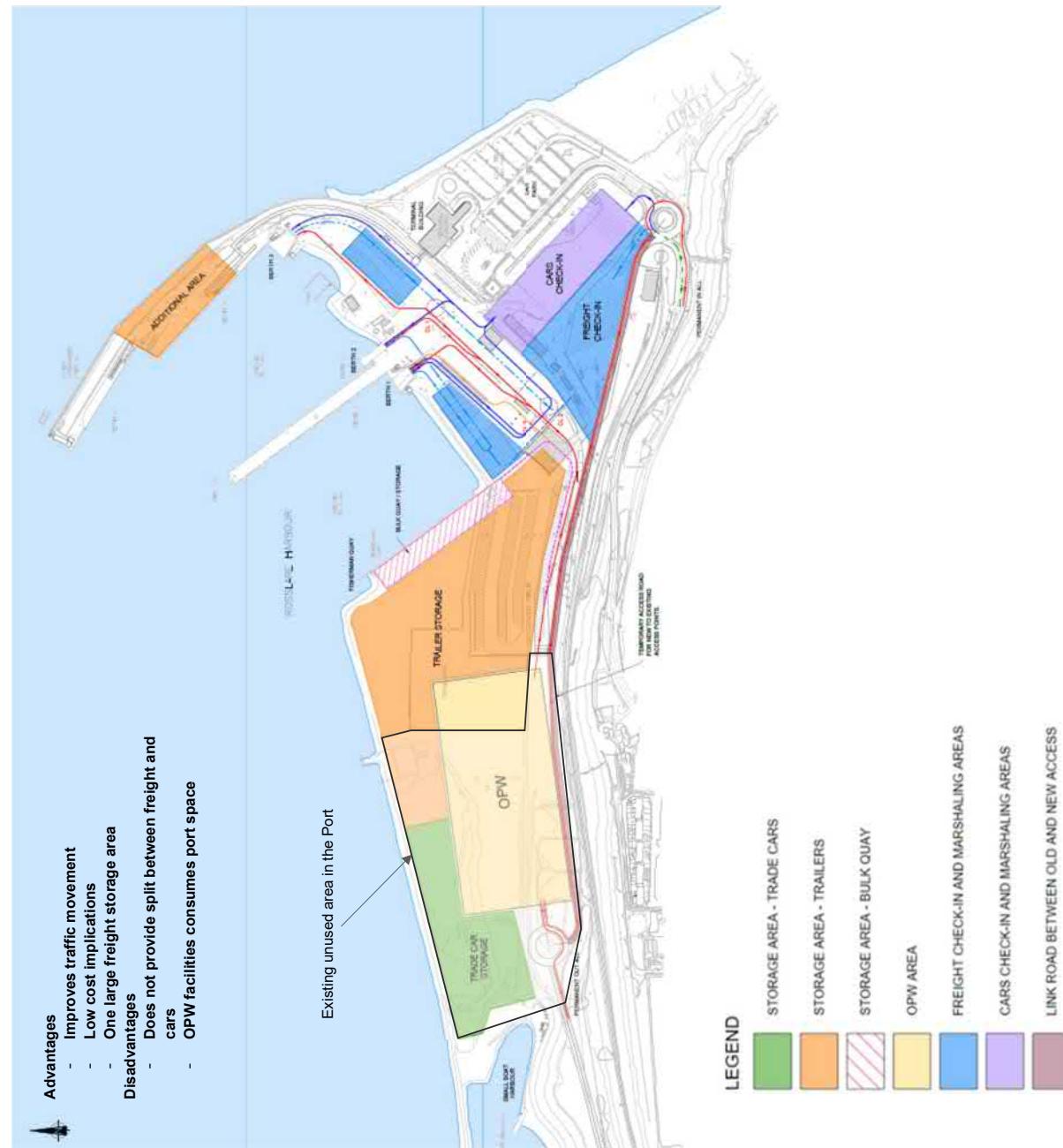


Figure 7.1 Option A

## **7.2.3 Description of Option B**

Option B relocates the freight and car check-in areas to the west of the port and focuses on the trailer storage area capacity and its location in relation to the berths. It also provides a large increase in the area for the trade cars.

### 7.2.3.1 Trade Car Area

The trade car area has increased by approximately 75% and has been relocated to the northwest end of the Port to create space for the OPW facilities and trailer storage areas.

7232 Trailer Storage Area

The trailer storage area has increased by approximately 50%. The location of the trailer storage area is relocated to the southeast area of the Port, extending in the area where the existing check-in area is present. This option focuses on providing a large trailer storage area. Both import and export trailer storage facilities are within one main area providing an efficient interface between the two storage facilities.

### **Bulk Storage Area**

The bulk storage area is largely similar to the existing layout. The bulk storage area remains in the same location as the existing layout i.e. adjacent to Fisherman Quay

Eracht Check-in Area

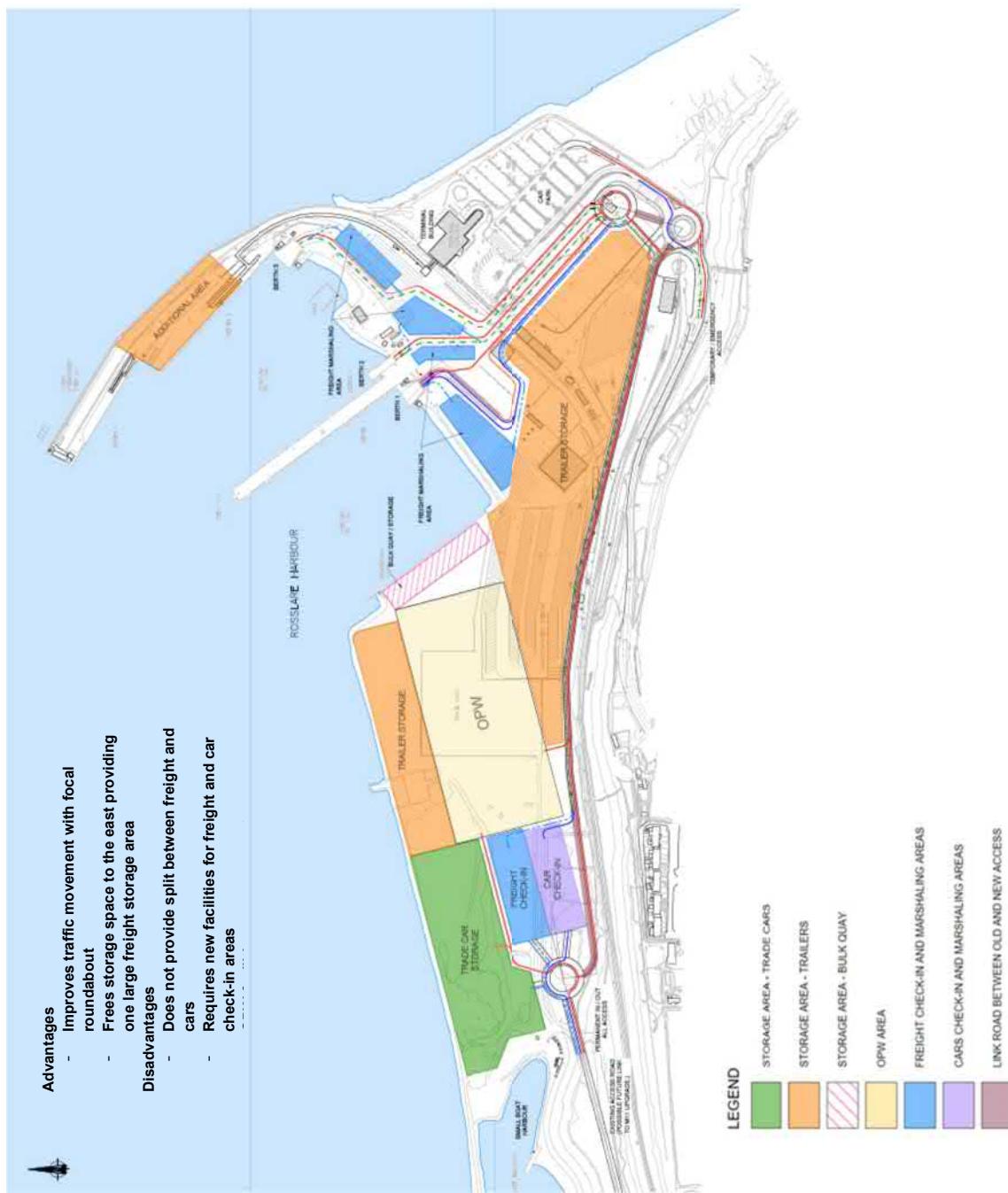
The freight check-in area has been decreased by approximately 8% to accommodate a larger trailer storage area. The check-in has been relocated to the west end of the Port where the new access will be located.

Carteles de la West Coast USA

**7.2.3.5 Car Check-in Area** The freight check-in area has been decreased significantly by approximately 60% to accommodate a larger trailer storage area. The check-in has been relocated to the west end of the Port where the new access will be located.

