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Baltinglass N81 / R747 Junction Upgrade Planning Report



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1 Introduction

1.1 Project Background

Clifton Scannell Emerson Associates (CSEA) was appointed by Wicklow County Council (WCC) to undertake an assessment of the N81 / R747 junction arrangement in the town of Baltinglass, Co. Wicklow and to develop a design for the upgrade of the junction.

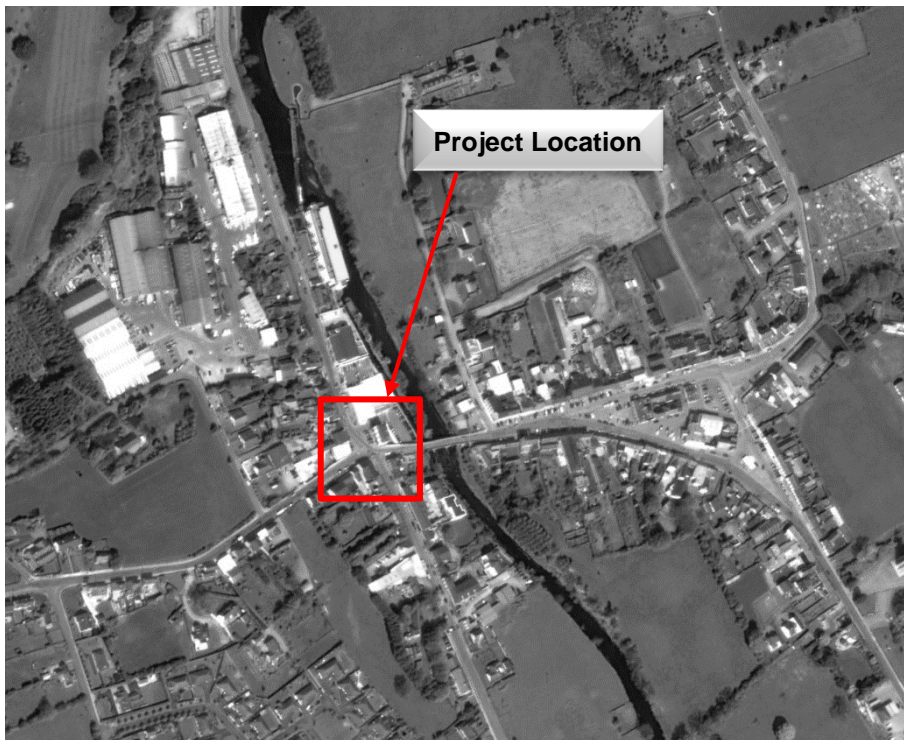
This report details the design process undertaken, the relevant legislative compliance issues, planning considerations and details of the proposed layout. These details are outlined with consideration for the implementation of the project under Section 38 of the Road Traffic Act (1994).

1.2 Project Location

Baltinglass is located in south-west County Wicklow, Ireland. It is located on the River Slaney (a protected Natura 2000 site) near the border with County Carlow and County Kildare. The town centre lies predominantly to the east of the River Slaney. West of the river, the town's retail offer is concentrated around the N81 / R747 crossroads.

This project is located at the intersection of national route N81, which runs in a north south direction, and regional route R747, which runs in an east west direction, as identified by Figure 1.

Figure 1 – Project Location



1.3 Background

The current DRAFT Wicklow County Development Plan (the Plan, 2016-2022) identifies the congestion at the N81 / R747 intersection as a constraint to the towns' development. Section 3.7 of the Plan notes the following:

“the R747 / N81 junction has been identified as an area in need of improvement in particular the removal of hazardous pedestrian movements on this route”.

The junction currently operates as a priority junction (non-signalised) with priority given to movements on the N81.

There are no pedestrian crossings located at the intersection although there is an existing signal controlled pedestrian crossing located approximately 25 m north of the junction. The existing pedestrian footpath width is insufficient on the south east corner of the junction.

Sightlines at the junction are poor in particular on the approach from the west on the R747 and on the east over the River Slaney, where visibility to the north and south is substandard.

The proposed scheme will involve the installation of traffic signals at the junction in order to improve safety at this location. It will also deliver improved pedestrian infrastructure including pedestrian crossings on all arms of the junction and wider footpaths. It will improve the pedestrian offer and encourage walking as a safe and convenient means for local trips.

