

Project

Delgany to Blacklion Road Scheme

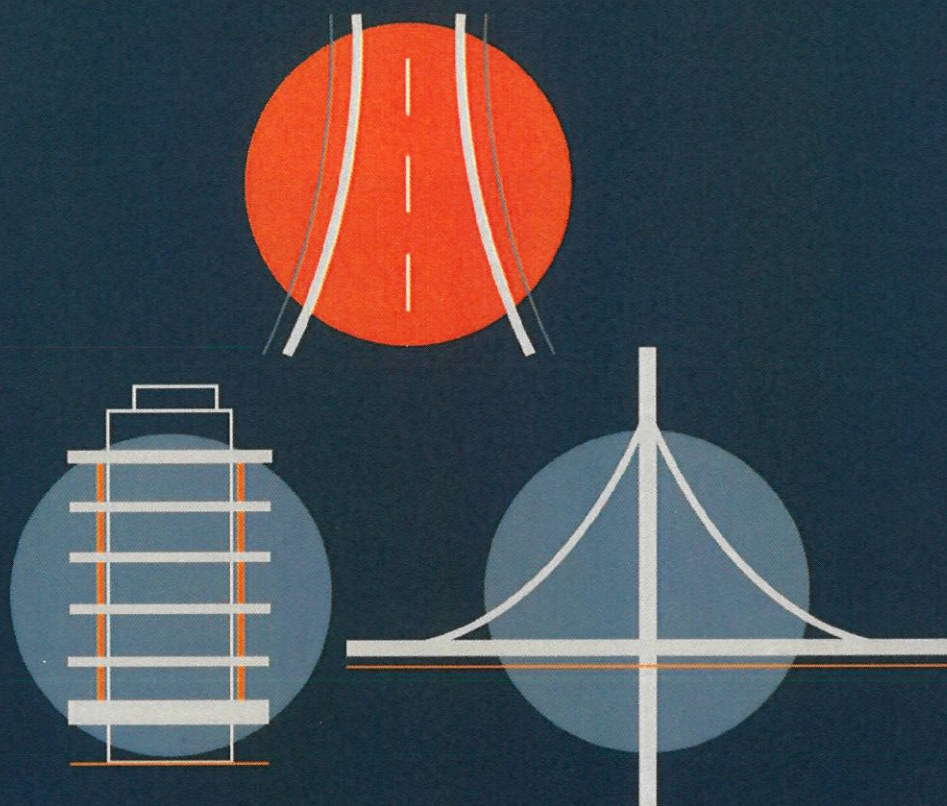
Report Title

Part 8 Design Report

Client

Wicklow County Council

TRANSPORTATION



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1.0 INTRODUCTION

1.1 Introduction to Scheme

- 1.1.1 DBFL have been commissioned by Wicklow County Council (WCC) to prepare the Part 8 Design Report for the design of the Delgany to Blacklion Road project.
- 1.1.2 The overall scheme aims to deliver an upgrade to a section of the existing Chapel Road, extending from the Chapel Road/Convent Road Roundabout, north to the Blacklion Manor Road, located approximately 2km west of Greystones Town Centre. This upgrade will consist of improvements for pedestrians and cyclists with the upgrade of footpaths and inclusion of cycle track facilities as well as improvements for vehicular traffic with the realignment and widening of the Chapel Road as well.
- 1.1.3 A section of the Chapel Road is being delivered by D-RES Properties under the WCC Planning Ref 18-678. The proposed scheme design and deliverables from this scheme will tie in with the proposals set out in the subject scheme.



Figure 1.1 – Chapel Road Scheme Location (Source: Google Maps)

1.2 Background to Scheme

- 1.2.1 Greystones, in County Wicklow, is a busy commuter town with a high level of traffic travelling to Bray and Dublin on a daily basis. With the increase in population, the area experiences daily congestion on the local road network.
- 1.2.2 At present, the pedestrian and cycle facilities along Chapel Road do not form a coherent, attractive or safe experience, in particular, for young children travelling to and from school. Therefore, improvements to the road will benefit all road users and provide an improvement to more sustainable modes of travel such as walking and cycling.
- 1.2.3 St. Laurences National School is located along Chapel Road. This road currently experiences congestion during peak hour periods, in particular during school drop off and collection times. A realignment and upgrade of the road would bypass the school and provide a local access, leading to reduced congestion and improvement in vehicular movements.
- 1.2.4 The scheme has been proposed for a number of years and is highlighted within the Greystones Local Area Plan 2013 – 2019.

1.3 Site Location

- 1.3.1 Chapel Road is located in Delgany in Greystones, County Wicklow. The location of the existing alignment of Chapel Road within the extents of the scheme is shown in **Figure 1.2** below.

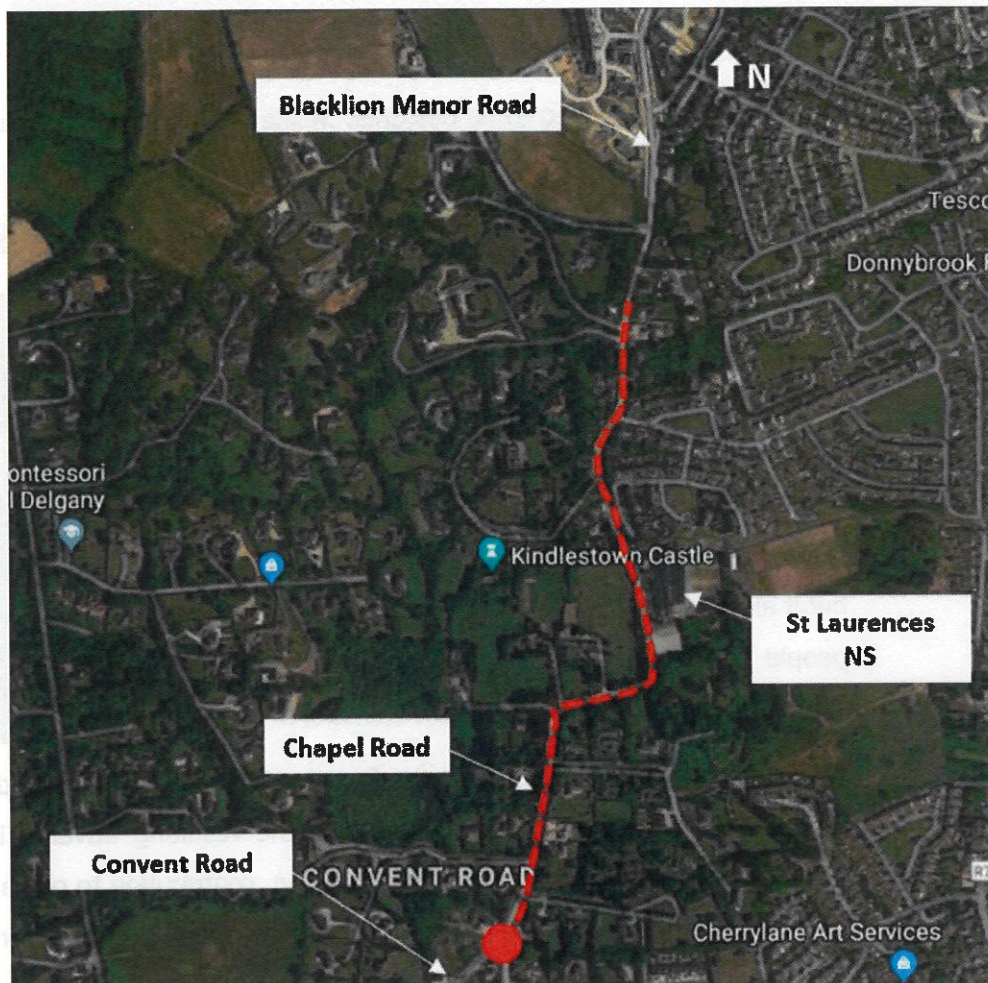


Figure 1.2 – Site Location of Proposed Road Improvement Scheme

1.3.2 As shown in **Figure 1.1**, the scheme extends from the roundabout with Convent Road and ties in with the recently constructed Blacklion Manor Road.

1.4 Aims & Objectives

1.4.1 The main aims and objectives for the scheme include:

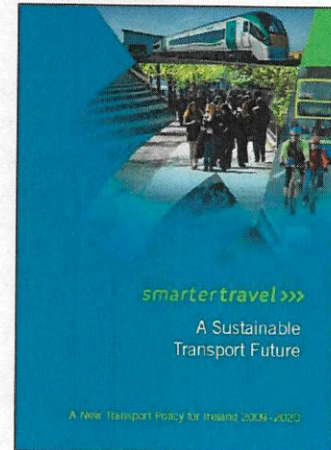
- To provide improved pedestrian facilities along the scheme route;
- To provide high quality, safe, continuous cycle tracks along the scheme route;
- To provide improvements for vehicular movements; and
- To reduce congestion on the road.

2.0 POLICY CONTEXT

2.1.1 The scheme is proposed to be designed in line with a number of guidance and standards documents. These are outlined in this section as follows.

2.2 Smarter Travel – Sustainable Transport Future 2009 – 2020 (DTTAS)

2.2.1 Smarter Travel - A Sustainable Transport Future, was published in February 2009, and represents a transport policy for Ireland for the period 2009-2020. The policy recognises the vital importance of continued investment in transport to ensure an efficient economy and continued social development, but it also sets out the necessary steps to ensure that people choose more sustainable transport modes such as walking, cycling and public transport.



2.2.2 The policy is a direct response to the fact that continued growth in demand for road transport is not sustainable due to the resulting adverse impacts of increasing congestion levels, local air pollution, contribution to global warming, and the additional negative impacts to health through promoting increasingly sedentary lifestyles.