**7.2.3.6 OPW Facility** The OPW area and footprint adopted is in accordance with OPW current requirements. The location of the OPW facilities is largely similar to option A providing a greater buffer distance from the berths, allowing more efficient vessel unloading.

**12.3.6 OPW Facility** The OPW area and footprint adopted is in accordance with OPW current requirements. The location of the OPW facilities is largely similar to option A providing a greater buffer distance from the berths, allowing more efficient vessel unloading.



*Figure 7-2 Option B*

## 7.2.4 Description of Option C

Option C splits the freight and car check-in areas. The freight check-in is relocated to the west end of the Port and the car check-in area remaining in its existing location. Splitting the two check-in areas provides a more segregated and effective traffic flow. It also provides a significant increase in the trade car area. This option investigates the provision of roundabouts and how they may impact the traffic flow within the Port.

### 7.2.4.1 Trade Car Area

The trade car area has significantly increased by approximately 140% and has been relocated to the northwest end of the Port to create space for the OPW facilities and trailer storage areas.

### 7.2.4.2 Trailer Storage Area

The trailer storage area has increased by approximately 6%. The location of the trailer storage area is similar to the existing layout but also extends into the existing freight check-in area. Both import and export trailer storage facilities are close to each other providing an efficient interface between the two storage facilities.

### 7.2.4.3 Bulk Storage Area

The bulk storage area is largely similar to the existing layout. The bulk storage area remains in the same location as the existing layout i.e. adjacent to Fisherman Quay . .

### 7.2.4.4 Freight Check-in Area

The freight check-in area is largely similar to the existing layout. The check-in has been relocated to the west end of the Port where the new Port access will be located.

### 7.2.4.5 Car Check-in Area

The freight check-in area has been increased by approximately 7% providing a similar area to the existing layout. The check-in has location has remained as in the existing layout if required, future expansion can be accommodated by expanding into the currently unused part of the terminal building car park. .

### 7.2.4.6 OPW Facility

The OPW area and footprint adopted is in accordance with OPW current requirements. The location of the OPW facilities is largely similar to option A and B providing a greater buffer distance from the berths, allowing more efficient vessel unloading. .

### 7.2.4.7 Provision of Roundabouts

From preliminary research it was found that roundabouts in general tend to improve the efficiency of traffic flow when they are designed appropriately. In this option the roundabouts helped reduce the number of traffic clashes that occur in the existing layout. The traffic flow with the proposed roundabouts has not been studied in detail at this stage of the masterplan.

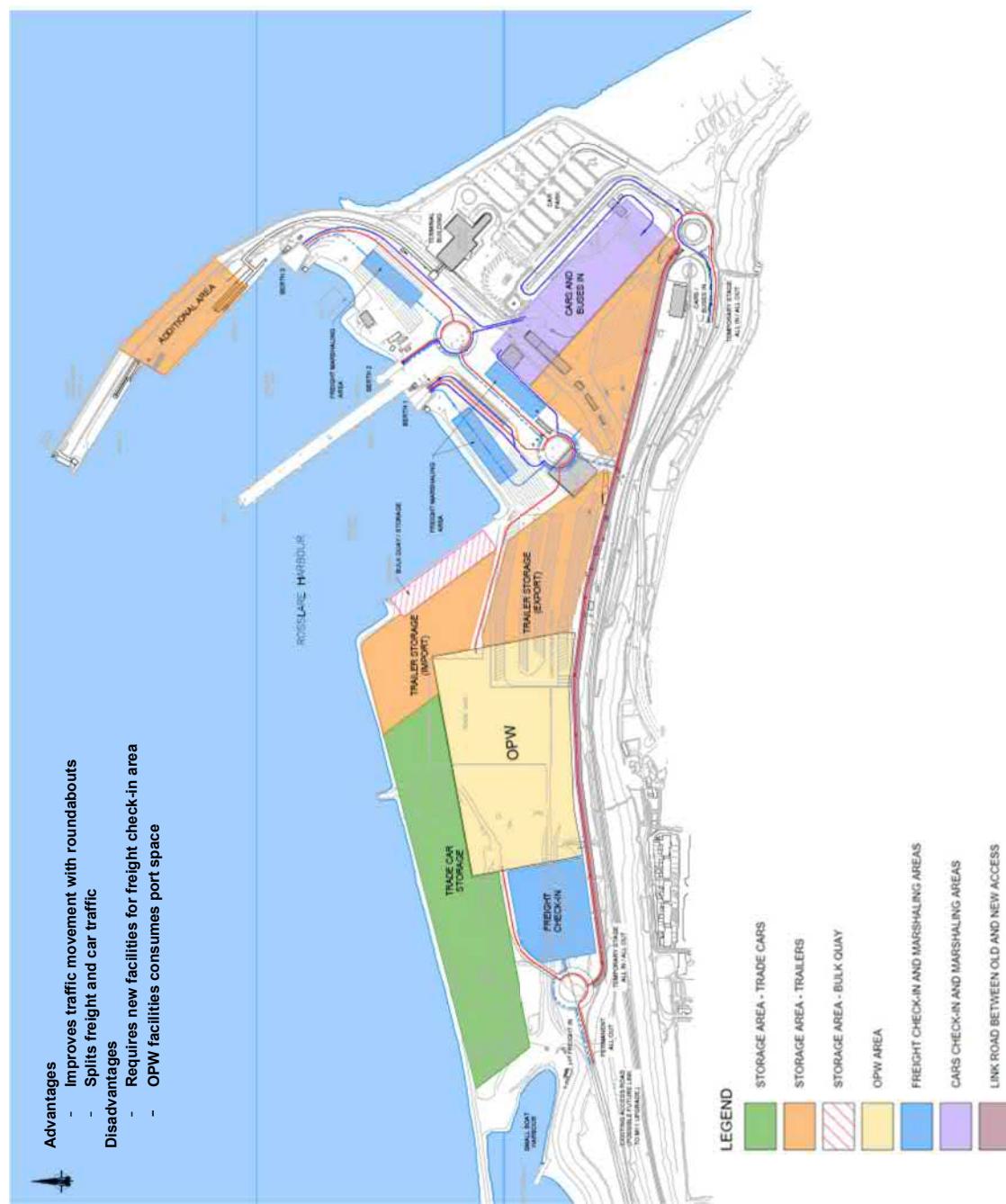


Figure 7.3 Option C

## 7.2.5 Description of Option D

Option D is similar to option C in terms of the vehicle check-in locations and investigates different OPW footprints. It also investigates a different location for the trade car area.

### 7.2.5.1 Trade Car Area

The trade car area has increased by approximately 45% and has been relocated to the southeast end of the Port where the existing freight check-in area is located. This creates space for trailer storage area on the northwest end of the Port.

### 7.2.5.2 Trailer Storage Area

The trailer storage area has increased by approximately 25%. The location of the trailer storage area is relocated to the northwest end of the Port. The storage area provides a large regular storage shape making efficient use of the space. Both import and export trailer storage facilities are within the same area providing an efficient interface between the two storage facilities.

### 7.2.5.3 Bulk Storage Area

The bulk storage area is largely similar to the existing layout. The bulk storage area remains in the same location as the existing layout i.e. adjacent to Fisherman Quay.

