Comhairle Cathrach & Contae Luimnigh

Limerick City & County Council

Limerick City Greenway (UL to NTP) Project

Draft Traffic Management Plan

June 2025

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1. Introduction

1.1. Purpose of the Project

The purpose of the University of Limerick City Greenway (UL to NTP) Cycle Path Project is to provide a safe transport route connecting the UL and NTP to the city whilst also enhancing amenity value of the area.

The Limerick Shannon Metropolitan Area Transport Strategy (LSMATS) references the proposed Greenway as part of Limerick's Cycle Network to develop a consistent, clear and continuous network of urban and suburban cycle networks to ensure cycling becomes a realistic choice as a mode of transport, making it an attractive location for cyclists of all ages and abilities by proposing the development of a consistent, clear, and continuous network of urban and suburban cycle networks throughout the area.

The UL to NTP Project will extend from the already constructed Limerick Smarter Travel, Route 2, which involved the upgrade of an existing pathway, 1.5km in length between University of Limerick and the Kevin Hannan Bridge along the bank of the River Shannon and connects directly into the city centre.

1.2. Purpose of this Report

The purpose of this Design Process Traffic Management Plan is to outline a practical solution to facilitate safe passage of traffic, including pedestrians and vulnerable road users, past the works, and to ensure that the safety of the workforce is not compromised during the construction contract period.

1.3. Design Guidelines

This document has been prepared in accordance with the Department of Transport (in conjunction with Local Authorities, the National Roads Authority, the Health and Safety Authority, and Local Government Management Services Board) publications:

- Traffic Signs Manual; Chapter 8 – Temporary Traffic Measures and Signs for Roadworks, Department of Transport (Aug, 2019); and,
- Guidelines for Working on Roads – Guide to the Safety, Health and Welfare at Work (Construction) (Amendment No. 2) Regulations 2008, Health and Safety Authority.

The Contractor shall appoint a Temporary Traffic Operations Supervisor, who will be required to supervise traffic management at road works and be on site when temporary traffic management signs and devices are being installed, modified, or removed. Signing, Lighting and Guarding at Roadworks must be supervised by at least one competent person. This person must have completed the Signing, Lighting and Guarding at Roadworks Construction Skills Certification Course (SLG CSCS) and possess a valid and relevant registration card.

The Contractor shall minimise disruption to residents and passing traffic. The Contractor shall provide for safe diversion and control of traffic in and around the Contract Works and shall provide for continuing operation and maintenance of the foregoing traffic diversions and controls for the duration of the construction works. The Contractor shall provide for traffic regulation in and around the works. Roads must be kept open at all times unless a temporary closure order has been granted. The Contractor may not assume that road closures will be granted at any location.

1.4. Objectives of Traffic Management Design

The primary objective in the planning and design of traffic management is to maximise the safety of the workforce and the travelling public and the main secondary objective is to keep traffic flowing as freely as possible and reduce the impact of the road works to a minimum (See **Appendix A** for Preliminary Traffic Management Proposal).

1.5. Principles of Traffic Management

Safe and efficient traffic management is founded upon the following principles:

- Development of traffic management proposals in accordance with the principles of prevention (Safety Health and Welfare at Work Act 2005) and by following the hierarchy of risk prevention and protection;
- Provision of clear and early warning of obstructions in the roadway;
- Optimisation of road space and the provision of adequate safety zone and workspace at work locations;
- Provision of clear directions relating to the decisions/actions required from road users;
- Minimisation of potential conflict between road users;
- Provision of credible traffic signs and temporary requirements;
- Provision of appropriate speed limits and restrictions.

1.6. Definitions

Throughout this report there are key words and expressions used. These are defined in Table 1.

Table 1: Key Word Definitions

Key Word	Definition
Cone Height	This is the minimum height of the cone permitted.
Cone Spacing	The recommended maximum spacing of cones required at tapers and longitudinally. Closer spacing may be needed at some locations, e.g. at short lengths of roadworks in urban areas or on tight bends.
Cumulative Distance	Spacing of signs is measured by placing the first Sign WK 001 at the cumulative distance of the spacing of all the advance signs from the start of the taper.
Lamp	Lamps to be used along lines of cones or barriers are to be battery operated steady lamps with amber light.
Minimum Lane Width	The minimum width of traffic lane to be maintained at all times for use by the road user. This may vary depending on the characteristics of the traffic being catered for.

Key Word	Definition
Number of Signs	This is the number of signs required in advance of the start of the taper. The first sign shall be Sign WK 001. The number of signs specified is for the left hand side only. For roads with two or more lanes in one direction additional signs should be placed on the right hand side of the road or on the central reserve at the same spacing.
Distance Between	The distance between signs is measured from the first Sign WK 001 at the specified distance
Safety Zone	Longitudinal and Lateral Safety Zones are areas between the works and the cones or barriers adjacent to the running traffic lane. They are the minimum clear distances required for the safety of the workers and must be clearly defined and kept free of all operations, stationary vehicles or materials except for mobile lane vehicles or crash cushions. The Lateral Safety Zone is measured from the trafficked edge of the cone or barrier to the edge of the works area. This area must be kept free of all operations, stationary vehicles, materials and personnel thus ensuring a clear safe distance back from the edge of the live traffic. The Longitudinal Safety Zone is measured from the end of the taper to the start of the works. It provides an area for an errant vehicle to come to a stop before reaching the work area.
Set Back	The minimum clearance, required on Level 6 roads, from the edge of the traffic lane to the front face of a temporary barrier or cones. It is provided for the safety of the road user and allows for driver judgement when travelling next to a physical barrier. Set back does not include the space required for the swing or overhang of site vehicles.
Sign Visibility	The uninterrupted sight distance of an approaching vehicle to the first Sign WK 001, Roadworks Ahead.
Speed Limit	The permanent posted speed limit or, if applicable, the roadworks speed limit for the temporary traffic management measures being implemented.
Taper	The required length for the reduction in width of a single lane or hard shoulder. The taper length is calculated using the specified rate of taper multiplied by the hazard width, including lateral safety zones, and rounded up to the nearest cone spacing.
Transition Length	The distance required between the first taper and the start of the next taper for the reduction of a number of lanes on multi-lane carriageways. A transition length will be

Key Word	Definition
	needed following each lane closed when two or more lane closures occur on the same carriageway.

1.7. Duties and Responsibilities

The roles and responsibilities of the various duty holders that relate to the specific elements of the traffic management design process are outlined below.

1.7.1. The Client

The following duties must be carried out by the Client:

- Appoint, in writing at the start of the Design Process, a project supervisor for the design process (PSDP) who has adequate training, knowledge, experience and resources; such an appointment can be changed, renewed or terminated as necessary;
- Appoint, in writing before construction begins, a project supervisor for the construction stage (PSCS) who has adequate training, knowledge, experience and resources; such an appointment can be changed, renewed or terminated as necessary;
- Be satisfied that each designer and contractor appointed has adequate training, knowledge, experience and resources for the work to be performed;
- Cooperate with the project supervisor and supply necessary information;
- Retain and make available the Safety File for the completed roadworks: the Safety File contains information on the completed roadworks that may be required for future maintenance works;
- Provide a copy of the Preliminary Safety and Health Plan prepared by the PSDP to every person tendering for the project;
- Notify the HSA of the appointment of the PSDP where construction is likely to take more than 500 person days or 30 working days.

1.7.2. The Project Supervisor Design Process (PSDP)

A competent PSDP must be appointed, in writing, by the Client for each project. The key duties of the PSDP are outlined below:

- Identify hazards arising from the design or technical, organisational, planning, or time related aspects of the project;
- Eliminate, where possible, the hazards and reduce the risk;
- Communicate necessary control measures, design assumptions, or remaining risks to the PSCS so they can be dealt with in the developed Safety and Health Plan;
- Ensure that the work of designers, including the Designer (TTM) and other Designers, is coordinated to ensure safety;
- Organise cooperation between Designers;

- Prepare a written Preliminary Safety and Health Plan for any project where construction work is likely to take more than 500 person days or 30 working days or where the Particular Risk and deliver the plan to the Client prior to tender;
- Ensure that a Temporary Traffic Management Plan prepared by the Designer (TTM) is available to the PSCS prior to construction works;
- Coordinate any revisions made to the Temporary Traffic Management Plan during the project;
- Prepare a Safety File for the completed project;
- Notify the HSA and Client of non-compliance with any written directions issued (the PSDP may issue directions to Designers, Contractors, or others).

1.7.3. The Designer

The key duties of the Designer are outlined below:

- Take account of the 'general principles of prevention';
- Identify hazards that the design may present during construction and subsequent maintenance;
- Eliminate, where possible, the hazards or reduce the risk, by completing design risk assessments;
- Communicate as necessary control measures, design assumptions or remaining risks to the PSDP so they can be dealt with in the Safety and Health Plan;
- Cooperate with other Designers and the PSDP or PSCS;
- Take account of any existing Safety and Health Plan or Safety File;
- Comply with directions issued by the PSDP and PSCS;
- Where no PSDP has been appointed, inform the Client that a PSDP must be appointed.

1.7.4. The Designer (TTM)

The key responsibilities of the Designer (TTM) are outlined below:

- Responsible for the design of the temporary traffic management arrangements and the preparation of the Temporary Traffic Management Plan;
- Update the Temporary Traffic Management Plan where it is found to be operationally deficient;
- Provide Temporary Traffic Management Plan to PSDP for inclusion in Preliminary Safety and Health Plan.

1.7.5. The Project Supervisor Construction Stage (PSCS)

A competent PSCS must be appointed, in writing, by the Client for each project. A PSCS may appoint, in writing, a named individual as Health and Safety Coordinator to assist the PSCS in carrying out the duties of the PSCS, however, responsibility for carrying out these duties cannot be delegated to a Health and Safety Coordinator. The key duties of the PSCS are outlined below:

- Coordinate the identification of hazards, the elimination of hazards or reduction of risks to an acceptable level during construction;
- Further develop the Preliminary Safety and Health Plan before construction commences; where further development of the Temporary Traffic Management Plan has been identified, the PSCS may consult

with a Designer (TTM) to ensure that the works operations and the Temporary Traffic Management Plan are compatible;

- Coordinate the implementation of the Construction Regulations by contractors;
- Organise cooperation and the provision of information between contractors;
- Coordinate the reporting of accidents to the HSA;
- Notify the HSA before construction commences if construction is likely to take more than 500 person days or 30 working days;
- Provide information to site safety representatives;
- Coordinate the checking of safe working procedures;
- Coordinate measures to restrict entry to the site;
- Coordinate the provision and maintenance of welfare facilities;
- Coordinate the arrangements to ensure that workers have valid CSCS cards, including the CSCS Signing, Lighting and Guarding at Roadworks and the CSCS Health and Safety at Roadworks;
- Coordinate the appointment of a site safety representative if there are more than 20 persons on site;
- Coordinate the implementation and operation of the Temporary Traffic Management Plan;
- Appoint a safety advisor if there are more than 100 workers on site;
- Provide all necessary Safety File information to the PSDP;
- Monitor the compliance of contractors and others and take corrective action where necessary;
- Notify the HSA and the Client of any instances of non-compliance with any written directions issued.