2.2.3 The following five key goals form the basis of the Smarter Travel policy document:

- Improve quality of life and accessibility to transport for all and, in particular, for people with reduced mobility and those who may experience isolation due to lack of transport.
- Improve economic competitiveness through maximising the efficiency of the transport system and alleviating congestion and infrastructural bottlenecks.
- Minimise the negative impacts of transport on the local and global environment through reducing localised air pollutants and greenhouse gas emissions.
- Reduce overall travel demand and commuting distances travelled by the private car.
- Improve security of energy supply by reducing dependency on imported fossil fuels.

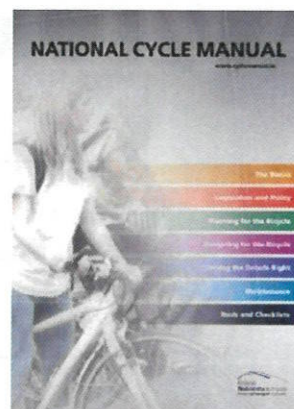
2.2.4 These aims will be achieved through 49 specific actions listed within the Smarter Travel Policy, which can be broadly grouped into 4 key areas:

- Actions to reduce distance travelled by private car and encourage smarter travel,
- Actions aimed at ensuring that alternatives to the private car are more widely available,
- Actions aimed at improving the fuel efficiency of motorised transport through improved fleet structure, energy efficient driving and alternative technologies, and
- Actions aimed at strengthening institutional arrangements.

2.2.5 The Smarter Travel policy also includes for a comprehensive range of supporting 'actions' including mode specific (e.g. walking, cycling and public transport etc.) and behaviour change initiatives which both encourage and provide for sustainable travel practices for all journeys.

2.3 National Cycle Manual – 2011 (NTA)

2.3.1 The National Cycle Manual is a national guidance document that details the principles of sustainable safety that offers a safe traffic environment for all road users including cyclists. The manual provides guidance on integrating the bicycle into the design of urban/suburban areas. The manual sets out five principles of Sustainable Safety:



1. **Functionality:** The principle of functionality is that the design which is fit for purpose is safer. Urban streets, roads and spaces are always multi – functional.
2. **Homogeneity:** The principle of Homogeneity is that reducing the relative speed, mass and directional differences of different road users sharing the same space increases safety.
3. **Legibility:** The principle of Legibility is that a road environment that all road users can read and understand is safer. A legible design will be self-evident, self-explanatory and self-enforcing.
4. **Forgivingness:** The principle of Forgivingness (Passive Safety) is that environments that contribute to benign outcomes of accidents are safer.

5. Self-Awareness: The principle of Self-Awareness is that where road users are aware of their own abilities and limitations to negotiate a road environment, the environment is safer.

2.3.2 The width of a cycle facility as well as the type of facility proposed (Integrated or Segregated) are two key factors for providing adequate, safe facilities and a sub-standard cycle lane/track is never recommended.

2.3.3 The designed width of a cycle facility is comprised of the effective width as well as clearances that are required in different circumstances. The Width Calculator table provides details for determining the actual width required for cycle lanes and tracks. It comprises of three main factors, A, B and C, as well as an additional factor, D, which is only relevant in certain circumstances. The width calculator table is illustrated in **Figure 2.1**.

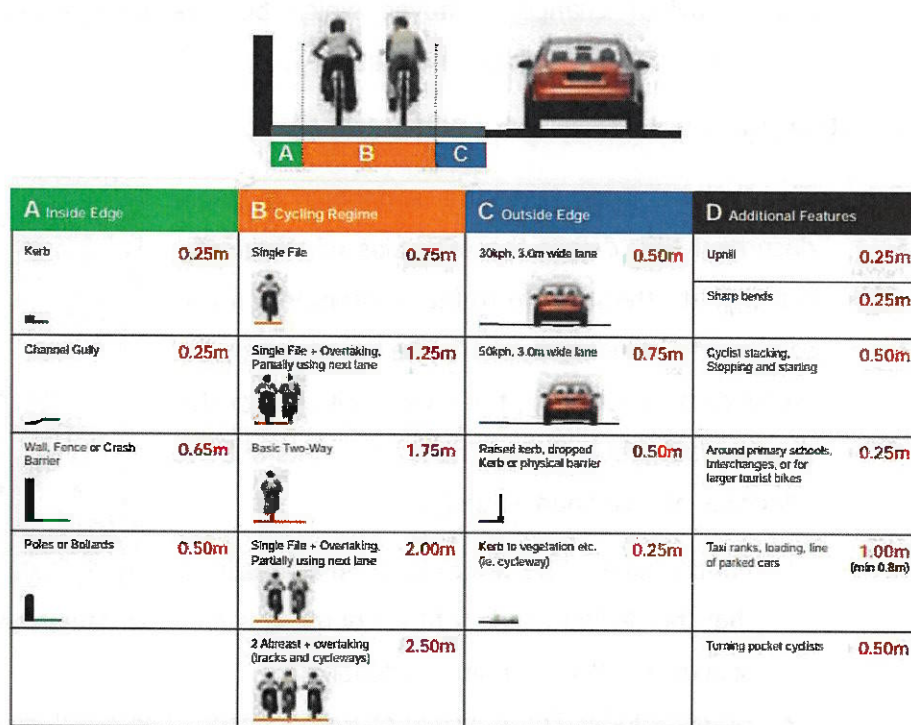


Figure 2.1 - Cycle width calculator – National Cycle Manual (Source: NCM)

2.3.4 Considering a cycle lane/track facility along a 50kph 3m lane with cyclists single file, the minimum width of facility required is 1.75m, i.e., A=0.25m, B=0.75m and C= 0.75m. It is noted that the typical target width for the proposed cycle facilities as part of this scheme is 2m.

2.3.5 In terms of the type of facility proposed, integrated or segregated, there are a number of factors considered for determining the type of facility most

appropriate. Segregated facilities are recommended in the following circumstances:

- The traffic regime cannot be rendered suitable for integrated cycling;
- To preclude traffic from queuing or parking on the facility;
- To confer an advantage on cyclists.

2.3.6 A guidance graph is illustrated in **Figure 2.2** that sets out relevant factors for determining the type of facility to provide.

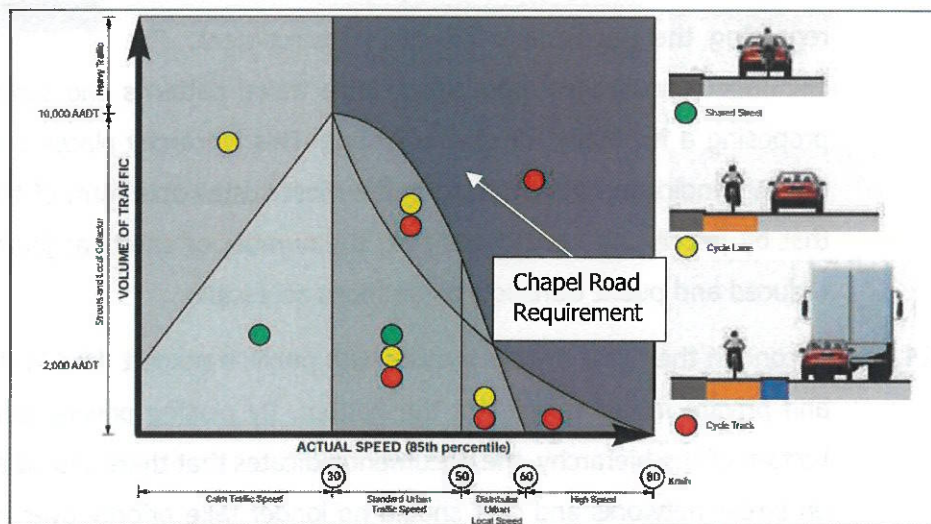
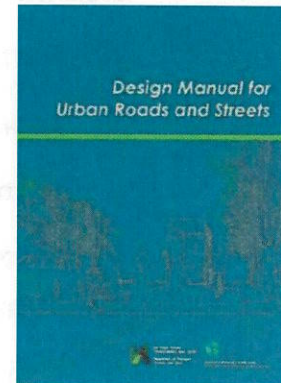


Figure 2.2 - Guidance graph for determining type of cycle facility (Source: NCM)

2.3.7 The graph determines the type of facility necessary, whether the facility is shared, cycle lane or cycle track, based on vehicle speed and AADT of the road. For this scheme, the posted speed limit for Chapel Road is 50kph. The AADT along the road is approximately 8,000 AADT. Therefore, a cycle track facility is required along this road.