### 7.2.5.4 Freight Check-in Area

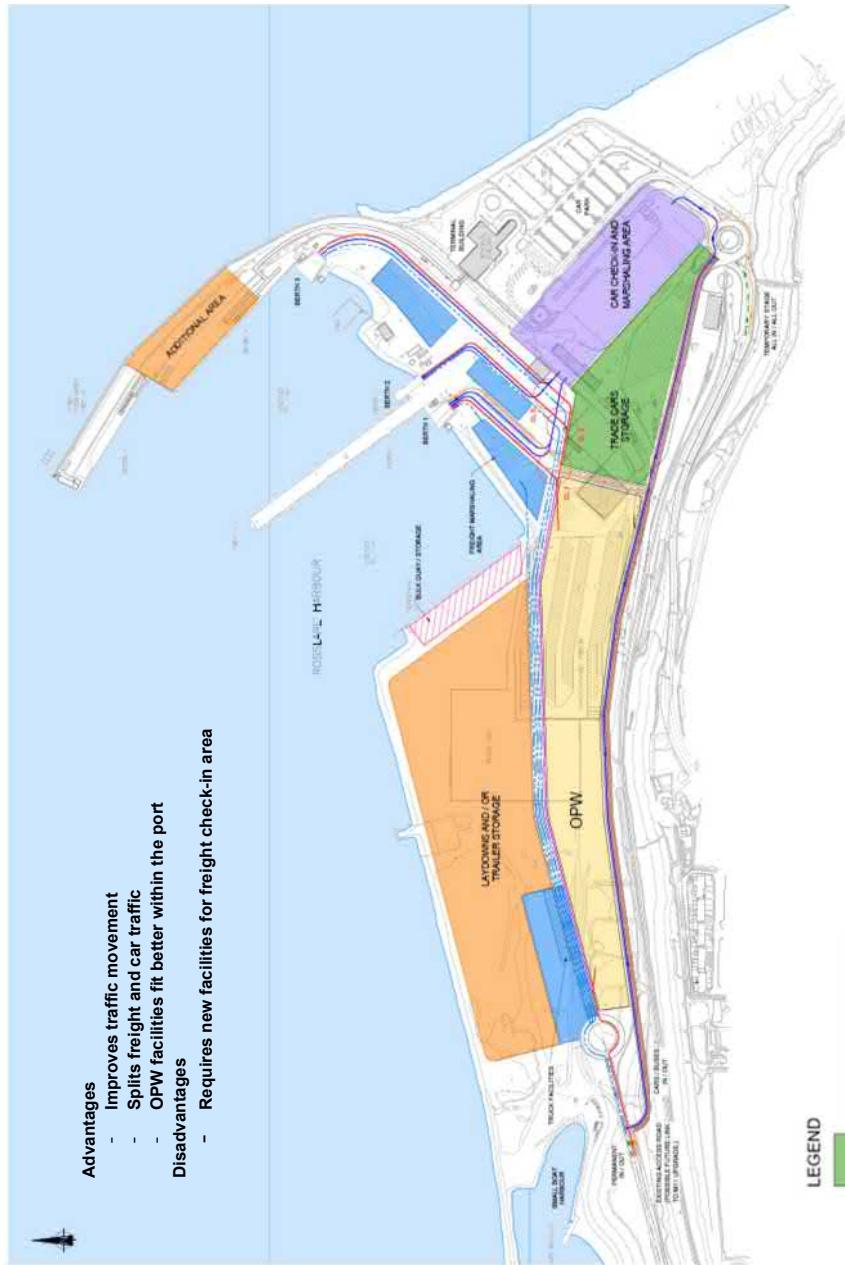
The freight check-in area is largely similar to the existing layout. The check-in has been relocated to the west end of the Port where the new Port access will be located.

### 7.2.5.5 Car Check-in Area

The car check-in area has been increased by approximately 45%. The check-in location remains as in the existing layout. If required, future expansion can be accommodated by expanding into the currently unused part of the terminal building car park.

### 7.2.5.6 OPW Facility

The OPW area adopted is in accordance with OPW requirements, however with a different footprint. The footprint of OPW in this option provides a more linear shape creating space on the northwest end of the Port. This space provides the Port with an open area that can be modified in the future to suit the Port's storage requirements without significant implications.



### LEGEND

	STORAGE AREA - TRADE CARS
	STORAGE AREA - TRAILERS
	STORAGE AREA - BULK QUAY
	OPW AREA
	FREIGHT CHECK-IN AND MARSHALING AREAS
	CARS CHECK-IN AND MARSHALING AREAS
	LINK ROAD BETWEEN OLD AND NEW ACCESS

Figure 7.4 Option D

## 7.3 Assessment of Options

### 7.3.1 General

This chapter considers the relative benefits of the four primary layout options described earlier.

### 7.3.2 Schedule of Areas

Table 7.2 presents a summary of the areas designated to each of the options including the existing set-up for comparison of the area capacity changes. In general, in all the options there is approximately 70% increase in the total area usage of the Port when compared to the existing usage area of the Port. The following are the options providing the largest increase in the various port areas:

- Trade car storage: Option C providing an area of 29,087m<sup>2</sup>
- Trailer storage: Option B providing an area of 62,215m<sup>2</sup>
- Bulk storage: Option A providing an area of 4,775m<sup>2</sup>
- Freight check-in area: Option A providing an area of 21,568m<sup>2</sup>
- Car check-in area: Option D providing an area of 19,037m<sup>2</sup>

Options	Trade car storage m <sup>2</sup>	Trailer storage m <sup>2</sup>	Bulk storage m <sup>2</sup>	Freight check-in Area in area m <sup>2</sup>	Car check-in area m <sup>2</sup>	Additional storage m <sup>2</sup>	OPW facility m <sup>2</sup>	Total area m <sup>2</sup>
Existing	11,990	40,447	3,680	15,118	12,980	-	1,750	84,215
Option A	17,084	46,600	4,775	21,568	12,520	7,500	34,925	144,972
Option B	21,042	62,215	3,438	13,955	5,051	7,500	34,925	148,126
Option C	29,087	42,925	3,370	14,187	13,943	7,500	34,925	145,937
Option D	17,316	51,570	3,560	14,668	19,037	7,500	34,946	148,597

Table 7-2: Schedule of areas

### MULTI-CRITERIA ANALYSIS FOR SELECTION OF LAYOUT

Ref	Item	Percentage	Weighting Important = 5 Unimportant = 1				Ranking (High = 5, Low = 1)				Weighted Ranking				Overall Percentage			
			Opt. A	Opt. B	Opt. C	Opt. D	Opt. A	Opt. B	Opt. C	Opt. D	Opt. A	Opt. B	Opt. C	Opt. D	Opt. A	Opt. B	Opt. C	Opt. D
	<b>Functional requirements</b>	50%	785	5	3	4	5	3	15	20	25	15	4.5	6.1	7.6	4.5		
1.1	Improve efficiency (less clashes)			5	2	4	5	4	10	20	25	20	3.0	6.1	7.6	6.1		
1.2	Increase trade car storage			5	3	5	3	4	15	25	15	20	4.5	7.6	4.5	6.1		
1.3	Increase trailer storage			5	5	3	3	4	25	15	15	20	7.6	4.5	4.5	6.1		
1.4	Increase Freight check-in area			4	3	1	4	5	12	4	16	20	3.6	1.2	4.8	6.1		
1.5	Increase car check-in area			4	4	5	4	3	16	16	12	4.8	6.1	4.8	6.1			
1.6	Increase OPW buffer distance			5	1	1	5	5	5	25	25	1.5	1.5	7.6	7.6			
1.7	Separation of freight and cars																	
	<b>Value and cost</b>	10%	25															
2.1	Capital cost		5	5	3	4	4	25	15	20	20	10.0	6.0	8.0	8.0			
	<b>Constructability and Programme</b>	30%	45															
3.1	Speed of construction		5	5	3	4	4	25	15	20	20	16.7	10.0	13.3	13.3			
3.2	Complexity of construction		4	5	2	4	3	20	8	16	12	13.3	5.3	10.7	8.0			
	<b>Future proofing</b>	10%	60															
4.1	Provision for future reclamation		4	3	1	3	5	12	4	12	20	2.0	0.7	2.0	3.3			
4.2	Easy incorporation of potential land on west		3	5	4	5	5	15	15	15	25	2.5	2.5	2.5	2.5			
4.3	Allows easy phasing		5	5	1	4	4	25	5	20	20	4.2	0.8	3.3	3.3			
		100%																

Table 7-1 – Multi Criteria.

Review of the highly scoring options indicates that:

- Functional requirements
- Value and cost
- Constructability and programme
- Future proofing
- Option C scores least in terms of future proofing.
- Option A scores least in terms of functional requirements.
- Option D scores least in terms of Constructability and programme.

A summary of the multi-criteria analysis is provided in the following sections.

Ranking of layouts

The multi-criteria analysis resulted in the following weighted ranking of the layouts, scored out of a total of 100:

- Option A 78
- Option B 58
- Option C 81
- Option D 79

This indicates that Option C results in the highest score. However, the scores for options A and D are not too dissimilar.

Review of the individual criteria indicates that:

- Option C is best in terms of satisfying the functional requirements
- Option C and D are the best in terms of value and cost.
- Option A is the best in terms of constructability and programme.
- Option D is best in terms of future proofing.

### 7.3.3 Multi-criteria analysis

By identifying the potential risks, impacts, opportunities, and constraints associated with each option, a high-level assessment has been made to identify the preferred layout option.

Each option has been ranked for each of the multi-criteria analysis criterion. In general, for each criterion one option has received the best ranking of 5 and another option the worst ranking of 1. The other options have been allocated values from 2 to 4 depending on their relative merits.

Each criterion is weighted to reflect its relative importance and consideration. These criteria have been established through discussions with ITR. The following criteria, with their respective weighting, have adopted during the multi-criteria analysis;

## 7.4 Proposed Final Masterplan

Further to the multi-criteria analysis the outcomes were analysed and discussed with IR and it was agreed to develop an option E which would capture the best of option C and D. The proposed option E is presented in

This option provides the following principal benefits:

- Flexible use of areas
- Reduces potential traffic conflicts and utilises roundabouts for ease of access.
- Incorporation of the future access road and roundabout on the west side of the port
- Increased storage areas through the port
- Reduces impact of OPW site footprint while providing the required facilities
- Enables phasing of the construction with reduced impact to the port's operations
- Enables future expansion in reclamation area and new berths without significant impact on the port operations

The following sections further discuss some of the main benefits of the Option E layout and how it addresses the current deficiencies present in the existing layout.



