

LEINSTER ORBITAL ROUTE

Corridor Protection Study

June 2009

Leinster Orbital Route Corridor Protection Study

NRA Highway Framework – Task 27

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Appendix A: Junction Protection Zones and Indicative Route Corridor Drawings

PREAMBLE

The National Roads Authority was charged by Government with the task of carrying out a Feasibility Study in respect of a possible Leinster Orbital Route (formerly known as the Dublin Outer Orbital Route).

The conclusion of the work undertaken has been the identification of a corridor linking Drogheda to Navan to Naas as being the corridor that most closely reflects the ambitions set out in the various policy documents for the region and that best achieves the outcomes required from such a route. The Feasibility Study Final Report (available on the NRA website) provides an examination of the feasibility of the identified project from a policy, economic, engineering and environmental perspective. Its conclusions can be summarised as:

1. The route is strategically beneficial for the region in terms of strengthening the links between key development centres, assisting the economic development of these centres and improving the overall regional transport network;
2. The route is economically viable. The work done to date indicates that the benefits of the project are significantly greater than the project costs; and
3. The route is technically feasible. While there are numerous constraints throughout the corridor area and adjacent to the corridor, it has been identified that a proper and satisfactory alignment can be developed to deliver the project. In addition, while there are environmental challenges to be addressed there are no environmental issues that would rule out this alignment at this stage of the process.

Arising from the favorable conclusions of the Feasibility Study Report, the Authority has recommended to Government that the scheme, which has been retitled as the "Leinster Orbital Route" (previously the Dublin Outer Orbital Route) to reflect the positive impacts of the scheme extending well beyond Dublin, be progressed to the next stage of development – the preparation of the statutory documentation for the project. This would ensure that the scheme would remain protected and would be ready and available for implementation at any stage in the future, when required. In addition, it would prevent new constraints from emerging that would render the project unavailable, or significantly increase its costs, in the future.

This Corridor Protection Study report sets out recommendations for policies and objectives for Planning Authorities, pending the Leinster Orbital Route progressing to the next stages of planning and design, with a view to securing that the feasible routes identified by the National Roads Authority are preserved and not rendered unavailable through incompatible land uses.

1.0 INTRODUCTION

The Roughan & O'Donovan FaberMaunsell Alliance has been commissioned to identify zones along the key radial routes from Dublin (M1, M3, M4, M7 & M9) where possible junctions with the proposed Leinster Orbital Route (or Dublin Outer Orbital Route) may be constructed in future. Provision has also been made for a junction with the R154 at Trim, in recognition of the regional strategic importance of this corridor. The objective in identifying such areas is to protect them from development which might potentially compromise the future deliverability of the proposed orbital motorway.

Feasibility and planning work for the Leinster Orbital Route (LOR) is identified as an objective of the National Development Plan 2007-2013. The LOR is proposed as a national primary route. It is recommended that this Corridor Protection Study be taken into account for Development Plans, Local Area Plans and any planning applications that might affect the potential route of the Leinster Orbital Route.

This study has taken account of existing and proposed land uses and has, where possible, avoided conflict with developed or zoned lands. This has not been possible in all instances, due to the need to connect to existing primary routes, which form development corridors, and in these instances, every effort has been made to keep conflicts to a minimum.

1.1 Background

The Leinster Orbital Route Feasibility Study was commissioned by the National Roads Authority to report on the feasibility of a new road link connecting the towns of Drogheda, Navan and Naas/Newbridge/Kilcullen, whilst serving Kells/Trim and Kilcock/Maynooth/Leixlip/Celbridge. The general corridor identified in the Leinster Orbital Route Feasibility Study is broadly as follows:

- M1 at Drogheda to M3 at Navan ;
- M3 at Navan to R154 at Trim;
- R154 at Trim to M4 at Enfield or Kilcock;
- M4 at Kilcock or Enfield to M7/M9 at Naas / Newbridge.

1.2 Objectives of Study

The objective of this study is to identify zones along the key radial routes from Dublin where junctions with the proposed Leinster Orbital Route might possibly be constructed in future in order to protect such areas from development which could compromise the deliverability of the proposed orbital motorway. Such development could significantly restrict the options for junction configurations and could potentially lead to significant cost increases or render unavailable a beneficial junction between the Leinster Orbital Route and the key radial route in question.

