

Appendix F

Cycle Network and Infrastructure Development



Straitéis Iompair na Gaillimhe
Galway Transport Strategy

Appendix F

GTS Cycle Network & Infrastructure Development

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F1 Introduction

The Galway Transport Strategy (GTS) sets out a proposal for a city-wide high quality cycle network, taking cognisance of existing facilities, previous proposals, journey types most suited to cycling and travel desire lines. This network is intended to maximise coverage and increase dedicated cycle priority measures across the city, with some additional cyclist priority links to nearby towns or villages situated within or just outside the metropolitan area of Galway, thereby encouraging cycling as a mode and increasing its mode share in the city and surrounding areas.

This Appendix sets out the development of the proposed cycle network for Galway City, including an audit process undertaken to identify engineering constraints, evaluate the feasibility and suitability of each cycle link with regard to these constraints and propose alternative facilities or mitigation measures to enable the implementation of the overall network. This Appendix therefore represents a supporting document to the main GTS Technical Report.

An environmental assessment has also been undertaken on the proposals contained in this report. For details of the environmental constraints and associated mitigation measures developed, please refer to Chapter 9 of the **GTS Technical Report**.

In many areas, proposals for road links, junction upgrades, bus priority measures and pedestrian facilities overlap with the cycle network. These are also presented or noted in the relevant sections for clarity and to give a holistic view of the transport network in that area. Further information on the proposed public transport network is contained in ‘**Appendix B – GTS Public Transport Network Development**’ and ‘**Appendix D – GTS Public Transport Infrastructure Development**’.

F2 Existing Network

F2.1 Existing Cycle Facilities

Figure 1 below shows the extent and quality of dedicated cycle facilities provided in Galway City as per the GMA Bus & Cycle Network Plan (Figure 3.5 of that document).



Figure 1 Existing Cycle Network (Dec 2013)

As part of the GMA Bus & Cycle Network Plan, a Quality of Service (QoS) Assessment was carried out, the results of which are shown in Figure 1. This assessment was based on the National Cycle Manual (NCM) with a variation for the wider geographical area considered here, which was approved by the NTA.

The five criteria for assessment, on which each piece of cycling infrastructure was scored, were:

- Pavement Quality;
- Width;
- Number of conflicts per 100m length;
- Junction time delay; and
- Level of comfort.

The full results of the QoS audit are shown below in Table 1.

Location	Type of Facility	Quality of Service
Western Distributor Road	C3 – Cycle Lane	C

Seamus Quirke Road / Bishop O'Donnell Road	C2 – Cycle Track Immediately Adjacent	B
N6 Quincentenary Bridge (Browne Roundabout – Sean Mulvoy Junction)	C2 – Cycle Track Immediately Adjacent	B
Headford Road (Sean Mulvoy Junction – Kirwan Roundabout)	C2 – Cycle Track Immediately Adjacent	C
Bóthar na dTreabh (Kirwan Roundabout – Lynch Roundabout)	C2 – Cycle Track Immediately Adjacent	B
Doughiska Road	C2 – Cycle Track Immediately Adjacent	D
Castlegar	C1 – Cycle Track Separated from Road	C
Rahoon Road (Outbound)	C3 – Cycle Lane	B
Rahoon Road (Inbound)	B1 – Bus Lane	C
Nimmo's Pier – Grattan Road	S2 – Shared Space	A
NUIG Campus - Quincentenary Bridge	G1 – Cycle Trail or Greenway / S2 – Shared Space	A
Quincentenary Bridge - NUIG Sports Grounds	G1 – Cycle Trail or Greenway / S2 – Shared Space	A
Galway Retail Park	C1 – Cycle Track Separated from Road	B
Dublin Road Outbound (French Junction – Renmore Park)	B1 – Bus Lane	C
Dublin Road Inbound (Doughiska Road – Renmore Park)	B1 – Bus Lane	C
Bóthar Uí Eithir	B1 – Bus Lane	C
Forster Street	B1 – Bus Lane	C

Table 1 Quality of Service Audit of Existing Cycle Network (GMA Bus & Cycle Network Plan 2014)

As expected, A-rated facilities are generally off-road, traffic-free routes, sometimes shared with pedestrians but always segregated from motorised vehicles. B-rated facilities in general consist of raised adjacent cycle lanes in good condition, as they provide some measure of segregation from motorised traffic. C-rated facilities are more varied, including on-road cycle lanes, some raised adjacent cycle lanes in poor condition or below standard, and bus lanes, as these facilities allow for a degree of sharing of the road space, sometimes with relatively

high speed traffic and / or large vehicles. D-rated facilities include cycle lanes on Doughiska Road which are nominally segregated from motorised traffic, but cyclists give way to motorised vehicles at all of the frequent interaction points.

It is therefore clear from this assessment that the type of facility in itself is not enough to guarantee a high quality route for cyclists, although the degree of segregation does play a part, but surrounding conditions, behaviour of other road users, and maintenance of the facility must also be taken into account.

It should be noted that Figure 1 is dated December 2013, and the QoS audit was carried out at approximately that time. As a result there have been some amendments to the network since that date which are not included in the above assessment. The principal additions are as follows:

- Threadneedle Road – new on-road cycle lane northbound;
- Tuam Road – minor extension of facilities approaching Bóthar na dTreabh; and
- Lough Atalia Road – section of new on-road cycle lanes in both directions as part of the railway bridge lowering scheme.

Figure 2 below shows the dedicated cycle facilities in Galway City as of November 2015. The current network available to cyclists also includes the road and street network of the city as well as bus lanes, but as these are not designed specifically for cyclists, are not dedicated facilities, and are currently primarily used by motorised vehicles, they have been omitted.



Figure 2 Existing Cycle Network (Nov 2015)

Table 2 below details the current extent of the existing dedicated cycle infrastructure, including location and type of facility.

Link	Description	Length (approx.)
Western Distributor Road	On-road cycle lanes on both sides from Blake Roundabout to Deane Roundabout.	2.1 km
Seamus Quirke Road / Bishop O'Donnell Road	Raised adjacent cycle lanes on both sides, transitioning to on-road at junctions, from Deane Roundabout to Browne Roundabout. Additional short sections of on-road cycle lanes on the approach to Seamus Quirke Road on Ragoon Road and Letteragh Road.	1.7 km
N6 Quincentenary Bridge	Raised adjacent cycle lanes on both sides, transitioning to on-road at junctions, from Browne Roundabout to Bodkin Junction.	1.6 km
N6 Headford Road	Raised adjacent cycle lanes on both sides, transitioning to on-road at junctions, from Bodkin Junction to Kirwan Roundabout. Additional short sections of on-road cycle lanes to the south of Bodkin Junction.	560 m
N6 Bóthar na dTreabh	Raised adjacent cycle lanes on both sides, transitioning to on-road at junctions, from Kirwan Roundabout to the Ballybane Road junction. Additional short sections of on-road cycle lanes on the approach to junctions of the N6 on the Ballybane Road and the Tuam Road.	2.4 km
Ballybrit Business Park / Ballybane Industrial Estate	On-road cycle lanes on both sides of the entrance road to these business parks.	100 m
Bóthar an Chóiste	Raised adjacent cycle lanes on both sides.	875 m
Parkmore Road (North)	On-road cycle lanes on both sides from the roundabout on Parkmore Road to the N17.	920 m
Doughiska Road	Raised adjacent cycle lanes on both sides.	1.5 km
Briarhill Junction	Cyclist underpass under junction, shared facility with pedestrians.	240m
Ballyloughaun Road	Off-road two way segregated cycleway from railway bridge to Ballyloughane Strand.	260 m
Martin Connolly Causeway/Nimmo's Pier	Off-road segregated cycleway.	1.1 km
Salthill Promenade	Shared path with pedestrians beside the coast along Grattan Road, Seapoint Promenade and the R336.	2.5 km
Threadneedle Road	On-road cycle lane northbound from the junction with Dr Mannix Road to Threadneedle Cross.	350 m
Gateway Retail Park	Raised adjacent cycle lanes on both sides through part of the retail park.	300 m
Lough Atalia Road	On-road cycle lanes on both sides under the railway bridge.	140 m
NUIG	Off-road cycling and walking track through the grounds of NUIG along the western bank	3 km

Link	Description	Length (approx.)
	of the River Corrib, connecting to University Road at the southern end.	
Canal Paths	Route comprising paths along the canals for pedestrian and cyclist use only with occasional shared use of cul de sacs with motorised traffic.	800 m

Table 2 Existing Cycling Infrastructure

F2.2 Constraints on Cycle Network

The principal constraints affecting the existing cycle network are a lack of dedicated cycling facilities, and discontinuities between those that have been put in place in recent years, leading to sections of cycle lanes but no overall connected network. There are currently 31.5 km of cycle lanes or combined off-road cyclist and pedestrian routes in Galway City, as well as 7.3 km of shared bus and cycle lanes, but much of the city has no dedicated facilities, requiring cyclists to share road space with private vehicles on most of the approaches to the city centre, and within the city centre itself.