Figure 7-5 Proposed masterplan layout

## 7.4.1 Flexibility

Flexibility can be a key contributor in achieving the ports strategic plan goals. The west side of the Port, north of OPW post has been set out as an open flexible area that can be easily modified in the future to suit the Port storage requirements. Using flexible fencing/barriers and ensuring any permanent structures are on the perimeter (such as lighting etc) of the open space area, enables easy alterations that can be undertaken in a relatively short time without significant disturbance to the Port operations. Other allowances for flexibility include provision of spare ducts with corresponding manholes/draw pits for possible future services. This flexibility means that future expansion by reclamation can be accommodated without significant changes to the Ports infrastructure.

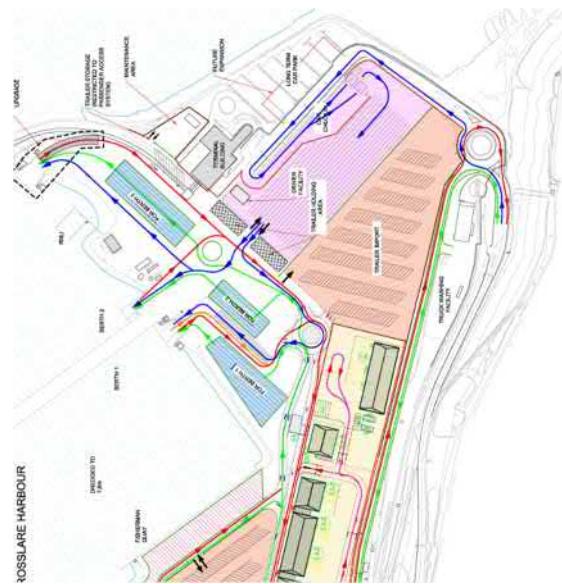


Figure 7-6 Proposed traffic flow within Berthing Area

## 7.4.2 Improved Traffic Flow

The introduction of roundabouts at the critical congested areas helps to improve the flow of traffic. The proposed layout introduces two roundabouts: one between the outgoing cars leaving the check-in area and berth 2. This roundabout will cater for all cars going to berths 2 and 3, as well as all vehicles arriving from those berths. The second roundabout is located west of the berths area and will accommodate all outgoing traffic flows from all three berths, the incoming freight traffic and also distribute the vehicles to the Trailer storage area and OPW facilities. This reduces the instances of crossing traffic in comparison to the existing traffic flow. Figure 7-1 and provide a simplified traffic flow diagram showing the reduction in instances of crossing traffic and flow between the existing and the proposed layout.

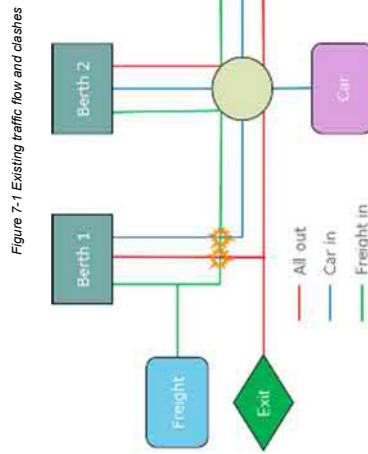
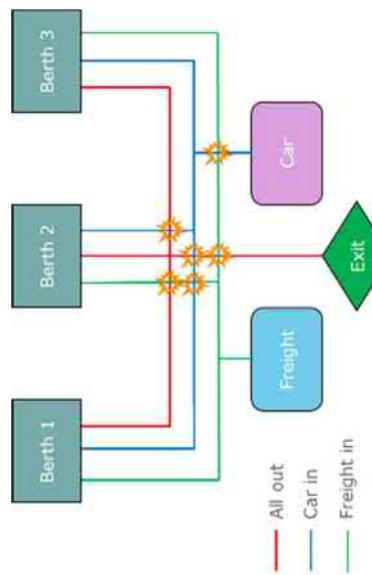


Figure 7-8 Future traffic flow and clashes

The traffic flow is also improved by introducing a central access route from the entrance of the freight check-in area providing easy access segregated from the car entrance. Moreover, the removal of the existing decommissioned rail track within the port removes a physical bottleneck. With these improvements the traffic flow and the vessel turnaround times are anticipated to be improved.



Figure 7-7 Proposed Freight Entrance

## 7.4.3 Improved Storage Areas

Option E optimises the use of the landside area making it the option with the highest total landside area. This was created by moving the Port maintenance area into an area that was unused in the Port, north of the terminal building, and also by increasing the car check-in area by utilising some of the terminal building car parking area. This allows the port to increase their total storage area by approximately 80% compared to the existing layout. Most of the storage areas has improved as presented in Table 7-3. There is flexibility in the usage of the areas as the proposed layout enables alterations of zones.

## 7.4.4 Accommodation of future developments

The new layout of the port has considered the Ports future developments and incorporates them within the masterplan phasing. The Ports main access has been moved to the west where it will join with the new N25/M11 road link. It also considers the new OPW facilities footprint and allows a linear area for this on the west end of the Port. The phasing section in this report (section 8) further discusses how the masterplan will incorporate the future developments while ensuring that there will be minimum impact on the existing Port operations.

Schedule of Areas						
	Trade Car Storage m2	Trailer Storage m2	Bulk Storage m2	Freight Check in Area m2	Car Check in Area m2	Additional Storage m2
Existing set up	11,990	40,447	3,680	15,118	12,980	84,215
Proposed Option	18,600	39,800	12,150	14,870	17,170	7500

Table 7-3 Area comparison between existing and proposed option

## 7.4.5 Unaccompanied

The new layout of the port has considered the Rosslare Euroports operations, with particular emphasis in relation to the unaccompanied trailer movements. Figure 7.9 indicates the proposed route for unaccompanied trailers between the expert storage, holding area, route to ships and route off ships to the import area.

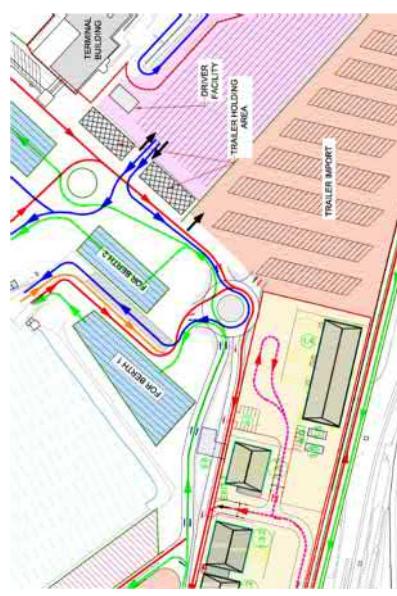


Figure 7.9 Proposed unaccompanied trailer holding areas

## 7.5 Proposed Option Developments

The proposed option allows for the future port developments outlined in this section.

### 7.5.1 Berth Developments

In order to accommodate the current trend towards increased vessel lengths, it is anticipated that the following berth developments may be required:

#### Berth 1

- A berthing trial with the W.B. Yeats demonstrated that longer transition ramps on the linkspan upper deck are required to accommodate this vessel. It is anticipated that longer transition ramps will be installed in the near future;
- A transition study has shown that, in order to provide acceptable transition gradients, a moveable wedge will require to be provided on the linkspan lower deck, in the relatively infrequent occasions when the W.B. Yeats berths stern-in;

- It is assumed that no dredging at the berth is required.

#### Berth 2

- A berthing trial with the W.B. Yeats stern-on was successful
- In line with the recommendations in the Strategic Plan, it is anticipated that Berth 3 will be extended, and an upper deck added to the existing linkspan;
- A feasibility study for the upgrading of the berth will shortly be commissioned by the Port.

#### Berth 4

- It is assumed that, following the future upgrading of Berth 3, this berth will become obsolete.

## 7.5.2 Landside Developments

In order to accommodate the Port functional requirements and increase in the required storage area in the port it is anticipated that the following landside developments may be required:

- New OPW facilities
- Replacement of the Port maintenance facilities
- Replacement of the freight check-in facilities and improved car check-in facilities
- Removal of the railway within the port creating more space
- Additional area lighting/signage/line marking to suit new layout
- Additional freight and car driver facilities at check-in area
- Possible additional disabled parking area
- Providing possible electric car charging points
- Incorporation of possible improved sewerage infrastructure

## 7.6 Existing Berth Capacity

The existing number of berths appear to be sufficient, in view of the fact that current Rosslare Europort utilisation is low with, in particular, a significant amount of downtime during each day.

