

Appendix 2: Traffic Management Plan

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Greater Dublin Drainage

Irish Water

Outline Traffic Management Plan

Irish Water

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APPENDIX A Drawings

1. Introduction

1.1 Introduction

The proposed Greater Dublin Drainage (GDD) scheme, which is located in the south of County Fingal covers an area from Blanchardstown, in the west of the county, to Baldoyle/Portmarnock, in the east of the county.

The proposed scheme, illustrated on Drawing No. 32102902-2000, is comprised of the following interlinked elements:

- Regional Wastewater Treatment Plant (WwTP), to be located in the townland of Clonshagh in Fingal,
- Orbital Sewers
 - Blanchardstown – Clonshagh
 - NFS Phase 1 Diversion Sewer
- Abbotstown Pumping Station
- Outfall Pipeline
 - Outfall Pipeline (Land based)
 - Outfall Pipeline (Marine based)
- Multiport marine diffuser

The pumping station and the orbital sewers facilitate the transport of wastewater from the catchments to the WwTP site, where it will be treated. The treated effluent will then be discharged via the outfall pipeline to the marine diffuser location, north east of Ireland's Eye.

1.2 Objective

The purpose of this Traffic Management Plan (TMP) is to provide the basis for the management of traffic expected during construction and operation of the GDD Scheme, on the basis of the designs shown in the planning documents. The TMP shall be developed by the appointed Contractor during detailed design into a more detailed Construction Stage Traffic Management Plan based on their specific design proposals. The role of Project Supervisor Design Process (PSDP) will be taken over by the Contractor and as such a Traffic Management Plan for his proposed design must be prepared in consultation with Irish Water and Fingal County Council. The Contractor will be required to appoint a Temporary Traffic Management Designer who shall prepare Detailed

Temporary Traffic Management Designs for all locations where Works are planned on, or impact on, any public road.

Prior to commencing the works, the plan must be developed into an Operational Traffic Management Plan by the Project Supervisor Construction Stage (PSCS) and should not be implemented until it has been assessed and developed by the PSCS. The appointed PSCS/Contractor of the project is required to carry out the Safety Audit on Operational Traffic Management Plans prior to commencing the works. The PSCS shall co-ordinate the implementation of the developed Traffic Management Plan during construction of the works.

The developed TMP requirements will include the provision of facilities for the safe passage of pedestrian and vehicular traffic and measures to keep the impact of the works on the roads, and local communities and road users, to a minimum. All traffic management controls proposed by the Contractor must be in accordance with the documents referenced herein.

1.3 Legislation

The Contractor shall comply with the requirements of:

- “Traffic Signs Manual – Chapter 8 – Temporary Traffic Measures and Signs for Roadworks” Department of Transport, November 2010
- Guidance for the Control and Management of Traffic at Roadworks – Department of Transport, N.R.A and Local Government Management Services Board, second edition 2010.
- HSA document titled ‘Guidelines for Working on Roads; Guide to the Safety, Health and Welfare at Work (Construction)(Amendment)(No. 2) Regulations 2008 (S.I. No. 423 of 2008)’
- Fingal County Council Road Closure Guidelines

These Guideline documents shall be read in conjunction with primary Safety Health & Welfare at Work legislation including the 2005 Act, the Safety, Health and Welfare (Construction) Regulations 2013, and any amendment to them (the Construction Regulations).

2. Impact of the Proposed Project

2.1 Works on Public Roads

Works will take place on public roads at a number of pipeline crossing points as indicated on Table 1. These crossing points are shown on Drawing Nos. 32102902-1110, 1111 & 1112. Due to the size of pipes to be installed, road closures will more than likely be required and alternative access routes provided where necessary.

• Location of Crossing	• Diversion
<ul style="list-style-type: none"> Local Road west of Premier Business Park 	<ul style="list-style-type: none"> No Diversion possible. Nightworks or local access shall be maintained.
<ul style="list-style-type: none"> Premier Business Park. 	<ul style="list-style-type: none"> No Diversion possible. Nightworks or local access shall be maintained.
<ul style="list-style-type: none"> Dubber Cottages 	<ul style="list-style-type: none"> No Diversion possible. Nightworks or local access shall be maintained.
<ul style="list-style-type: none"> Silloogue Green 	<ul style="list-style-type: none"> No Diversion possible. Nightworks or local access shall be maintained.