In addition, despite the recent works carried out at a number of existing major junctions in the city to convert them from roundabouts to signalised junctions, there are a number of locations where similar works are required to allow for safe navigation of large junctions by cyclists and pedestrians, including Browne Roundabout to the west and Kirwan and Skerritt Roundabouts to the east.

The Bus & Cycle Network Plan identified the following issues impacting on the cycle network, focusing in particular on the top trip generators or destinations:

- Lack of a legible corridor for cyclists through the city centre;
- Safety concerns due to the presence of both large numbers of pedestrians and congestion of motorised vehicles in the city centre, particularly at Eyre Square and Spanish Arch;
- A need for more dedicated routes to the NUIG and UHG areas, specifically along Newcastle Road, Thomas Hynes Road and University Road;
- Lack of dedicated cycle routes on regional road network to high employment zones such as Ballybrit Business Park and Mervue Business Park, and provision of large amounts of free parking, incentivising driving over cycling; and
- Low quality cyclist access to GMIT and the hospitals located on the Dublin Road, and no access from other regional roads to these locations

It made the following general proposals for improvement to the overall cycle network, which are retained and recommended by the Galway Transport Strategy:

- Provision of safe, coherent, direct, attractive and comfortable infrastructure;
- Provision of high quality segregated infrastructure where possible and where demand is high;

- Improving cyclist safety at junctions;
- Introduction of traffic management measures to improve safety and perception of safety for cyclists; and
- Provision of safe and secure cycle parking.

F3 Proposed Network Development

F3.1 Network Coverage

The majority of the proposed cycle network stems from the Galway Metropolitan Area Bus & Cycle Network Plan, which set out a system of primary, secondary, and feeder cycle links. Some of these have been re-designated under the GTS due to factors such as gaps in the network or updated bus routes. Proposed bus lanes have been widened to cater for cyclists also, or on some corridors cyclist movements have been prioritised on alternative routes to segregate them from the busier motorised traffic movements. Conversely, on some routes no dedicated facility is proposed for cyclists as the removal of private vehicles from those roads is recommended, and therefore a shared environment is envisioned with public transport, cyclists and pedestrians only. On other routes, no dedicated facility is proposed due to the nature of the area, for example in a primarily residential neighbourhood, shared use of the road space with appropriate traffic management measures by motorised vehicle users and cyclists is intended to slow traffic speeds and encourage the idea of the street as a ‘place’ as well as a ‘link’.

The overall network should provide a safe and comfortable environment for cyclists, whether or not dedicated cycle lanes are present.

F3.2 Route Classification and Provision

Links on the cycle network are classified as primary, secondary and feeder routes in a similar fashion to the GMA Bus and Cycle Network Plan. The classification in that plan originally set out to provide 2+1 width cycling facilities, which accommodate two cyclists abreast plus one overtaking, on primary routes; 1+1 width facilities, which accommodate one cyclist plus one overtaking, on secondary routes; and 1+0 width facilities, which do not provide for overtaking, on feeder routes. It was not physically possible to achieve this in all areas however, and therefore the classification in this network indicates the desired function and character of the cycle route sections forming the network, and not necessarily the type of facility to be provided.

Primary routes will act as the main distribution or leisure routes through and around the city, with links of secondary and feeder classification joining to the primary routes. Secondary routes will connect the primary network to residential areas and key destinations. Feeder routes will be mainly developed as cycle friendly advisory routes where traffic calming and management measures allow cyclists and motorists to mix safely. The feeder routes will, for the most part, not incorporate dedicated cycling infrastructure due to space constraints or the nature of the area, with a desire to reduce traffic speeds and encourage the ‘place’ function of a street. Traffic management measures include, but are not limited to,

improving sight lines at junctions, reducing corner radii, introduction of fixed and variable signage, and delineation of bus cages.

The National Cycle Manual (NCM) provides guidance and recommendations on the design and provision of cycle facilities. It recognises two possible positions for cycling along roads and streets:

- In mixed traffic, where cyclists are in front or behind vehicles in a controlled speed environment; or
- On cycling lanes or tracks where cyclists are beside vehicles, in their own space.

Regardless of which situation is present, the expected position of the cyclist should be legible to all road users and there must be sufficient width for cycling. If a functional cycle lane according to the recommendations of the NCM cannot be provided due to space constraints, then a mixed traffic solution should be considered with an appropriate traffic regime. In other words, a substandard cycle lane is never recommended. However, it notes that where a cycle lane exceeds 3.0m in width, there may be some confusion with traffic lanes and a cycle track may be a better solution. Section 1.5 of the manual refers to the width required for various types of cycle lanes or tracks, which is determined by combinations of A, B C and sometimes D, where:

- A is the space to the left of the cyclist;
- B is the space required to support the cycling regime (two-abreast, single file, overtaking etc.);
- C is the space to the right of the cyclist; and
- Additional width (D) may also be required for particular conditions such as topography, traffic, locality etc.

Table 3 below is taken from the NCM and provides a simplified means of determining the actual width required for cycle lanes and tracks. Standard wobble room, a provision for cyclists wandering from side to side slightly to keep balance, is already built into the values in the table.

Inside Edge (A)		Cycling Regime (B)		Outside Edge (C)		Additional Features (D)	
Kerb	0.25m	Single File	0.75m	30kph, 3.0m wide lane	0.50m	Uphill	0.25m
Channel Gully	0.25m	Single File + Overtaking (partially using next lane)	1.25m	50kph, 3.0m wide lane	0.75m	Sharp Bends	0.25m
Wall / Fence / Crash Barrier	0.65m	Basic Two-Way	1.75m	Raised kerb / dropped kerb /	0.50m	Cyclist stacking, stopping and starting	0.50m

				physical barrier			
Poles / Bollards	0.50m	Single File + Overtaking (partially using next lane)	2.00m	Kerb to vegetation etc.	0.25m	Around primary schools, interchanges, or for large tourist bikes	0.25m
		Two abreast + Overtaking (tracks and cycleways)	2.50m			Taxi ranks / Loading / Line of parked cars	1.00m (Min. 0.80m)
						Turning pocket cyclists	0.50m

Table 3 Cycle Facility Width Requirements

For the GTS, the general width assumed for cycle lanes has been taken as 2.0m in total, allowing for a kerb or footpath to the left, single file cyclist, a 50kph 3.0m wide lane to the right, and 0.25m extra for additional features. This will vary according to location, and in certain areas where alternative facilities have been proposed, concept designs have been drawn up to verify that cycle facilities can be delivered in pinch points or to a larger extent than the 2.0m width. In some areas where the 2.0m width is not deliverable, alternative solutions have been put forward, such as traffic management measures, to deliver a safe mixed environment.

F4 Cycle Infrastructure Proposals

This section represents an audit of the existing road and street network, in tandem with an engineering constraint identification exercise, in order to develop a comprehensive cycle network and associated infrastructural proposals. The study area is broken down by areas of the city, and each section of the network is evaluated for the suitability of various cycle facilities. Details are given for each individual link of the network, with a description of the proposed facilities.

Existing facilities are described where present, along with an appraisal of the existing characteristics on each corridor section, including:

- Land-Use;
- Geometry/Lane Allocation;
- Parking/Loading; and
- Bus services operating through the area.

As part of the network evaluation, a comprehensive engineering constraints exercise was undertaken for the proposed network, including a suite of GPS photography records along the proposed routes, in order to identify specific locations where geometric factors or the presence of bus measures, heavy vehicular traffic, parking or loading spaces for vehicles could affect the nature or the implementation of proposed cycle facilities.