On site the PSCS can adjust the Temporary Traffic Management Plan to take account of the progress of the works. Should any adjustments require design input, the PSCS may, as necessary, require the Designer (TTM) to review and/or modify the plan; the Designer (TTM) shall work under the coordination of the PSDP.

1.7.6. The Contractor

The key responsibilities of the Contractor are outlined below:

- Cooperate with the PSCS and where required the PSDP to ensure works are coordinated;
- Provide a copy of their safety statement and relevant information to the PSCS – the names of the relevant CSCS card holders should be contained in the Safety Statement including the names of CSCS Signing, Lighting and Guarding and CSCS Health and Safety at Roadworks cardholders;
- Promptly provide the PSCS with information required for the Safety File;
- Comply with directions from the PSDP and PSCS;
- Report accidents to the HSA and to the PSCS if any Employee cannot perform his/her normal work for more than 3 days;
- Comply, and ensure Employees comply, with site rules and the Safety and Health Plan including the Temporary Traffic Management Plan. e.g. keep safety zones clear of personnel, plant and material;
- Identify hazards, eliminate hazards, or reduce risks during construction;
- Facilitate the site safety representative;

- Ensure the relevant workers have a safety awareness card and a construction skills card where required, including the CSCS Signing, Lighting and Guarding Card and CSCS Health and Safety at Roadworks card;
- Appoint a safety officer if there are more than 20 persons on site or 30 persons employed;
- Consult workers and safety representatives;
- Monitor compliance and take appropriate corrective action.

1.7.7. The Temporary Traffic Operations Supervisor

The Temporary Traffic operations Supervisor must hold a valid SLG CSCS card and will be required to:

- Supervise traffic management roadworks and be available at short notice to deal with issues at particular site locations;
- Be on site when temporary traffic management signs and devices are being installed, modified or removed, e.g. a SLG CSCS cardholder is required on site when switching between traffic lights and STOP/GO operations; be on site to install traffic management arrangements diverting pedestrians or cyclists onto the roadway; perform inspections of the traffic management and record same; report issues or accidents relating to the temporary traffic management to the PSCS; and liaise directly with the Designer (TTM) where required.

1.7.8. The CSCS Health and Safety at Roadworks Cardholder

A Health and Safety at Roadworks CSCS cardholder is required to be present on site if a SLG CSCS cardholder is not present and construction works are taking place on the road. The Health and Safety at Roadworks CSCS cardholder is responsible for:

- Making minor alterations to the temporary traffic arrangements as necessary, such as cleaning/correcting of devices and replacing devices that may have been moved or dislodged;
- Reporting incidents that affect the safety, health and welfare of operatives on site to his/her supervisor.

The Health and Safety at Roadworks CSCS cardholder's duties do not extend to modifying the traffic management arrangements at a road works site.

2. Location of the Proposed Works

This Project is located in Castletroy, Co. Limerick. The proposed Limerick City Greenway (University of Limerick (UL) to National Technology Park (NTP)) will be 4.25km long and will consist of a 3.3km long and 3.0-4.0m wide shared path on existing paths or in green fields, and 0.9km of separated 1.8m wide footpaths and 1.8-2.0m wide cycle lanes alongside the eastern and western sides of University Road and McLaughlan Road. The proposed Greenway will extend between the River Goody bridge and Plassey Park Road.

3. Undertaking of Works

Due to the linear nature of the proposed works the proposed cycle path has been divided into sections, each serviced by separate temporary construction compounds (in Flood Zone C areas) and site access routes, to facilitate sequencing of works. This sectional approach will mean that one section of the proposed cycle lanes can be constructed while the other sections are kept in use for cyclists and pedestrians. The proposed path has been sectioned into Red, Cyan, Magenta, Blue, and Yellow Sections (also referred to as Sections 1-5 respectively) from west to east as illustrated in the drawings included in Part 3 - Appendices of the EIA report.

3.1. Access Routes

Linking the site with the Regional Road Network, namely the Dublin Road (R445) are a series of Local Roads including Plassey Park Road, Mc Laughlan Road, University Road, and unnamed roads through the UL campus.

3.1.1. Red Section

Construction vehicle access to the proposed construction Compound 1 for the Red Section of the proposed cycle lanes will be via Harvard Close, which is the existing service road to the Castletroy Wastewater Treatment Plant (WwTP). This route is normally only accessed by maintenance and operations vehicles. A section of haul road will require construction linking the existing road network to the construction compound.

3.1.2. Cyan Section

Construction vehicle access to Temporary Works Area 1 for the Cyan Section of the proposed greenway will be through the Castletroy WwTP site. The WwTP site is accessed via Harvard Close. The temporary working area will require the construction of a temporary haul road to connect to the existing road in the WwTP.

Construction vehicle access to Construction Compound 2 will be via an unnamed road to the west of Dromroe Student Village within the UL Campus.

3.1.3. Magenta Section

Construction vehicle access to the proposed Construction Compound 3 for the Magenta Section of the proposed cycle lanes will be via University Road. A section of haul road will require construction linking the compound to University Road.

3.1.4. Blue Section

The Blue Section will also utilise construction Compound 3. Vehicle access to the proposed Construction Compound for the Blue Section of the proposed cycle lanes will be via University Road. A section of haul road will require construction linking the compound to University Road.

3.1.5. Yellow Section

Construction vehicle access to the proposed Construction Compound 4 for the Magenta Section of the proposed cycle lanes will be via McLaughlan Road. A section of haul road will require construction linking the compound to McLaughlan Road.

3.2. Overview of Traffic Control Measures

Existing traffic, together with pedestrian walkways and cycleways will have to be facilitated alongside construction traffic along all access routes, for the duration of the works.

Traffic Control measures in the form of a static lane closure will be required on University Road through the National Technology Park (NTP), to facilitate construction works for the cycle lane to the west and east of the road, including in the verge, parking bay and along the footpath to the edge of the road.

Out of hours work is needed at the entrance and exit car parks of premises accessed via University Road, including Troy Studios, H&MV Engineering, Collins McNicholas Recruitment and HR and BD-RCI Limerick, while construction works are ongoing for the cycle lane passing along the entrance and exit of the organisation's car park.

Traffic control measures in the form of a static lane closure will be required at the entrance and exit car parks of premises accessed via University Road, including Troy Studios, H&MV Engineering, Collins McNicholas Recruitment and HR and BD-RCI Limerick while construction works are ongoing for the cycle lane passing along the entrance of the organisation's car park.

Traffic Control measures in the form of a static lane closure will be required on McLaughlan Road, to facilitate construction works for the cycle lane on the footpath at the eastern and western edge of the road.

Out of hours work is needed at the entrance and exit to Cook Medical, Three Ireland and Greentech Plastics Ltd, accessed via McLaughlan Road while construction works are ongoing for the cycle lane passing along the entrance and exit of the organisation's car park.

Traffic control measures in the form of a static lane closure will be required for the entrance to Cook Medical, Three Ireland and Greentech Plastics Ltd carparks accessed via McLaughlan Road will be required while construction works are ongoing for the cycle lane passing along the entrance of the organisation's car park.

Traffic Control measures related to works at a junction will be required at the entrance/exit of McLaughlan Road to facilitate the merging of the cycle path onto an existing cycle track at the edge of the road, at this location.

Cycle and pedestrian traffic diversions for the duration of works will be carried out along the proposed path where required.

Flagmen should be positioned at the entrances to the construction site to control construction traffic entering and leaving the site.

Where traffic control measures are required their impact on roads and footpaths is to be minimised. The Contractor shall inform local businesses/education facilities and the public in advance of the works by means of written communications, local signs and VMS boards, and detailing construction from "start date" to "end date".

Temporary safety barriers placed around the working area 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 and cones most suitable for the works.

The appropriate level of signage and temporary traffic measures required for a static lane closure is detailed in Section 4 of this report. Following lane closure design, the PSCS shall develop a suitable method of controlling vehicular/cycle/pedestrian traffic passing the works sites. The factors affecting the choice of traffic control method are summarised in Table 2. The PSCS shall consult Limerick City and Council's Roads Department, The University of Limerick, The IDA, and An Garda Siochána prior to implementing traffic control measures on site.

Table 2: Factors affecting the choice of traffic control method

Method	Maximum Speed Limit	Coned Area Length	Maximum Traffic Flow
Give and Take	50 km/h	50m maximum	400 vph and 20 HGV/hr
Priority (Yield Sign)	100 km/h	80m maximum	850 vph
STOP and GO battens	100 km/h	100m 200m 300m 400m 500m	1400 vph 1250 vph 1050 vph 950 vph 850 vph
Temporary Traffic Signals	100 km/h	500m maximum	Not applicable
ALL STOP	100 km/h	Not applicable	Not applicable

Note: Where shuttle working is required, a 45 degree taper shall be used on both approaches in conjunction with a suitable method of traffic control.

In addition to layout design, passive/active traffic control is required to regulate the flow and speed of traffic through or around a site. The main factors affecting the selection of the most appropriate type of control are:

- Visibility through the works area;
- Length of the controlled area;
- Volume of traffic flow;
- Duration of the works;
- Proximity of junctions, pedestrian crossings, or railway crossings.

3.3. Public Liaison

After the Works Programme is developed, the Contractor's Public Liaison Officer shall liaise and consult with local residents, the business community, and Limerick City and County Council. Representatives of the Employer and Contractor's site teams shall be available to attend meetings with An Garda Siochána, Limerick City and County Council, the University of Limerick, The IDA, local residents, and the business community when required during the contract period.

3.4. Working Hours

The working hours are as defined as follows;

'Working hours shall be restricted to 07:00 to 19:00 Monday to Friday and 08:00 to 13:00 Saturdays. Work outside of these hours shall only be by permission of the Employers Representative'.

However, it is recognised that it may be necessary to carry out some works outside normal working hours to reduce the impact on vehicular and pedestrian movements.