2.4 Design Manual for Urban Road and Streets 2019

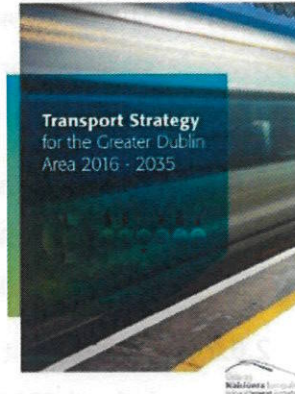
- 2.4.1 DMURS provides guidance relating to the design of urban roads and streets. It presents a series of principles, approaches and standards that are necessary to achieve balanced, best practice design outcomes with regard to street networks and individual streets.
- 2.4.2 The manual places a significant emphasis on car dominance in Ireland and the implications this has had regarding the pedestrian and cycle environment. The document encourages more sustainable travel patterns and safer streets by proposing a hierarchy for user priorities. This hierarchy places pedestrians at the top, indicating that walking is the most sustainable form of transport and that by prioritising pedestrians first, the number of short car journeys can be reduced and public transport made more accessible.
- 2.4.3 Second in the hierarchy are cyclists with public transport third in the hierarchy and private motor vehicles at the bottom. By placing private vehicles at the bottom of the hierarchy, the document indicates that there should be a balance on street networks and cars should no longer take priority over the needs of other users.
- 2.4.4 The manual emphasises that narrow carriageways are one of the most effective design measures that calm traffic. Standard width of an arterial and link street is 3.25m, however, this may be reduced to 3m where lower design speeds are being applied. Desirable footpath widths are between 2m – 4m, as per this subject scheme which provides 2m width footpaths on both sides of the road. The 2m width should be implemented to allow for low to moderate pedestrian activity. A 3m – 4m footpath should be implemented to allow for moderate to high pedestrian activity.
- 2.4.5 The focus of the manual is to create a place – based sustainable street network that balances the pedestrian and vehicle movements. The manual references the different types of street networks, including arterial streets, link streets, local streets, and highlights the importance of movement.



2.5 Transport Strategy for the Greater Dublin Area 2016 – 2035 (NTA)

2.5.1 The purpose of this strategy is 'to contribute to the economic, social and cultural progress of the Greater Dublin Area by providing for the efficient, effective and sustainable movement of people and goods.'

2.5.2 This transport strategy provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area (GDA).



2.5.3 There is an onus on the Authority to take full account of current prevailing policies and plans made at central government level, in transport, planning and in other sectors as well as other regional level plans. On review of these policies, the following key messages have emerged:

- Transport must be a key consideration in land use planning;
- In the short term, funding for large scale transport projects will be limited;
- Addressing urban congestion is a priority;
- The capacity of the strategic road network must be protected;
- A significant reduction in the share of trips undertaken by car is required, particularly in relation to short trips and commuter trips;
- An associated increase in walking, cycling and public transport is also required;
- A safe cycling network, with extensive coverage in metropolitan Dublin and in other towns, is needed to cater for the increased use of cycling that is already occurring and to reduce the dominance of the private car in meeting travel needs;
- The enhancement of the pedestrian environment, including measures to overcome severance and to increase permeability, is a priority.

2.5.4 The proposed scheme is in line with this strategy and proposes the improvement in the cycling network as well enhancement of the pedestrian environment.

2.6 Wicklow County Development Plan 2016 – 2022

- 2.6.1 The Wicklow County Development Plan 2016 – 2022 sets out the overall strategy for the proper planning and sustainable development of County Wicklow for the plan period and beyond.
- 2.6.2 The Plan states that *'reducing the need to travel long distances by private car and increasing the use of sustainable and healthy alternatives, can bring multiple benefits to both our environment and communities.'*
- 2.6.3 Government policy, as set out in 'Smarter Travel – A New Transport Policy for Ireland 2009 – 2020' and the 'National Cycle Policy Framework 2009 – 2020, clearly places an emphasis on walking and cycling as alternatives to vehicular transport.
- 2.6.4 The provision of walking and cycling routes within and connecting towns and villages to each other forms an essential part of a linked-up transport system, involving a variety of transport modes, where public transport facilities can be availed of.
- 2.6.5 The objective of WCC with regard to walking and cycling are as follows:
- TR9 To improve existing or provide new foot and cycleways on existing public roads, as funding allows;
 - TR10 To require all new regional and local roads to include foot and cycleways, except in cases where shared road space is provided;
 - TR11 To facilitate the development of foot and cycleways off road in order to achieve the most direct route to the principal destination;
- 2.6.6 With regard to the road objectives within the county, the general road objectives are as follows:
- TR14 To improve public roads in the County as necessary, including associated bridges and other ancillary structures, as funding allows, having due regard to both the transportation needs of the County and the protection of natural habitats.
- 2.6.7 The scheme proposals for this scheme are in line with the WCC Development Plan targets and objectives as set out above.

2.7 Greystones-Delgany & Kilcoole Local Area Plan 2013 - 2019

- 2.7.1 The purpose of this plan is to establish a framework for the planned, co-ordinated and sustainable development of Greystones-Delgany and Kilcoole. The aim of the plan is to enhance and facilitate the balancing of economic, social and environmental infrastructure in order to maintain and develop a high quality of life without compromising the protection of the environment and the needs of future generations.
- 2.7.2 In general, the plan area is relatively well served by pedestrian and cycling facilities. Currently, the Roads Section of WCC is in the process of implementing the 'greenroutes' initiative for the development of pedestrian and cycling facilities in parts of the Greystones area, including at Killincarrig, Marine Road and Delgany.
- 2.7.3 With regard to the proposed scheme, the following LAP roads objectives are relevant:
- RO2** Completion of the new road from the R761 at Blacklion to Chapel Road, with an upgraded road continuing southwards to link up with the alignment of road objective RO3;
- RO3** Realignment of Chapel Road in the vicinity of St Laurence's School as necessary, to provide a more direct and efficient route to Blacklion from Delgany.
- 2.7.4 The LAP Land Use Zoning Objectives map, as shown in **Figure 2.3**, illustrates road objective RO3, the realignment of Chapel Road, which is classed as a 'Short Term' objective for WCC. It is noted that this objective is being delivered by D-RES Properties and does not form part of this Part 8 Proposal.

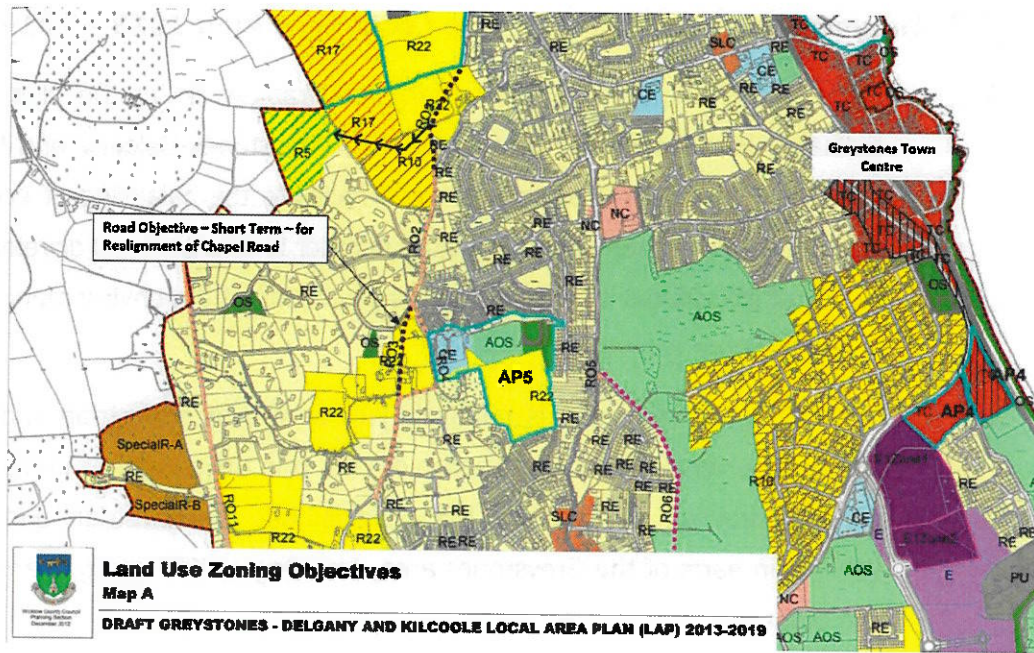


Figure 2.3: Land Use Zoning Objectives Map – LAP 2013 - 2019

3.0 EXISTING CONDITIONS

3.1 Introduction

3.1.1 This section details the existing conditions of the road network within the vicinity of the scheme including the traffic, public transport, pedestrian & cycle facilities as well as the existing drainage and utilities along Chapel Road.

3.1.2 For the purposes of this report, the proposed scheme study area has been separated into two sections for discussion as follows:

- **Section 1: Southern Section:** Convent Road Roundabout to Chapel Road;
- **Section 2: Northern Section:** Chapel Road / Dromont Estate Junction to Blacklion Manor Road;

3.1.3 These sections are illustrated in **Figure 3.1** below. **Figure 3.1** also highlights the section of Chapel Road that is being delivered by D-RES Properties as part of separate application Ref. 18-678.

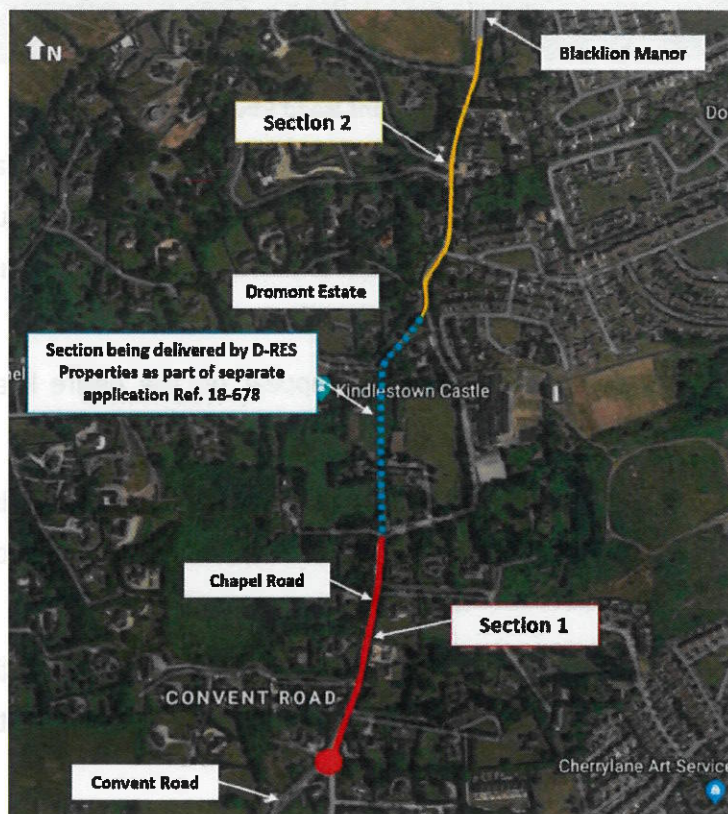


Figure 3.1: Scheme Study Area

3.2 Section 1 – Convent Road Roundabout to Chapel Road

Existing Road Network

- 3.2.1 This section of the scheme commences at the Chapel Road/Convent Road/Delgany Wood Avenue Roundabout. This is a single lane approach roundabout with a wide circulating carriageway and large radius on the approach arms, as shown in **Figure 3.2** below.