However, based on the advertised berthing facilities the following points are noted, with respect to the geometrical capacity of the main berths to accommodate the trend towards longer ROPAX vessels:

#### Berth 1

- The advertised limiting vessel length is sufficient to accommodate both Stena E-Flexer vessels and the W.B. Yeats;

- The advertised limiting vessel beam is sufficient to accommodate the E-Flexer vessels and the W.B. Yeats with some restrictions;
- The charted depth in Rosslare Europort of -7.2m CD provides unrestricted access to vessels up to 6.5m draft. Irish Ferries have advised that the WB Yeats has a design draft of 6.5m and a load line draft of 6.7m;

#### Berth 2

- The advertised limiting vessel length is sufficient to accommodate the W.B. Yeats, but not Stena E-Flexer vessels;
- The charted depth in Rosslare Europort of -7.2m CD provides unrestricted access to vessels up to 6.5m draft. Irish Ferries have advised that the WB Yeats has a design draft of 6.5m and a load line draft of 6.7m;

#### Berth 3

- The advertised limiting vessel length is sufficient to accommodate either Stena E-Flexer vessels or the W.B. Yeats.
- The charted depth in Rosslare Europort of -7.2m CD provides unrestricted access to vessels, but not the W.B. Yeats.
- The charted depth in Rosslare Europort of -7.2m CD provides unrestricted access to vessels up to 6.5m draft. Irish Ferries have advised that the WB Yeats has a design draft of 6.5m and a load line draft of 6.7m;



Photo 7.1 Existing berthing.

- Provides unrestricted access to vessels up to 6.5m draft. Irish Ferries have advised that the WB Yeats has a design draft of 6.5m and a load line draft of 6.7m.

## 7.7 Proposed Option Berth Capacity

In order both to facilitate the Port's growth plan and accommodate the trend towards longer ROPAX vessels, the strategic plan for Rosslare Port recommend a significant capital investment to:

- Combine Berths 3 & 4 reaching a total length of approximately 330m;
- Add an upper deck to the existing single deck linkspan on Berth 3;

Currently the Port's strategic plan maintains berths 1 and 2 and the dredge level of the port as existing.



*Photo 7.2 Existing berths*

## 7.8 Landside Capacity

The existing landside capacity is able to cope with the volumes currently passing through Rosslare.

OPW facilities areas are split and include a 1,500m<sup>2</sup> building for general inspections, and a 250m<sup>2</sup> agricultural inspection building. The proposed layout has the future OPW facilities area concentrated in one specific region of the terminal further away from the berths, giving more buffer zone for traffic to approach, with a total area of approximately 31,000m<sup>2</sup>, including 12 buildings, manoeuvring areas, over 40 parking slots for trucks and over a 100 parking slots for cars.



*Photo 7.3 Existing trailer storage*

## 7.9 Proposed Drainage and Services

During the detailed design of the masterplan solution infrastructure services will be upgraded to provide new drainage systems and develop power and communication network.

The surface water drainage network will be designed in consultation with Wexford County Council and be installed during the construction of the new paving and road network.

Power and communication networks will be designed developed to account for the new layouts and current technology requirements



*Photo 7.4 Existing car storage*

## 8 Rosslare Europort Masterplan Phasing

Phasing and programme are critical elements to the delivery of the masterplan infrastructure, and these were reviewed to facilitate the existing Port operating with minimum impact during the construction works. As with all construction projects in a live operational facility there would be a number of phases necessary to enable the transfer of operations from one area to another and still maintain the Port as operational.

The phasing and programme does not include for the OPW facility as this would be carried out under a separate contract on behalf of the OPW. The area for the site for the OPW would be available once the phase 1 works is completed.

### 8.1 Phasing

A full detailed review of phasing was carried out to try to mitigate potential conflicts during construction to ensure there could be a functioning Port at all times. There would be a transfer of functions from their existing locations to the new locations which would require some careful management during the operational transfer over.

#### Phase 1

With the overall Rosslare Europort area increasing in usable space from its existing area the first phase of construction was to carry out the installation of the new perimeter access road, new entrance roundabout, security fencing along the perimeter, new freight check in area and the central spine access road.

A large proportion of this phase of the construction can be developed without any impact on the existing Port operations as the construction is on the area adjoining the port facility.

The only anticipated impact on the Port will be the connection to the existing entrance roundabout and the removal of some buildings along the perimeter as well as some minor impact to the existing trailer storage area.

The phase 1 will also include the construction of the main service runs which will be installed under the main assess routes.

Phase 1 would enable freight to access the Port along the new road and roundabout and check in at the new location



Figure 8-1 Phase 1

#### Phase 2

On completion of Phase 1 access for all freight will commence along the new access road, around to the western roundabout and ente the port through the new freight check in area. The Phase 2 works will include all the paving areas from the new central spine road to the northern quay including the areas for the bulk storage, export trailer area and trade car areas.

The completion of these paved areas will enable existing storage areas to be transferred to free up zones for future Phases. Phase 2 will be completed in sections to enable operations continue within the port.



Figure 8-2 Phase 2

### **Phase 3**

This phase is anticipated to be the most difficult and have the most potential impact on Port operations. This phase is the alteration around the main loading and unloading areas at the berths. It stretches from the terminal building to the berths in one direction and from the new roundabout to Berth 1 in the other direction.

It would likely involve a number of small sections to be completed in sequence so as to minimise the effect on operations. It would be beneficial to complete the infill of the old rail line and construction of the new maintenance building initially to free up space for the diversion of traffic for the subsequent sections. The critical areas to complete would likely be adjoining berths and sequencing of the movement of traffic. This could be further developed during detailed design stages.

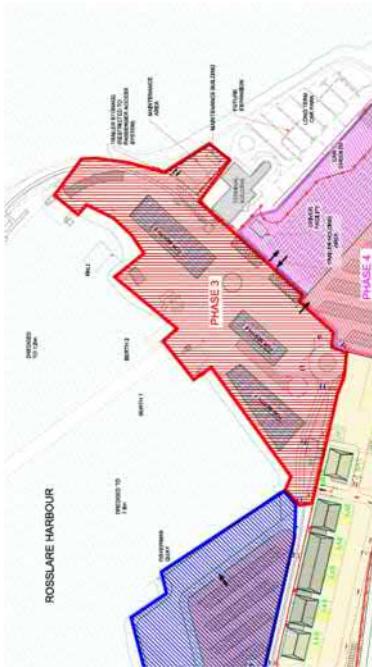


Figure 8-3 Phase 3

### **Phase 4**

This final phase would include the areas for the import trailer storage, upgrade to the passenger vehicle check in and completion of the secure fencing.

With the previous phases completed this will free up a large proportion of the trailer storage area for construction and only during the passenger vehicle area modifications would there be some minor impact on Port operations.



Figure 8-4 Phase 4

## 8.2 Construction Programme

The following is a high-level assumed duration required for each of the Masterplan phases and the Capital Projects as outlined below.

### Masterplan

The programme includes an initial design stage which would set out the overall infrastructure parameters, planning for the works and develop a masterplan plan for the installation of services and outline design information which would follow through each of the phases. There is also an allowance for submission of a planning application for the new entrance road, roundabout and freight check-in area. During each of the subsequent phases there is a period set aside for detailed design to develop the details for that phase of the works.

### Digitisation of Port

The Digitisation of the Port project provides for the implementation of a Terminal Management System to enhance customer service, improve operational performance and minimise manual processing of information. The proposed system will manage vehicle check-in, yard storage, vehicle queuing and invoicing/billing. The Terminal Management System will be implemented on a phased basis corresponding to the delivery of Phase 1 (Freight Check-In), 2 (Export Yard) & 4 (Passenger Vehicle Check-in & Import Yard) of the Masterplan due to the interfaces with the infrastructure to be provided in each phase

### Berth 3 Upgrade

The Berth 3 Upgrade project provides for the extension of berth, the provision of a double tier linkspan, the upgrade of fendering & mooring on the berth and the provision of new quay side areas. The majority of the proposed upgrade works are remote from the other developments in the Masterplan and can be delivered independently. Elements of the proposed upgrade works can also be delivered on a phased basis to suit the business requirement.