3.5. Temporary Pedestrian Routes

A temporary route should be clearly delineated using appropriate barriers and it is preferable to keep the temporary route off the roadway. Where containment barriers are used to delineate pedestrian routes, they should be brightly coloured and highly visible to facilitate people with vision impairments. Scaffolding or hoarding should be highlighted in a contrasting colour to aid detection by people with vision impairments.

Pedestrian routes are not part of the works area and no construction activity should take place within a designated route. The route must be kept clear of obstacles, trip hazards, overhanging objects and the surface should be suitable for all pedestrians, including people with disabilities.

Where a footway is diverted onto a roadway, the longitudinal and lateral safety zones should be located between the footway and live traffic. A lateral safety zone is not required where a continuous containment barrier is provided between the pedestrian route and live traffic.

Where a roadway crossing is out of use due to construction works, existing signs and crossing controls should be removed or covered as appropriate. Pedestrians should be directed to the nearest alternative crossing. Pedestrian barriers should be used to prevent pedestrian access onto the roadway and encourage pedestrian to cross the roadway at designated crossing points only. The 'Pedestrians' sign, WK 140, should be used where pedestrians are directed to cross the roadway at locations where motorists would not normally expect to encountered pedestrian movements.

Where the temporary route directs pedestrians onto the roadway, kerb ramps or raised footways should be provided to maintain access for wheelchair and buggy users. Ramps should have a slip resistant surface and a maximum gradient of 1:12. The use of handrails should also be considered.

3.6. Cyclists

Where possible, the temporary route provided for cyclists at roadworks should mirror the permanent arrangements. If cycle routes cannot be kept open through the works site, it may be necessary for cyclists to use the running lane on the roadway, take an alternative diversion route or dismount and use temporary pedestrian facilities provided.

When cycle lanes are affected by the road works, the changes should be clearly signed well in advance of the road works using sign RUS 009 with P010 (Section 0) where appropriate. Alternative routes should be adequately signed and where possible be independent of vehicular traffic.

Temporary signals should give cyclists sufficient time to pass through road works site, particularly where shuttle systems are in operation. The cycle route through the road works site should be kept as level as practicable; potholes, gullies, metal plates, sloping fillets and cable protectors can be particularly hazardous. In situations

where vehicles are unable to pass cyclists safely, where the lane width is less than 3.5m, the use of 'Cycle Warning' sign WK 143 should be considered.

3.7. University Road

Construction traffic will use University Road though the NTP to access to the Magenta and Blue Section of the proposed path and Compound 3. Works to include pedestrian and cycle lanes on both the east and west sides of the road in addition to a raised table to the north extent of the road.

It is planned that the western lane of the unnamed road through the NTP (Link A) will be temporarily closed during the works to permit construction of the proposed cycle and pedestrian paths. The proposed cycle path will be situated in the existing grassed verge area to the west of the road. The proposed pedestrian path will occupy the western extent of the existing parking bays. The existing footpath on the eastern side of the road will remain in use during the works.

Once construction on the cycle path to the west has been complete, it is planned that the eastern lane of the University Road through the NTP will be temporarily closed during the works to permit construction of the proposed cycle and pedestrian paths. The proposed cycle path will be situated in the existing footpath and verge to the east of the road. The proposed footpath on the western side of the road will remain in use during the works.

It will be the responsibility of the PSCS to maintain the footpaths for the duration of the works. The requirements of clause 8.3.11 of 'Traffic Signs Manual (Chapter 8 – Temporary Traffic Measures and Signs for Roadworks)' must be adhered to.

A shuttle system shall be adopted to enable traffic to pass through the works using one lane. This may be operated by two methods:

- Stop and Go
- Temporary Traffic Signals

3.7.1. STOP and GO

STOP and GO battens, which can be either manual or mechanically operated, allows traffic flow to move according to demand. It is ideal during peak traffic flow periods and may be coupled with temporary traffic signal during off-peak periods. Signing using Sign No's. RUS 060 and RUS 061 (Refer to **Appendix B**) and coning for the STOP and GO system shall be in accordance with 'Traffic Signs Manual (Chapter 8 - Temporary Traffic Measures and Signs for Roadworks)' and 'Guidance for the Control and Management of Traffic at Roadwork Manual'. This operation must be undertaken by trained personnel and wearing high visibility garments.

The Road Authority or the Contractor must consult with the Gardaí prior to the implementation of STOP and GO battens. Battens shall be used in accordance with sign numbers RYS060 and RUS061 (**Appendix B**). Temporary signage in advance of the manually controlled stopping point shall include the use of sign WK 061 (**Appendix B**).

The use of manually operated STOP and GO battens is preferred where traffic is reduced to shuttle working. This will allow traffic flows to move according to the actual demand, thereby reducing congestion, delay, and driver frustration. This operation must be undertaken by trained personnel wearing high visibility garments.

For short works (20m or less) manual control at one end or in the middle may be sufficient. For short works at site crossing points or exits, a single operator may use a double-sided STOP batten to control traffic. For works longer than 20m, but less than 200m, remotely operated STOP and GO battens may be used provided the operator has an unobstructed view of both ends of the site and is not more than 100m from either end.

Two operators are required for works longer than 200m – one at either end of the controlled section. Additional operators may be required to regulate traffic emerging from any junctions within the controlled section. The work site should be limited to 500m maximum length, including tapers. Operators should be in contact by a suitable means, e.g. two-way radios.

STOP and GO method should be replaced by temporary traffic signals for night time working. If the night time use of STOP and GO is required for a particular operation, appropriate flood lighting must be provided to illuminate battens and flagmen on all approaches. Signing and coning for the STOP and GO batten method should be in accordance with Figure 1. The cross-over and cross-back gaps at the respective leading and trailing tapers should be 20m (10m minimum and only where HGVs are not expected). For 20m in advance of the STOP/GO positions, cones should be placed along the centre line where space permits or otherwise along the verge, to highlight the approaching manually controlled stopping point to the driver.

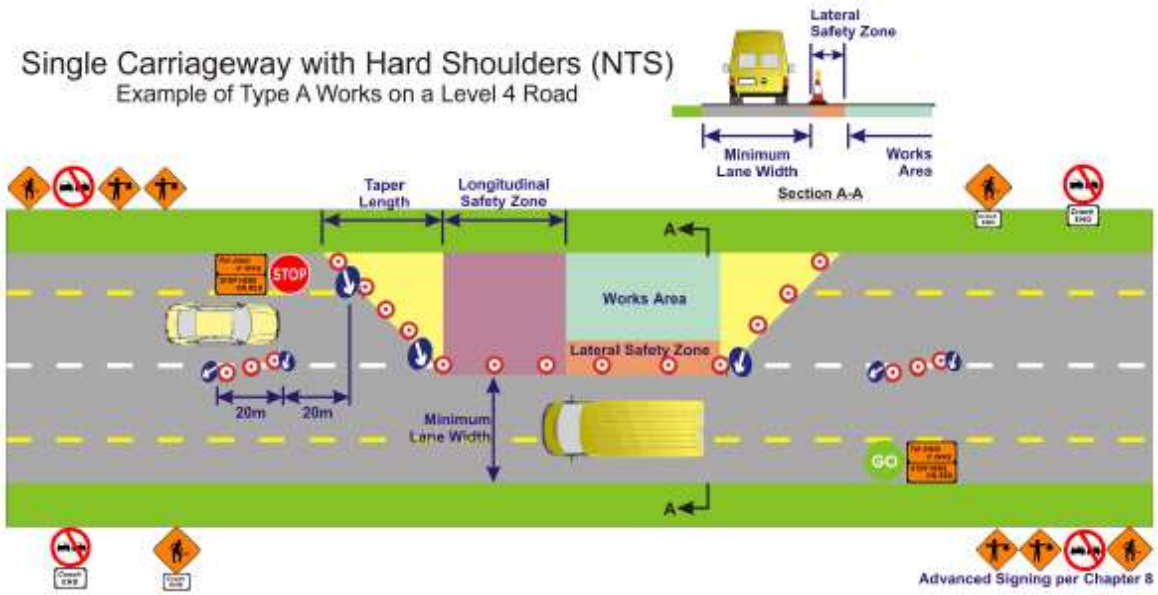


Figure 1: Shuttle system at static works with STOP/GO traffic control

3.7.2. Temporary Traffic Signals

The Road Authority or Contractor must consult with the Gardaí prior to the implementation of temporary traffic signals. Temporary traffic signals may be used on single carriageway roads where traffic is reduced to shuttle working at all times on low traffic volume roads and at off-peak times only on roads with high traffic volume. Temporary signage in advance of the signal-controlled stopping point shall include the use of sign WK 060 (Refer to **Appendix B**). Temporary traffic signals should be positioned with adequate forward visibility and,

where possible, have inter-visibility. The recommended maximum distance between signals is 500m. The design and calculation of timings and phases should be as for permanent traffic signals. The design should include fixed and variable timings, where applicable, and the length of restriction to be installed. Traffic signals should be bagged/covered or removed when they are not in use for any significant period of time.

In order to react manually to actual traffic demands, the use of temporary traffic signals may have to be suspended at peak traffic flow periods in favour of a STOP and GO batten system. Signing and coning for the temporary traffic signal method should be in accordance with Figure 2. The cross-over and cross-back gaps at the respective leading and trailing tapers should be 20m (10m minimum and only where HGVs are not expected). For 20m in advance of the temporary traffic signal, cones should be placed along the centre line where space permits or otherwise along the verge, to highlight the approaching manually controlled stopping point to the driver.