The completed scheme will provide a safe, coherent and attractive environment for pedestrians and vehicles.

1.4 Road Safety Audit

A Stage III Road Safety Audit (RSA) was completed in September 2014 at the project location in order to assess the existing junction arrangements and to identify concerns and safety issues at the junction under existing conditions. This report recommended the installation of traffic signals at the junction including set back stop lines to facilitate the movement of larger vehicles and multiple improvements in facilities at the junction for pedestrians and vulnerable road users.

1.5 Proposed Scheme

The N81 / R747 junction provides an important route for vehicles wishing to travel between Baltinglass and the M9 motorway and between Blessington and County Wexford. The junction is located within a 50 km/h speed limit area. The junction also provides a key connection between the east and west sides of Baltinglass town.

The scheme is being placed on public consultation in accordance with the requirements of Section 38 of the Road Traffic Act (1994) to seek public comment on the proposed scheme.

2 Objectives

2.1 Over Riding Purpose of the Project

The Over Riding Purpose (ORP) of the N81 / R747 project is to improve safety at the junction for road users and pedestrians.

2.2 General Objectives

The following core objectives have been identified for this project:

- Improve safety and accessibility for pedestrians at the junction
- Provide improved facilities for vulnerable road users in the vicinity of the intersection
- Improve safety for road users and in particular provide for the turning movements required by larger vehicles
- Complement a potential upgrade to the adjacent bridge over the River Slaney

3 Planning Context

There are a number of policy documents relating to the need to provide improved pedestrian infrastructure in Ireland and to support the increased uptake of this sustainable mode of transport. In addition, the current Wicklow County Development Plan identifies the need for improvement at this junction. The following sections briefly identify some of the key documents which support this proposal.

3.1 Smarter Travel; A Sustainable Transport Future 2009 - 2020

The Government's Smarter Travel policy document identifies a number of actions in relation to walking in Ireland and the development of a sustainable culture of walking. Action 16 is specifically related to the targets and objectives established for walking patterns and most notably, for this project, include the following:

-
- *Providing safe pedestrian routes*
 - *Reprioritising traffic signals to favour pedestrians instead of vehicles, reducing waiting times and crossing distances at junctions*
 - *Clearing footpaths of unnecessary street furniture, e.g. rationalisation of signage poles etc.*
 - *Improving the surface quality of footpaths*
 - *Creating level grade crossings for pedestrians across junctions*
-
- *This project proposes a safe, high quality, de-cluttered and direct route, which will connect to other network routes to provide a continuous provision for pedestrians.*

3.2 Draft Wicklow County Development Plan 2016 – 2022

The current draft Plan outlines the policies and objectives for the current development period.

Section 3.7 contains a specific strategy relevant to this proposal which relates to the development of safer infrastructure for pedestrians in Baltinglass; that “the R747 / N81 junction has been identified as an area in need of improvement in particular the removal of hazardous pedestrian movements on this route”.

- *This proposal will directly support safer pedestrian movements at this intersection. The current arrangement provides existing footpaths which are narrow without safe crossing opportunities.*

Section 9.1.1 of the Plan outlines the strategy “to improve facilities for pedestrians and access for people with special mobility needs”.

- *This proposal will improve accessibility for pedestrians and people with special mobility needs through the introduction of dropped kerbs, tactile paving and wider footpaths.*

Walking transport policy TR9 states the policy “to improve existing or provide new foot and cycleways on existing public roads, as funding allows”.

- *This proposal will improve the existing infrastructure at this intersection.*

4 Existing Arrangement

4.1 Existing Road Layout

The N81 / R747 junction consists of four arms and is priority controlled, with priority afforded to the N81. Each arm comprises two lanes and has a 50 km/h speed limit. On street parking is widely available and not time limited.

On the northern approach there is an existing signalised pedestrian crossing located approximately 25 m north of the intersection. There are existing pedestrian paths on both sides of the road approaching the intersection. However, the large area of off road pavements that are provided on either side of the road, adjacent to the intersection, are currently used for uncontrolled parking.