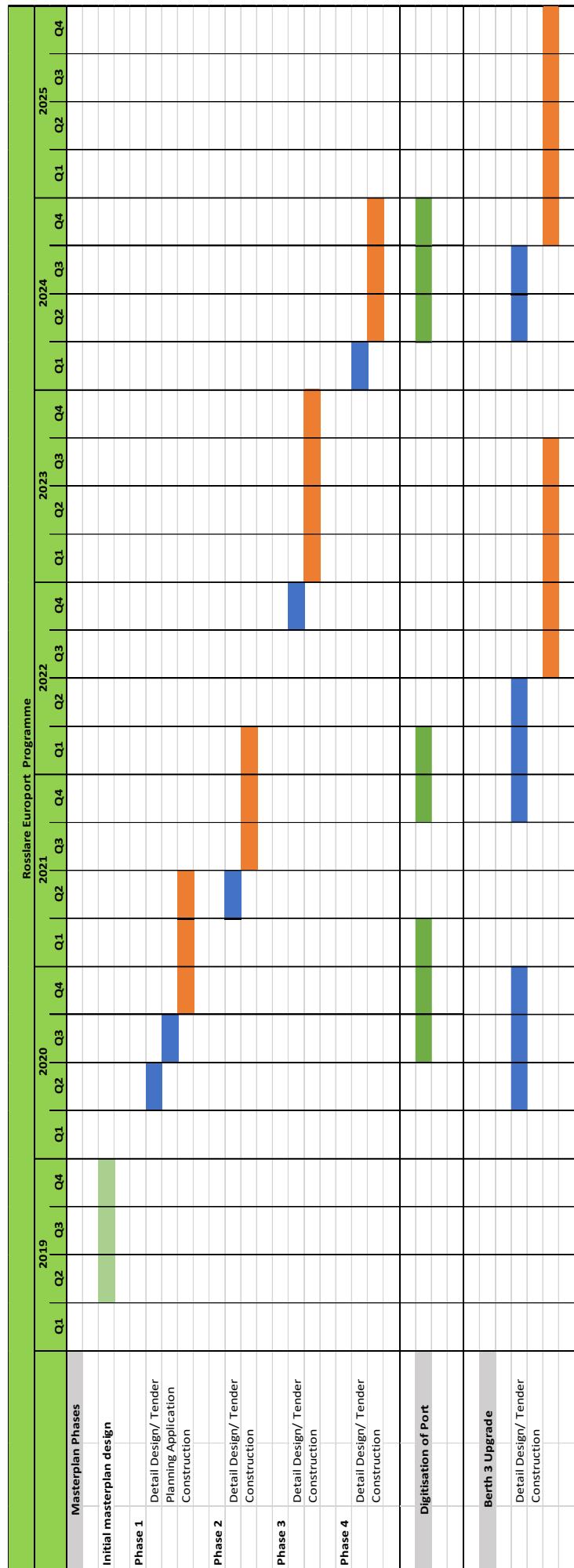


Table 8-1 Programme

9 Stakeholder Engagement

9.1.1 Stakeholder Consultations

On completion of the review with IR of the various options and agreement on the preferred solution a number of consultations were held with stakeholders who would have an impact on the scheme and the OPW to review their input on the location and operational function of the proposed areas.

## Consultation with Boss|are Europort Stakeholders

This was a presentation and discussion on 9th October 2019 at Rosslyn Port with various representatives from the following

Iarnrod Eireann Irish Ferries NVD

Niraas Perennial Freight Niraas

Nicholas O'Dwyer  
Stena Line

The consultation process involved a presentation to personnel outlining the existing deficiencies, reviews for the various options and an explanation on the proposed preferred solution Option F for the Fort

In general, there was a positive reaction to the proposed scheme and there was an appreciation of the opportunity to develop the Port for the future.

After the presentation there was a general discussion among parties on the proposed solution and any potential improvements which could be

The following schedule is a list of the main queries in relation to proposed solution and where possible an alteration to the scheme will be adopted in the solution.

Consultation with OPW

This was a discussion on 9th October 2019 at the OPW offices with various representatives of the OPW Brexit team to specifically discuss the operation and function of the OPW facility which is proposed for the Dún Laoghaire area.

Initial layouts provided by the OPW were their original scheme but recently they have developed a more defined layout for the facility. They are currently developing this scheme for all ports including Dublin and Rosslare and have been in consultation with EU officials in relation to the areas and functions requirements.

The location of the proposed facility based on the preferred Option E was outlined to the OPW by IR to demonstrate why this location was more suitable for the function of the Port and enabling expansion in the



## Schedule of Topic Discussed at Consultation No 1

Schedule of Topic Discussed at Consultation No 1		Topic	Remarks
1	Trade cars are driven individually coming out of ferry or Port	Review route for trade cars	
2	Check-in tolls for freight too close to the new west roundabout.	Move location of Check in for the Freight further from the entrance roundabout.	
3	Representative from Irish ferries concerned about clashes between public vehicle routing and freight.	Review traffic flow to clarify proposed freight and public routing	
4	How do passengers on foot get in and out?	Rail passenger routing to be detailed during the detailed design stage of the masterplan.	
5	How do the tugs manoeuvre in the port? Do they have a dedicated lane? Currently in the port they have a lane along the shoreline.	A review of the tug movements was taken in relation to the layout.	
6	Concern that the freight marshalling areas are small. Need to look at the statistics of number of trailers being handled.	A new trailer holding area will be provided at the berthing areas to enable short term storage of trailers.	
7	Is planning required for removing the rail track.	Not necessary as this will be dealt with internally by IR.	
8	Suggested about flyover or re-direction of ramp on berth 1 to allow smoother access for public vehicles when coming out of check-in area.	There are problems with both space and costs in relation to providing a flyover for passenger vehicles.	
9	Review the position of the new roundabout on the west side so that it allows easier link between freight dropping trailers at export and then going to the import area to pick up trailers.	The control of the vehicles can be marshalled by the Port to ensure no clashes with freight traffic.	
10	Can OPW be shifted to the north so that the import and export trailer area is one big area.	Location of the internal roundabout to be relocated to provide connection to the import trailer area.	This was reviewed as one of the options but was discarded due to the fact it makes the area around the OPW inflexible and doesn't allow easy expansion by reclamation.
11	Show the upper tier ramp on berth 3 – red dashed line for future expansion.		This will be indicated on the layouts.

There was a discussion on the operation of the OPW facility and the requirements in relation to traffic passing through and the types of checks to be carried out. The overall proposal to locate the OPW facility along the western boundary was itself not an issue with the OPW.

- The following is a summary of the actions from the meeting
    - OPW will assess the proposed location of the facility to examine if it can accommodate the latest requirements and provide the required functionality. IR provided a copy of the existing layout for review.
    - The seal check area will require additional queueing spaces prior to the check area.
    - The relocation of the internal roundabout will provide the access into the facility.
    - Further clarification on the immigration checking will be provided after OPW consult with the relevant stakeholder.

Further consultations were held between the OPW and IR design team on 5<sup>th</sup> December 2019 in relation to the location of the proposed facility and in general terms it was accepted in principle that the location along the Southern boundary would be the optimum solution of the operations of the north

- The OPW did pass further comments on the minimum requirements in relation to parking, location of the facilities and how they operate the facility.

The OPW did note that until agreement with the various stakeholders and operators of the Facility is obtained they are not in apposition to formally agree the layout.

This will be indicated on the layouts.