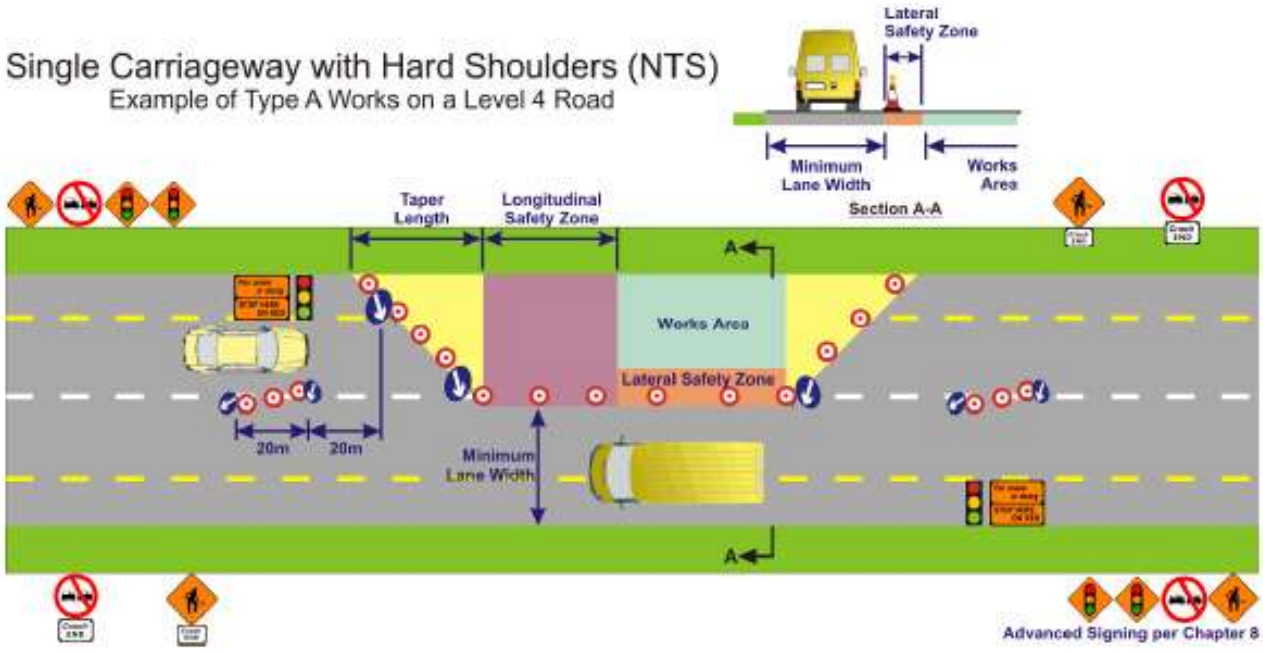


Figure 2: Shuttle system at static works with traffic signals

3.8. McLaughlan Road

Construction traffic to the Yellow Section of the proposed path will use McLaughlan Road. Works to include pedestrian and cycle lanes on both the east and west sides of the road in addition to a raised table at the northmost extent of the road.

It is planned that the eastern lane on McLaughlan Road will be temporarily closed during the works to permit construction of the proposed combined cycle and pedestrian path. At which point the proposed combined cycle and pedestrian path will be constructed along the eastern extent of the existing road in place of the existing footpath and verge. The existing footpath on the western side of the road will remain in use during this stage of works.

It is planned that the western lane on McLaughlan Road will be temporarily closed during the works to permit construction of the proposed combined cycle and pedestrian path. At which point the proposed combined cycle

and pedestrian path will be constructed along the western extent of the existing road in place of the existing footpath and verge. The newly constructed cycle and pedestrian path on the eastern side of the road will remain in use during this stage of works.

It will be the responsibility of the PSCS to maintain the footpaths for the duration of the works. The requirements of clause 8.3.11 of 'Traffic Signs Manual (Chapter 8 – Temporary Traffic Measures and Signs for Roadworks)' must be adhered to.

A shuttle system shall be adopted to enable traffic to pass through the works on one lane. This may be operated by two methods:

- Stop and Go
- Temporary Traffic Signals

3.9. Plassey Park Road

Works related to the end of the pedestrian and cycle path on McLaughlan Road, will be carried out at the junction of McLaughlan Road and Plassey Park Road. The proposed path will merge onto Plassey Park Road and connect to existing active travel infrastructure at this location.

3.9.1. Junctions

The preferred objective is to maintain two-way traffic past the obstruction when it is safe to do so. Traffic restrictions such as the prohibition of turning movements may be required, subject to agreement of the Local Road Authority in consultation with the Gardaí. If suitable, convenient alternative roads are available, temporary diversions should be arranged and signed.

If the road width available to traffic has to be reduced to less than 5.0m, it will be necessary to control traffic by means of STOP/GO battens or temporary traffic signals as illustrated in Figure 3.

If the road width available in the side road is sufficient for one-way traffic only, all turns from the major road must be prohibited, subject to agreement of the Local Authority in consultation with the Gardaí, so that the side road operates one-way only past the obstruction. A diversion should then be signed to permit access to the side road. It may be possible to operate shuttle working past the obstruction under the following circumstances: the side road is a cul-de-sac; diversion routes are impracticable; and/or traffic is very light and there is little risk of traffic on the main road being inconvenienced. Permanent signage and road markings should be temporarily masked or removed as appropriate.

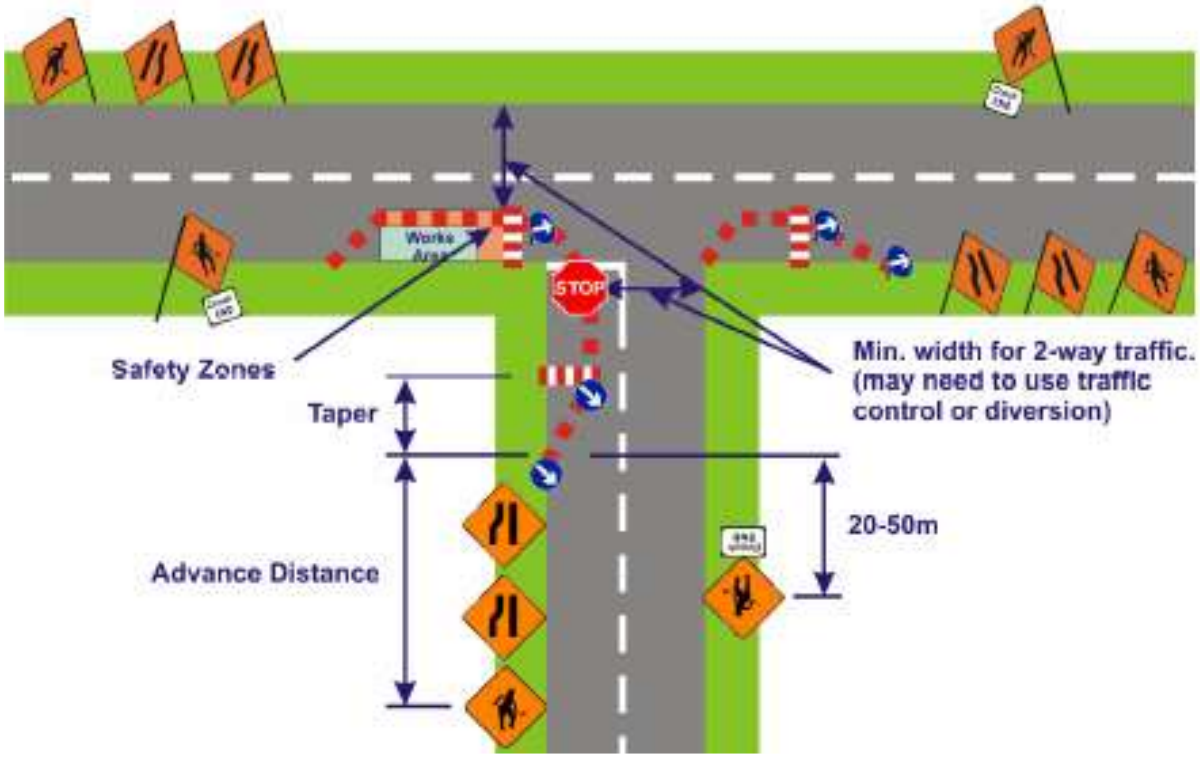


Figure 3: Works at Junctions (Main Road)

4. Traffic Management for the Proposed Works

4.1. Introduction

Existing traffic, together with access for businesses and local property owners, will have to be facilitated along Harvard Close, within the University of Limerick Campus, Plassey Park Road, University Road, and McLaughlan Road.

The works on the Plassey Park Road are located on a 60km/h road. In accordance with Chapter 8 of the Traffic Signs Manual, the designation of the road for Traffic Management Design Parameters will be Level 1. Refer to Section 4.3.

University Road and McLaughlan Road, are also assumed to be 50 or 60km/h roads as no special speed limit is signalled for the roads. In accordance with Chapter 8 of the Traffic Signs Manual, the designation of the road for Traffic Management Design Parameters will be Level 1. Refer to Section 4.3.

Works on University of Limerick Campus Roads are on 40km/h roads represent Level 1 roads, in accordance with Chapter 8 of the Traffic Signs Manual, the designation of the road for Traffic Management Design Parameters.

Harvard close is assumed to be a 40km/h road as no special speed limit is signalled for the roads. In accordance with Chapter 8 of the Traffic Signs Manual, the designation of the road for Traffic Management Design Parameters will be Level 1. Refer to Section 4.3.

4.2. Pedestrian and cyclist diversion routes

Construction of the cycleway is to be carried out in sections, as per drawings included in **Appendix A**. Diversions will be set in place for cyclists and pedestrians around each section of the towpath while works are ongoing. Diversion signage WK 090 as illustrated in **Appendix B** will be used at the beginning, end, and at junctions within each diversion route to signal the diversion, its direction and length.

Possible diversion routes for each of the construction sections are illustrated in **Appendix A** and described in the sections below.

4.2.1. Red Section

During construction along the Red section of the proposed path, cyclists and pedestrians will be allowed to use the existing gravel towpath for much of its length between the River Groody and Construction Compound 1 as the red section diverts of the existing path in many locations. In areas between the River Groody and Construction Compound 1 where the proposed route overlaps the existing towpath, a pedestrian route will be maintained at all times. Once pedestrians reach the Construction Compound 1, they will be diverted away from the Red Section and towards UL Boat House, past the entrance of Castletroy WwTP until reaching the Tierney Building. They will then head north for a short distance and rejoin the tow path at the Cyan Section via the existing gravel path along the mill race.

4.2.2. Cyan Section

During construction along the Cyan Section of the proposed path, cyclists and pedestrians will be diverted away from the tow path at the UL Boat House and continue past the entrance of Castletroy WwTP until reaching the Tierney Building. They will then head north for a short distance until travelling through Dromroe Student Village and to the Foundation Building. From here they will continue past the White House and rejoin the tow path at the Magenta section via an existing footbridge at the back of the PESS building.

4.2.3. Magenta Section

During construction along the Magenta Section of the proposed path, cyclists and pedestrians will be diverted away from the tow path at Dromroe Student Village and be diverted to the Foundation Building. From here they will continue past the White House and behind the PESS building, a hockey pitch and tennis court until reaching Kilmurry Student Village. Pedestrians will then use the existing pathway from Kilmurry Student Village which runs between the Acres Maguires Pitches until reaching Plassey Park Road.

4.2.4. Blue Section

During construction along the Blue Section of the proposed path, cyclists and pedestrians will be diverted away from the tow path at Kilmurry Student Village and be diverted along University Road until reaching Plassey Park Road.