The engineering constraints identified for each area were contrasted against the network proposals, along with likely mitigation measures. Proposals for junctions are presented as well as for links.

F4.1 Knocknacarra South



Corridor Proposed Infrastructure Summary			
Category	Location	Type of Facility	Length
Greenway	Bearna Greenway	Currently no facility in place. Proposal to establish a Greenway for cyclists only along the coast from Bearna to Salthill.	5 km
Primary	Western Distributor Road (from Cappagh Road to Deane Roundabout)	Currently on-road cycle lanes from Blake Roundabout to Deane Roundabout. Proposal to upgrade these to off-road cycle lanes, and install raised adjacent cycle lanes as far as Cappagh Road. Roundabout junctions to be converted to signalised junctions with cyclist crossing facilities.	2930 m
Secondary	Clybaun Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	850 m
Feeder	Cappagh Road/Cappagh Park/Lios Mór	Currently no facility in place. Proposal of a combination of traffic calming measures on Cappagh Road, and installation of off-road cycle paths through Cappagh Park and down to the R336 Coast Road.	910 m

	Ballymoneen Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	840 m
	Shangort Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	770 m
	R336 Coast Road/R337 Kingston Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists. It is also proposed to upgrade and install footpaths where necessary along this route.	2440 m

Corridor Assessment

<p>Existing Route Corridor Characteristics</p>	<p>Land Use: The area of Knocknacarra to the south of the Western Distributor Road is mainly residential housing estates, with some small commercial and amenity areas. Cappagh Park and Bearna Woods, to the west of the Cappagh Road, are large amenity areas. Further west of this the area becomes more rural with one-off houses as far as Bearna village.</p> <p>Geometry / Lane Allocation: Roads in this area are generally 2 lanes wide, with a single lane in each direction and footpaths on either side. There are some locally widened areas on the WDR, generally on the approach to roundabouts, with kerbed medians in these areas also. There are currently on-road cycle lanes along the WDR between Blake Roundabout and Deane Roundabout. Kerb-to-kerb cross section width is typically 9-10m, while back-of-footpath widths are typically 13m. The other roads in this area are generally narrower, with kerb-to-kerb widths of 6-9m and occasional pinch points as narrow as 5m. Most of the roads on which the cycle network is based have footpaths on both sides, with the exception of the R336 Coast Road which generally has a footpath on one side only, alternating sides in different areas, and Ballymoneen Road which has a footpath on the eastern side only near the junction with the WDR.</p> <p>Parking / Loading: On-street parking is not permitted on the Western Distributor Road, the R336 Coast Road, or on the roads in between discussed above. Parking occurs internally in the residential areas.</p> <p>Bus Operations: This corridor currently carries a number of bus services, including the 402, 411, 412 and 414 services.</p>
<p>Engineering Constraints and Mitigation Measures</p>	<p>The key constraints on this corridor are generally related to the built up nature of the area, lack of permeability, roundabout junctions, motorised traffic and narrow roads.</p> <p>The upgrade to and installation of raised adjacent cycle lanes along the WDR is possible with moderate road widening, taking into account the additional proposed bus lanes along this route. The Bearna Greenway would require agreement with private landowners, as per other greenways elsewhere in the country.</p> <p>The proximity of houses to most of the roads on the network is a major constraint in providing dedicated cycle facilities. For this reason, the most appropriate measures on many links to improve the general environs for cyclists are reducing traffic speed and alerting other road users to the presence of cyclists through use of signage, road markings, and other traffic management measures.</p>

Permeability through the residential areas will also be examined as part of the pedestrian network, and any measures proposed for pedestrians shall also cater for cyclists in accessing the external road network. This is of particular interest in the area between Cappagh Park and the Coast Road, where increased cycle links will be required to provide a safe alternative to using the Cappagh Road, which is very narrow in places.

Concept Design for Junctions

The roundabout junctions along the WDR, i.e. at the junctions with Cappagh Road, Ballymoneen Road, Clybaun Road, Bóthar Stiofáin, Gort na Bró and Bishop O'Donnell Road, are all to be converted to signalised junctions. Raised adjacent cycle lanes will transition to on-road cycle lanes at these junctions to facilitate crossing at the signals.

Concept Design for Links

At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. The proposed cycle lanes on the Western Distributor Road will require 2m of the carriageway or green land on either side between Cappagh Road and Blake Roundabout, and will re-utilise the existing space dedicated to cycle lanes from Blake Roundabout to Deane Roundabout. However, there will be road widening and relocation of these cycle lanes due to proposed bus lanes along the entirety of the WDR. The Bearna Greenway is subject to detailed design, but will require between 3m and 5m width at sections where it will be located away from roads, to allow for a shared pedestrian and cycle facility, as well as requiring 2m wide lanes in each direction at sections where it may follow an on-road or road-adjacent alignment. Traffic management measures will be designed on a case by case basis for each route.

F4.2 Salthill



Corridor Proposed Infrastructure Summary

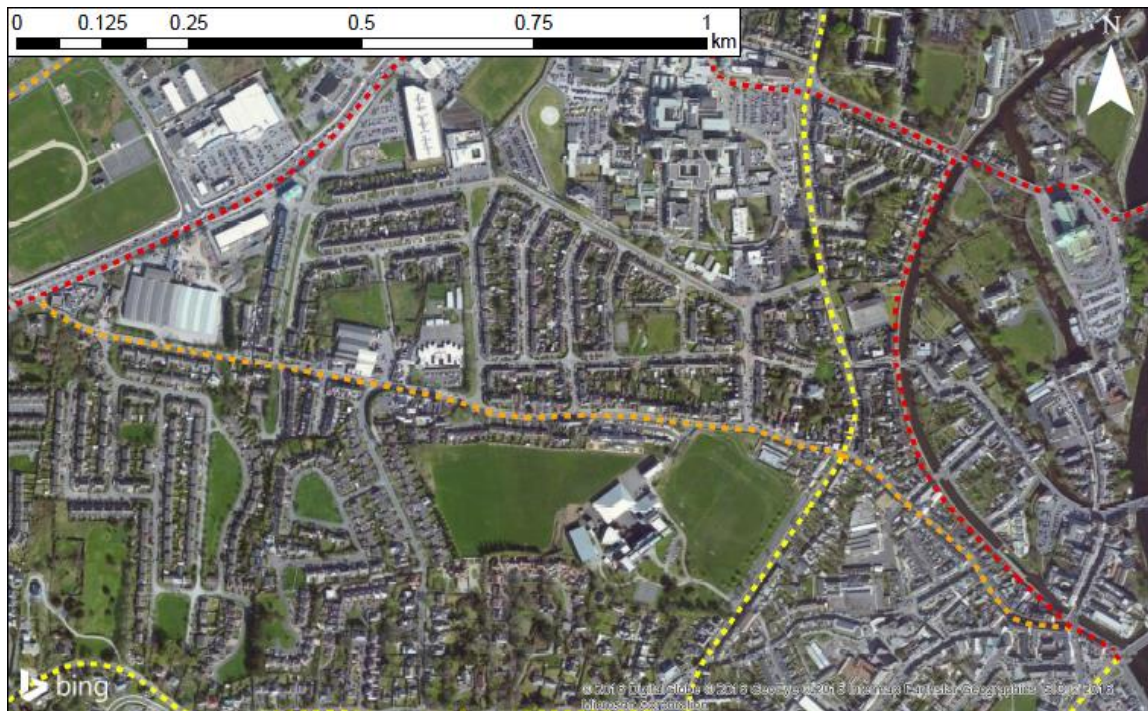
Category	Location	Type of Facility	Length
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Greenway	Bearna Greenway	Current provision consists of an off-road segregated cycle and pedestrian path around South Park. Proposal to integrate this with a Greenway and provide a facility for cyclists only from Bearna to Galway City.	3.5 km
	Bishop O'Donnell Road	Currently no facility in place from Deane Roundabout to Threadneedle Cross. Proposal to install off-road raised adjacent cycle lanes on both sides of this section of road.	360 m
Primary	Threadneedle Road	Currently there is a limited length of cycle lane in the northbound direction only. Proposal to extend this for the full length of Threadneedle Road northbound. It is not proposed to install this in the southbound direction due to the vertical gradient here and potential for excessive speeds.	1090 m
	Kingston Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists. Proposals on this section also include the upgrade of footpaths where possible.	380 m
Secondary	Dr Mannix Road	Currently no facility in place. Proposal to install on-road cycle lanes on both sides of the road, from the junction with Threadneedle Road to the end of Devon Park.	1180 m
	Salhill Road Upper & Lower	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds through Salhill and advertise the presence of cyclists.	1130 m
Feeder	Taylor's Hill	Currently no facility in place. Proposal to improve pedestrian facilities in this area, and to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	1570 m
	St Mary's Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	440 m
	The Crescent	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	350 m
	Whitestrاند Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	680 m
	Father Griffin Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	450 m