## Appendix 1 – Drawings

## Appendix 2- List of Vessels

Sample of some of the Largest Ferries and RoRo cargo in the Europe

Vessel	LOA	GT	Draft	Yr Built	Company	Vessel	LOA	GT	Draft	Yr Built	Company
Color Magic	223.70	75,156	6.9	2007	Color Line	Finnswan	218.80	42,923	7.0	2007	Finnlines
Color Fantasy	223.70	74,027	6.9	2004	Color Line	Skåne	199.00	42,705	5.8	1998	Scandlines
Cruise Roma	254.00	63,000	7.0	2007	Grimaldi Ferries	Pont-Aven	184.60	41,758	6.8	2004	Brittany Ferries
Stena Britannica	240.00	62,200	5.9	2010	Stena Line	Danielle Casanova	175.00	41,447	6.7	2002	Corsica Linea
Stena Hollandica	240.00	62,200	5.5	2010	Stena Line	Victoria I	193.80	40,975	6.2	2004	Tallink
Pride of Rotterdam	215.44	59,925	6.0	2001	P&O Ferries	Romantika	193.80	40,803	6.2	2001	Tallink
Pride of Hull	215.44	59,925	5.8	2001	P&O Ferries	Pearl Seaways	178.40	40,039	6.4	1989	DFDS Seaways
Silja Europa	201.80	59,914	6.7	1993	Tallink	Nuraghes	214.00	39,780	7.0	2004	Tirrenia di Navigazione
Silja Symphony	203.03	58,377	7.1	1991	Silja Line	Sharden	214.00	39,780	6.8	2005	Tirrenia di Navigazione
Silja Serenade	203.03	58,376	7.1	1990	Silja Line	Excelsior	201.20	39,739	6.5	1999	Grandi Navi Velozi
Stena Scandinavica	240.00	57,639	6.0	2003	Stena Line	Excellent	202.83	39,739	6.4	1998	Grandi Navi Velozi
Viking Grace	218.00	57,565	6.8	2013	Viking Line	Stena Vision	175.37	39,178	6.4	1987	Stena Line
Cruise Barcelona	225.00	54,919	6.7	2008	Grimaldi Ferries	Stena Spirit	175.37	39,178	6.7	1988	Stena Line
Cruise Europa	225.00	54,919	6.7	2009	Minoan Lines	Splendid	214.12	39,139	6.2	1994	Grandi Navi Velozi
Cruise Olympia	225.00	54,919	6.5	2009	Minoan Lines	El Venizelos	205.40	38,261	6.4	1992	ANEK Lines
W.B. Yeats	195.00	51,388	6.4	2018	Irish Ferries	Elyros	192.10	38,261	6.7	2009	ANEK Lines
Tanit	212.00	51,000	7.1	2012	CTN	Mecklenburg-Vorpommern	199.95	37,987	5.9	1996	Stena Line
Ulysses	209.02	50,940	6.2	2001	Irish Ferries	Mariella	177.00	37,799	6.7	1985	Viking Line
La Suprema	211.00	49,270	7.4	2003	Grandi Navi Velozi	Princess Anastasia	177.00	37,583	6.6	1986	St Peter Line
La Superba	211.00	49,270	7.4	2002	Grandi Navi Velozi	Europa Palace	214.00	36,825	7.0	2002	Minoan Lines
Megastar	212.00	49,000	6.6	2016	Tallink	Olympia Palace	214.00	36,825	6.4	2001	Minoan Lines
Galaxy	212.10	48,915	6.1	2006	Silja Line	Bithia	214.60	36,475	6.8	2001	Tirrenia di Navigazione
Baltic Princess	212.10	48,915	6.3	2008	Silja Line	Janas	214.60	36,475	7.0	2001	Tirrenia di Navigazione
Baltic Queen	212.10	48,915	6.2	2009	Tallink	Athara	214.60	36,300	7.0	2001	Tirrenia di Navigazione
Spirit of Britain	213.00	47,600	6.0	2010	P&O Ferries	Pascal Lota	177.00	36,299	7.1	2007	Corsica Ferries
Spirit of France	213.00	47,600	6.5	2011	P&O Ferries	Norröna	161.00	35,966	6.3	2003	Smyril Line
Viking Cinderella	191.00	46,398	6.7	1989	Viking Line	Mont Stichel	173.95	35,891	5.9	2002	Brittany Ferries
Rhapsody	172.00	44,307	6.5	1996	Grandi Navi Velozi	Pride of Bruges	179.35	31,598	5.5	1986	P&O Ferries
Stena Germanica	240.00	44,237	5.7	2001	Stena Line	Superfast XII	188.00	30,902	6.4	2001	Superfast Ferries
Stena Adventurer	211.56	43,532	5.4	2003	Stena Line	Mega Express	176.38	26,024	6.4	2001	Corsica Ferries
Finnstar	218.80	42,923	6.8	2006	Finnlines	Mega Express Two	176.38	26,024	6.4	2001	Corsica Ferries
Finnmaid	218.80	42,923	6.7	2006	Finnlines	Isle of Inishmore	182.50	34,031	5.7	1997	Irish Ferries
Finnlady	218.80	42,923	6.6	2007	Finnlines	Stena Europe	149.02	24,828	6.0	1981	Stena Line
Europalink	218.80	42,923	6.8	2007	Finnlines	Celestine	162.49	23,986	6.5	1996	CLDN

Vessel	LOA	GT	Draft	Yr Built	Company
Celandine	162.49	23,987	6.5	2000	CLDN
Catherine	182.35	21,357	7.4	2002	CLDN
Amandine	195.40	25,325	7.4	2011	CLDN
Adeline	152.00	16,342	5.4	2012	CLDN
Celine	234.06	74,273	8.1	2017	CLDN
Clementine	162.42	23,986	6.5	1997	CLDN
Delphine	234.06	74,273	8.1	2018	CLDN
Hermine	216.47	50,443	8.2	2019	CLDN
Laureline	216.47	50,443	8.2	2019	CLDN
Ysaline	216.47	50,443	8.2	2019	CLDN
Sixtine	216.47	50,443	8.2	2019	CLDN
Mazarine	195.40	25,325	7.4	2009	CLDN
Opaline	195.40	25,325	7.4	2010	CLDN
Palatine	195.40	25,325	7.4	2009	CLDN
Peregrine	195.40	25,325	7.4	2010	CLDN
Vespertine	195.40	25,325	7.4	2009	CLDN
Meleq	209.79	32,770	6.5	2017	CLDN
Melusine	162.42	23,986	6.5	1999	CLDN
Valentine	162.42	23,986	6.5	1999	CLDN
Victorine	162.42	23,986	6.5	2000	CLDN
Pauline	200.00	49,166	7.4	2006	CLDN
Yasmine	200.00	49,166	7.4	2007	CLDN
Severine	152.00	16,342	5.4	2012	CLDN
Capucine	152.00	16,342	5.4	2011	CLDN
Wilhelmine	152.00	16,342	5.4	2012	CLDN
Undine	147.70	11,854	5.3	1991	CLDN
Stena Baltica	165.00	22,308	6.2	2007	Stena Line
Stena Danica	154.90	28,727	6.3	1983	Stena Line
Stena Flavia	186.50	26,904	6.9	2008	Stena Line
Stena Forecaster	195.03	24,688	6.3	2003	Stena Line
Stena Gothic	171.00	13,294	5.4	1981	Stena Line
Stena Forerunner	195.03	24,688	6.3	2003	Stena Line
Stena Hibernia	142.50	13,017	4.8	1996	Stena Line
Stena Horizon	186.50	27,522	6.7	2006	Stena Line

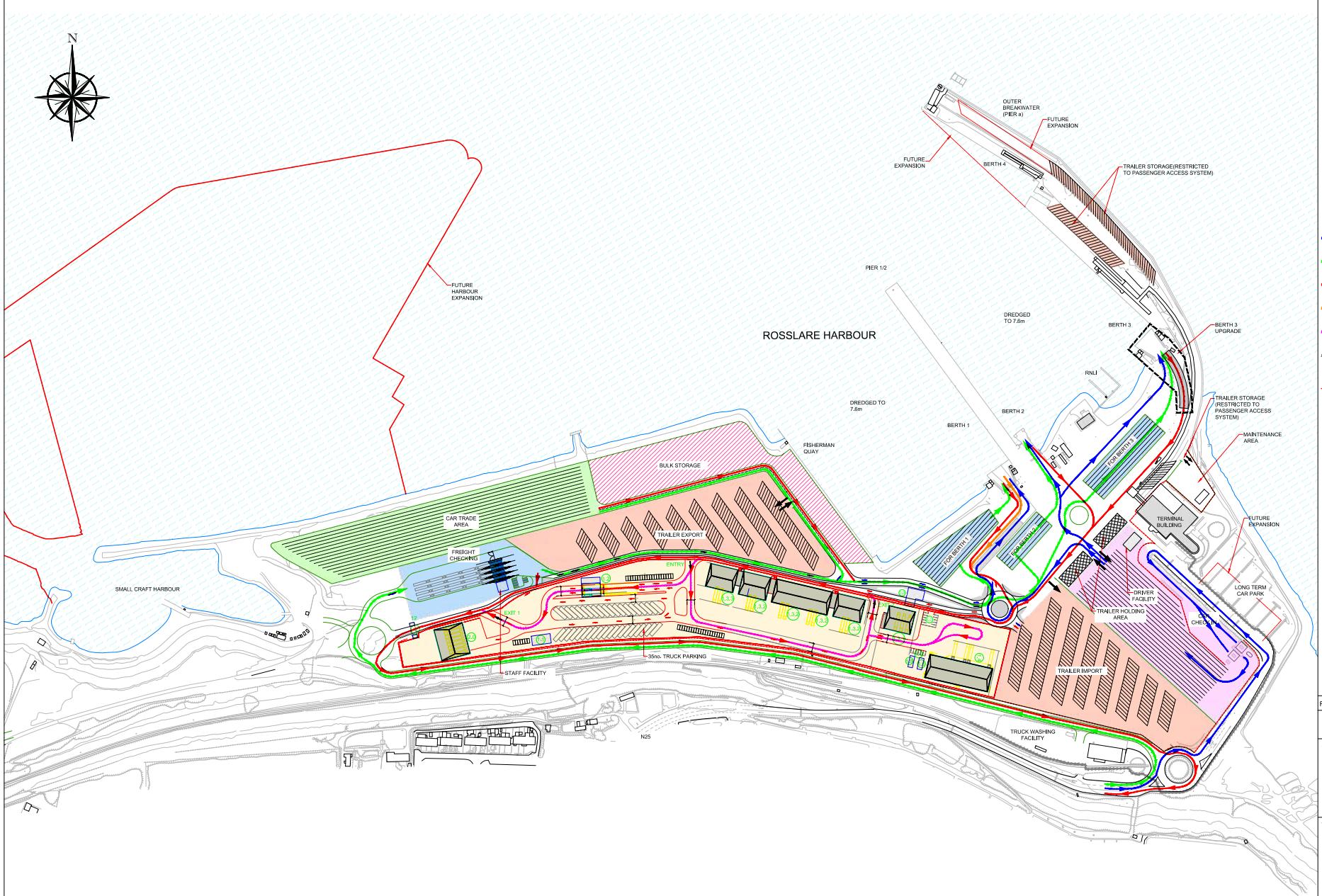
Vessel	LOA	GT	Draft	Yr Built	Company
Stena Jutlandica		184.30		29,691	6.0
Stena Lagan		186.60		25,600	6.6
Skåne		200.00		28,960	6.5
Stena E-Flexer Series I		214.50		40,500	6.4
Stena E-Flexer Series II		214.50		40,500	6.4
Stena E-Flexer Series III		214.50		40,500	6.4
Stena Mersey		186.60		25,600	6.6
Misana		165.75		15,586	6.0
Stena Nautica		135.60		19,763	5.6
Misida		165.75		15,586	6.2
Stena Nordica		170.50		24,206	6.0
Sassnitz		171.50		20,276	4.8
Scottish Viking		186.00		26,904	6.9
Stena Saga		166.50		33,750	6.8
Stena Scotia		142.50		13,000	5.4
Somerset		183.40		12,502	6.3
Stena Superfast X		203.30		30,285	6.4
Stena Superfast VII		203.30		30,285	6.6
Stena Superfast VIII		203.30		30,285	6.6
Stena Transit		212.00		33,690	6.3
Stena Transporter		212.00		33,690	6.3
Urd		171.00		11,030	5.3
Stena Vinga		129.90		14,551	5.6
Ark Dania		195.20		24,485	6.2
Ark Germania		195.20		25,000	6.5
Epsilon		186.44		26,375	6.2
Dublin Swift		101.40		8,403	3.7
Hull 777		226.00		67,300	6.5
PRIDE OF BURGUNDY		179.70		28,138	6.1
PRIDE OF CANTERBURY		179.00		30,635	5.7
PRIDE OF KENT		179.70		30,635	5.9
EUROPEAN SEAWAY		175.00		22,986	5.4
NORBAY		166.77		17,464	5.8
NORBANK		166.77		17,464	5.8
					1993