4.2.5. Yellow Section

During construction along the Yellow Section of the proposed path, cyclists and pedestrians will be diverted away from the tow path at Kilmurry Student Village and be diverted along University Road until reaching Plassey Park Road.

4.3. Design Parameters for a Level 1 road

The design parameters for Level 1 roads relevant to construction works i.e. ii – iv. are provided in Table 3 to Table 5. If a road is assumed to be 50 or 60km/h, upper design requirements of a level 1 (iv) road is applied.

Table 3: Design Parameters for Level 1 (iv) Road (Single Carriageway 60km/h)

Design Parameters	Roadworks Type A (Full-Time)	Roadworks Type B (Part-Time)	Roadworks Type C (Single Vehicle Operation)
Speed Limit	60km/h		60km/h
Temporary Signs			
Sign Visibility (m)	60		60

No. of Signs	3	-
Cumulative Distance (m)	60	-
Distance between advance signs (m)	20	-
Minimum Rate of Taper		
Taper at Lane (m)	1 in 10	-
Taper at Hard Shoulder (m)	1 in 10	-
Maximum Lamp Spacing		
At Taper (m)	6	-
Longitudinal (m)	12	-
Maximum Cone Spacing		
At Tapers (m)	3	-
Longitudinal (m)	6	-
Cone Height (mm)	750	-
Safety Zone		
Longitudinal (m)	15	-
Lateral (m)	0.5	-
Minimum Lane Width		
Min Lane Width (m)	3.0	-

Table 4: Design Parameters for Level 1 (iii) Road (Single Carriageway 50km/h)

Design Parameters	Roadworks Type A (Full-Time)	Roadworks Type B (Part-Time)	Roadworks Type C (Single Vehicle Operation)
Speed Limit	50km/h		50km/h
Temporary Signs			
Sign Visibility (m)	50		50
No. of Signs	2		-
Cumulative Distance (m)	40		-
Distance between advance signs (m)	20		-
Minimum Rate of Taper			
Taper at Lane (m)	1 in 5		-
Taper at Hard Shoulder (m)	1 in 5		-
Maximum Lamp Spacing			
At Taper (m)	6		-
Longitudinal (m)	6		-
Maximum Cone Spacing			
At Tapers (m)	3		-
Longitudinal (m)	3		-
Cone Height (mm)	750		-
Safety Zone			
Longitudinal (m)	5		-
Lateral (m)	0.5		-

Minimum Lane Width		
Min Lane Width (m)	3.0	-

Table 5: Design Parameters for Level 1(ii) Road (Single Carriageway 40km/h)

Design Parameters	Roadworks Type A (Full-Time)	Roadworks Type B (Part-Time)	Roadworks Type C (Single Vehicle Operation)
Speed Limit	40km/h		40km/h
Temporary Signs			
Sign Visibility (m)	35		35
No. of Signs	2		-
Cumulative Distance (m)	30		-
Distance between advance signs (m)	15		-
Minimum Rate of Taper			
Taper at Lane (m)	1 in 1		-
Taper at Hard Shoulder (m)	1 in 1		-
Maximum Lamp Spacing			
At Taper (m)	3		-
Longitudinal (m)	6		-
Maximum Cone Spacing			
At Tapers (m)	1		-
Longitudinal (m)	3		-
Cone Height (mm)	750		-

Safety Zone		
Longitudinal (m)	0.5	-
Lateral (m)	0.5	-
Minimum Lane Width		
Min Lane Width (m)	3.0	-

4.4. Harvard Close

It is proposed that construction traffic will access proposed construction Compound 1 and Temporary Works Area 1 along the red section of the proposed path via Harvard Close. The road is normally only used by maintenance and operations vehicles accessing the WwTP. The entrance to Harvard Close off Plassey Park road is illustrated in Figure 4. Harvard Close crosses the road, path and cycle track leading to UL boat club on the UL campus as illustrated in Figure 5. Adequate signage will be required along this route during construction works to ensure the safety of existing users.

Figure 4: Entrance to Harvard Close via Plassey Park Road.

Figure 5: Intersection between Harvard Close and road accessing UL boat club on UL campus.

4.5. Dromroe Student Village

It is proposed that construction traffic will access a proposed Construction Compound 2 along the Cyan Section of the proposed path via the road to the west of Dromroe Student Village on the UL campus. The road is normally used to access Dromroe Student Village and the North UL Campus including Thomand and Cappavilla Student Village via the road bridge over the River Shannon. Pedestrian and Cycle lanes are present on both the west and east lane of the road. The entrance road along the entrance to Dromroe Student Village is illustrated in Figure 6. The proposed location for construction Compound 2 is illustrated in Figure 7.

Figure 6: Entrance to Dromroe Student Village.

Figure 7: Proposed location for construction Compound 2

4.6. University Road

It is proposed that construction traffic will access construction Compound 3 along the Magenta and Blue Sections of the proposed path via University Road. Refer to Figure 8 for a photo of a section of University Road. It is proposed to facilitate existing traffic, and pedestrian walkway along University Road.

Figure 8: University Road Looking South

The works along University Road will operate in all flow and visibility conditions and will remain in position for a duration of more than 24 hours, it is anticipated that the class of the roadworks will be 'Type A'.

Refer to Table 6 for details. Adequate signage will be required along this route during construction works to ensure the safety of existing users.

Table 6: Road and Traffic Management details at University Road

Works Class	Speed Limit (kph)	Footpath	Road Width	Hazard	Traffic Management Layout	Notes
A	Assumed 50 - 60	Existing along eastern side of road to remain operational throughout the works	Varies, approx. 7-12m	Existing road traffic, pedestrians, construction traffic accessing Compound 3.	One lane closure with stop and go, or traffic lights	Provision must be maintained for pedestrian use of footpath. The proposed pedestrian path will occupy approx. 50% of the width of the parking bays at the

						western side of the road.

4.7. Mc Laughlan Road

It is proposed that construction traffic will access proposed construction Compound 4 along the Yellow Section of the proposed path via McLaughlan Road. Refer to Figure 9 for a photo of a section of Mc Laughlan Road. It is proposed to facilitate existing traffic, and pedestrian walkway, along the section of McLaughlan Road.

Figure 9: McLaughlan Road looking north

The works along Mc Laughlan Road will operate in all flow and visibility conditions and will remain in position for duration of more than 24 hours, it is anticipated that the class of the roadworks in will be 'Type A'. Works along the entrance and exit to the car park of Cook Medical, Greentech Plastics Ltd will be temporary and it is anticipated that the class of the roadworks in will be 'Type B'. Refer to Table 7 for details.

Table 7: Road and Traffic Management details at Mc Laughlan Road

Works Class	Speed Limit (kph)	Footpath	Road Width	Hazard	Traffic Management Layout	Notes
A	Assumed 50 - 60	Existing along both sides of road. Path along one side of road to remain operational	Varies, 5 -10m	Existing road traffic, pedestrians, construction traffic accessing Yellow Section of proposed	One lane closure with stop and go, or traffic lights	Provision must be maintained for pedestrian use of footpath

		throughout the works		route and Compound 3		
B	Assumed 50 - 60	Existing along both sides of road. Path along one side of road to remain operational throughout the works	Approx. 7m	Existing road traffic, pedestrians, construction traffic accessing Yellow Section of proposed route and Compound 3	One lane closure with stop and go, or traffic lights	Provision must be maintained for pedestrian use of footpath

4.8. Plassey Park Road

Works related to the end of the pedestrian and cycle path on McLaughlan Road, will be carried out at the junction of McLaughlan Road and Plassey Park Road. The proposed path will merge onto Plassey Park Road and connect to existing active travel infrastructure at this location. Refer to Figure 10 for a photo of the junction between McLaughlan Road and Plassey Park Road from McLaughlan Road.

Figure 10: Looking south from McLaughlan Road to Plassey Park Road

The proposed cycle path is due to merge onto Plassey Park Road at its junction with McLaughlan Road. Refer to Figure 11 for a photo of where the proposed path will merge with existing active travel infrastructure on Plassey Park Road.

Figure 11: Location of Plassey Park Road junction with McLaughlan Road

It is proposed to facilitate existing traffic, and pedestrian walkways, along Plassey Park Road. The works will operate in all flow and visibility conditions and will be temporary, it is anticipated that the class of the roadworks will be 'Type B'. Refer to Table 8 for details.

Table 8: Road and Traffic Management details at Plassey Park Road

Works Class	Speed Limit (kph)	Footpath	Road Width	Hazard	Traffic Management Layout	Notes
B	60	Existing along both sides of road. Path along southern side of road to remain operational throughout the works	Approx. 8m	Existing traffic, existing pedestrian and cyclist traffic	Works at a Junction in addition to 'Stop and Go' or 'Temporary Traffic Signals'	Provision must be maintained for pedestrian use of footpath

5. Construction Stage Traffic Management Plan

The PSCS/Contractor shall develop the DPTMP described herein into a Construction Stage Traffic Management Plan. This Plan must be submitted to Limerick City and County Council for review and agreed prior to work commencing and shall include drawings detailing all proposed arrangements including those listed below:

- The location and details of any proposed road closures including temporary diversions and duration of proposed closure;
- Provision for pedestrians and local access. Where pedestrian facilities exist, the PSCS is responsible for maintaining them during the duration of the works unless otherwise stated;
- The location and details of all temporary signage to be erected by the PSCS; and
- Details of any arrangements for the delivery and storage of materials.

Advance advertising in local press, local radio, advisory road signs and leaflet drops will be required to notify the public of any changes to be implemented in the management of traffic in and around the sites. The PSCS shall also provide information including qualifications of the Traffic Operations Supervisor, who shall be responsible for the implementation of the developed TMP onsite.

6. Key Personnel, Organisations and Responsibilities

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

- Limerick City and County Council Roads Department;
- The University of Limerick;
- The National Technology Park;
- Garda Síochána;
- Employer's Representative;
- PSDP; and,
- Emergency Services.

The PSCS shall consult all relevant authorities as listed above during the development of the Construction Stage Traffic Management Plan. The PSCS shall co-ordinate the implementation of the developed traffic management plan throughout the duration of the work. Where a problem arises with traffic management, the PSCS shall consult with Limerick City & County Council to revise the traffic management plan, as necessary. The PSCS shall take into account the impact of the construction works on general traffic, businesses, schools and property owners.

7. Road Closures

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

8. Temporary Road Works Speed Limit Order

It is proposed that a 30 km/h Road Works Speed Limit Order is enforced on all roads affected by the proposed works. The PSCS shall allow a notification and consultation period of least 6 weeks for the Roads Authority to rule on an application for a Temporary Road Works Speed Limit Order. The speed limit signs shall be in accordance with the 'Traffic Signs Manual (Chapter 8 – Temporary Traffic Measures and Signs for Roadworks).