Corridor Assessment

Existing Route Corridor Characteristics	<p>Land Use: The Salthill area has varied land use. It is largely residential, with some commercial properties, notably small businesses in Salthill village and several large hotels, numerous schools, and significant recreational areas including sports grounds, particularly along the coast.</p> <p>Geometry / Lane Allocation: Roads in this area are all two-way single carriageway, with footpaths on both sides. Cross-section widths generally vary between 5-10m kerb to kerb, with some significantly wider sections on Salthill Road Upper running alongside the Promenade. However, there is widespread on-street parking along many of these roads, particularly along the wider sections and along residential streets. Footpaths vary in width and quality.</p> <p>Parking / Loading: On-street parking is widespread throughout this area, with most of it free of charge. There are also two surface car parks near the seafront which are free of charge. Loading is mainly concentrated around Salthill village where most of the commercial properties are located.</p> <p>Bus Operations: This corridor currently carries the 401 and 402 bus services, as well as some regional coach services.</p>
Engineering Constraints and Mitigation Measures	<p>The key constraints on this corridor are generally due to the built up nature of the area, motorised traffic and on-street parking.</p> <p>Some roads are quite narrow and therefore a compromise must be made with regard to the prioritisation of modes - e.g. on sections of Kingston Road or St. Mary's Road, where footpaths are generally narrow and in poor condition, dedicated cycle facilities are not proposed as upgrading the pedestrian facilities takes precedence. However, on other roads on-street parking may need to be reduced in order to facilitate cycle lanes, e.g. Dr Mannix Road.</p> <p>Salthill Promenade may form part of the Greenway, but the Greenway may alternatively use existing road space, or the Promenade may need widening locally during detailed design which again could have an impact on parking availability.</p> <p>The proximity of houses to most of the roads on the network is a major constraint in providing dedicated cycle facilities. Also, several roads are extremely narrow and widening for cycle lanes would require significant land acquisition and engineering works, particularly in areas such as Taylor's Hill and Devon Gardens where there are steep inclines. For these reasons, the most appropriate measures on many links to improve the general environs for cyclists are reducing traffic speed and alerting other road users to the presence of cyclists through use of signage, road markings, and other traffic management measures.</p> <p>Permeability through the residential areas will be examined as part of the pedestrian network, and any measures proposed for pedestrians shall also cater for cyclists in accessing the external road network.</p>
Concept Design for Junctions	<p>The roundabout junctions at the bottom of Threadneedle Road and at the junction of Seapoint Promenade and Salthill Road Upper are to be converted to signalised junctions. Crossing facilities will be provided at these locations for cyclists and pedestrians.</p>
Concept Design for Links	<p>At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. The proposed cycle lanes on Dr Mannix Road and Bishop O'Donnell Road will require 2m of the carriageway or green land on either side of these roads.</p> <p>The Bearna Greenway is subject to detailed design, but may require additional road space adjacent to the existing Salthill Promenade.</p> <p>Traffic management measures will be designed on a case by case basis for each route.</p>

F4.3 Shantalla



Corridor Proposed Infrastructure Summary			
Category	Location	Type of Facility	Length
Primary	Canal Road / Canal paths	The current facility between Fr Griffin Road and University Road varies between a segregated pedestrian and cyclist path and on-road sections. The on-road sections are cul-de-sacs however, so traffic is light and generally slow moving, and should be further reduced by the proposal to make University Road bus and local access only. Proposal is to upgrade paths where necessary to facilitate safe cycling, and install crossing facilities on roads which the route crosses.	880 m
Secondary	Shantalla Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	1.2 km
	St Helen's Street / Henry Street / Dominick Street Upper	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists, particularly at junctions as many of the roads in this area are quite narrow.	430 m
Feeder	Lower Newcastle Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists. In addition, bus priority measures in this area will also serve as a cyclist link to and through UHG.	500 m

Corridor Assessment

Existing Route Corridor Characteristics	<p>Land Use: The Shantalla area and its surroundings are mainly residential, with several schools, UHG to the north-east, and more concentrated commercial areas towards the city centre.</p> <p>Geometry / Lane Allocation: Roads in this area are all two-way single carriageway, with footpaths on both sides. Cross-section widths generally vary between 5-7m kerb to kerb, with sporadic wider sections. However, there is extensive on-street parking, in particular on the wider sections and along residential streets. Footpaths vary in width and quality, and at some pinch points there is a footpath on one side only.</p> <p>Parking / Loading: On-street parking is widespread throughout this area, with most of it free of charge. Loading is required mostly along Henry Street and Dominick Street Upper, with some isolated commercial premises elsewhere.</p> <p>Bus Operations: The 402 and 405 bus services currently travel through this area, as well as some regional coach services.</p>
Engineering Constraints and Mitigation Measures	<p>The key constraints on this corridor are generally due to the built up nature of the area, motorised traffic, on-street parking and narrow streets. Some streets are quite narrow, with less than 5m kerb to kerb in places, and therefore a compromise must be made with regard to the prioritisation of modes - as this corridor approaches the city centre, priority should be given to the installation of footpaths along all streets wherever possible. This may not be feasible in all locations due to properties opening directly onto the street. Permeability is reasonably good in this area, and motorised traffic along most roads is moving at low speeds due to the narrow road widths and due to it mostly being local traffic. However, signage and road markings should be put in to increase awareness of cyclists along Lower Newcastle Road on the approach to UHG, on Shantalla Road and on to Henry Street and Lower Dominick Street, which will improve the general environment for cyclists.</p>
Concept Design for Junctions	<p>Crossing facilities are to be provided at locations where the canal paths cross New Road and Presentation Road. This may consist of signage to alert all modes using these roads to the presence of the cycle and pedestrian paths.</p>
Concept Design for Links	<p>The canal paths will remain a shared environment for cyclists and pedestrians, and may require installation of signage along the sections shared with motorised vehicles.</p> <p>Traffic management measures will be designed on a case by case basis for each route.</p>