Figure 3.2: Existing Chapel Road/Convent Road Roundabout

- 3.2.2 At present, there are issues with a lack of deflection at the roundabout and vehicles have been noted to drive straight through the roundabout without yielding appropriately. The roundabout also has a wide circulating carriageway and narrow footpaths surrounding the junction.
- 3.2.3 Pedestrian crossings at the roundabout appear off the desire line in some locations and consist of dropped kerb priority crossings.
- 3.2.4 Travelling north along Chapel Road, the road is a narrow single lane carriageway, between approximately 5.5m – 6m, that runs in a north south direction.
- 3.2.5 The road in this section is residential in nature and is bounded on both sides by residential properties. **Figure 3.3** below shows the typical cross section of the road carriageway along Chapel Road in **Section 1**.



Figure 3.3: Section 1 - Chapel Road - Road Carriageway (Facing North)

Existing Pedestrian and Cycle Facilities

- 3.2.6 At present, pedestrian and cycle facilities are poor along this section of Chapel Road. There is a narrow footpath, less than 1m width, located on the eastern side of the road only, as shown in **Figure 3.3**.
- 3.2.7 Pedestrian crossing facilities are poor along this section of the road with no crossings provided for residential dwellings on the western side of the road to cross to the footpath on the eastern side of the road.
- 3.2.8 At present, there are no dedicated cycle facilities along this section of Chapel Road and cyclists use the road carriageway.

3.3 Section 2 – Chapel Road/Dromont Estate Junction to Blacklion Manor Road

Existing Road Network

- 3.3.1 This section of the road continues from the existing Dromont residential estate. The road has a similar cross section to Section 1 and is a two-way single lane carriageway, between 5.5m – 6m, as shown in **Figure 3.4** below.
- 3.3.2 This section of the road runs in a north to south direction. The road is bounded on both sides by residential properties.
- 3.3.3 The study area terminates and ties in with the recently constructed facilities at the Blacklion Manor Road.



Figure 3.4: Section 2 – Chapel Road – Road Carriageway (Facing North)

Existing Pedestrian and Cycle Facilities

- 3.3.4 The footpath condition improves slightly within Section 2 where the footpath increases in width to approximately 1 – 1.5m in places; however, the footpath is located on the eastern side of the road only, as shown in **Figure 3.5**.
- 3.3.5 There are no cycle facilities at present along this section of Chapel Road with cyclists currently cycling within the road carriageway. At present, the number of cyclists along this road is not high due to the lack of facilities provided. For pupils traveling to the schools along this road and within the area, it is not envisaged that the cycle on road at present, and rather, it is envisaged that they would use the footpaths along the road.



Figure 3.5: Footpath condition along Chapel Road within Section 2 (Facing South)

3.4 Traffic Counts along Chapel Road

3.4.1 Traffic counts were undertaken as part of a previous Options Report commissioned by WCC for this scheme. Automated Traffic Counts (ATCs) were carried out at two locations on Chapel Road, to the north and to the south of St Laurence’s National School, as shown in **Figure 3.6**, in January 2017.



Figure 3.6: Traffic ATC Survey Locations along Chapel Road

3.4.2 Survey results were assessed for three peak periods within the Options Report, the AM 08:00 – 09:00, PM 17:00 – 18:00 as well as the Midday peak of 13:00 – 14:00. The survey results, taken from the Options Report, are shown in **Table 3.1** for the ATC to the north and **Table 3.2** for the ATC to the south of the school.

Table 3.1: ATC Results to the north of the School (Extracted from Options Report)

Traffic Survey Results	Arriving North of School	Departing North of School
Peak AM flow (8-9am)	220 veh	373 veh
Peak Midday Flow (1-2pm)	150 veh	350 veh
Peak Afternoon Flow (5-6pm)	95 veh	213 veh
% of HGV	4.7%	4.5%
85% of Speed	40kph	39kph

Table 3.2: ATC Results to the south of the School (Extracted from Options Report)

Traffic Survey Results	Arriving South of School	Departing South of School
Peak AM flow (8-9am)	401 veh	591 veh
Peak Midday Flow (1-2pm)	409 veh	371 veh
Peak Afternoon Flow (5-6pm)	190 veh	180 veh.
% of HGV	1.3%	3.6%
85% of Speed	43kph	45kph

- 3.4.3 Results for the ATC to the north of the school show that there is an AM two-way flow 593 vehicles. The midday period shows a two-way flow of 500 vehicles with the PM peak displaying a two-way flow of 308 vehicles.
- 3.4.4 Results for the ATC to the south of the school show that there is an AM two-way flow of 992 vehicles. It is presumed that a large volume of these vehicles are dropping pupils to the school and travelling on either north or south from there. The midday period shows a two-way flow of 780 vehicles. The PM peak is low with a two-way flow of 370 vehicles.
- 3.4.5 The 85th percentile speed is below the PSL of 50kph on both approaches.
- 3.4.6 The percentage of HGVs along the road is low, with between 1% - 4% recorded at the southern side of the school and between 4% - 5% recorded on the northern side of the school.

3.5 Existing Public Transport

- 3.5.1 At present there are no bus routes serving Chapel Road.

3.6 Existing Horizontal & Vertical Alignment

- 3.6.1 Chapel Road, extending north from the Chapel Road/Convent Road roundabout follows an uphill straight alignment for approximately 280m, where it takes an almost 90 degree turn to the right and continues for a short section before taking a 90 degree turn to the left. The road then continues in a straighter alignment, with the gradient levelled off, and merges with the recently constructed Blacklion Manor Road.

3.7 Surface Water Drainage

- 3.7.1 For the southern section of Chapel Road, surface water run-off discharges to an existing Wicklow County Council (WCC) 225mm diameter surface water sewer which discharges to an existing 900mm diameter sewer / 2 x 450mm diameter overflow pipes at Chapel Road / Delgany Wood Avenue Roundabout.

This surface water drainage ultimately discharges to an existing stream adjacent to Delgany Wood Avenue to the south. Attenuation is provided for same at Delgany Wood Avenue before discharging to the existing stream.

3.7.2 According to Irish Water records, there is a 180mm HDPE pipe that runs from Delgany along Convent Road to the end of Chapel Road at its junction with the R761.

3.7.3 For the northern section of Chapel Road, surface water run-off discharges to existing WCC surface water drainage in Beechbrook Park and Applewood Heights to the east of Chapel Road. Additionally, there is an existing 225mm diameter WCC surface water sewer to the north of Chapel Road at Blacklion.

3.8 Foul Water Drainage

3.8.1 Foul water drainage records from Irish Water received from Wicklow County Council show an existing 225mm uPVC foul sewer entering Chapel Road in the northern section of the road. This runs in a southerly direction towards the junction with Beechbrook Park where this serves this estate.

3.8.2 There is a foul sewer along the southern section of Chapel Road from the entrance of the Nurseries on to the Convent Road Roundabout.

3.9 Utilities

3.9.1 A number of utility companies and records were reviewed in order to determine the existing utilities along Chapel Road and within the immediate environs. The following records were determined:

- There is an existing Eir line running along the length of Chapel Road;
- Gas Networks Ireland (GNI) records a 90mm PE-80 4 bar gas pipe within the footpath at the southern point of the site;
- There are a number of MV/LV underground ESB power lines in the northern portion of the site with a number of overhead power lines running along the proposed route;
- There are no current records for Virgin Media.

3.10 Accident Statistics

3.10.1 The RSA accident database was reviewed as part of this assessment in order to determine whether there are any existing collision trends within the area or along Chapel Road. The database covers the period between 2005 – 2015 and details minor, serious and fatal collisions that have occurred within this timeframe.

3.10.2 There has been a total of three collisions on Chapel Road within the 10 year period. Two of these were minor collisions with one serious collision that occurred in 2006 involving a single vehicle. This collision occurred at the 90 degree bend in the road in close proximity to St Laurences school.