Table 1: Road Crossings and Diversions

Should a road be impacted and road users affected, the Contractor shall provide facilities for the safe passage of pedestrian and vehicular traffic and measures to keep the impact of the works on local roads, and local communities to a minimum. If required, alternative access arrangements will be put in place to ensure continued access to homes and businesses during road crossing works.

2.2 Access and Egress from the Wastewater Treatment Plant

A left turn only access on to the proposed Wastewater Treatment Plant (WwTP) site access road is proposed from the R139 Malahide Road, to the south of the site. This road will act as both temporary access for construction traffic and permanent access for the completed facility. The speed limit along this section of the R139 is 60km/hr and therefore has a required stopping distance of 59m. A left turn lane will be provided on the approach to the site entrance, therefore omitting a section of the existing bus lane.

An egress only road from the WwTP site, for both construction and operational traffic, is proposed onto the Clonshaugh Road, to the west of the site. The speed limit along Clonshaugh Road is 60km/hr resulting in a required visibility of 120m from a setback of 3m. This visibility splay can be achieved, by setting back of boundaries and verge widening as well as some service diversions.

Accident data made available by the Road Safety Authority on www.rsa.ie has been reviewed. There are no accident clusters recorded along the R139 in the vicinity of the proposed access road, or along the Clonshaugh Road in the vicinity of the proposed egress from the site.

The realignment of the Malahide Road is a stated objective of the Fingal County Development Plan, 2011 – 2017. The layout of the proposed WwTP has recognised the potential for the Malahide Road realignment, and will not impact on the future development of this road realignment.

2.3 Access and Egress from Abbotstown Pumping Station

Permanent access to and egress from the proposed Abbotstown pumping station will be from an existing signalised junction on the R843. Construction access to this site will be from the local road L3090. Accident data made available by the Road Safety Authority on www.rsa.ie has been reviewed and no accident clusters are recorded along the R843 or the L3090 in the vicinity of the existing accesses.

2.4 Access to the Pipeline Corridor & Construction Compounds

Access to the working sites along the pipeline route will be via the public road network and along the construction wayleave, where practicable. However, in certain circumstances it will not be possible to access the works along the wayleave, and in these circumstances access will be through third party lands.

Drawing Nos. 32102902-1110, 1111 & 1112 and Table 2 indicate how the Orbital Sewer and Outfall Pipeline is broken up into discrete sections by the following existing physical features; the N2 National Road, the M1 motorway, the Dublin-Belfast Rail line and Baldoyle Bay. These drawings, and Table 2, indicate the access points that will be used during the construction of each discrete section of the Orbital Sewer.

To facilitate the construction of the project temporary compounds will be required at various locations, e.g. at Abbotstown pumping station, at various locations along the pipeline route, at trenchless road crossing locations etc. These temporary construction compounds or satellite compounds will be in place for periods of 2 to 12 months, depending on the location. The satellite compounds will have site office, welfare facilities, parking and materials storage areas. The proposed locations of temporary compounds are identified on Drawing Nos. 32102902-1110 to 1112.

Section	Description	Access Points	Access Location
A	Blanchardstown to N2 Road	AP-1A	(i) Existing entrance off N3 to Connolly Hospital (ii) Existing rear entrance to Connolly Hospital
		AP-1B	Existing entrance to National Aquatic Centre/ Sports Campus
		AP-2	Existing entrance to Premier Business Park
		AP-3	Existing unused road off roundabout on Cappagh Road
		AP-4	New entrance off R135 south of Huntstown Power Station