F4.4 Westside



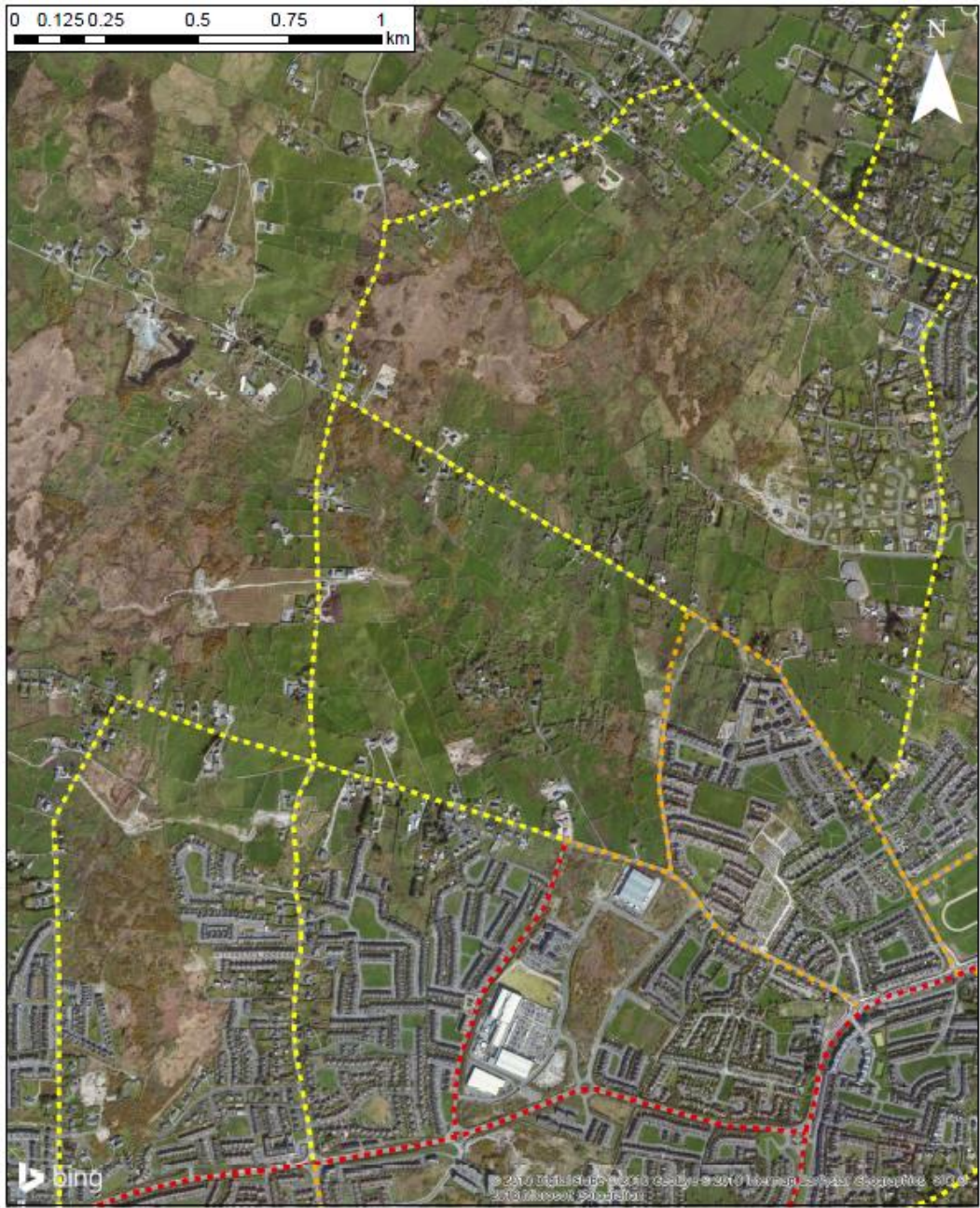
Corridor Proposed Infrastructure Summary			
Category	Location	Type of Facility	Length
Primary	Seamus Quirke Road/Bishop O'Donnell Road	Currently raised adjacent cycle lanes from Deane Roundabout to Browne Roundabout, transitioning to on-road at junctions. Proposal to maintain these cycle lanes.	1.6 km
Secondary	Rahoon Road	There is currently a short on-road cycle lane on both sides of Rahoon Road on the approach to the junction with Seamus Quirke Road. Proposal to extend these on both sides from the junction with Seamus Quirke Road to the junction with Bóthar Stiofáin.	960 m
	Letteragh Road	There is currently a short on-road cycle lane southbound approaching the junction with Bishop O'Donnell Road. Proposal to extend this and install on-road cycle lanes on both sides from the junction with Bishop O'Donnell Road to the edge of current	1.3 km

		developed land, with the cycle lane extending alongside development if and when it occurs. Depending on link roads associated with the N6 Galway City Ring Road project (N6 GCRR), these cycle lanes may extend as far north as the next junction.	
	Siobhán McKenna Road	Currently no facility along this road. Proposal to install on-road cycle lanes along its full length, from Letteragh Road to Thomas Hynes Road.	1 km

Corridor Assessment

Existing Route Corridor Characteristics	<p>Land Use: The land use in Westside is mixed, with large areas of residential housing throughout and a central commercial area on both sides of Seamus Quirke Road. There are also community facilities and amenity areas in Westside, and Ragoon Cemetery is located on the northern side of Ragoon Road. University Hospital Galway is located to the eastern extremity of the area, accessed via Browne Roundabout.</p> <p>Geometry / Lane Allocation: Seamus Quirke Road and Bishop O'Donnell Road are over 16m wide at the narrowest points, widening to over 21m in some areas. There is one traffic lane and one bus lane in each direction on these roads, with the bus lane generally terminating in advance of junctions to provide for left-turning lanes. There are also multiple right-turning pockets along the length of the road, with a kerbed central median and railing dividing the traffic lanes. A raised adjacent cycle lane and footpath run on both sides of these roads. Siobhán McKenna Road, Letteragh Road and Ragoon Road vary in width from 7m to over 9m kerb to kerb. These and the smaller residential roads have footpaths on both sides, with footpaths ending on Letteragh and Ragoon Roads at the fringes of developed land. There is one traffic lane in each direction on these roads, with a short additional section of bus lane southbound on Ragoon Road.</p> <p>Parking / Loading: On-street parking is not permitted on the roads and streets discussed above. Parking occurs internally in the residential areas and the commercial areas have extensive surface carparks.</p> <p>Bus Operations: The 404 and 405 bus services currently travel along this corridor.</p>
Engineering Constraints and Mitigation Measures	<p>The key constraints on this corridor are generally related to the built up nature of the area, lack of permeability, and some large roundabouts. The installation of on-road cycle lanes should be feasible in most areas without land acquisition. The signalisation of Deane Roundabout and Browne Roundabout will remove a significant safety risk for cyclists and provide safe crossing facilities. Permeability through the residential areas will also be examined as part of the pedestrian network, and any measures proposed for pedestrians shall also cater for cyclists in accessing the external road network.</p>
Concept Design for Junctions	Deane Roundabout and Browne Roundabout are to be converted to signalised junctions. Raised adjacent cycle lanes will transition to on-road cycle lanes at these junctions to facilitate crossing at the signals.
Concept Design for Links	At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. The proposed cycle lanes on Ragoon Road, Letteragh Road and Siobhán McKenna Road will require 2m of the carriageway or green land on either side. Any traffic calming measures required in addition to this will be designed on a case by case basis for each road.

F4.5 Knocknacarra North & Bushypark



Corridor Proposed Infrastructure Summary

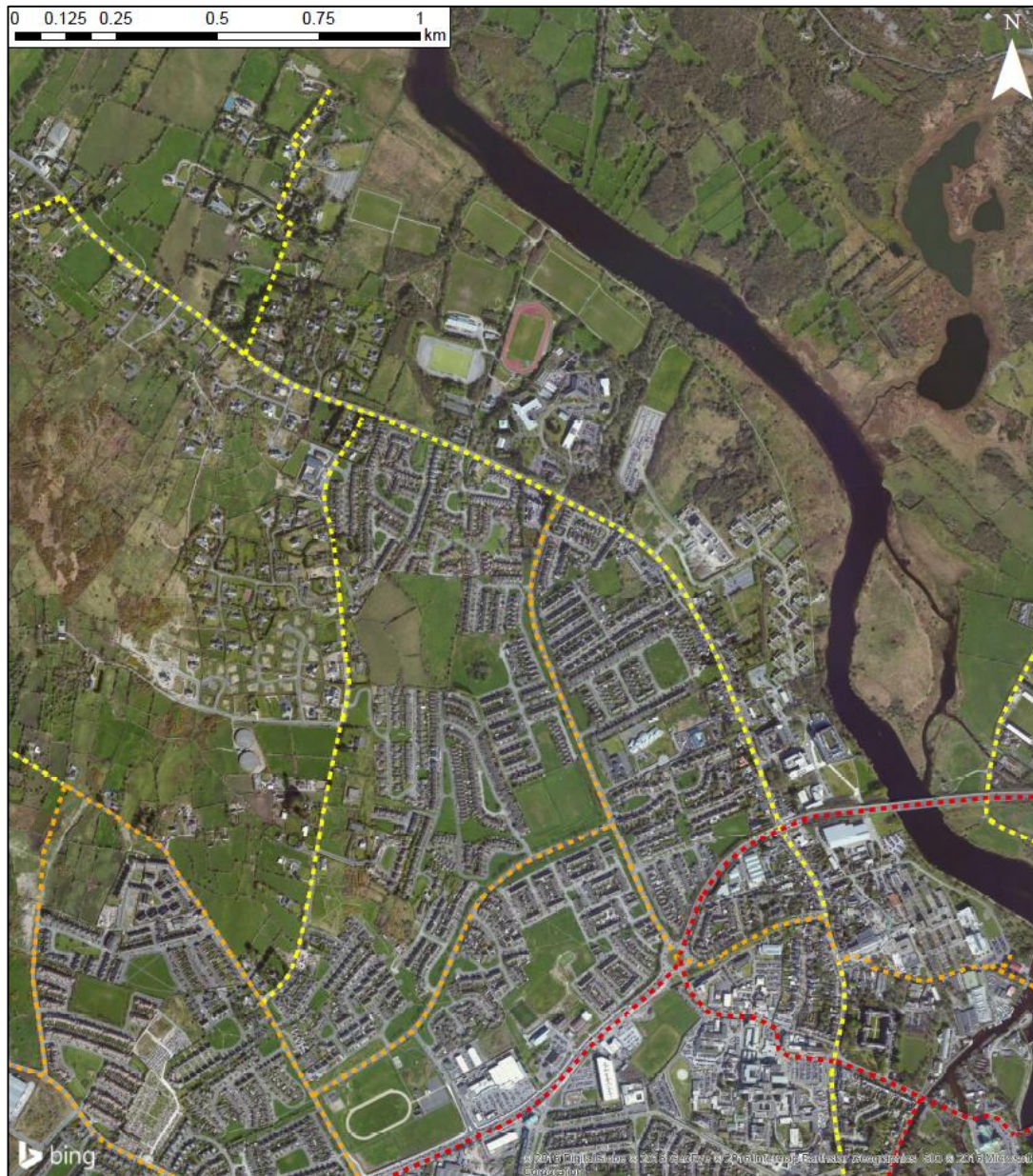
Category	Location	Type of Facility	Length
Primary	Bóthar Stiofáin	Currently no facility in place. Proposal to install on-road cycle lanes on both sides of this section of road.	870 m
Secondary	Letteragh Road to Rahoon Road Link	Currently no facility in place as the direct link between these roads is incomplete. Proposal to install raised adjacent cycle lanes along both sides of residential road if and when it is developed, and/or along the existing Rosán Glas road. As an interim measure, cyclists could route through Bun a Chnoic and Cnoc an Óir on the	730 m