9. Other Traffic Control Tools

The PSCS shall allow for a notification and consultation period for the Roads Authority to rule on applications for traffic diversions, lane width restrictions, footpath alterations and restrictions or alterations to parking.

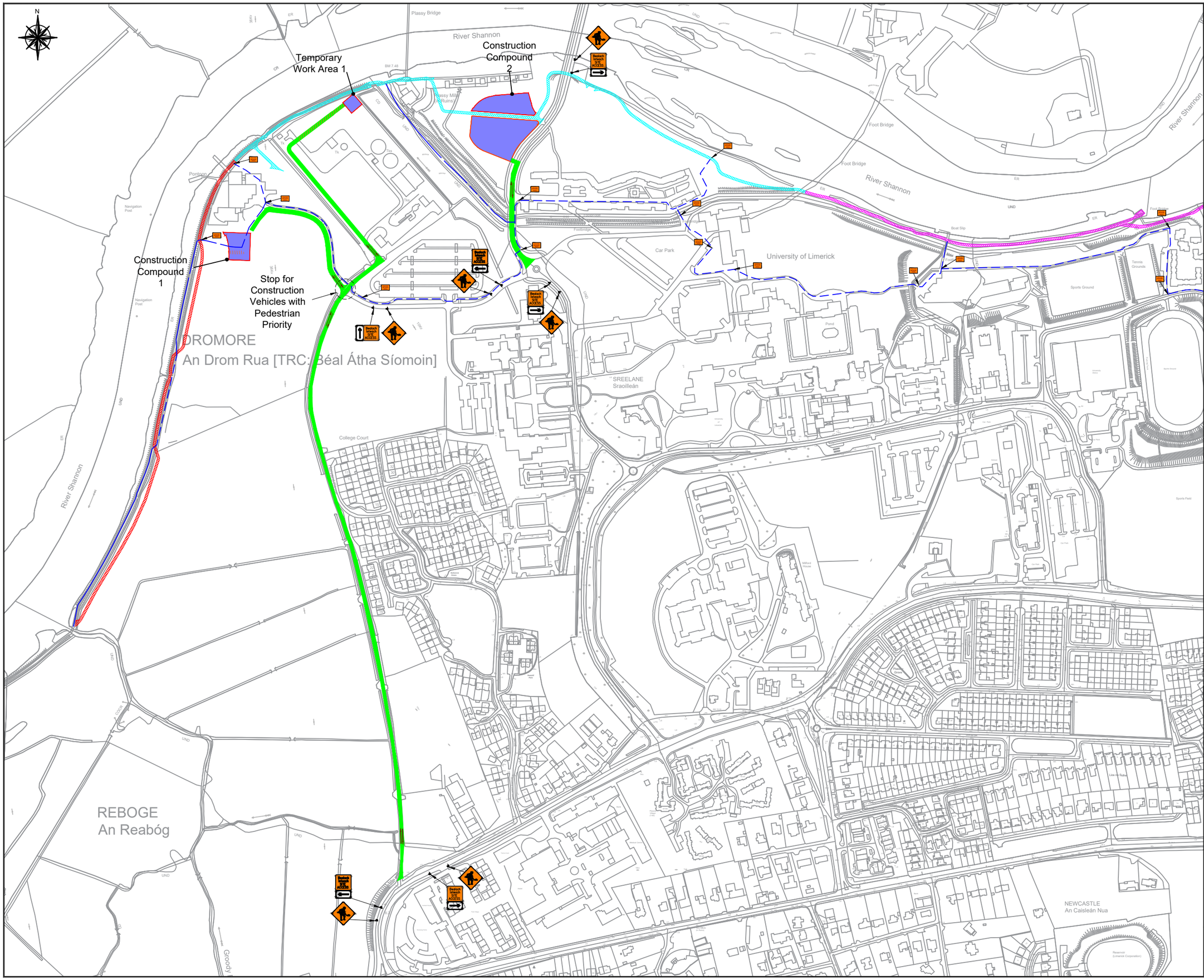
10. Public Notices

The PSCS shall liaise with the Roads Authority in respect of any temporary road closures, diversion routes, 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 of the changes involved and new road layouts to be expected.

11. Temporary Road Surface

It is anticipated that traffic will be running on temporary surfaces during the works prior to permanent reinstatement of road carriageway areas. It is the duty of the PSCS to ensure temporary signage is erected prior to permanent reinstatement of surfaces to ensure road users are aware of temporary surfaces. The Contractor shall be responsible for the temporary restoration of the existing carriageways, in the event that they are damaged as a result of the Works. Any temporary restoration in roads shall be carried out in accordance with the Particular Specification and relevant Standard Detail Drawings. No more than 30 metres of trench shall be left un-restored at any time and no traffic shall be permitted to enter un-restored areas. Manholes and valve chambers should have permanent covers secured prior to permitting traffic to pass over reinstated areas. In the event of any interference with road markings, the Contractor shall arrange for immediate replacement with temporary markings and arrange with Limerick City & County Council to have permanent markings restored in conjunction with the permanent trench reinstatement. Road markings shall comply with Clause 1211 of the TII Specification for Roadworks.

APPENDIX A - Preliminary Traffic Management Plan Drawings



Notes

1. **Levels are in metres O.D. and refer to Malin Head Datum.**
2. **Dimensions are in millimetres unless otherwise stated.**
3. **Figured dimensions only to be used. If in doubt check with the Engineer in advance of construction.**
4. **For All existing utilities the contractor shall contact the relevant utility provider.**
5. **Existing Services are based on record drawings and should not be deemed to be inclusive of all.**
6. **Services should be located on site by the Contractor prior to commencement of excavation.**
7. **The Contractor shall consult with utility companies and carry out investigative works to locate all services prior to all excavations.**

Legend

- Proposed Route - Section 1
- Proposed Route - Section 2
- Proposed Route - Section 3
- Proposed Route - Section 4
- Proposed Route - Section 5
- 2-Way Construction Access (via Existing Road)
- 2-Way Construction Access (Haul Road to be Laid)
- STOP/GO Construction Access (via Existing Road)
- STOP/GO Construction Access (Haul Road to be Laid)
- Proposed Construction Compound
- Proposed Motorist Detour Route
- Proposed Pedestrian Detour Route

REV	DATE	DRN	DESCRIPTION	CHK	APD

REVISIONS

DRAWING STATUS

☒ PRELIMINARY ☐ CONTRACT ☐ TENDER ☐ CONSTRUCTION
☐ FOR APPROVAL ☐ FOR YOUR INFORMATION ☐ AS CONSTRUCTED

CLIENT

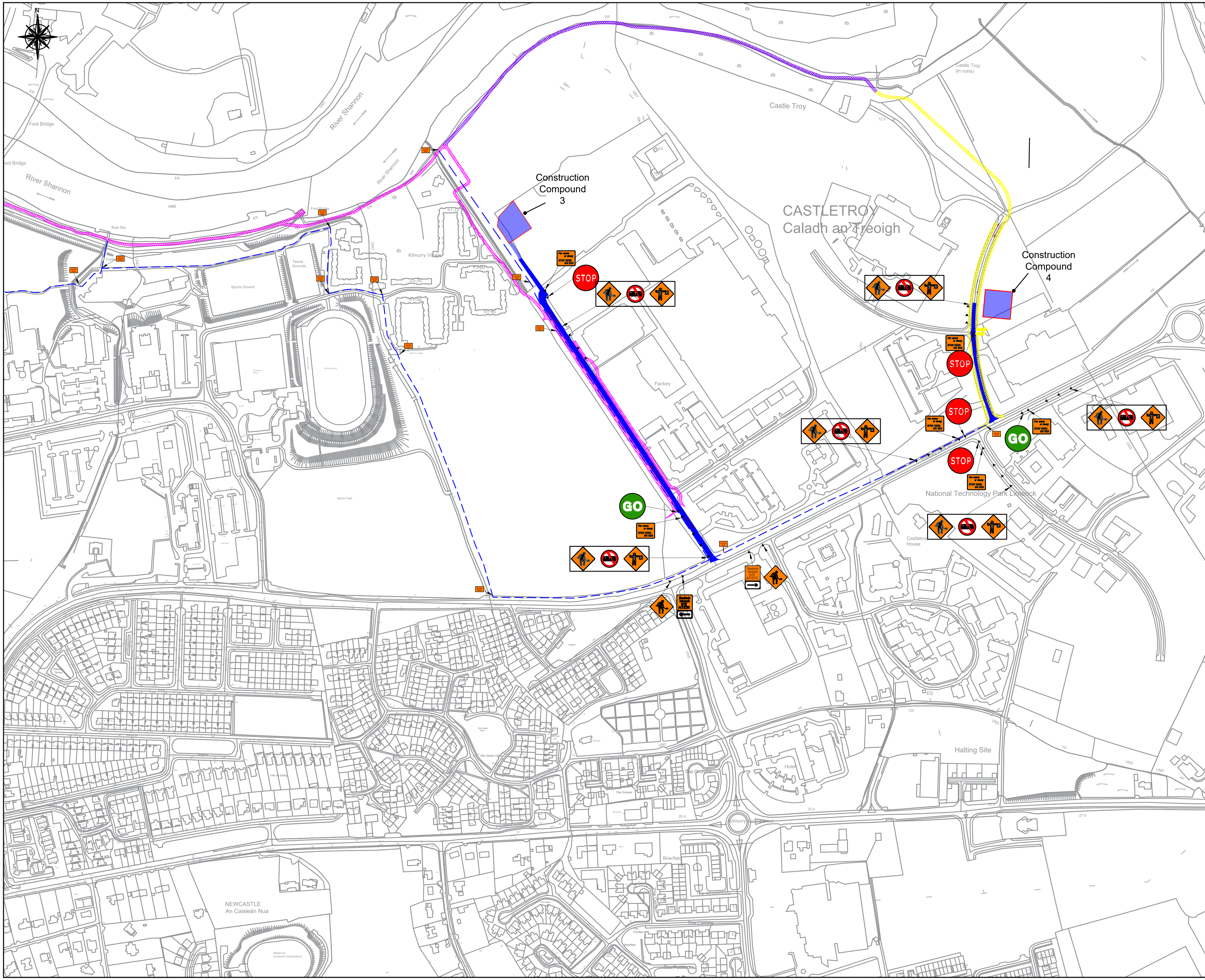
PROJECT
Limerick City Greenway (UL to NTP)