Section	Description	Access Points	Access Location
B	N2 Road to M1 Motorway	AP-5	New entrance off R122 south of Dublin Airport Logistics Park
		AP-6	New entrance off Silloge Green north of IKEA
		AP-7A	Existing entrance to NCT Centre Northpoint off R108
		AP-7B	Existing entrance to Northside Test Centre off R108
		AP-8A	Existing entrance to compound on Swords Road adjacent to Daridstown Cemetery
		AP-8B	Existing entrance to Quick Park at Dublin Airport
C	M1 Motorway to Dublin Belfast Rail Line	AP-9	New entrance off Clonshaugh Road north of Clayton Hotel Dublin Airport
		AP-10	Existing entrance to Craobh Chiarain GAA Club off R139
		AP-11A	New entrance off R107 (Malahide Road) south of Kinsealy Garden Centre
		AP-11B	New entrance off R107 (Malahide Road) south of Kinsealy Garden Centre
		AP-12	New entrance off R123 opposite Balgriffin Cottages
D	Rail Line to Baldoyle Bay	AP-13	New entrance off R123 opposite Moyne Park
E	Baldoyle Bay to Tunnel/Dredge Interface	AP-14	Existing entrance at junction of R123 and R126
		AP-15	Existing entrance at Portmarnock Beach Parking on Golf Links Road
F	Tunnel/Dredge Interface to Outfall	Via Irish Sea	Equipment and materials brought to site via Irish Sea

Table 2 Access Points and Locations (Refer to Drawings No. 32102900-1110 to 1112)

In total there are 20 construction traffic access points that have been identified allowing access to the proposed pipeline route, the five compounds, the Abbotstown pumping station and the WWTP.

Construction site entrances will be signposted appropriately in accordance with Chapter 8 of the Traffic Signs Manual. All entrances will be designed/managed such that HGVs are not forced to queue on the public road network. Gateways for each site access shall be sited so that they are clearly visible to drivers approaching them for at least the safe stopping distance appropriate for the 85thile speed of traffic.

Haul Routes for the disposal of construction waste have also been identified in Drawing Nos. 32102902-1100 to 1105.

2.5 Working Hours

Typically working hours during construction are expected to be;

- Weekdays 7am to 7pm,
- Weekends and Bank Holidays 7am to 2pm

It is also anticipated that there will be a requirement for 24 hour working during tunnelling works. This would be facilitated by two 12 hour work shifts.

For full details of the traffic impacts of the GDD Scheme, refer to Chapter 13 of the EIAR.

2.6 Construction Mitigation Measures

The appointed Contractor(s) will prepare a Construction Traffic Management Plan which will address the following issues.

- Site Access & Egress;
- Traffic Management Signage;
- Routing of Construction Traffic / Road Closures;
- Timings of Material Deliveries to Site;
- Traffic Management Speed Limits;
- Road Cleaning;
- Road Condition;
- Road Closures;
- Implementation of Traffic Management Plan
- Details of Working Hours and Days;
- Details of Emergency Plan;
- Communication;
- Construction Methodologies; and
- Particular Construction Impacts.

Particular mitigation measures are identified in various sections of the EIS and summarised below, these requirements shall be included in the Construction Traffic Management Plan.

- To minimise any hindrance, advance notice will be given to the owners of all residential/ commercial/ community properties before construction starts and in advance of any major planned disruptions to traffic management arrangements.
- The scheduling of materials' deliveries to site outside of times where peak traffic flows will be using the network.
- A wheelwash will be installed at the entrance to and exit from the WwTP site and other locations deemed appropriate.
- Roads used by construction traffic will be monitored visually and a road sweeper used to remove debris from construction activities when required.
- Loads of materials leaving site shall be assessed and covered where necessary to reduce dust impacts.
- Development of a detailed construction programme that gives consideration to traffic flows and aims to avoid coincidentally high volumes of traffic using the same roads where possible.

3. Site Specific Concerns

3.1 Connolly Hospital

Connolly Hospital currently has two entrance routes, one to the rear of the hospital, to the north, which is restricted to ambulances, and an entry route to the south, off the N3, at the front of the hospital. The hospital always maintains two access routes ensuring they have redundancy. It is noted that it is essential to maintain access to the hospital at all times during the construction period.

The current alignment of the orbital sewer through the grounds of Connolly Hospital is along an internal road, west of the roundabout on the southern entrance to the hospital off the N3, through this roundabout, and through green space east of the roundabout.

The proposed pipe is 1800mm diameter with depths to invert of up to 10m. The pipeline will therefore be constructed using trenchless (tunnelling) techniques. This will avoid excavations along the hospital's internal roads and will allow the hospital access roads to remain in operation throughout the construction period. There will however be deep excavations associated with the construction of drive and reception shafts for the tunnelling operations. There will be three such shafts constructed in the vicinity of the roundabout on the southern entrance to the hospital, one to the west of the entrance road, one immediately east of the entrance road and one approximately 150m west of the entrance road, as shown in Figure 1. The access points for the construction traffic to these areas are also shown.