This study also suggests supporting policies and objectives with associated mapping that should be adopted in all relevant Development Plans and Local Area Plans. This is discussed in Section 2.0 of this document.

This study identifies possible junction locations of the Leinster Orbital Route with the following routes: M1; M3; R154; M4; M7 & M9. No junction location has been identified in this study for the proposed M2 as the route for this scheme has yet to be finalised.

1.3 Limitations of Study

It needs to be borne in mind that this Corridor Protection Study is based only on the outline work done for the Feasibility Report for the Leinster Orbital Route and, for the avoidance of doubt, no comprehensive Constraints Study or Route Selection Study or Junction Strategy or Preliminary Design or Environmental Impact Assessment have been undertaken at this stage.

The Feasibility Report was submitted to the Government for its consideration in March 2007, together with a recommendation that the scheme be advanced to planning stage. As no direction has been received from the Government so far to proceed with the next stages in the scheme development, the NRA has not been in a position to develop this scheme to the next stage of project definition. Accordingly, route corridors and junction zones shown in this Corridor Protection Study are indicative only at this stage and are subject to further development and possible change.

2.0 DEVELOPMENT AND LOCAL AREA PLANS DEVELOPMENT CONTROL

The following are the suggested policies which are required to protect the proposed route reservation. Mapping of the proposed junction zones/route reservation are included in Appendix A. A number of policies and objectives are suggested in order to embrace a number of eventualities, including:

- General facilitation of the Leinster Orbital route (LOR).
- Specific protection of the reservations.
- Applications within the reservations.

2.1 General

All Development Plans and Local Area Plans should include a general policy supporting the development of the LOR as follows:

- *“The Council recognises the strategic importance of the proposed Leinster Orbital Route infrastructure as recognised in the NDP and the Regional Planning Guidelines for the Greater Dublin Area and will ensure the protection of the proposed junction zones and likely approach route corridors free of inappropriate development and otherwise facilitate the NRA in the delivery of the preferred route.”*

2.2 Specific

There are a number of specific policies that should be inserted into all Development Plans and Local Area Plans along the route options. Listed below in descending order of preference are a number of suggested policies:

- “It is the policy of the Council to safeguard, protect and reserve all land within the Leinster Orbital Route junction zones and likely approach route corridors free of development during and beyond the life-time of the plan. This will include all lands required for the proposed road, ancillary works, services and facilities.”*
- “Junction zones and likely approach route corridors are designated as a Specific Objective of this plan. This Objective limits the development types which will be considered within the corridors to those listed below [refer to section 2.3]. The Objective is the primary policy consideration in terms of land use policy. It is the policy of the Council to notify and consult with the NRA regarding all development and land use policy proposals within or adjacent to the corridors.”*
- “The Council will preserve free from development all lands within the proposed Leinster Orbital Route junction zones and likely approach route corridors as identified on the attached maps until such time as a preferred route has been identified.”*
- “It is the policy of the Council to support the proposed NRA road schemes by reserving the junction zones and likely approach route corridors free of any development which would interfere with the provision of the road proposal or would prejudice the implementation of the scheme. “*

2.3 Planning Applications

- *It is the policy of the Council to refer to the NRA for their observations:*

- *All planning applications for development within or immediately adjacent to the proposed junction zones and likely approach route corridors, and:*
- *Proposals that would give rise to traffic movements which would materially impact on the operation of proposed junctions, accesses to and the general operation of the existing and proposed motorways within a 1 km radius of proposed junctions.*

3.0 M1 - LEINSTER ORBITAL ROUTE JUNCTION

3.1 Overview

Previous feasibility studies have identified an optimal location for the M1 intersection in the Drogheda region. A desktop review has indicated that the optimal location for the M1 junction is south of the River Boyne, in order to avoid the difficult topography and concentration of archaeology (including UNESCO World Heritage Sites at Newgrange, Knowth and Dowth between Drogheda and Slane) north of the river.

A stretch of the M1 extending to the existing toll plaza south of the Duleek Junction has been considered for the purposes of this study. Three possible junction locations have been identified within this zone.