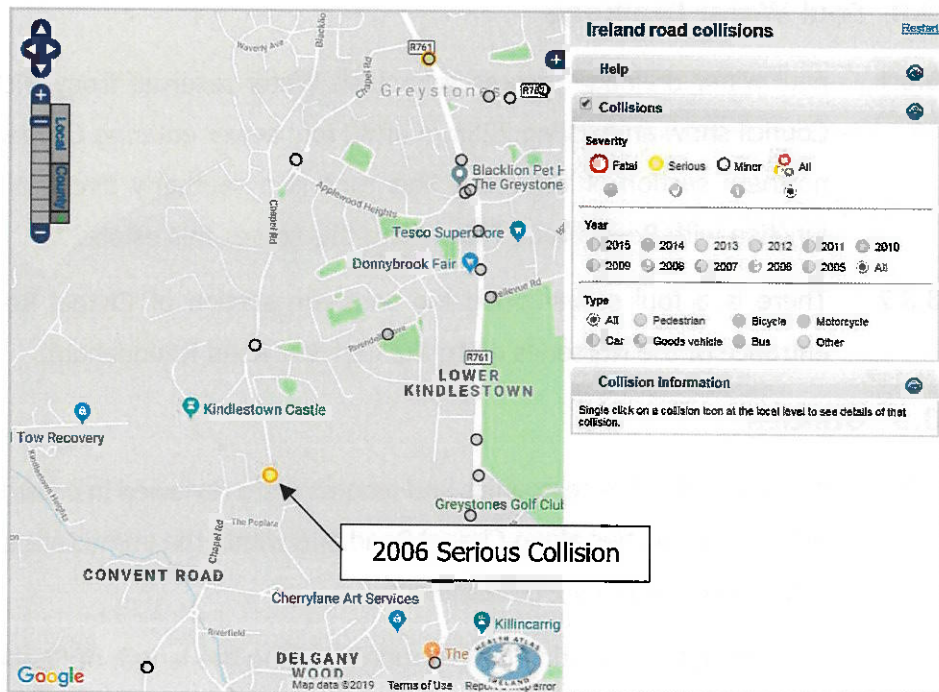


Figure 3.7: RSA Collision History 2005 - 2015

4.0 PROPOSED SCHEME DEVELOPMENT

4.1 Introduction

- 4.1.1 This section discusses the proposals for the scheme with regard to the improvements to the pedestrian and cycle network, the road network, as well as any requirements for utility and water services.
- 4.1.2 Similarly to **Section 3** of this report, the scheme study area has been separated into two sections, **Section 1** and **Section 2**, as detailed in **Figure 4.1**.

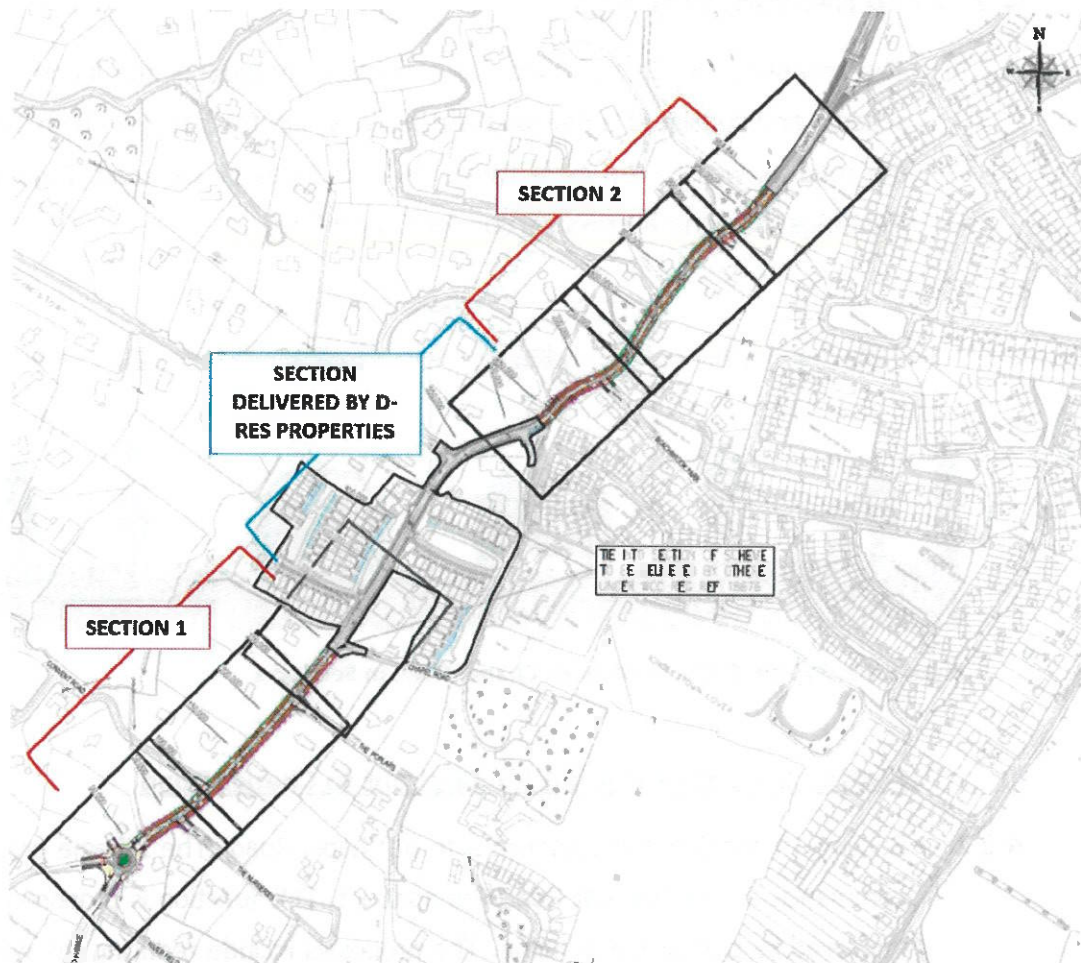


Figure 4.1: Overall Scheme Layout for Chapel Road

- 4.1.3 The overall proposals comprise of an upgrade and realignment of a section of Chapel Road in order to improve vehicular movement along the road as well as to provide an improvement to the pedestrian and cycle environment. It is proposed to realign Chapel Road from within the vicinity of St. Laurence's School and divert this through existing private properties to improve the

horizontal alignment of the road and provide a safer transport route for all road users.

4.1.4 It is noted that the section of the scheme to be realigned is being delivered by D-RES Properties under the WCC Planning Ref 18-678 and is therefore not considered within this application, however, the interfaces and connections between both schemes has been coordinated to ensure consistency.

4.1.5 Detailed in the following sections are the design proposals for Chapel Road.

4.2 Road Network Proposals

4.2.1 The proposals for Chapel Road are consistent throughout the length of this scheme and consist of a 6m road carriageway, 2m footpaths on both sides of the road as well as 2m cycle tracks on both sides of the road. **Figure 4.2** illustrates the general cross section for Chapel Road.

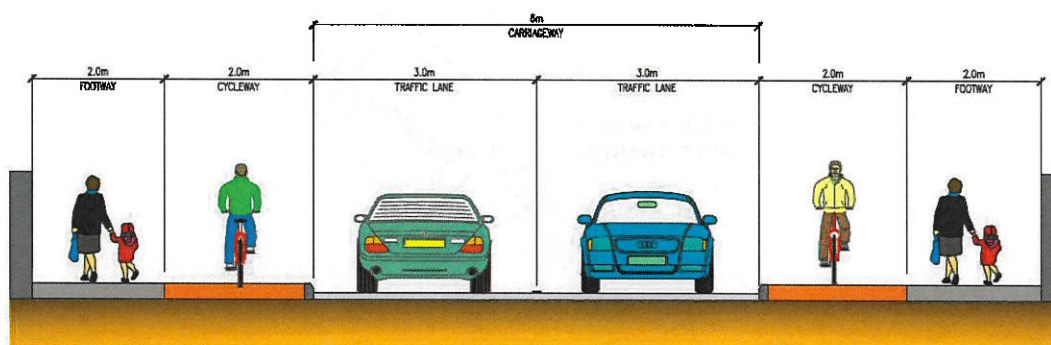


Figure 4.2: Typical Cross Section for Chapel Road in Section 1

Section 1 – Convent Road Roundabout to Chapel Road

4.2.2 Section 1 considers the southern side of Chapel Road. The scheme proposals commence at the Convent Road Roundabout. This junction is proposed to be improved as part of this scheme. The proposals include reducing the width of the circulating carriageway in order to reduce speeds. An overrun is proposed for larger vehicles to negotiate the roundabout.

4.2.3 A shared pedestrian and cycle path is proposed around the roundabout with raised zebra crossings provided on two arms, Chapel Road and Delgany Wood Avenue, with raised priority crossings provided on the Convent Road arm and the local access arm. The design proposals are illustrated in **Figure 4.3**. All design drawings are shown in more detail in **Appendix A** of this report.

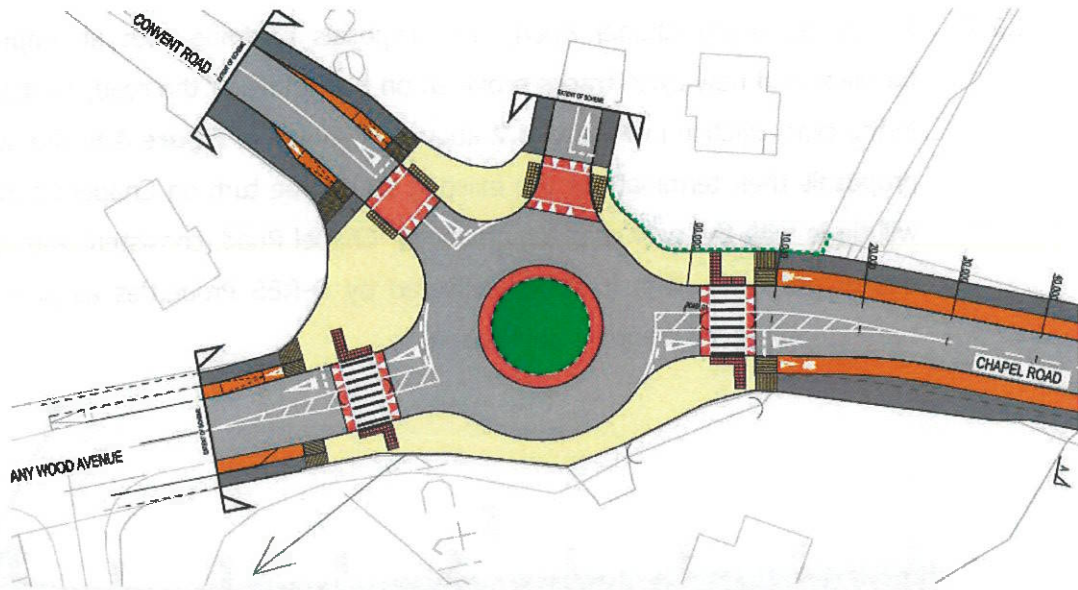


Figure 4.3: Section 1 Design Proposals for the Chapel Road/Convent Road Roundabout

4.2.4 Travelling north of the roundabout, Section 1 continues with a 2m wide footpath and 2m wide cycle track are proposed on both sides of Chapel Road, as detailed in **Figure 4.4**, and also shown in **Appendix A** of this report.