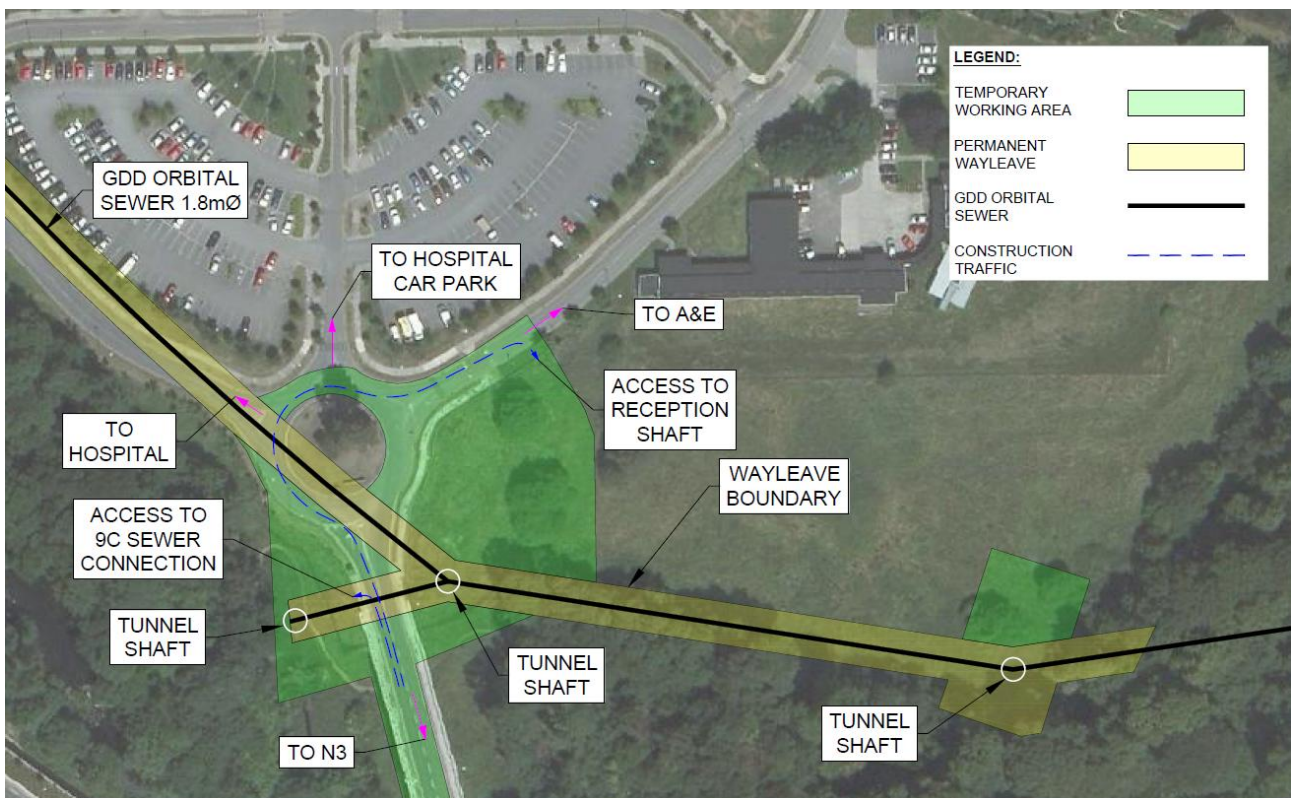


Figure 1 Construction Traffic Temporary Access Points at Connolly Hospital Roundabout

3.1.1 Construction Traffic

Construction traffic will access the site as follows:

- Access to the Reception Shafts and Tunnelling Compounds East of the roundabout, and the Reception Shaft immediately west of the roundabout, will be via the front entrance, off the N3, south of the hospital
- Access to Tunnelling Compound No.1 west of the roundabout will be through the hospital's rear entrance, to the north, from Waterville road.

Roads used by construction traffic will be monitored visually and a road sweeper used to remove debris from construction activities when required.