3.2 Possible Junction Location

3.2.1 *Extended Drogheda South Junction (Option M1-A)*

The first location considered is adjacent to the existing Duleek Road Junction southwest of Drogheda. This dumbbell junction was constructed as part of the M1 from Gormanstown to the River Boyne and was completed in June 2003. Free-flow conditions can be provided at this location between the M1 and the Leinster Orbital Route with link roads to the existing Duleek Road Junction in order to facilitate movements from the local road network to and from the M1 and Leinster Orbital Route.

The proposed junction protection zone at this location avoids the lands zoned under the Drogheda and Environs Local Area Plan 2009-2015.

3.2.2 *Beymore (Option M1-B)*

The second location considered is at the townland of Beymore approximately 1.2 km south of the Duleek Junction and immediately adjacent to an existing road overbridge which was constructed to divert a County Road as part of the M1 motorway scheme. The junction can provide free-flow connectivity between the M1 and the Leinster Orbital Route.

3.2.3 *M1 Toll Plaza (Option M1-C) at Balgeen*

The third location considered is at the existing toll plaza on the M1 located south of the Duleek Junction. This option involves constructing a number of slip roads onto and off the M1 from the Leinster Orbital Route immediately north and south of the toll plaza. The junction protection zones and indicative route corridors for both options as noted above are illustrated on Drawing No. M1-LR in Appendix A.

The junction protection zones and indicative route corridors for these options as noted above are illustrated on Drawing No. M1-LR in Appendix A.

Appendix A also contains Drawing No. SK-001 which illustrates the junction protection zones and indicative route corridors in relation to the Drogheda and Environs Local Area Plan 2009-2015.

4.0 M3 – LEINSTER ORBITAL ROUTE JUNCTION

4.1 Overview

The Leinster Orbital Route Feasibility Study identified the preferred location for the Leinster Orbital Route - M3 Junction to be south of Navan in the vicinity of the M3 Navan South Junction at Kilcarn. This study has considered two possible locations for the junction. Both locations are north of the River Boyne, avoiding the Tara and Bective Abbey areas south of the river, which are extremely sensitive in terms of archaeology and landscape. The approach corridors to both junction options pass through predominantly greenfield sites avoiding the urban extents of Navan town.

The two potential junction locations identified avoid the lands zoned in the Navan Development Plan 2009 – 2015 and generally avoid existing development, aside from some sport facilities and a small number of private properties. Further work will be required at later design stages to optimise the routes to minimise the impacts on these constraints, which are considered unavoidable for the purposes of this high level exercise.

4.2 Possible Junction Locations

4.2.1 Kilcarn Interchange (Option M3-A)

The first potential interchange location is south of the Kilcarn Interchange which is currently under construction as part of the M3 scheme. The proposed configuration would constitute a southwesterly extension of this existing interchange and would allow for all movements between the Leinster Orbital Route, the M3 and the local road network (linking to the old N3).

4.2.2 Kilcarn Interchange (Option M3-B)

The second location considered is a greenfield site approximately 1.5 km west of the Kilcarn Junction. Again, this would constitute an extension of the Kilcarn Junction. The junction is similar to that considered in Option 1 with free-flow connectivity from the Leinster Orbital Route to the M3 in all directions with onward connectivity to the local road network. The slip road on the M3 southbound into Navan would be relocated further west to a combined LOR / Navan exit from the M3. In order to facilitate movements to and from Navan onto and from the Leinster Orbital Route a $\frac{3}{4}$ dumbbell junction would be constructed at the location where the existing N3 intersects the Leinster Orbital Route.

The junction protection zones and indicative route corridors for both options as noted above are illustrated on Drawing No. M3-LR in Appendix A. Drawing No's SK-002 and SK-003 are also included in appendix A which show the junction protection zones and indicative route corridors in relation to the Navan Town Development Plans 2003-2009 and 2009-2015.

5.0 R154/TRIM - LEINSTER ORBITAL ROUTE JUNCTION

5.1. Overview

Previous feasibility studies have identified that a potential Leinster Orbital Route could pass east or west of Trim with a junction along the R154 Regional Road. A typical dumbbell junction arrangement has been considered for the intersection of the Leinster Orbital Route and the R154.

Providing an interchange to serve the R154 near Trim is challenging, due to the considerable constraints in the area, principally the River Boyne cSAC and numerous archaeological constraints. This study has identified the two locations nearest the town on either side, where a junction may be situated in future.