Figure 2 – View facing south (N81) illustrating cars parking on pavement

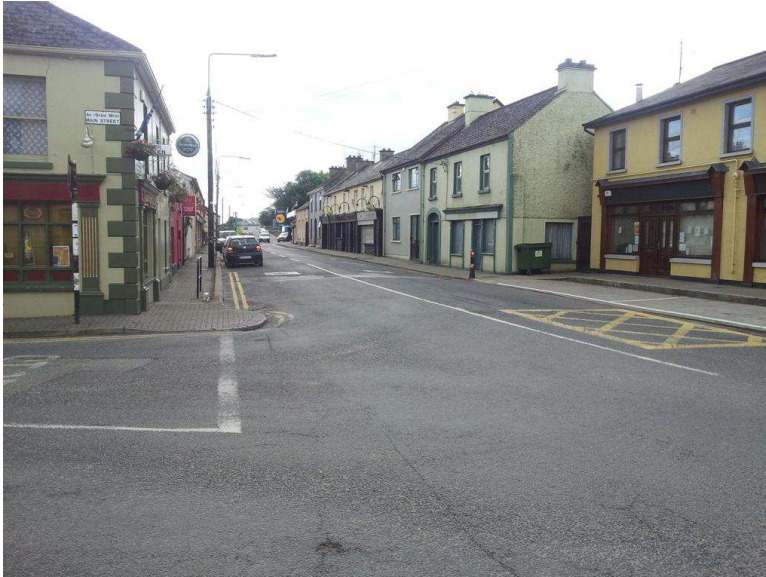


Figure 3 – View facing west across intersection



On the southern approach there are existing pedestrian paths on both sides of the road approaching the intersection; however, the path located on the east side of the road ends abruptly after turning east on the R747 towards the river.

Figure 4 – View facing south (N81)



On the western approach footpaths are provided on both sides of the road, however these are affected by parking.

Figure 5 – View facing west illustrating cars parking on pavement



On the eastern approach there is an existing bridge over the River Slaney. There is an existing pedestrian path on the north side of the road which continues across the bridge. On the south side of the road there is a short length of existing pedestrian path which terminates abruptly adjacent to the public house.

There is no pedestrian crossing on this arm of the intersection.

Figure 6 – View facing east from the junction



Figure 7 – View facing east from the junction



Figure 8 – View facing west on the bridge



4.1.1 Horizontal Alignment

The main line is comprised of the N81. There is negligible horizontal curvature on this main line to the south of the intersection. On the northern side of the intersection there is a radius of approximately 45 m on the approach to the intersection as the road curves to the left.

There is a significant alignment offset of the north and south sections through the junction itself which results in poor visibility on the side roads.

There is negligible horizontal curvature on the R747 on either approach to the intersection from the east or west.

4.1.2 Vertical Alignment

The N81, on the southern approach to the intersection, has a downward slope of approximately 1.16%.

The N81, on the northern approach to the intersection, has an upward slope of approximately 0.04%.

The R747, on the western approach to the intersection, has a downward slope of approximately 7.29%.

The R747, on the eastern approach to the intersection, has an upward slope of approximately 1%. There is a low spot located approximately 14 m east of the junction.

4.1.3 Existing Footpaths

There are existing pedestrian footpaths on all approaches to the junction of varying quality. The paths vary from approximately 1.3 m at pinch point locations adjacent to existing buildings, to wider paths of approximately 2 m and above at other locations.

On all approaches to the junction the integrity of the footpaths are impacted by the presence of uncontrolled on street parking.

4.1.4 Signage

On the approach from Enniscorthy there are multiple existing information signs located on the west side of the intersection. These indicate the routes to the following locations:

- Arklow
- Hacketstown
- Kiltegan
- Ballitore
- Enniscorthy
- Rathvilly
- Dublin
- Blessington

Figure 9: Existing Signage



On the western approach there is an existing stop sign located approximately 13 m prior to the stop line.