		Letteragh Road side. This will necessitate resurfacing of access tracks and/or increased permeability through the residential area.	
Feeder	Ballymoneen Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists. The extent of this depends on the interaction with the proposed N6 GCRR alignment but safe crossing facilities will be provided for cyclists where appropriate.	1.5 km
	Rahoon Road	Currently no facility in place. Proposal to the north of the junction with Bóthar Stiofáin is to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists. Safe crossing facilities will be provided for cyclists where appropriate if there are new junctions on this road as a result of the proposed N6 GCRR.	1.3 km
	Clybaun Road	Currently no facility in place. Proposal to the north of the WDR as far as the Ballagh Road is to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists. Safe crossing facilities will be provided for cyclists where appropriate if there are new junctions on this road as a result of the proposed N6 GCRR.	2.6 km
	Ballagh Road	Currently no facility in place. Proposal is to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	930 m
	Letteragh Road	Currently no facility in place. Proposal to the north of developed lands is to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists. Safe crossing facilities will be provided for cyclists where appropriate if there are new junctions on this road as a result of the proposed N6 GCRR.	1.1 km
	Circular Road	Currently no facility in place. Proposal is to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	1.5 km

Corridor Assessment

Existing Route Corridor Characteristics	<p>Land Use: This area is a mix of residential and agricultural lands, with ribbon developments along the more rural roads to the north, and denser housing estates to the south and east approaching the city. Further development of some sites to the south is likely, with areas zoned residential or enterprise/industrial. However, the majority of the land is zoned agricultural.</p> <p>Geometry / Lane Allocation: Roads in this area are all two-way single carriageway. Cross-section widths generally vary between 5-8m kerb to kerb, with some wider areas, and occasional narrower pinch points. Footpaths are present generally in the areas of denser housing, with some gaps. There are currently no cycle facilities in place in this area. It should be noted that on the more rural stretches of road, hedging may encroach on the road space and further reduce the “kerb to kerb” widths.</p> <p>Parking / Loading: There is currently no designated parking in this area, with the exception of outside St James’ National School.</p> <p>Bus Operations: No bus routes travel along the roads in this corridor.</p>
Engineering Constraints and Mitigation Measures	<p>The key constraints on this corridor are narrow roads with occasional housing along both sides. Most of the more rural roads are quite narrow and therefore a compromise must be made with regard to the prioritisation of modes. As there are generally no footpaths except in the vicinity of housing estates, installing pedestrian facilities will take precedence where possible, although the narrow road widths and the extent of housing fronting onto the road presents a challenge to this.</p> <p>It is proposed to install dedicated cycle facilities along wider roads which are close to developed lands in order to cater for the maximum number of users. Some roads are excluded from this due to gradient constraints. Potential new roads should include cycle facilities, and cycle lanes etc. are to be extended as lands are developed along existing roads.</p> <p>Traffic management measures on the majority of these roads are proposed in order to provide a safer environment for cyclists and pedestrians. Permeability through the residential areas will be examined as part of the pedestrian network, and any measures proposed for pedestrians shall also cater for cyclists in accessing the external road network.</p>
Concept Design for Junctions	<p>The roundabout junctions on the Western Distributor Road are to be converted to signalised junctions. Crossing facilities will be provided at these locations for cyclists and pedestrians.</p>
Concept Design for Links	<p>At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. Proposed cycle lanes will require 2m of the carriageway or green land on either side of existing or new roads.</p> <p>Traffic management measures will be designed on a case by case basis for each route.</p>

F4.6 Newcastle & Dangan



Corridor Proposed Infrastructure Summary			
Category	Location	Type of Facility	Length
Greenway	NUIG/ Greenway	Currently a combination of paved path, gravel path and unpaved track within the NUIG grounds. Proposal to upgrade this to a paved cycle path through NUIG grounds from University Road along the western bank of the River Corrib and connect to the proposed Oughterard Greenway to Connemara, noting that a route has not yet been decided on for this Greenway and a full design will be required.	4.1 km
Primary	N6 and Quincentenary Bridge	Currently raised adjacent cycle lanes from Browne Roundabout to Bodkin junction, transitioning to on-road at junctions. Proposal to maintain these cycle lanes.	1.6 km

	UHG	Currently no facility in place. Proposal is to provide signage advertising the presence of cyclists, and to allow cyclists to route through the hospital along with buses. Any bus priority measures installed at entrances/junctions will also include cyclist priority facilities.	530 m
	University Road	Currently no facility in place. Proposal to close University Road to all traffic except for public transport and local access. This will significantly reduce motorised traffic on this road and provide a shared environment for all users, which will improve safety for cyclists and make it a more inviting route for cycling.	230 m
Secondary	N59 Thomas Hynes Road	Currently no facility in place. Proposal to install on-road cycle lanes on both sides from junction with Upper Newcastle to Browne Roundabout.	1.2 km
	Old Seamus Quirke Road	Currently no facility in place. Proposal to install on-road cycle lanes on both sides from Browne Roundabout to junction with Lower Newcastle	380 m
	NUIG	Currently no facility in place. Proposal to install on-road cycle lanes through NUIG to connect the Newcastle Road to the proposed bridge across the former Clifden railway bridge piers.	400 m
Feeder	N59 Moycullen Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists. It would be expected that internal cyclists within the university would use the Greenway or the internal university roads.	1.5 km
	Chestnut Lane	Currently no facility in place. This is envisaged as a link from the N59 to the Greenway. Proposal to provide signage to advertise the presence of cyclists.	740 m
	Upper Newcastle	Currently no facility in place. Proposal is to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	1 km
	Lower Newcastle	Currently no facility in place. Proposal is to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	610 m