3.1.2 Design and Construction Traffic Management Plan

During the next, (detailed design) phase of the project, when the design is further developed, a Traffic Management Plan will be drafted with the requirements of the detailed design included in the Contract Documents prior to Tender. Following appointment of the Contractor, a Construction Traffic Management Plan will be prepared incorporating the requirements of the Contract Documents but that will be representative of the final detailed design. The appointed contractor will prepare a Construction Traffic Management Plan which will address the following issues.

- Site Access & Egress;
- Traffic Management Signage;
- Routing of Construction Traffic / Road Closures;
- Timings of Material Deliveries to Site;
- Traffic Management Speed Limits;
- Road Cleaning;
- Road Condition;
- Road Closures;
- Implementation of Traffic Management Plan
- Details of Working Hours and Days;
- Details of Emergency Plan;
- Communication;
- Construction Methodologies; and
- Particular Construction Impacts.

3.2 Craobh Chiaráin GAA Club

The entrance to the proposed WwTP access road is located off the R139, approximately 60m west of the existing entrance to the Craobh Chiaráin GAA grounds, as indicated in Drawing No. 32102902-1067. The proposed access road will encroach upon the existing access road to the GAA grounds. As such, it is proposed to divert part of the existing access road to Craobh Chiaráin GAA grounds, to a line east of its current location and east of the WwTP access road, as shown on Figure 2.

Access to the GAA grounds will be maintained throughout the works until the new access road is completed. The construction of these roads will require the crossing of the Mayne River. A culvert system will be required to achieve this crossing. It is proposed that a box culvert will be used to ensure there is no disruption to the river. The proposed culvert shall be installed prior to the removal of the culvert at the existing access road to the GAA grounds.