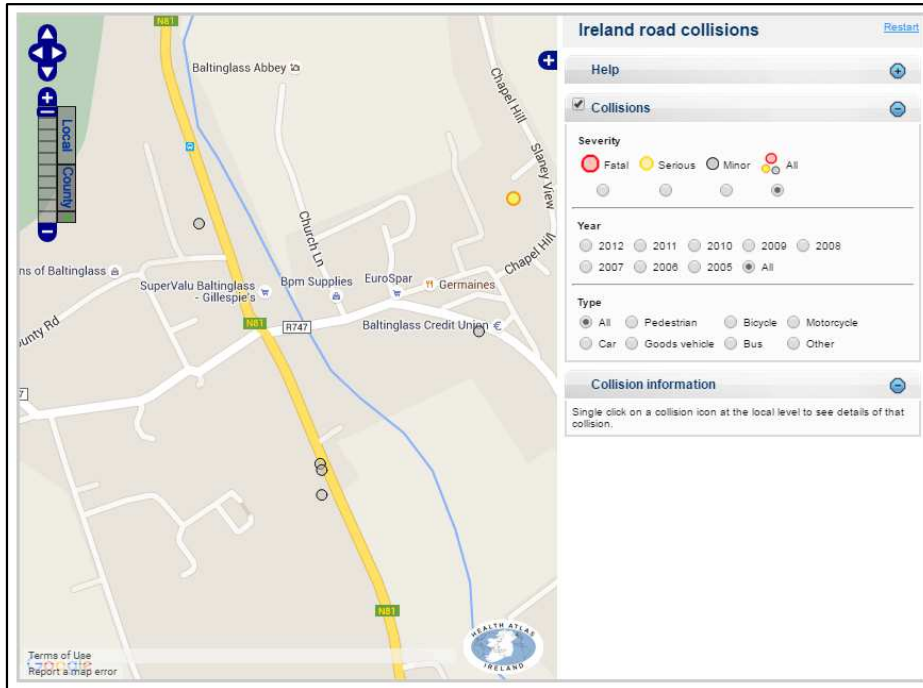
On the eastern approach from the bridge over the River Slaney there is an existing stop sign located approximately 2.5 m prior to the stop line.

4.2 Collision Record

The Road Safety Authority (RSA) website does not identify any recorded incidents immediately at the junction for the period between 2005 and 2012. There are four recorded incidents on the N81 on the approaches to the junction as follows:

- 1 incident approximately 150m to the north of the junction (2006)
- 3 incidents approximately 220m to the south of the junction (2005, 2006 & 2011)

Figure 10 – RSA Road Collisions



4.3 Project Constraints

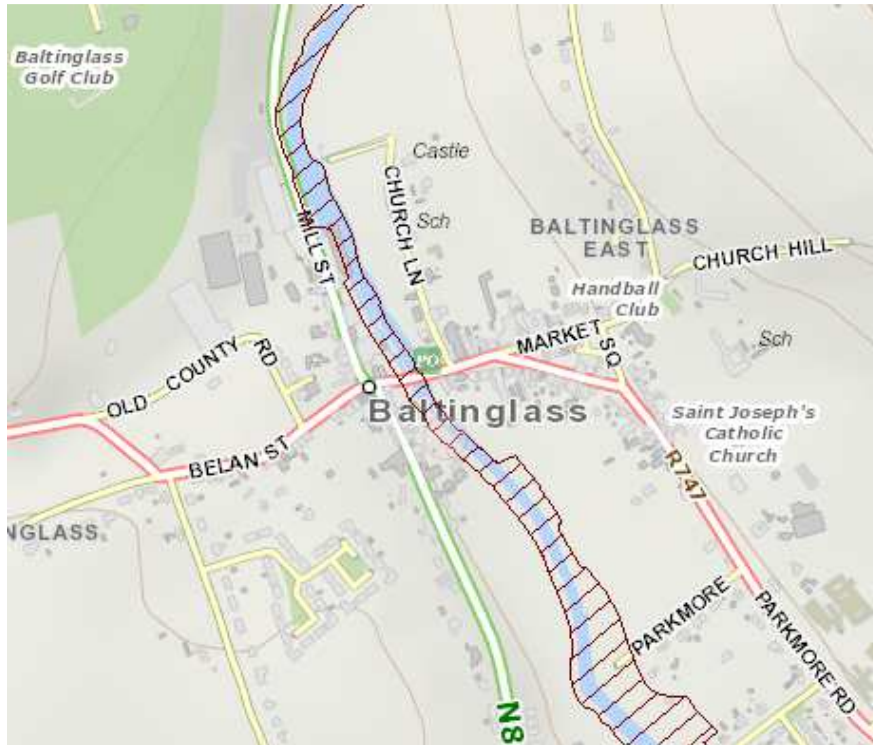
The following constraints have been identified as particular to the location of this project.

4.3.1 Ecological

The Slaney River Valley Special Area of Conservation (SAC) is located immediately to the east of the N81 / R747 junction. However, the area impacted by this project falls outside of the SAC area.