TITLE
Traffic Management Plan

Sheet 1 of 2

SCALE @ A3	DATE	DRAWN	CHECKED	APPROVED
1:5000	DEC 2024	AC	BL	PS

JOB No.	DRAWING No.	REV.
2535	TMP001	0



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- Proposed Route - Section 1
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REV	DATE	DRN	DESCRIPTION	CHK	APD

REVISIONS

DRAWING STATUS
☒ PRELIMINARY ☐ CONTRACT ☐ TENDER ☐ CONSTRUCTION
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CLIENT

PROJECT
Limerick City Greenway
(UL to NTP)

TITLE
Traffic Management Plan

Sheet 2 of 2

SCALE @ A3	DATE	DRAWN	CHECKED	APPROVED
1:5000	DEC 2024	AC	BL	PS

JOB No.	DRAWING No.	REV.
2535	TMP002	0

APPENDIX B - Warning Signs for use at Roadworks

Sign No.	Sign Face	Description
WK 001	 	**Roadworks Ahead:** this sign shall be the first temporary sign visible to the road user on the approach to any roadworks. It may be supplemented with a Supplementary Plate P 082 indicating the nature of the works. At some sites, it is necessary to provide additional Signs WK 001 well in advance of the start of the roadworks. Where this is the case, the signs shall have a Supplementary Plate P 001 indicating the distance to the start of the works. **End of Roadworks**: the 'Roadworks Ahead' sign shall be erected together with a Supplementary Plate P 010, End, as the last temporary sign visible to the road user leaving any roadworks. This 'End' plate marks the finish of all other roadworks warning signs used within the site. **Cautionary Speed:** the 'Roadworks Ahead' sign may also be used at intervals through the roadworks together with Supplementary Plate P 011, Cautionary Speed (see Section 8.3.3).
WK 010		**One-lane Crossover (Out):** this sign should be used on divided carriageways to depict traffic crossing the central reserve in a single lane from one carriageway to that of the opposing traffic, forming a contra flow.
WK 011		**One-lane Crossover (Back):** this sign should be used on divided carriageways to depict traffic crossing the central reserve in a single lane from the carriageway of the opposing traffic back to the original side at the end of a contraflow.
WK 012		**Move to Left (One Lane):** this sign should be used to depict traffic being diverted to the left by approximately one lane width, once the traffic is operating in a single lane. When this sign is used to direct traffic onto the hard shoulder, it should be used in conjunction with Supplementary Plate P 083, Use Hard Shoulder.
WK 013		**Return to Main Carriageway (One Lane):** this sign should be used to depict traffic being diverted to the right. It is generally used to direct traffic back from the hard shoulder into the near-side lane of the main carriageway.

WK 014		**Move to Left (Two Lanes):** this sign should be used on a two or more lane carriageway to depict two lanes of traffic being diverted to the left by approximately one lane width. When this sign is used to direct traffic onto the hard shoulder, it should be used together with Supplementary Plate P 083, Use Hard Shoulder.
WK 015		**Return to Main Carriageway (Two Lanes):** this sign should be used on a two or more lane carriageway to depict traffic deviating to the right from the hard shoulder and lane 1 back onto the normal lanes. It may also be used for similar manoeuvres in three or more lane carriageways.
WK 016		**Obstruction Between Lanes:** this sign should be used to depict traffic travelling in the same direction being divided to pass on either side of an obstruction.
WK 017		**End of Obstruction Between Lanes:** this sign should be used to depict the end of traffic travelling in the same direction being divided on either side of an obstruction.
WK 018		**Start of Central Reserve or Obstruction:** this sign should be used to depict the start of a separation of traffic travelling in opposing directions either side of a central reserve or obstruction.
WK 019		**End of Central Reserve or Obstruction:** this sign should be used to depict the end of a central reserve or obstruction separating traffic travelling in opposing directions.
WK 020		**Lanes Diverge at Crossover:** this sign should be used on a dual carriageway to depict traffic in the near-side lane carrying straight on by deviating to the left and traffic in the off-side lane crossing the central reserve to the opposite carriageway at the start of a contra-flow.
WK 021		**Lanes Rejoin at Crossover:** this sign should be used on a dual carriageway to depict traffic in the near-side lane carrying straight on by deviating back to the right and traffic in the off-side lane crossing back over the central reserve at the end of a contra-flow.

WK 022		**Two-lane Crossover (Out):** this sign should be used on a dual carriageway to depict two lanes of traffic crossing the central reserve to the opposing carriageway side by side at the start of a contra-flow.
WK 023		**Two-lane Crossover (Back):** this sign should be used on a dual carriageway to depict two lanes of traffic crossing back over the central to the left-hand carriageway side by side at the end of a contra-flow.
WK 030		**Single Lane (for Shuttle Working):** this sign should be used to indicate that a length of road is operating with a single lane of traffic where the opposing traffic is either stopped or diverted. It is intended to reassure drivers that they will not encounter oncoming traffic.
WK 031		**Two-way Traffic:** this sign should be used where a one-way street or part of a dual carriageway is converted to a two-way operation for the purpose of carrying out roadworks. It may also be used to highlight a two-way diversion around the works.
WK 032		**Road Narrows on Left:** this sign should be used to depict roadworks on the left side of the carriageway on sections of two-lane road where a sudden reduction in carriageway width creates a potential hazard. It may also be used at roadworks with 'Priority', 'Give and Take' or shuttle working.
WK 033		**Road Narrows on Right:** this sign should be used to depict roadworks on the right side of the carriageway on sections of two-lane road where a sudden reduction in carriageway width creates a potential hazard. It may also be used at roadworks with 'Priority', 'Give and Take' or shuttle working.
WK 034		**Road Narrows on Both** Sides: this sign should be used to depict roadworks on both sides of the carriageway on sections of two-lane road where a sudden reduction in carriageway width creates a potential hazard. It may also be used at roadworks with 'Priority', 'Give and Take' or shuttle working.

WK 040		**Offside Lane (of Two) Closed:** this sign should be used on a two-lane one-way street or dual carriageway to depict an offside lane closure.
WK 041		**Nearside Lane (of Two) Closed:** this sign should be used on a two-lane one-way street or dual carriageway to depict a nearside lane closure.
WK 042		**Offside Lane (of Three) Closed:** this sign should be used on a three-lane one-way street or dual carriageway to depict an offside lane closure.
WK 043		**Nearside Lane (of Three) Closed:** this sign should be used on a three-lane one-way street or dual carriageway to depict a nearside lane closure.
WK 044		**Two Offside Lanes (of Three) Closed:** this sign should be used on a three-lane one-way street or dual carriageway to depict closure of both the centre and offside lanes.
WK 045		**Two Nearside Lanes (of Three) Closed:** this sign should be used on a three-lane one-way street or dual carriageway to depict closure of both the centre and nearside lanes.
WK 046		**Offside Lane (of Four) Closed:** this sign should be used on a dual four-lane carriageway to depict an offside lane closure.
WK 047		**Nearside Lane (of Four) Closed:** this sign should be used on a dual four-lane carriageway to depict a nearside lane closure.
WK 048		**Two Offside Lanes (of Four) Closed:** this sign should be used on a dual four-lane carriageway to depict closure of lanes 3 and 4 on the offside.

WK 049		**Two Nearside Lanes (of Four) Closed:** this sign should be used on a dual four-lane carriageway to depict closure of lanes 1 and 2 on the nearside.
WK 050		**Side Road on Left:** this sign should be used to indicate the presence of a road junction ahead to the left created by the roadworks.
WK 051		**Side Road on Right:** this sign should be used to indicate the presence of a road junction ahead to the right created by the roadworks.
WK 052		**Site Access on Left:** this sign should be used to indicate the position of a site entrance and/or exit to the left. On roads with a speed limit of >80km/h., an additional sign WK 052 should be positioned 100m in advance of the entrance, with a Supplementary Plate P001 stating the distance. At sites with several entrances, a supplementary colour code or numbering system may be used with this sign.
WK 053		**Site Access on Right:** this sign should be used to indicate the position of a site entrance and/or exit to the right. On roads with a speed limit of >80km/h., an additional sign WK 053 should be positioned 100m in advance of the entrance, with a Supplementary Plate P 001 stating the distance. At sites with several entrances, a supplementary colour code or numbering system may be used with this sign.
WK 060		**Temporary Traffic Signals:** this sign should be used to indicate the presence ahead of traffic control by means of temporary traffic signals. This sign may be used with a Supplementary Plate P 001 stating the distance if forward visibility is poor and on roads with speed limits of >80km/h.
WK 061		**Flagman Ahead:** this sign should be used to indicate the presence ahead of manual or automated traffic control by means of Stop & Go/Téigh discs. This sign may be used with a Supplementary Plate P 001 stating the distance if forward visibility is poor and on roads with speed limits of >80km/h.

WK 062		**Queues Likely:** this sign should be used where queues are likely to occur in an unexpected location due to roadworks. It may be used on high-speed roads or where a queue may form just after a bend. This sign shall always be preceded by a Roadworks Sign WK 001 with a Supplementary Plate P 001 stating the distance to the start of the roadworks.
WK 070		**Hump or Ramp:** this sign should be used to indicate the presence of a hump in the road either due to roadworks or to a traffic calming measure.
WK 071		**Uneven Surface:** this sign may be used to indicate that there is an uneven surface for vehicles, usually associated with the different layers of surfacing. At the start of the relevant section of road, this sign should be erected with supplementary Plate P 080, Slow. Sign WK 071 with Supplementary Plate P 010, End, should be erected to mark the end of the section affected. However, if this coincides with the end of the roadworks, Sign WK 001 with Supplementary Plate P 010 should be erected instead.
WK 072		**Slippery Road:** this sign should be used to warn that the danger of vehicles skidding is greater than normal. The degree of danger cannot be defined as it depends on the skid resistance, speed of traffic, superelevation, weather and other factors. The sign will normally be used where traffic is running on a temporary surface or the final surfacing has not yet been laid. Supplementary Plate P 085, Unfinished Road Surface, and Plate P 011, Cautionary Speed, may be used in conjunction with Sign WK 072. Sign WK 072 with Supplementary Plate P 010, End, should be erected to mark the end of the section affected. However, if this coincides with the end of the roadworks, Sign WK 001 with Supplementary Plate P 010 should be erected instead. Where roadworks are substantially complete but it is necessary for a road to remain for a period with a surface other than the permanent final surface course, Sign WK 072 should be used. Since this is a roadworks sign with an orange background, it must be preceded by Sign WK 001 even though other traffic management measures are removed.