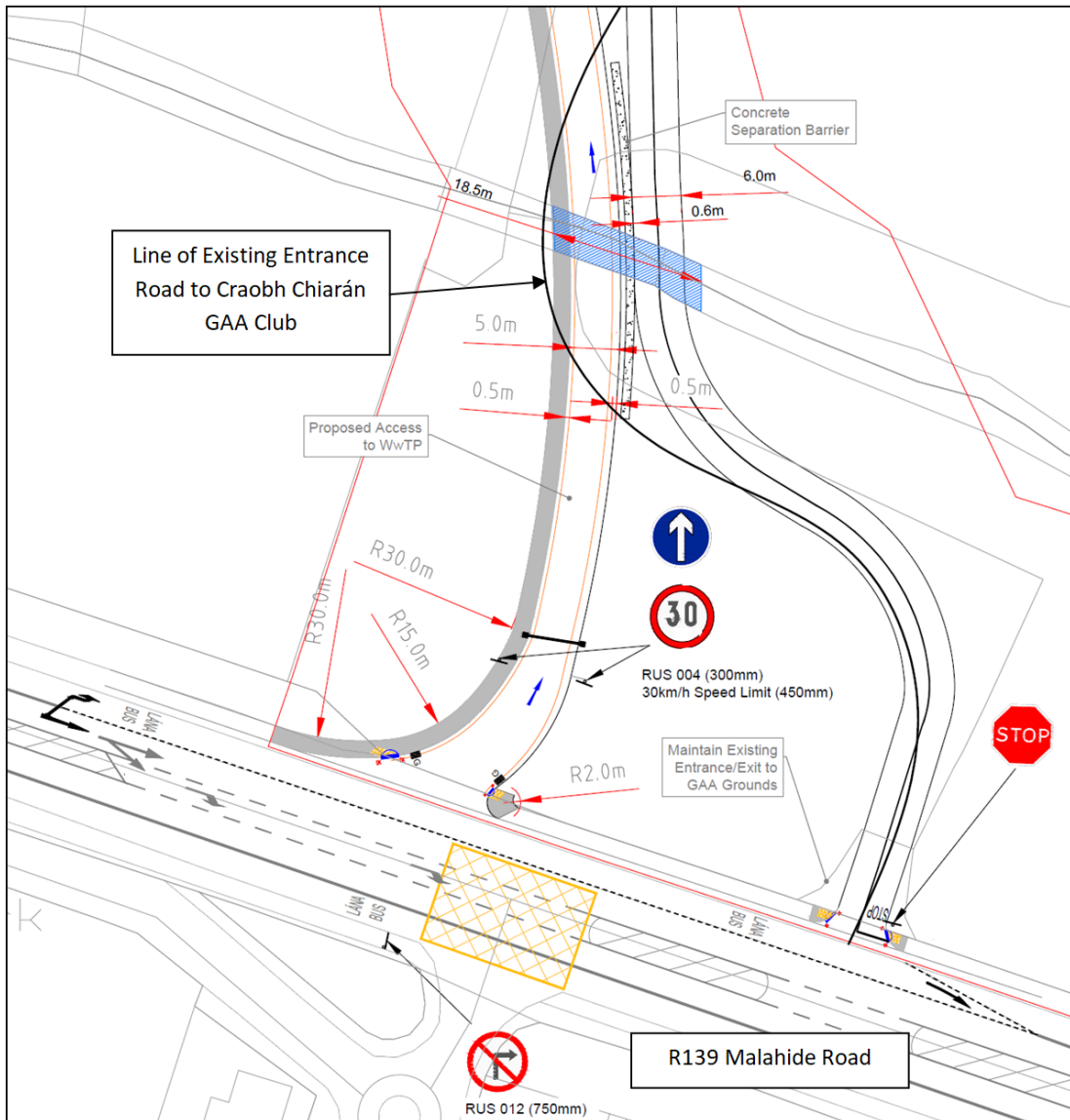


Figure2 Proposed Access Realignment at Craobh Chiarán GAA Club

4. Other Particulars

4.1 Traffic Management Plan Principles

Traffic Control measures will be required during any construction works on public roads, and also in relation to access and egress of construction traffic at each of the works sites.

Temporary safety barriers placed around the working areas should be clearly defined by temporary road markings, signage and coning as specified in the Traffic Signs Manual. The PSCS shall carry out a risk assessment before commencing any works on site, to determine the type of barriers (if any) and cones most suitable for the works.

Bespoke site specific Traffic Management Plans shall be prepared where there is any impact on the normal running of footpaths and roads or interference in what is normally expected or present for pedestrians or motorists. In addition, the Contractor will be required to provide cross sections for all traffic management locations. Impact or interference means reduction in space, or reduced visibility or any hindrance to the safety of road or footpath users. The Contractor shall liaise with Fingal County Council Traffic Operations Team to ensure proposed traffic management plans are as per requirements.

4.2 Communication Requirements

In all aspects of the management of traffic, the Contractor's PSCS, shall liaise with the following parties;

- Employer's Representative
- Fingal County Council Roads Department
- Dublin City Council Roads Department
- Garda Síochána, ambulance & fire services
- Private and Public Bus Services

The PSCS, shall consult all relevant authorities as listed above during the development of the Construction Stage Traffic Management Plan. The Contractor shall co-ordinate the implementation of the developed traffic management plan throughout the duration of the works.

The PSCS shall take into account the impact of the construction works on general traffic, businesses, and local property owners.

Where a problem arises with traffic management, the PSCS shall consult with the PSDP, the Employers Representative and Fingal County Council and revise or modify the temporary traffic management plan as necessary, as per paragraph 3.3.4 of the 'Guidance for the Control and Management of Traffic at Road Works'.

The PSCS shall consult with the Garda Síochána, and fire and ambulance services in the preparation of the Construction Stage Traffic Management Plan and during the implementation of the works.

4.3 Traffic Signage

All traffic signage for use at roadwork's (warning, regulatory and information) must comply with Clause 8.2.1 of the Department of Transport Traffic Signs Manual, Chapter 8.

4.4 Variable Message Signs (VMS)

The Contractor shall allow for variable message signs (VMS) in accordance with Chapter 8 paragraph 8.2.4 of the Traffic Signs Manual on approach routes affected by traffic management measures, restrictions or road closures. The VMS's must be in place 2 weeks before traffic management measures commence advising motorists of the upcoming road works. Once works have commenced these VMS shall advise drivers of the restrictions, the alternative routes where appropriate, and any Special Speed Limit. VMS locations are to be agreed with the Fingal County Council as part of the process for agreeing the Contractor's Temporary Traffic Management proposals

4.5 Traffic Signals

Where congestion is visible at nearby junctions, modifications to existing traffic signals may be required. Where roads works are placed adjacent to existing junctions, traffic signal outages may be required.