The hatched area on Figure 8 illustrates the SAC area; taken from the National Parks and Wildlife Services (NPWS) map viewer.

Figure 11: Outline of SAC Area



4.3.2 Archaeological

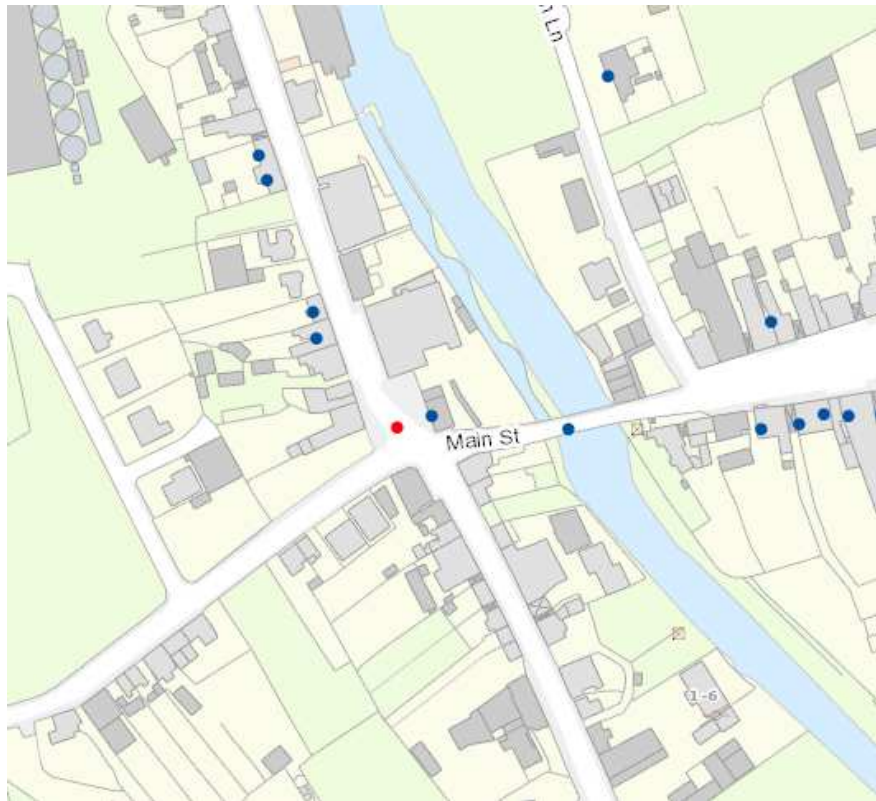
There are seven Records of Monuments and Places (RMP's) identified on the National Inventory of Architectural Heritage within the study area. There are a large number of other monuments and places identified in the Baltinglass area; however these are considered to be outside of the area of influence of the proposal.

Table 1: National Inventory of Architectural Heritage

Recorded Reg. No.	Description	Location
16316028	House	N81; approx. 120 m north of intersection
16316027	House	N81; approx. 120 m north of intersection
16316026	House	N81; approx. 70 m north of intersection
16316025	Shop / retail outlet	N81; approx. 70 m north of intersection
16316024	Shop / retail outlet	North eastern corner of intersection
16316023	Bridge	East of intersection
WI027-024	Historic town	Baltinglass town

The approximate locations are detailed on Figure 9 below. None of these sites are directly impacted by the proposal.

Figure 12: Map Location of Architectural Heritage Sites & National Monuments (ref: National Inventory of Architectural Heritage online map viewer)



4.3.3 Alignment

The proposal for the upgrade of the junction is to install traffic signals to control movements at the junction and to provide for safe pedestrian movements, to provide improved surfacing at the junction and to install new kerb lines facilitating wider footpaths, de-cluttering of the street furniture and improved lighting.

The design is constrained by the existing road levels on the approaches to the junction. In the immediate vicinity of the junction there are a number of existing retail developments which include a public house, a fast food restaurant, a newsagent and supermarkets. These existing developments and the existing bridge over the River Slaney present constraints to the junction's horizontal realignment. These constraints on the horizontal alignment impact severely on the available sightlines at the junction particularly on the approaches from the R747, Main Street and Belan Street.

5 Description of the Proposal

5.1 Proposed Development

In order to develop a suitable proposal a thorough problem identification process was undertaken which included site visits, visual inspections, survey completion, a road safety audit and consultation with Wicklow County Council.