WK 073		**Loose Chippings:** this sign should be used to indicate that there is a risk of airborne chips or stones due to a surfacing operation being undertaken. At the start of the relevant section of road, this sign may be erected with Supplementary Plate P 080, Slow, or P 011, Cautionary Speed. Sign WK 073 with Supplementary Plate P 010, End, should be erected to mark the end of the section affected. However, if this coincides with the end of the roadworks, Sign WK 001 with Supplementary Plate P 010 should be erected instead.
WK 074		**Soft Verge:** Where it is considered necessary to warn drivers of soft verges, Sign WK 074, Soft Verges, may be erected. Sign WK 074 with Supplementary Plate P 010, End, should be erected to mark the end of the section affected. However, if this coincides with the end of the roadworks, Sign WK 001 with Supplementary Plate P 010 should be erected instead.
WK 080		**Pedestrians Cross to Left:** this sign should be used to indicate that a footway is closed ahead and pedestrians should cross to the left at this point.
WK 081		**Pedestrians Cross to Right:** this sign should be used to indicate that a footway is closed ahead and pedestrians should cross to the right at this point
WK 090		**Detour:** these signs should be used in advance and at the start of a diversion route for any road that is closed due to roadworks. They indicate to the traffic the distance to the start of the detour. The distance displayed should be in accordance with Table 8.2.3.
WK 091	  	**Diverted Traffic:** these signs should be used to indicate straight ahead, left or right at every decision point, for the road user to follow a diversion route for any road that is closed due to roadworks. The arrow direction may be varied to suit. On diversions with long distances between decision points, it is recommended that the straight ahead variant be repeated at intervals, to reassure drivers that they are still on the correct route. 

WK 092		**End of Detour:** this sign should be placed at the end of a diversion route, to advise drivers that they are back on the original route.
WK 093	 Typical sign	**Detour Destination:** for complicated diversion routes, Signs WK 093, are to be used in place of the Diverted Traffic (along the diversion) signs. These are direction or advance direction signs, designed in accordance with Chapter 2 but with an orange background. Such signs should show one or more destinations and the route number and only be used for diversion routes. Existing direction signs that do not contradict the roadwork signs, shall remain in place for the duration of the works.
WK 094		**Road Closed:** this sign should only be used in conjunction with WK 001 when a road has been closed to facilitate roadworks.
WK 095		**Stop Here On Red:** this sign may be used to indicate to drivers where to stop when temporary traffic controls are in place.
WK 096		**Free Recovery:** this sign should be used to indicate to drivers that there is a free recovery service in operation within the works. The sign should be repeated at 500m intervals. The telephone number must be varied to suit.
WK 097		**Free Recovery End:** this sign should be used to indicate to drivers where the end of the free recovery service takes effect beyond the works.

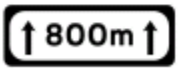
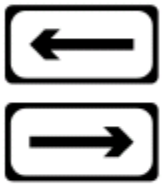
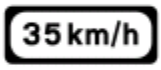
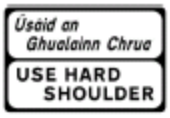
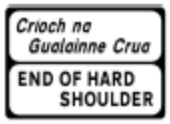
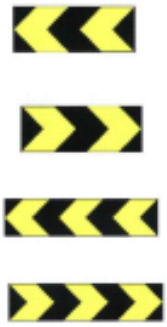
Plate No.	Sign Face	Description
P 001		**Distance:** This plate may be used in conjunction with any roadworks sign to indicate the distance to a hazard. The distance shown on the plate shall be in accordance with Table 8.2.3.
P 002		**Length:** This plate may be used in conjunction with any roadworks sign to indicate the extent of the hazard. The distance shown on the plate shall be in accordance with Table 8.2.3.
P 003L P 003R		**Direction:** These plates may be used in conjunction with any roadworks sign to indicate the direction to a hazard.
P 004L P 004R		**Direction and Distance:** These plates may be used in conjunction with any roadworks sign to indicate the direction and distance to a hazard. The distance shown on the plate shall be in accordance with Table 8.2.3.
P 010		**End:** this plate may be used in conjunction with any roadworks sign to highlight to the road user that the end of a specific hazard or operation has been reached.
P 011		**Cautionary Speed**: this plate may be used in conjunction with Sign WK 001, Roadworks Ahead, Sign WK 072, Slippery Road, or Sign WK 073, Loose Chippings, to indicate the speed which traffic is recommended not to exceed. The speed displayed must be one from the following list: 25, 35, 45, 55, 65 or 75km/h. See Section 8.3.3.
P 069		**Safe Height for Overhead Electric Cables:** this plate must be used in conjunction with sign W 111 to advise vehicles of the safe height available. The safe height should be agreed with the owner of the electrical cables and rounded down to the nearest 0.1m.
P 080		**Slow:** this plate may be used in conjunction with any roadworks sign to highlight to the road user that speed should be reduced when passing a particular hazard or operation.

Plate No.	Sign Face	Description
P 081		**Concealed Entrance:** this plate may be used in conjunction with signs WK 050, WK 051, WK 052 or WK 053 to indicate the presence of a concealed site entrance or existing entrance within the works.
P 082	 Typical sign	**Type of Works:** these plates may be used in conjunction with Sign WK 001 at the start of roadworks to highlight to the road user a specific type of operation is being carried out. One of the following alternatives, in bilingual format, should be used as appropriate: Bridge Inspection — Iniúchadh Droichid Bridge Repairs — Deisiú Droichid Grass Cutting — Bearradh Féir Gritting — Grean á Leagan Gully Emptying — Folmhú Clasáin Hedge Cutting — Bearradh Fáil Line Painting — Línphéinteáil Litter Picking — Bailiú Brusca Mobile Roadworks — Oibreacha Bóthair Soghluaiste Road Marking — Marcáil Bóthair Road Repairs — Deisiú Bóthair Road Resurfacing — Athdhromchlú Salting — Sailleadh Stud Fitting — Feistiú Stoda Surveying — Suirbhéireacht Sweeping — Scuabadh Tree Cutting — Bearradh Crann Weed Spraying — Spraeáil Fiailí
P 083		**Use Hard Shoulder:** this plate may be used in conjunction with Signs WK 012 and WK 014 where it is necessary for the hard shoulder to be used as a traffic lane.
P 084		**Hard Shoulder Closed:** this plate may be used in conjunction with Sign WK 001 to indicate that the hard shoulder, but not the traffic lanes, is closed temporarily.
P085		**Unfinished Road Surface**: this plate should be used in conjunction with Sign WK 072, Slippery Road, to indicate that the final surfacing has not yet been laid.
P086		**On Slip Road**: this plate should be used in conjunction with sign WK001 and all other advanced warning signs on the mainline or side roads to indicate that the works are being carried out on the diverge or merge slips.

Other Signs for use at Roadworks

Sign No.	Sign Face	Description
W 062 W 063		**Chevron Boards:** Chevron boards are used to direct traffic at a change of direction. At roadworks, they are normally situated behind a line of cones or other barrier in the line of sight of approaching drivers. Standard chevron boards have two or three chevrons, but longer boards may be used (see Chapter 6).
W 110		**Restricted Headroom:** Where a warning sign is appropriate, Sign W 110 should be used, with the available headroom indicated in metres to one decimal place.
W 111		**Overhead Electrical Cables:** Where there is a danger that high vehicles may contact overhead electrical cables, Sign W 111, Overhead Electrical Cables, should be provided on each approach (see Chapter 6). Sign W 111 shall be erected together with Supplementary Plate P 069, Safe Height, to advise vehicles of the safe height available. The safe height should be agreed with the owner of the electrical cables and rounded down to the nearest 0.1m..
W 183 W 184 W185		**Barrier Boards:** Barrier boards indicate that a lane is closed. At roadworks, they are normally situated behind a line of cones or other barrier to indicate the start of a closed lane. Barrier boards may be repeated at intervals along the closed lane. Standard barrier boards have three, four or five red bars. They shall always start and finish with a red bar (see Chapter 6).
RUS 039 to RUS 044	 RUS 043  RUS 042	**Speed Limit:** Speed limit signs (RUS 039 to RUS 044) indicate the maximum allowable speed applying to a length of road. At roadworks, they may indicate the permanent speed limit for that length of road, or a roadworks speed limit implemented for the particular works. Speed Limit signs may show a speed of a 120, 100, 80, 60, 50 or 30km/h. No other speed limit value shall be used. A speed limit sign should be erected on both sides of the carriageway. Repeater signs should be provided at a maximum of 500m intervals and after a junction. See Section 8.3.3 and Chapter 5 for further details.

Sign No.	Sign Face	Description
RUS 014	 	**No Overtaking:** No Overtaking sign prohibits overtaking at locations where it is considered dangerous to do so (see Chapter 5). At the point where the overtaking restriction ends, Sign RUS 014 shall be erected together with a Supplementary Plate P 010, End.
RUS 026		**Yield:** The Yield Sign imposes a requirement on all approaching vehicular traffic to yield (see Chapter 5). It is generally provided in association with a Yield Line, RRM 018 (see Chapter 7).
RUS 027		**Stop:** The Stop Sign imposes a requirement on all approaching vehicular traffic to stop (see Chapter 5). It is generally provided in association with a Stop Line, RRM 017 (see Chapter 7).
RUS 001		**Keep Left:** Traffic must pass to the left of the sign. Used at a nosing or similar, where all traffic must pass to the left (see Chapter 5).
RUS 002		**Keep Right:** Traffic must pass to the right of the sign. Used at a nosing or similar, where all traffic must pass to the right (see Chapter 5).
RUS 003		**Pass Either Side:** Traffic may pass to either the left or right of the sign. Used at a nosing or similar, where traffic splits to pass either side of an island, or some traffic diverges (see Chapter 5).
RUS 060 RUS 061		**Stop and Go:** Stop and Go discs shall display 'STOP' with a red background on one side and 'GO' or '*Téigh*' with a green background on the reverse. These signs are used for controlling traffic by manual or automated methods. See Sections 8.2.7 and 8.3.9 and Chapter 5. If a sign is to be used to stop both streams of traffic at the one time, such as at a site exit, then a panel displaying 'STOP' on both sides should be used.
RUS ...	Various	**Other Regulatory Signs:** Where a need arises, any of the regulatory signs in Chapter 5 may be used at roadworks.
F401		**Speed Limit Ahead:** this sign may be used to warn traffic of a roadworks speed limit ahead. The distance shown on the plate shall be in accordance with Table 8.2.3. The speed limit displayed shall match the regulatory speed limit for which this sign is advance notification. See Section 8.3.3 and Chapter 4.