Following a review of the Trim Development Plan 2008 – 2014, the proposed junction locations have been slightly amended from the draft proposals.

5.2. Possible Junction Locations

5.2.1 Iffernock (Option R154 A)

The first location considered is along the R154 at the townland of Iffernock east of Trim. A dumbbell junction arrangement can be provided at this location. The location of this junction coincides with the proposed Trim Southern Bypass reservation as indicated in the Trim Development Plan 2008-2014. The indicative alignment of the Leinster Orbital Route east of Trim town generally follows that of the Trim Southern Bypass, which could possibly be delivered as a parallel link road within an adequately wide reservation. It is considered feasible for the Trim Southern Bypass to be delivered by the Local Authority in advance of the Leinster Orbital Route provided due regard is taken to ensure compatibility between the two schemes.

This option impacts on the eastern end of lands zoned for retail warehousing use and requiring a framework plan (FP3) under the development plan proposals. As they are situated on the eastern extremity of the town, beyond a residential landbank that is not due to be developed until post 2014, development proposals for these lands are unlikely to be crystallised for a few years. It would be desirable that further route studies for the LOR will have clarified the precise nature and extent of impacts on these lands prior to development taking place. However, in the immediate term, the considerable constraints both east and west of this location indicate that it would be prudent to reserve a corridor as shown to provide for a possible LOR route on the eastern side of Trim pending further route studies.

5.2.2 Ballynafeeragh (Option R154 B)

The second location considered is along the R154 at the townland of Ballynafeeragh on the western edge of Trim. Similar to Option 1, a dumbbell junction arrangement can be provided. Again, the motorway and Trim Southern Bypass could be delivered as parallel roads within a single reservation. Also, it is considered feasible for the Trim Southern Bypass to be delivered by the Local Authority in advance of the Leinster Orbital Route provided due regard is taken to ensure compatibility between the two schemes.

The proposed junction protection zone at this location has been amended slightly to avoid impacting on lands zoned for industrial use on the northwest side of the town.

The junction protection zones and indicative route corridors for both options as noted above are illustrated on Drawing No. TR/R154-LR Rev B in Appendix A. Drawing No. SK-004 Rev A is also included in Appendix A which illustrates the location of the junction protection zones and indicative route corridors in relation to the Trim Local Area Plan 2008 – 2014.

6.0 M4 –LEINSTER ORBITAL ROUTE JUNCTION

6.1 Overview

Three potential junction locations have been identified along the M4, two of which comprise extensions of existing junctions and a third option for an entirely new junction.

All of the options identified lie between Enfield and Kilcock on the M4 corridor. While later studies may investigate a connection further east to serve the Maynooth area, for the purposes of this study it is considered that such a route would not be consistent with the overall routing objective of connecting Drogheda to Naas via Navan, as it would involve a significant eastward deviation of the LOR.

Consideration has been given to existing and proposed land uses in the vicinity of Kilcock and Enfield and conflicts are generally avoided. The option nearest Kilcock would require some acquisition of development land immediately adjacent to the interchange and some reorganisation of activities in the existing warehousing at this location.

6.2 Possible Junction Locations

6.2.1 Kilcock (Option M4-A)

The first option considered is located west of Kilcock town adjacent to (and forming an extension of) the M4 Kilcock Junction. The junction identified allows for all movements between the M4, the LOR and the local road network via a combination of free-flow and non free-flow movements, depending on anticipated demand.

6.2.2 Between Kilcock and Enfield (Option M4-B)

The second option considered is at a rural greenfield site located approximately 7.5km west of the existing M4 Kilcock Junction and approximately 3.5km east of the existing M4 Enfield Junction and would provide full free-flow connectivity between the two motorways.

6.2.3 Enfield (Option M4-C)

The third option considered is located on the western side of Enfield adjacent to (and forming an extension of) the existing M4 Enfield Junction. The proposed junction would provide free-flow connections between the LOR and M4 with onward connections to the local road network. If the route is to pass west of Enfield, careful consideration will be required regarding the interface with the adjacent proposed M4 service areas.