Figure 4.4: Section 1 Chapel Road Design Proposals

4.2.5 A toucan crossing is proposed in Section 1, located south of The Poplars residential estate. This crossing will accommodate both pedestrians and cyclists.

4.2.6 Ramped entry treatment is proposed at all side arms along Chapel Road on both sides of the road fulfilling a traffic calming function as well as providing priority for pedestrians and cyclists using Chapel Road. Dropped kerbs will be provided at all residential accesses.

- 4.2.7 Continuing along Chapel Road, the proposals continue with an improved footpath and new cycle tracks provided on both sides of the road, as detailed in the cross section in **Figure 4.2** above. As shown in **Figure 4.5**, the design proposals then terminate at the existing 90 degree turn on Chapel Road and will tie in with the new road alignment for Chapel Road, consistent with these design proposals, that is being delivered by D-RES Properties as part of a separate approved planning application.

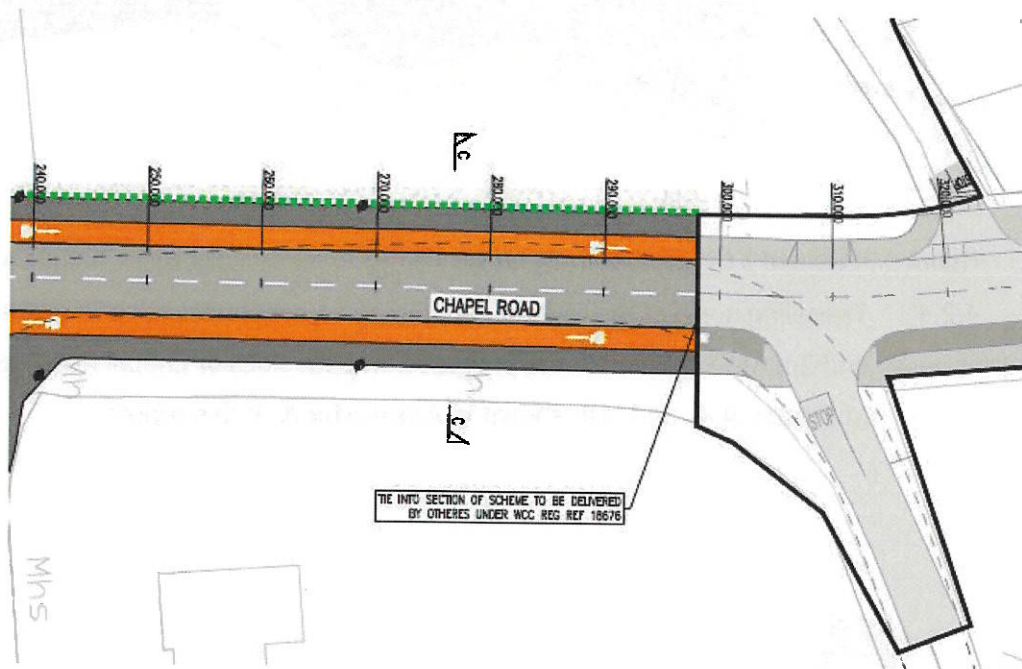


Figure 4.5: Section 1 Design Proposals to Tie in with New Chapel Road Alignment

Section 2: Chapel Road/Dromont Estate Junction to Blacklion Manor Road

- 4.2.8 Section 2 considers the northern side of Chapel Road. This section of the scheme recommences at the Dromont Estate where the new road alignment for Chapel Road will route through. The existing Chapel Road will form a three-arm priority junction with the new Chapel Road alignment.
- 4.2.9 The proposals for this section, as shown in **Figure 4.6** and also in **Appendix A**, will tie in with the design proposals being delivered for the new alignment of Chapel Road, which are consistent with the design proposals for this scheme.

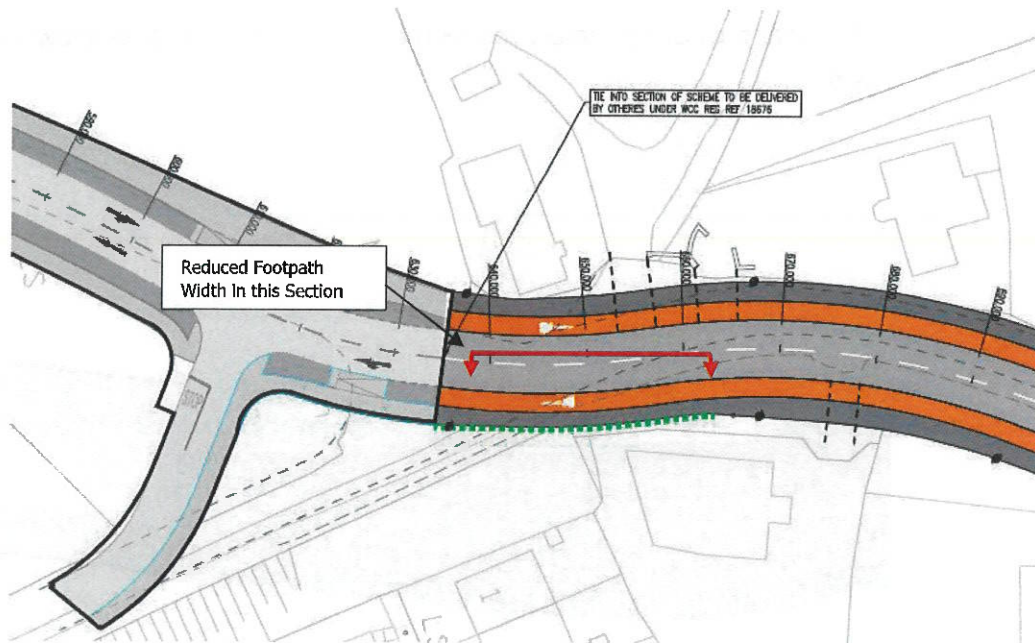


Figure 4.6: Section 2 Design Proposals to tie in with the New Chapel Road Alignment

- 4.2.10 The proposals for this section maintain the 2m footpath and 2m cycle track on both sides of the road with the exception of a short section of footpath located on the southern side of Chapel Road where this reduces down to 1.5m over a short distance due to residential boundary constraints. The cycle track is proposed to be retained here at 2m width.
- 4.2.11 The design proposals continue along Section 2, as shown in **Figure 4.7**, and continue a 2m footpath and 2m cycle track both sides of Chapel Road.

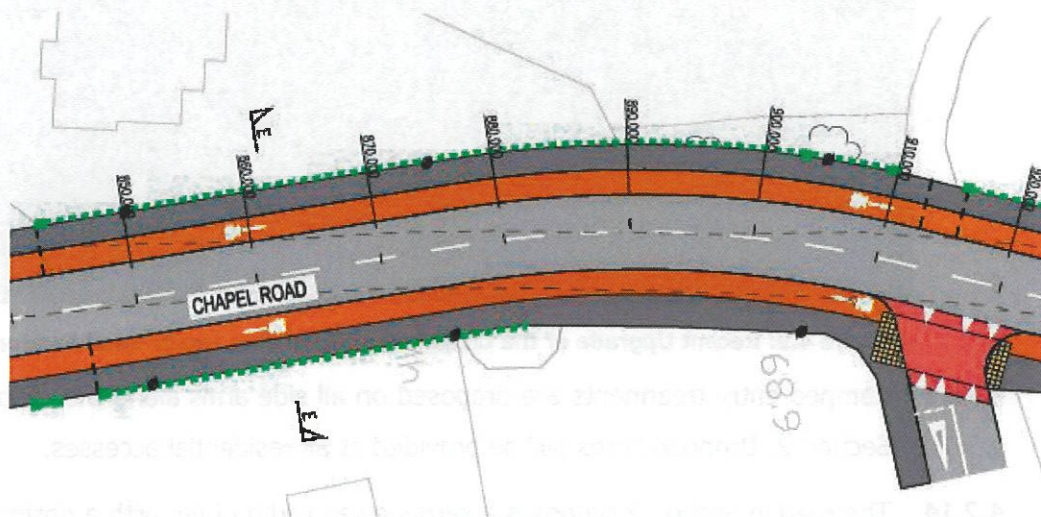


Figure 4.7: Section 2 Design Proposals along Chapel Road

- 4.2.12 The scheme then terminates at the northern section and will tie in with the recently constructed facilities at the Blacklion Manor Road (shown in **Figure**

4.8) that provides for improved footpaths and cycle tracks, as shown in **Figure 4.9**.