Corridor Assessment

Existing Route Corridor Characteristics	<p>Land Use: The Newcastle and Dangan area is dominated by the presence of NUIG to the east and UHG to the south. Apart from the occasional commercial premises, and the commercial area of the Galway Business Park in Dangan, the area is dominated by residential housing. NUIG also includes recreational areas which are used by university and external sports clubs, and the walkway along the western bank of the River Corrib which is regularly used by recreational walkers, runners and cyclists.</p> <p>Geometry / Lane Allocation: Roads in this area are all two-way single carriageway, with the exception of the N6 which has two lanes in each direction. Cross-section widths generally vary between 9-10m kerb to kerb, except for Chestnut Lane which is significantly narrower. Some sections of road also have wide verges and green areas. There are footpaths along both sides of all roads except for Chestnut Lane, and raised adjacent cycle lanes along both sides of the N6.</p> <p>Parking / Loading: There are some marked parking areas along Newcastle Road, and unofficial parking along Old Seamus Quirke Road. NUIG and UHG also have internal surface car parks.</p> <p>Bus Operations: The 402 and 404 bus services travel along roads in this corridor, as well as some regional coach services.</p>
Engineering Constraints and Mitigation Measures	<p>A major constraint in this corridor is heavy traffic volumes on the N59 national secondary road. Some of this traffic will remain, regardless of additional road construction, as it is the main link to Connemara from Galway City. As Thomas Hynes Road is wider than Upper Newcastle, and has more space to the sides as individual properties generally do not open onto the footpath, it is proposed to install on-road cycle lanes on Thomas Hynes Road. This also caters for a larger catchment of residential areas, while the Greenway within the university provides a safe, segregated and direct route through the university from the entrance point near the canal on University Road. A similar facility is proposed along Old Seamus Quirke Road to link the university to the cycle facilities to Westside, although this may require some of the land to either side, or rationalisation of parking.</p> <p>Taking into account the likely volumes of motorised traffic through this corridor, traffic calming measures and signage is proposed in order to alert motorists to the presence of cyclists on all roads, regardless of whether or not there is a dedicated cycling facility.</p> <p>Permeability through the residential areas will be examined as part of the pedestrian network, and any measures proposed for pedestrians shall also cater for cyclists in accessing the external road network.</p>
Concept Design for Junctions	<p>Browne Roundabout is to be converted to a signalised junction. This may have implications on the phasing of the signalised junction of Newcastle Road and the N6. Crossing facilities will be provided or maintained at these locations for cyclists and pedestrians.</p>
Concept Design for Links	<p>At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. Proposed cycle lanes will require 2m of the carriageway or green land on either side of existing or new roads. A Greenway is likely to require land width of greater than 2m along its length.</p> <p>Traffic management measures will be designed on a case by case basis for each route.</p>

F4.7 City Centre



Corridor Proposed Infrastructure Summary

Category	Location	Type of Facility	Length
Greenway	River Corrib Crossing	Proposal to construct a new pedestrian and cyclist bridge over the River Corrib to the south of the Wolfe Tone Bridge. The exact location and design of this will require further studies, but it will form a connection between the Bearna Greenway and the Dublin-Galway Greenway, and link Claddagh Quay to the Spanish Arch/Long Walk area.	260 m
	Dock Road	Currently no facility in place. Proposal is for a two-way cycleway from the Long Walk around the Docks as far as Lough Atalia Road, to form part of the Dublin-Galway Greenway between Oranmore and Bearna, pending a full design of this Greenway.	570 m
	Lough Atalia Road	There is currently a short section of on-road cycle lane on both sides of Lough Atalia Road under the railway bridge, and extending for approximately 50m on either side. This infrastructure is to be reused and integrated into the network if possible. Proposal to install a two-way cycleway from Lough Atalia Road to Renmore, possibly re-using the existing pedestrian path alongside the railway bridge or via the existing link through Galway Port lands, or possibly routing to the north of the Lough	1.3 km

		Atalia inlet via the junction with College Road and Moneenageisha, to form part of the Dublin-Galway Greenway. The Greenway route is subject to detailed design, but it is intended to form the primary cyclist route rather than College Road as Lough Atalia Road and Renmore both have wider carriageways, flat topography, and fewer direct vehicular accesses.	
Primary	University Road/Gaol Road	Currently no facility in place. Proposal to remove access to this road for private vehicles, to allow public transport and local access only from the junction with Newcastle Road to the Salmon Weir Bridge. This will significantly reduce motorised traffic and provide a shared environment for all users, which will improve safety for cyclists and make it a more inviting route for cycling.	280 m
	Salmon Weir Bridge	Currently no facility in place. Proposal to remove access to this road for all private vehicles, allowing public transport vehicles and cyclists only to use the bridge. There is an additional proposal to provide a dedicated pedestrian crossing facility, whether as a separate footbridge or a cantilevered structure. The combination of these measures will reduce traffic on the bridge and allow for the existing footpaths on the bridge to be removed, widening the carriageway available for buses and cyclists. An alternative possibility would be to create a separate bridge which caters for both cyclists and pedestrians. Either solution would create a safer environment for cyclists and a direct route into the city from the hospital and the university.	110 m
	St Vincent's Avenue / St Francis Street / Eglinton Street / Williamsgate Street	Currently no facility in place. Proposal to remove access to these streets for private vehicles, to allow public transport, cyclists, pedestrians and local motorised access only between the Salmon Weir Bridge and the top of Eyre Square, with the exception of a short section next to the courthouse to allow access from Newtownsmith to the Headford Road. This will significantly reduce motorised traffic in the area and provide a shared environment for all users, which will improve safety for cyclists and make it a more inviting route for cycling.	470 m
	Eyre Square	The west side of Eyre Square is currently closed to motorised vehicles outside of loading hours. Proposal to maintain this and allow access to all other sides of the square for public transport and cyclists only, with the exception of loading vehicles at specific times. This will significantly reduce motorised traffic in the area and provide a shared environment for all users, which will improve safety and the amenity value of the area for cyclists.	470 m
Secondary	Queen Street/Victoria Place	Currently no facility in place. Proposal to install on-road cycle lanes on both sides between Eyre Square and the Greenway on Dock Road.	280 m
	Forster Street	Currently no facility in place. Proposal to remove access to this streets for private vehicles, to allow public transport and local access only with the exception of loading at specific times. This will	170 m

		significantly reduce motorised traffic in the area and provide a shared environment for all users, which will improve safety for cyclists and make it a more inviting route for cycling.	
	College Road	Currently no facility in place. Proposal to close College Road as a through road for private vehicles, allowing public transport and local access only through. This will significantly reduce motorised traffic in the area and provide a shared environment for all users, which will improve safety for cyclists and make it a more inviting route for cycling.	990 m
	River Corrib Pedestrian Bridge (NUIG / Waterside)	Proposal to construct a pedestrian and cyclist bridge across the existing piers of the former Clifden Railway Line bridge, similar to the bridge which was granted planning permission in 2002. This will connect the NUIG campus directly with the Headford Road area and the eastern side of the city.	490 m
	Headford Road	Currently short sections of on-road cycle lanes and inbound bus lane in place to the south of Bodkin Junction. Proposal to extend the inbound bus lane as far as the junction with St Bridget's Place, which can also be used by cyclists travelling inbound. Signage is proposed to reduce motorised traffic speeds on the outbound route and to the west of St Bridget's Place, and advertise the presence of cyclists along this road. It is the intention of the City Council to prepare a statutory Local Area Plan for the Headford Road area. That plan may propose to alter the land use and layout of the area, and cyclist use of this road link should be taken into account in its development and implementation.	850 m
Feeder	Bohermore	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	1.1 km
	Dyke Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists. Footpaths are not continuous.	830 m

Corridor Assessment

Existing Route Corridor Characteristics

Land Use: The land use in the city centre is varied, with generally commercial areas in the city centre core, and a mix of residential and commercial properties towards the edges. There are also amenity areas within this corridor, such as the Sportsground/Greyhound Stadium, and Kennedy Park in Eyre Square, as well as community facilities such as schools, churches, the cathedral, the train and bus stations, City Hall, County Hall and the courthouse.

The Headford Road has several large commercial properties, while the Bohermore, College Road and Lough Atalia Road areas are primarily residential.

Geometry / Lane Allocation: Roads in this area are two-way single carriageway, with some one-way streets in the city centre core, and some fully pedestrianized streets apart from during loading hours. Cross-section widths vary considerably in the city centre, from over 11m on the Headford Road to under 4m on some of the smaller city streets such as Mary Street. There are footpaths of varying quality along both sides of

most streets and roads in this area, with some gaps, but no cycle lanes apart from the sections under the railway bridge on Lough Atalia Road and short sections on the Headford Road.

Parking / Loading: There are numerous private multi-storey car parks in the city centre, as well as several council-owned and private surface car parks. On-street paid parking is also widely available. Loading facilities are required on most of the streets in this area, especially towards the city centre core from Eyre Square to the Sea Road and Dominick Street area, on the other side of the river and canals.