The junction protection zones and indicative route corridors for the three options as noted above are illustrated on Drawing No's M4-LR-01, M4-LR-02, M4-LR-03 in Appendix A.

7.0 M7/M9 - LEINSTER ORBITAL ROUTE JUNCTION

7.1 Overview

The Leinster Orbital Route Feasibility Study identified a number of connection points to the N7/M7, from Kill at the northern end to south of Newbridge at the southern end (at the M7 / M9 junction). Having reviewed the feasibility study, the objectives of the scheme and evolving NRA policy, the area between Newhall and the Great Connell interchange (M7 / M9) has been identified as the optimal connection location.

While the primary objective of the exercise is to identify a connection point to the M7, an opportunity exists under certain variants to connect to the M9 also, thereby providing a direct link from the cities of Kilkenny and Waterford to the North Leinster Region and reducing localised traffic pressure on the M7 north of the M9 junction.

The junction zone identified also allows for a possible connection between the M7 south and the M9, which is not accommodated at the existing junction.

The study has made provision for a connection to the R445 (Naas to Newbridge dual carriageway) via a dumbbell junction between Newbridge and Newhall. Previous studies have identified an upgrade scheme for the M7 Newhall Interchange, which could be incorporated into the M7 / LOR junction design, however, the options for such a scheme are constrained by development around the junction. Later studies should further investigate the potential for synergies between the two schemes.

7.2 Possible Junction Locations

7.2.1 Existing M9/M7 Junction at Great Connell (Option M7-A)

This option involves the upgrade of this existing M7/M9 motorway connection to allow for full free flow movements (including the provision for freeflow connectivity between the M7 south and the M9, which is not currently provided for).

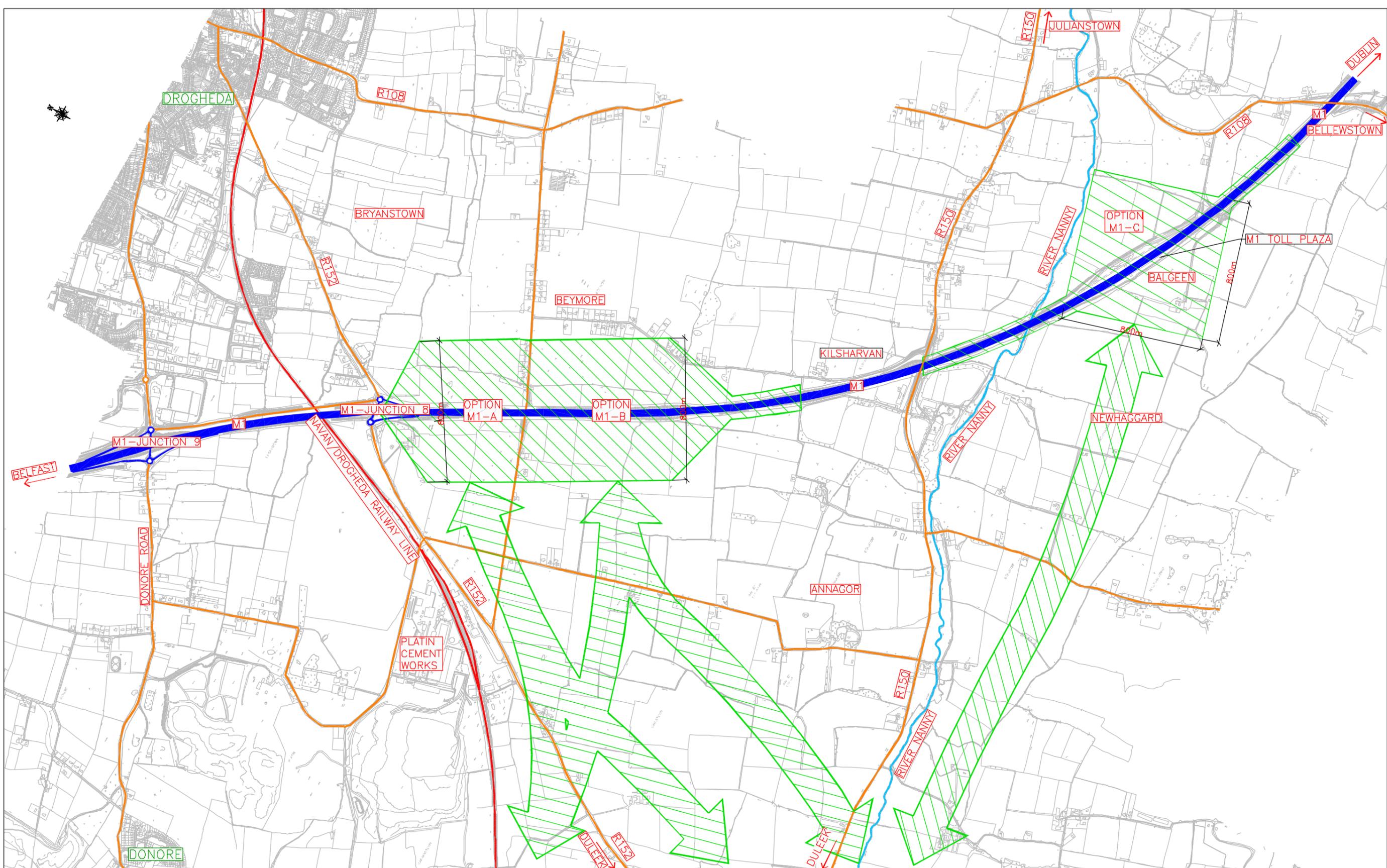
7.2.2 Existing M9/M7 Junction at Great Connell linked with Junction at Lewistown (Option M7-B)