Figure 4.8: Section 2 Design Proposals terminate and tie in the Blacklion Manor Road

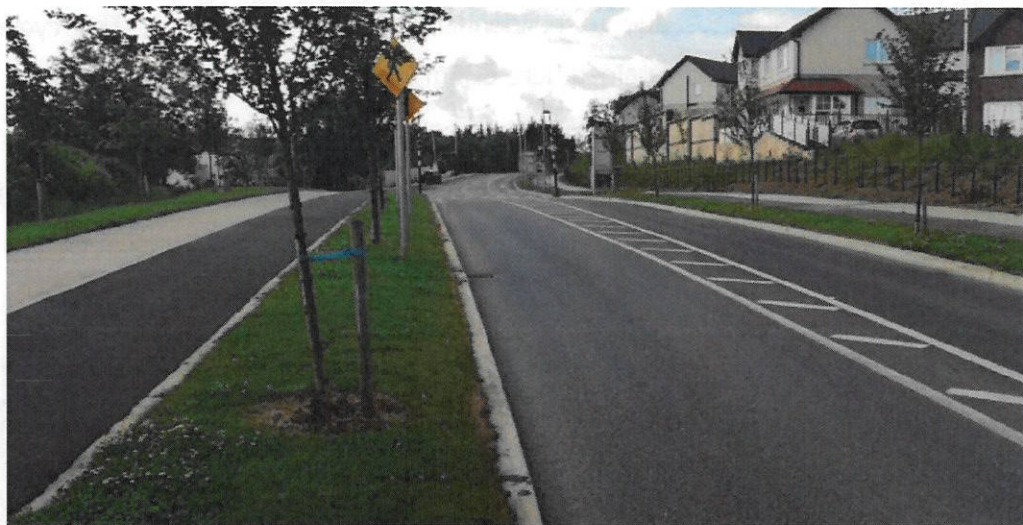


Figure 4.9: Recent Upgrade of the Chapel Road/Blacklion Manor Road Section

- 4.2.13 Ramped entry treatments are proposed on all side arms along the road within Section 2. Dropped kerbs will be provided at all residential accesses.
- 4.2.14 The road in Section 2 proposes a carriageway width of 6m with a design speed of 50kph.

4.3 Proposed Horizontal & Vertical Alignment

- 4.3.1 The southern section of Chapel Road will continue to provide a straight alignment that proceeds downhill travelling southbound towards the Convent Road roundabout. The centre of the roundabout has been realigned in order to provide a more compact roundabout and circulating carriageway.
- 4.3.2 The horizontal geometry of the new road has been improved along Section 2 to provide a minimum 75m radius centreline geometry. This section is relatively flat with a slight slope downhill travelling southbound.

4.4 Proposed Road Lighting

- 4.4.1 Public lighting is proposed on both sides of the road carriageway and will be located within the back of footpath.

4.5 Traffic Calming

- 4.5.1 In order to provide adequate traffic calming along the scheme route, a number of measures have been proposed that will incorporate reduced vehicular speeds by self-regulating measures, as referenced in the Design Manual for Urban Roads and Streets (DMURS). DMURS specifies that speed reduction along urban roads should be self-regulating and not rely on extensive speed regulatory controls and physical intrusive measures for enforcement.
- 4.5.2 The scheme proposes a reduced road carriageway width of 6m, which in accordance with DMURS, is one of the most effective design measures to calm traffic. Providing a 6m road carriageway does allow for two large vehicles to pass one another, however, will also contribute to reducing vehicular speeds along the road.
- 4.5.3 For the Chapel Road/Dromont Estate Junction to Blacklion Manor Road section of the scheme, the horizontal geometry provides minimum radii thereby producing a twisting path with minimum forward visibility for the design speed. This will have the effect of reducing vehicle speeds along this stretch as per DMURS.
- 4.5.4 Pedestrian crossings have been proposed along the scheme route. These will be in the form of signalised toucan crossings along Chapel Road and also raised zebra crossings at the Convent Road roundabout. The implementation of these crossings will also aid in the reduction of vehicular speeds along Chapel Road.

4.6 Proposed Drainage

Surface Water Drainage

- 4.6.1 For the new northern section of Chapel Road, new gullies draining to a new stormwater collection system will be provided.
- 4.6.2 Run-off collected from the new road will be discharged via an attenuated outlet to the existing drainage network in Beechbrook Park Estate in accordance with the GSDS requirements. Associated stormwater storage will be provided within the open space.
- 4.6.3 A short length of the new northern section of Chapel Road will require its surface water run-off to be drained towards the existing stormwater drainage network at Blacklion, refer to the scheme drawings for details.

4.7 Proposed Utilities

- 4.7.1 Gas Networks Ireland (GNI) have requested to provide a 250mm PE4 Bar main along the extent of Chapel Road. This will form part of an overall 7km pipeline from Blacklion to Druids Glen.

4.8 Compulsory Purchase Order & Boundary Treatment

- 4.8.1 The proposed road improvement scheme may require Compulsory Purchase Orders (CPO) for a number of residential properties with land take necessary. Land take requirement will vary depending on the road alignment; however, it is envisaged that land take will be between 1m – 6m for each property.
- 4.8.2 Boundary treatment for residential properties impacted by this scheme is to be provided on a 'like for like' basis.
- 4.8.3 To provide for the proposed scheme will require widening of the current road corridor which will necessitate the removal of hedges, boundaries and trees along sections of the route. Trees that are adjacent to the scheme may also require removal / trimming.

5.0 ENVIRONMENTAL ASSESSMENT

5.1 Introduction

5.2 Appropriate Assessment Screening

- 5.2.1 Scott Cawley Ltd were commissioned to carry out a screening for Appropriate Assessment for this scheme. The full report is contained within **Appendix B** of this report.
- 5.2.2 The AA Screening report contains information required for Wicklow County Council to undertake a screening for Appropriate Assessment. It provides information on and assesses the potential for the proposed development to impact on the Natura 2000 network.
- 5.2.3 The AA Screening was undertaken with regard to a range of guidance documentation such as:
- *Appropriate Assessment of Plans and Projects Ireland – Guidance for Planning Authorities (DEHLG 2010);*
 - *Appropriate Assessment under Article 6 of the Habitats Directive: Guidance for Planning Authorities; and*
 - *Assessment of Plans and Projects Significantly Affecting Natura 2000 sites.*
- 5.2.4 The report summarises that the potential impacts associated with the proposed development do not have the potential to affect the receiving environment and, consequently, do not have the potential to affect the conservation objectives supporting the qualifying interest/special conservation interests of any European sites. Therefore, the proposed development is not likely to have significant effects on any European sites.
- 5.2.5 As the proposed development itself will not have any effects on the Qualifying Interests (QIs)/ Special Conservation Interests (SCIs) or conservation objectives of any European sites, there is no potential for any other plan or project to act in combination with it to result in likely significant effects on any European sites.
- 5.2.6 The potential impacts of the proposed development on the receiving environment, their Zone of Impact (ZoI) and the European sites at risk of likely significant effects are summarised in the table below.

Table 1 Summary of Analysis of Likely Significant Effects on European sites

Potential Direct, Indirect in Combination Effects and the ZoI of the Potential Effects	Are there any European sites within the ZoI of the proposed development?
<p>Habitat loss Habitat loss will be confined to the lands within the proposed development boundary.</p>	<p>No There are no European sites within the proposed development boundary</p>
<p>Habitat degradation as a result of hydrological impacts Habitats and species downstream of the proposed development site and the associated surface water drainage discharge points, and downstream of offsite wastewater treatment plants.</p>	<p>No There are no European sites at risk of hydrological effects associated with the proposed development</p>
<p>Habitat degradation as a result of hydrogeological impacts Groundwater-dependant habitats, and the species those habitats support, in the local area that lie downgradient of the proposed development site.</p>	<p>No There are no European sites at risk of hydrogeological effects associated with the proposed development</p>
<p>Disturbance and displacement impacts Potentially up to several hundred metres from the proposed development boundary, dependent upon the predicted levels of noise, vibration and visual disturbance associated with the proposed development, in conjunction with the sensitivity of the qualifying interest species to disturbance effects</p>	<p>No There are no European sites within the potential zone of influence of disturbance effects associated with the construction or operation of the proposed development</p>

5.2.7 The report concludes that following an examination, analysis and evaluation of the relevant information, including in particular, the nature of the project and its potential relationship with European sites and their conservation objectives, as well as considering other plans and projects , and applying the precautionary principle, it is considered that there is no potential for likely significant effects on any European sites and that the application for consent for the proposed development does not require an Appropriate Assessment or the preparation of a Natura Impact Statement (NIS).

5.3 EIAR Requirements

5.3.1 Screening is the process of assessing the requirement of a project to be subject to an Environmental Impact Assessment Report (EIAR), based on the project type, scale and on the significance or environmental sensitivity of receiving environment.

5.3.2 The overriding consideration in determining whether a road scheme should be subject to an EIAR is the likelihood of significant environmental effects. Significant effects may arise by virtue of the type of road scheme, the scale or extent of the road scheme and the location of the road scheme in relation to sensitive environments.

- 5.3.3 In interpreting which projects are likely to have significant environmental effects, the EIAR Directive lists those projects for which the EIA is mandatory and those projects for which an EIAR may be required.
- 5.3.4 The legal requirements for EIA of a road development are defined in the Roads Act (1993) as amended by the Planning and Development Act (2000 – 2017) and regulations made under the Roads Acts & Planning Acts.
- 5.3.5 **Table 5.1** provides an overview of the legislative requirements that determine whether a road scheme will require an EIA. With reference to the proposed Delgany to Blacklion Road scheme, the minimum criteria have been assessed below.