4.6 Road closures

Applications for Temporary Road Closures shall be made on the Fingal County Council. Proforma application form – Temporary Road Closure, and all required information shall be included with the application. The Contractor is advised that a 6 week minimum advance notification period is required in advance of any temporary road closure.

It is advisable that critical road closures are applied for in good time i.e. immediately after contract signing, to facilitate advertisement of an intention to close a road. There is no flexibility in reducing the statutory time limits.

The Contractor should allow at least 6 weeks for the Roads Authority to rule on an application for a Temporary Closing of Roads Order.

The Contractor is entirely responsible for obtaining Road Closures as necessary to enable him to fulfil his contractual obligations.

4.7 Road Opening Licence

All road openings shall be carried out in accordance with the latest version of the document “Guidelines for Managing Openings in Public Roads (Guidelines for the Opening, Backfilling and Reinstatement of Openings in Public Roads)”.

For the avoidance of doubt; all road opening licences shall be processed through the MapRoad Roadworks Licensing (MRL) system through the Road Management Office (RMO).

The Contractor is entirely responsible for obtaining Road Opening Licenses as necessary to enable him to fulfil his contractual obligations.

4.8 Public Notices

The Contractor shall liaise with the Roads Authority in respect of any temporary road closures, lane closures, and other traffic management controls required to be carried out to ensure the safety of the workforce and the general public during the duration of the works. The advertising of such notices in local press, local radio, and leaflet drops will be required to warn motorists and local businesses and residents of the changes involved and new road layouts to be expected.

4.9 Temporary Road Surfaces

Temporary protection of works with appropriate sized and secured steel plates with anti – skid surfaces will be permitted across trenches, which are not fully or only partially reinstated for a maximum period of 7 days.

In the event of any interference with road markings, the Contractor shall arrange for immediate replacement with temporary markings and arrange with Fingal County Council to have permanent markings restored in conjunction with the permanent trench reinstatement.

All reinstatement be it temporary or permanent shall be carried out fully in compliance with the requirements of the “Guidelines for Managing Road Openings in Public Roads, Guidelines for the Opening, Backfilling & Reinstatement of Trenches in Public Roads” (DTTAS, 2015) or latest as published by the Department of Transport, Tourism and Sport

4.10 Permanent Road Reinstatement

Permanent reinstatement where specified is defined as the second stage of a two-stage reinstatement procedure where the temporary reinstatement is removed and the permanent pavement reinstatement is completed. Permanent reinstatement where specified shall be carried out by using materials fully in compliance with the requirements of the “Guidelines for Managing Road Openings in Public Roads, Guidelines for the Opening, Backfilling & Reinstatement of Trenches in Public Roads” (DTTAS, 2015) or latest as published by the Department of Transport, Tourism and Sport. Permanent reinstatement shall only be carried out after a minimum consolidation period of six months or such period as conditioned by the Road Opening Licence has elapsed since the temporary reinstatement was placed.

4.11 Wide / Abnormal Loads

The Contractor shall assist the Gardaí in moving wide/abnormal loads through the Works by modifying the signing/coning as necessary. Signs/cones so moved shall be replaced immediately the abnormal loads have passed through the Works.

4.12 Lighting

Where floodlighting of the works area is required in poor daylight conditions, the positioning of the lighting units must not be such as to cause glare to drivers. Workmen should be protected from stepping inadvertently from the illuminated area into an unilluminated traffic lane.

In addition to lighting, signs, chevrons, barriers and other devices should be reflectorised. Reflectors should be used to ensure that the work area is adequately marked if the lighting is vandalised or otherwise fails.

4.13 Hazard Warning Lights

All vehicles and self propelled plant used in the construction works shall be fitted with roof-mounted amber flashing lights whilst in the working areas.

4.14 Abnormal Load Permit

The Contractor is advised that in order to transport what may be deemed to be an abnormal load on the public roads, it is required to apply for an Abnormal Load Permit. In this instance transportation of strings of welded pipeline will be deemed to be an abnormal load and will require an Abnormal Load Permit.

Application shall be made on the Fingal County Council. proforma application form "Application for Abnormal Load Permit to authorise the Use of Vehicles on Public Roads Maintained by Fingal County Council" and shall be accompanied by all relevant information.

APPENDIX A
DRAWINGS