The second option examined is at Lewistown south of Newhall Junction. This junction accommodates movements to and from the Leinster Orbital Route to the M7 with onward parallel link roads to the M9 at Great Connell.

The junction protection zones and indicative route corridors for both options as noted above are illustrated on Drawing No M7-M9-LR in Appendix A.

APPENDIX A

Junction Protection Zones and Indicative Route Corridor Drawings



LEGEND:

	JUNCTION PROTECTION ZONE		RIVER NANNY
	INDICATIVE ROUTE CORRIDOR		
	EXISTING MOTORWAY		
	EXISTING RAILWAY LINE		
	EXISTING LOCAL ROADS		

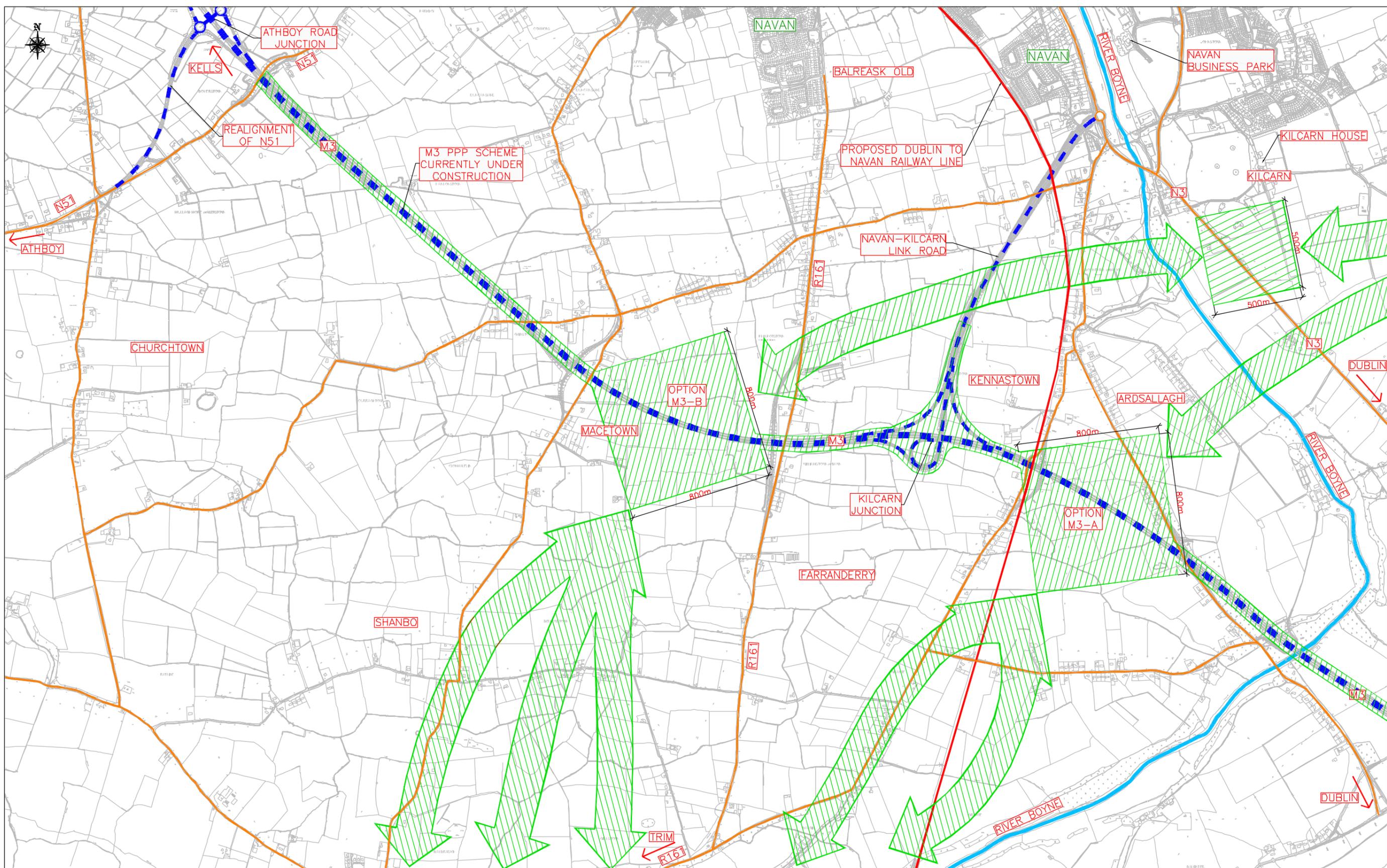
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1	PRELIMINARY				
2	APPROVAL				
3	TENDER				
4	CONSTRUCTION				