Table 5.1: Summary of Legislative Requirements for EIAR Screening

Mandatory		Comparative Assessment	EIAR Required
Construction of a motorway		The proposed scheme is not a motorway	No
Construction of a busway		The proposed scheme is not a busway	No
Construction of a service area		The proposed scheme does not contain a service area.	No
Any prescribed type of proposed road development consisting of the construction of a proposed public road or improvement of an existing public road, namely:	The construction of a new road of four or more lanes, or the realignment or widening of an existing road so as to provide four or more lanes, where such new, realigned or widened road would be eight kilometres or more in length in a rural area, or 500 metres or more in an urban area;	The proposed scheme is subject to widening, however, contains 2 lanes only	No
	The construction of a new bridge or tunnel which would be 100 metres or more in length.	Scheme does not include for the construction of a bridge or tunnel.	No

- 5.3.6 With reference to **Table 5.1**, the proposed scheme on Chapel Road is sub threshold in all cases and therefore does not require a mandatory EIAR with reference to the Roads Act and also Schedules 5 & 7 of the Planning & Development Regulations (2001 – 2017).

5.4 Archaeological & Built Heritage Constraints

5.4.1 A desktop study was undertaken with reference to the Archaeological and Built Heritage environment surrounding the proposed scheme extents. The purpose of this is to evaluate any potential impact of the proposed scheme on the archaeological and architectural heritage within the area and to propose mitigation measures to avoid or reduce any adverse impacts if necessary. **Figure 5.1** below illustrates the location of both the National Inventory of Architectural Heritage (NIAH) sites and the National Monuments Service sites in relation to Chapel Road.

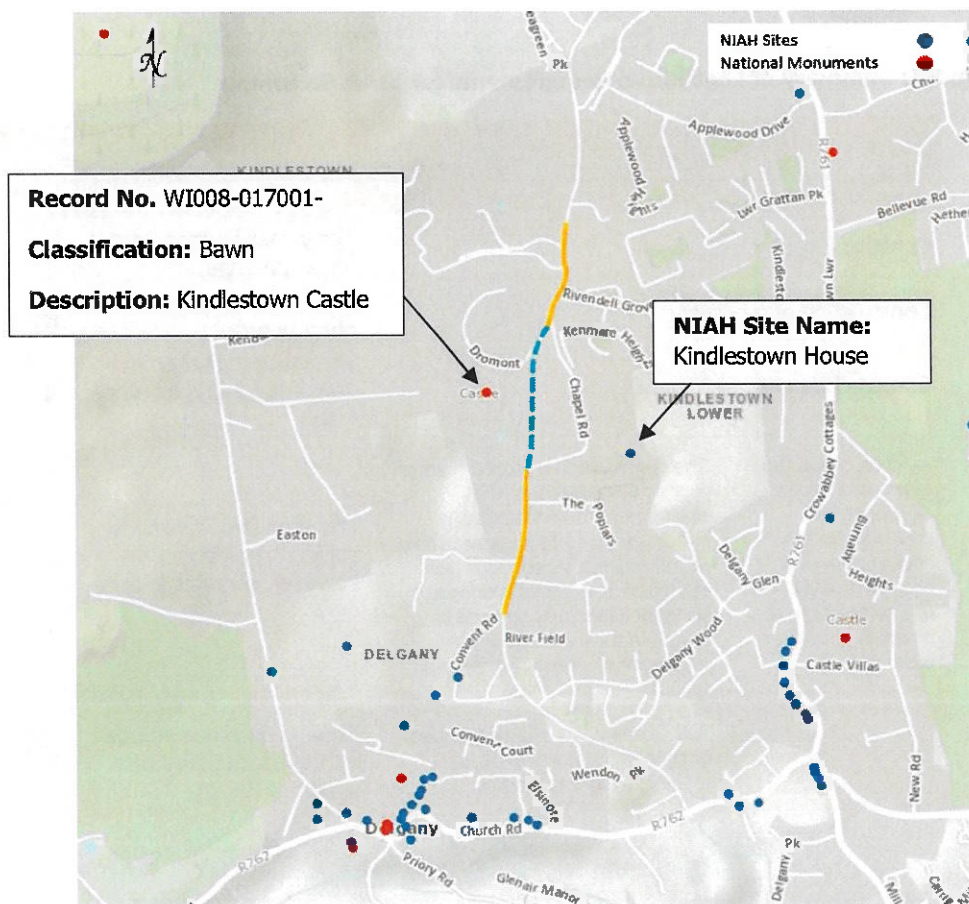


Figure 5.1: Location of NIAH and National Monuments within proximity to Chapel Road

5.4.2 **Figure 5.1** outlines that there are a number of NIAH and National Monument sites within Greystones, Co. Wicklow. There are two sites located in the vicinity of the Chapel Road scheme. These are illustrated in **Figure 5.1** and detailed in **Table 5.1** below.

NIAH Site/National Monument	Location to Scheme
National Monument: Kindlestown Castle	80m west of Chapel Road Proposals
NIAH Site: Kindlestown House	220m east of Chapel Road Proposals

5.4.3 It is not envisaged that the proposed road upgrade scheme will directly impact on any archaeological or architectural site of national importance.

6.0 SUMMARY OF REPORT

6.1 Summary of Report

- 6.1.1 DBFL have been commissioned by WCC to prepare the Part 8 Design Report of the Delgany to Blacklion Road project.
- 6.1.2 The overall scheme intends to deliver an upgrade to a section of Chapel Road and Convent Road roundabout. This upgrade will consist of improvements for pedestrians and cyclists as well as improvements for vehicular traffic.
- 6.1.3 A section of the Chapel Road is being delivered by D-RES Properties under the WCC Planning Ref 18-678.
- 6.1.4 The proposed scheme is in line with a number of policy documents as well as the Greystones – Delgany Local Area Plan (2012-2019) which details a road improvement objective for the Chapel Road.
- 6.1.5 The existing pedestrian and cycle environment is poor along Chapel Road and consists of a narrow footpath located on one side of the road only. There are no existing cycle facilities along the road.
- 6.1.6 The existing road is a narrow single lane carriageway of approximately 5.5m – 6m in width. The road runs in a north – south direction and is bounded on both sides by residential properties.
- 6.1.7 The existing alignment for the road is severe in places with two 90 degree turns in close proximity to one another.
- 6.1.8 Existing traffic counts taken along the road, in the vicinity of St Laurences NS, show that there was a two-way traffic flow of 593 vehicles to the north of the school in the AM peak hour, with 500 vehicles recorded in the PM peak hour. To the south of the school, there was a two-way traffic flow of 992 vehicles recorded in the AM peak hour with 370 vehicles recorded in the PM peak hour.
- 6.1.9 For the southern section of Chapel Road, surface water discharges to an existing WCC sewer. Attenuation is provided for at Delgany Avenue before discharging to the existing stream. Foul water drainage shows a foul sewer entering Chapel Road in the northern section of the road. There is a public water main that runs the extents of the scheme. New gullies and stormwater collection network incorporating attenuated outlets and storage areas will be provided to drain the proposed new sections of road.

- 6.1.10 There are a number of existing utilities along Chapel Road including Irish Water watermains and sewers, EIR, Gas Networks Ireland and ESB.
- 6.1.11 Collision records were reviewed within the area in order to determine whether any collision trends were apparent along the road. There have been three collisions recorded between 2005 – 2015, with one of these recorded as a serious collision.
- 6.1.12 The road proposals, which are consistent throughout the scheme, proposes to provide a 6m road carriageway, with 2m footpaths on both sides of the road as well as 2m cycle tracks on both sides of the road. The scheme proposals will tie in in two locations, north and south, of the new section of Chapel Road being delivered by D-RES Properties. These proposed design proposals for this section of Chapel Road will be consistent with the design proposals for this scheme.
- 6.1.13 The southern section of Chapel Road will continue to provide a straight alignment that proceeds downhill travelling southbound towards the Convent Road roundabout. The centre of the roundabout has been realigned in order to provide a more compact roundabout and circulating carriageway.
- 6.1.14 The horizontal geometry of the new road has been improved along Section 2 to provide a minimum 75m radius centreline geometry. This section is relatively flat with a slight slope downhill travelling southbound.
- 6.1.15 The scheme route proposes traffic calming measures, in line with DMURS, that will reduce vehicular speeds along the road. These include a reduced road carriageway width of 6m as well as the incorporation of crossing facilities along the road.
- 6.1.16 The proposed public lighting is proposed on both sides of the road to the back of footpath.
- 6.1.17 GNI propose to provide a 250mm PE4 Bar main along the extent of Chapel Road. This will form part of an overall 7km pipeline from Blacklion to Druids Glen.
- 6.1.18 The proposed road improvement scheme may require Compulsory Purchase Orders (CPO) for a number of residential properties to provide for the footprint of the widened road extents.

- 6.1.19 An AA screening assessment was conducted by Scott Cawley. The report concludes that there is no potential for likely significant effects on any European sites and that the application for consent for the proposed development does not require an Appropriate Assessment or the preparation of a Natura Impact Statement (NIS).
- 6.1.20 A desktop study was conducted with regard to screening for EIAR requirements and potential impact on Archaeological and Architectural Heritage. With regard to the EIAR requirements, it was considered that the scheme was sub-threshold in all cases and therefore does not require a mandatory EIAR. With regard to the Archaeological and Architectural Heritage assessment, it was concluded that the proposed road upgrade scheme will not directly impact on any site of national importance.