Vessel	LoA	GT	Draft	Yr Built	Company
EUROPEAN CAUSEWAY	159.50	20,646	5.0	2000	P&O Ferries
EUROPEAN HIGHLANDER	162.70	21,188	5.5	2002	P&O Ferries
EUROPEAN ENDEAVOUR	118.15	8,097	4.4	1978	P&O Ferries
PRIDE OF YORK	179.20	31,785	5.9	1987	P&O Ferries
EUROPEAN TRADER	176.02	17,068	5.2	1978	P&O Ferries
NORSKY	180.00	20,296	5.8	1999	P&O Ferries
NORSTREAM	180.00	20,296	6.1	1999	P&O Ferries
NORQUEEN	170.93	17,884	6.3	1980	P&O Ferries
NORKING	170.93	17,884	6.2	1980	P&O Ferries
Aegli	158.50	21,554	5.1	2002	Neptune Lines
Avra	155.02	19,220	6.6	1989	Neptune Lines
Dynamis	158.50	21,554	5.7	2002	Neptune Lines
Galene	169.55	37,692	7.5	2014	Neptune Lines
Hellas	168.06	36,711	8.4	2009	Neptune Lines
Horizon	168.06	36,711	8.6	2010	Neptune Lines
Iliad	169.58	36,825	7.8	2010	Neptune Lines
Ithaki	169.59	36,825	8.4	2010	Neptune Lines
Kefalonia	169.59	36,825	8.3	2009	Neptune Lines
Okeanis	165.00	27,788	5.7	2005	Neptune Lines
Odyssey	169.59	36,825	8.4	2010	Neptune Lines
Thalassa	169.55	37,692	8.5	2014	Neptune Lines
Thelisis	165.00	27,788	5.7	2006	Neptune Lines
Monza Express	168.06	36,711	8.6	2009	Neptune Lines

## NOTES

### LEGEND:

- STORAGE AREA - TRADE CARS (APPROX. PROPOSED AREA 18,600m<sup>2</sup>)
- STORAGE AREA - TRAILERS (APPROX. PROPOSED AREA 39,800m<sup>2</sup>)
- STORAGE AREA - BULK QUAY (APPROX. PROPOSED AREA 12,150m<sup>2</sup>)
- OPW AREA (APPROX. PROPOSED AREA 43,600m<sup>2</sup>)
- FREIGHT CHECK-IN AND MARSHALING AREAS (APPROX. PROPOSED AREA 14,870m<sup>2</sup>)
- CARS CHECK-IN AND MARSHALING AREAS (APPROX. PROPOSED AREA 17,170m<sup>2</sup>)
- LINK ROAD BETWEEN OLD AND NEW ACCESS
- TRAILER HOLDING AREA (1000 m<sup>2</sup>)
  
- > CAR / BUS TRAFFIC IN
- > FREIGHT TRAFFIC IN
- > ALL TRAFFIC OUT
- > CAR / BUS TRAFFIC OUT
- > FREIGHT TRAFFIC OUT
- > FOOT PASSENGERS
  
- FENCE



Rev.	Date	Description	App'd
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## MASTERPLAN

Client :



Title :  
ROSSLARE HARBOUR  
COUNTY WEXFORD  
SITE PLAN - OPTION E

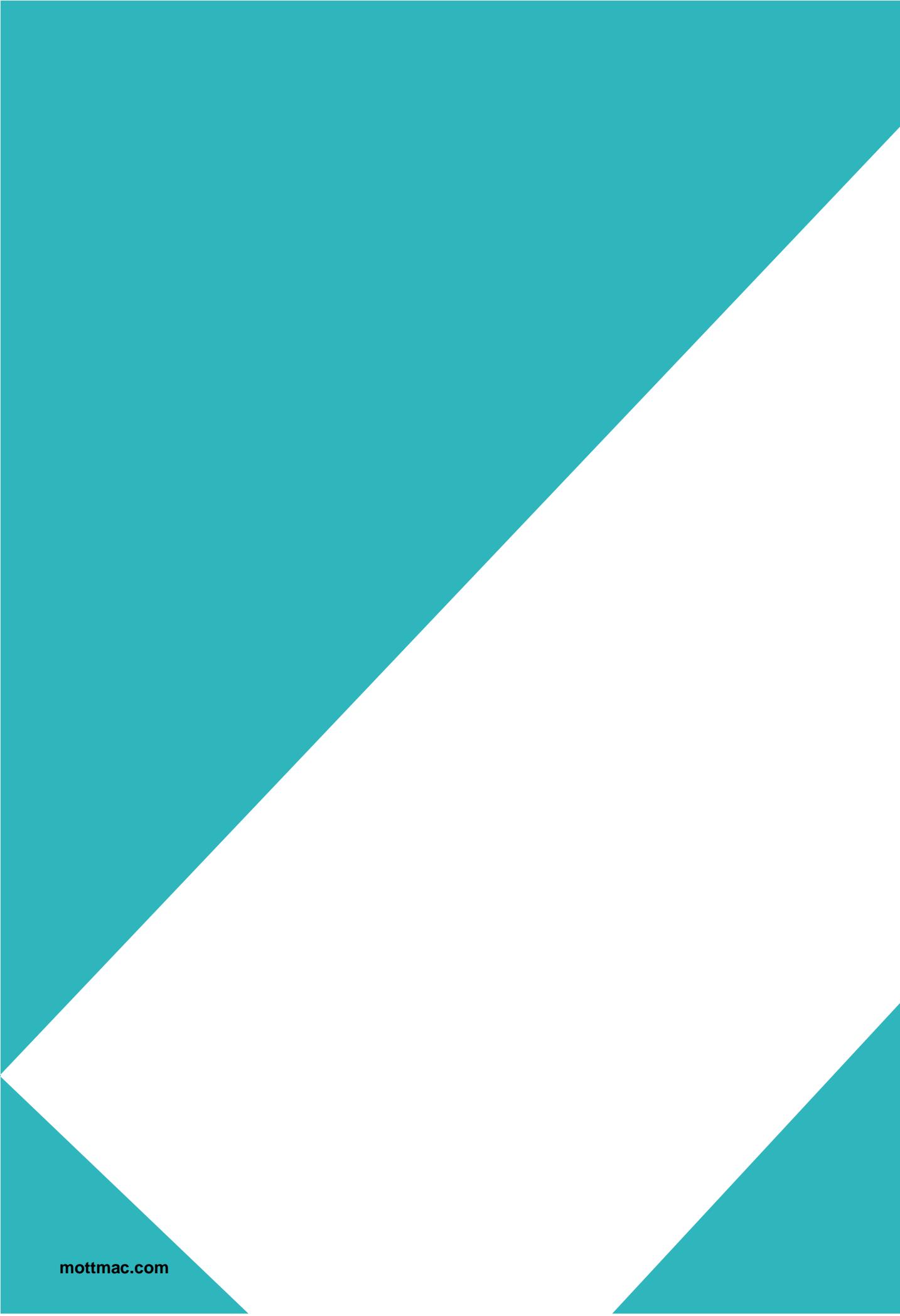
**NIRAS** **NICHOLAS O'Dwyer**

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Drawn Checked Approved Scale (at A1): 1:2000

MAP GAL ROMU Date: 16.12.2019

Drg No : ROSS-NOD-00-XX-DR-C-SK-1000 Rev P8



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