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Project Title: LEINSTER ORBITAL ROUTE CORRIDOR STUDY	
Drawing Title: M1 JUNCTION PROTECTION ZONES & INDICATIVE ROUTE CORRIDORS	
Drawn: JWC	Scale: FEASIBILITY
Checked: EOC	Scale: 1:10000 (2A)
Approved: EMB	Date: JAN 09
Client: EOC	Sheet: M1-LR
Drawn: JWC	Phase: A



LEGEND:

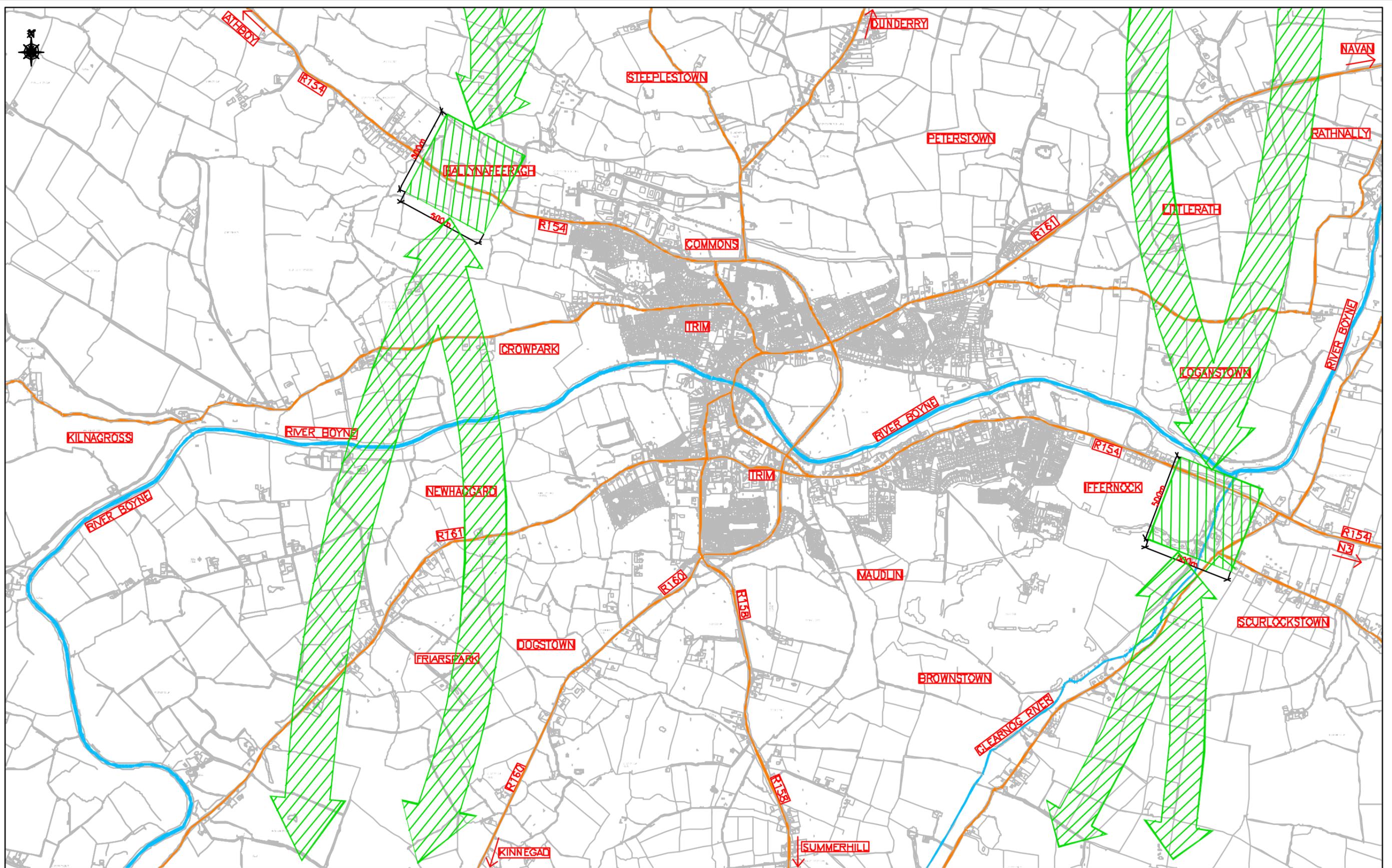
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- INDICATIVE ROUTE CORRIDOR
- MOTORWAY SCHEME UNDER CONSTRUCTION
- PROPOSED RAILWAY LINE
- EXISTING LOCAL ROADS
- RIVER BOYNE

NO.	REVISION	DATE	BY	CHKD	APPD
A	ADDITIONAL DETAILS INCORPORATED				
PRELIMINARY					
APPROVAL					
TENDER					
CONSTRUCTION					

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Project Title: LEINSTER ORBITAL ROUTE CORRIDOR STUDY	
Drawing Title: M3 JUNCTION PROTECTION ZONES & INDICATIVE ROUTE CORRIDORS	
Author: JCB	Scale: 1:10000 (3/8"=1')
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Checked: JCB	Scale: 1:10000 (3/8"=1')