Multiple site visits were carried out by the design team members to gain an appreciation of the existing road infrastructure and to identify problems and constraints to upgrading the junction. A topographical survey was undertaken to identify the physical constraints effecting the alignment and levels of the junction.

5.2 Options Assessment:

A number of options were assessed previously to determine the best layout for the junction improvement. These included

- Adjusting the existing priority junction arrangement
- Provision of a mini roundabout
- Provision of signal controlled junction.

The adjustment of the priority junction arrangement was unsatisfactory as adequate sightlines could not be achieved on Belan Street due to the road alignment and the existing buildings. This arrangement would not improve crossing facilities for pedestrians without the addition of controlled pedestrian crossings.

The provision of a roundabout arrangement was unsatisfactory due to the geometry of the junction. The elongated and staggered nature of the junction prevents the creation of a suitable central island about which traffic can circulate.

A signal controlled junction can be provided within the existing road space and can facilitate safe pedestrian movements on each arm. A signal controlled junction also allows the set back of stop lines to facilitate unimpeded turning movements of larger vehicles such as buses or trucks.

5.3 Preferred Layout

Some of the key requirements considered in the development of the proposal included:

- Improve safety and accessibility for pedestrians at the junction
- Provide improved facilities for vulnerable road users in the vicinity of the intersection
- Improve safety for road users and in particular provide for the turning movements required by larger vehicles
- Complement the proposed upgrade to the adjacent bridge over the River Slaney
- Develop an option with careful consideration for the environmental amenity of the adjacent Slaney River Valley SAC.

Following the assessment of the existing junction layout, the constraints and safety issues, and the findings of the Road Safety Audit, the following features are proposed for the junction:

- Installation of traffic signals including a formal pedestrian crossing on all junction arms

- Set back stop lines on both approaches to the intersection on the N81 and on the Main Street approach in order to facilitate the turning movements of large goods vehicles and buses.
- Adjustments to the existing kerbs on all arms in order to better align the approach lanes, to provide appropriate pedestrian crossing facilities and to control parking at the intersection.
- Rationalisation of the parking on the N81 in order to control parking close to the proposed traffic signals to ensure free flow of the junction.
- New signage and line marking appropriate to the above proposals.

In developing the preferred layout traffic counts were utilised to model queuing lengths on each arm of the junction. In each case the average maximum queuing length was determined for the AM and PM Peak. Parking Restriction lengths are based on these queuing lengths to ensure that the traffic will be able to move through the junction and not obstructed by parked vehicles.

The final preferred option achieves the project requirements through the following:

- Development of an option which does not require realignment of the approach roads to the junction.
- The proposal aligns with other adjacent projects and supports and connects to those projects.
- The proposal will provide pedestrian crossings including tactile paving and dropped kerbs on all sides of the junction, improving safety and accessibility.
- The proposal will set back the traffic on the N81 to facilitate movements of larger vehicles through the junction.

The table below outlines the key benefits and adverse impacts of the final proposed option.

Table 2: Benefits & Adverse Impacts

Benefits	Adverse Impacts
Improved safety for road users at the junction	Some waiting time for vehicles during red traffic signal phase times
High quality pedestrian infrastructure	Some waiting time for vehicles during pedestrian green traffic signal phase times
Improved alignment of the approach lanes to the junction through kerb line adjustments	Some loss of parking at the intersection
De-cluttering of street furniture	
Minimal impact on Slaney River Valley SAC	

6 Conclusion and Recommendation

The proposed scheme will have a number of benefits including:

- Enhanced safety, functionality and connectivity for pedestrians and vehicles at this location
- Facilitate and promote more sustainable modes of transport in the area.

The preferred layout for this project addresses the findings of the Road Safety Audit conducted at the site location by PMCE.

The potential environmental impacts arising from the construction of the scheme are not anticipated to have any significant adverse impacts on the adjacent SAC.

In order to ensure that the public are adequately engaged and consulted on the proposed project this scheme is being advertised and submissions invited, in accordance with Section 38 of the Road Traffic Act (1994).

It is recommended to the Council to proceed with this scheme as proposed.

Appendix A – Drawings

12_135A_00_2001-PL01 N81 Junction Arrangement

12_135A_00_2002-PL01 Extent of Parking Restrictions

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