Approved: JVC	Date: JAN 09
Project No: 07-130-V3-R	Sheet: FEASIBILITY
Drawing No: M3-LR	Rev: A



LEGEND:

	JUNCTION PROTECTION ZONE		RIVER NANNY
	INDICATIVE ROUTE CORRIDOR		EXISTING MOTORWAY
	EXISTING MOTORWAY		EXISTING LOCAL ROADS
	EXISTING RAILWAY LINE		
	EXISTING LOCAL ROADS		

NO.	REVISIONS	DATE	BY	CHKD
1	ISSUED FOR TENDER	10/01/2018	MM	MM
2	REVISED FOR RFI	10/01/2018	MM	MM
3	REVISED FOR RFI	10/01/2018	MM	MM
4	REVISED FOR RFI	10/01/2018	MM	MM
5	REVISED FOR RFI	10/01/2018	MM	MM
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9	REVISED FOR RFI	10/01/2018	MM	MM
10	REVISED FOR RFI	10/01/2018	MM	MM

Roughan & O'Donovan + Partner Maunsell
Alliance

Consulting Engineer

Area: Water, Air, Noise, Ecology, Traffic, etc.
Scale: 1:20,000
Date: 10/01/2018
Project: TR R154R

CLIENT: LINCOR INDUSTRIAL		CORRIDOR STUDY	
TITLE: TRIM R154 JUNCTION PROTECTION ZONES & INDICATIVE ROUTE CORRIDORS			
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