Bus Operations: All local and regional bus services travel through this corridor, as Eyre Square is the terminus for the city services and both regional coach stations are located in this area (Eyre Square and Fairgreen Road/Forster Street).

Engineering Constraints and Mitigation Measures

The primary constraints in the city centre are the built-up nature of the area, lack of permeability in some areas, conflict of modes, dominance of the private car on the city streets, and the widespread availability of parking, which encourages private car use. The reallocation of the corridor of road space from the top of University Road, along Eglinton Street, Eyre Square and Forster Street to the junction of College Road and Lough Atalia to public transport should encourage mode shift, both by making public transport and cycling faster and more pleasant options, and by making it less attractive to drive through the city centre, while still maintaining access to car parks.

This reallocation of road space also alters the movements on surrounding streets, changing some one way systems for motorised users.

The River Corrib poses a barrier to cross-city movement by all modes. The most southerly existing crossing of the river is the Wolfe Tone Bridge.

This bridge is narrow, with a narrow footpath on the south side and a cantilevered footway on the north side, and no dedicated cycling facility. It is also heavily trafficked by motorised vehicles. The addition of a pedestrian and cyclist bridge to the south of this as part of the Greenway network will provide a safer and more attractive route for active modes. Similarly, the closure of the Salmon Weir Bridge to private vehicles will increase the safety of cyclists using this bridge. The proposed pedestrian crossing in the vicinity of the Salmon Weir Bridge will provide a more enjoyable and safer segregated walking route to and from the city centre and reduce conflicts between pedestrian and cyclist routes in this area.

In addition, the proposed bridge across the Clifden Railway Line piers will provide a direct connection between NUIG and the east of the city, enabling more direct journeys to the university for staff and students, and providing a pedestrian link also.

The availability and cost of parking will be examined and updated on a continuous basis in order to facilitate movements by all modes.

Permeability through the residential areas will also be examined as part of the pedestrian network, and any measures proposed for pedestrians shall cater for cyclists in accessing the external road network.

Concept Design for Junctions

Movements at various junctions in the city centre will change under the proposed road reallocation and provision of an inner-city cordon for private motorised traffic. Some one-way streets will become two-way and vice versa. These junctions will be appropriately signposted and crossing facilities for pedestrians and cyclists will be provided.

Concept Design for Links

At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. Proposed cycle lanes will require 2m of the carriageway or land on either side of existing or new roads.

Traffic management measures will be designed on a case by case basis for each route.

F4.8 Terryland & Ballinfoyle



Corridor Proposed Infrastructure Summary

Category	Location	Type of Facility	Length
Primary	N6 and Quincentenary Bridge	Linked to Newcastle/Dangan area. Currently raised adjacent cycle lanes from Browne Roundabout to Bodkin junction, transitioning to on-road at junctions. Proposal to maintain these cycle lanes.	1.6 km
	N6 Headford Road	Currently raised adjacent cycle lanes from Bodkin Junction to Kirwan Roundabout, transitioning to on-road at junctions. Proposal to maintain these cycle lanes and provide crossing facilities at the signalised junction to replace Kirwan Roundabout. An additional proposal on this section of road converts one lane in each direction to a bus lane.	560 m
	N6 Bóthar na dTreabh	Currently raised adjacent cycle lanes from Kirwan Roundabout to the N17 junction. Proposal to maintain these cycle lanes.	1.8 km
	Sean Mulvoy Road / Moneenageisha Road	Currently no facility in place. Proposal to install a raised adjacent or off-road cycle path where possible to segregate cyclists from large volumes of traffic. Additional proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists on these links and particularly in the vicinity of Joyce Roundabout (Cemetery Cross).	960 m

Secondary	N84 Headford Road	Currently no facility in place. Proposal to install an inbound bus lane between Bóthar an Chóiste and the Kirwan Roundabout, which is to be upgraded to a signalised junction. This bus lane shall be wide enough to cater for cyclists also, and an outbound on-road cycle lane is proposed on the same section of the N84.	1.2 km
	Ballinfoyle Cycleway	A narrow gravel road currently leads from Bóthar an Chóiste in Castlegar village around the south of Maigh Riocaird, Lochán and Baile an Chóiste housing estates. Proposal to upgrade this surface and extend the route to connect to the Headford Road in the vicinity of the new Ballinfoyle Community Centre.	1 km
	Menlo Park Road	Currently no facility in place. Proposal to install on-road cycle lanes on both sides of this road from the Kirwan Roundabout to the junction with Dyke Road.	580 m
	Link Road from N6 to Liosban (New)	There is currently no connection here. However, a new road is proposed from the N6 Bóthar na dTreabh, where it introduce a signalised junction, across the Terryland River to connect to Liosban Industrial Estate and the Tuam Road. This road will have a footpath and raised adjacent cycle lane on both sides, transitioning to on-road at junctions. The configuration of the existing internal road in the industrial estate will need to be examined to provide the extension of these cycle lanes as far as the Tuam Road.	400 m
Feeder	Dyke Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	840 m
	Baile an Chóiste	There is a raised adjacent cycle lane on both sides of the main road serving Baile an Chóiste. Proposal is to maintain this as part of the feeder network, and connect it to the bus and cycle lanes on the N84.	880 m

Corridor Assessment

Existing Route Corridor Characteristics

Land Use: The land use in this area is mainly residential, with several commercial sites and hotels towards the city, generally grouped in business parks such as Liosban Industrial Estate and Terryland Retail Park. There are also some amenity and community facilities, including the waterworks, Ballinfoyle Community Centre and Eamonn Deacy Park. The Terryland Forest Park lies within this corridor also.

Geometry / Lane Allocation: Roads in this area are generally two-way single carriageway, with right turning pockets at some priority junctions. Cross-section width varies between 7-11m kerb to kerb. The N6 is an exception to this, with two lanes in each direction and a cross section of approximately 14m kerb to kerb, with some local widening. Footpaths of varying quality are present on both sides of roads in this area, apart from sections of the Dyke Road, and cycle lanes are present only along the N6.

Parking / Loading: There is no on-street parking along the roads listed above; however there is parking on the internal residential roads and surface car parks in the retail and industrial parks. Loading facilities are required within the retail and industrial sites, which are all off-road.

Bus Operations: The 407 bus route travels along this corridor, as well as some regional services.

Engineering Constraints and Mitigation Measures

A major constraint in this corridor is heavy traffic volumes on the N84 national secondary road, conflict of modes, and lack of permeability. The demand for the corridor along the N84 Headford Road is a particular constraint, with a need for to cater for pedestrians, cyclists, and buses, as well as private vehicles coming from Headford or as far north as Castlebar. The proximity of housing to the road is an additional constraint. A compromise is therefore required here, which is why an inbound combined bus and cycle lane is proposed. Right-turning pockets may need to be reduced or removed depending on available road space.

The Kirwan Roundabout is a significant constraint to cyclist safety and ease of movement, as it is a five-arm roundabout with guardrails at numerous crossing points for pedestrians and cyclists. This is difficult to negotiate as a cyclist and does not provide any safe refuge in case of a vehicle approaching at speed. The proposed upgrade of this roundabout to a signalised junction will provide safe crossing facilities for cyclists and pedestrians, and a direct route from the Headford Road into the city centre. The proposed link road from the N6 to the Tuam Road via Liosban will also increase permeability for all modes.

The River Corrib poses a physical barrier to cross-city movement. The cycle lanes across the Quincentenary Bridge shall be maintained to provide for journeys crossing the river to the north of the city centre. Traffic calming measures and signage is proposed along the Dyke Road in order to alert motorists to the presence of cyclists and pedestrians, and to reduce rat-running. Permeability through the residential and commercial areas will be examined as part of the pedestrian network, and any measures proposed for pedestrians shall also cater for cyclists in accessing the external road network.

Concept Design for Junctions

Kirwan Roundabout is to be converted to a signalised junction. Raised adjacent cycle lanes will transition to on-road cycle lanes at this junctions to facilitate crossing at the signals. Pedestrian and cyclist crossing facilities will be included in junction design for new and altered junctions due to the proposed link road from Ballinfoyle to Liosban.

Concept Design for Links

At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. Proposed cycle lanes will require 2m of the carriageway or land on either side of existing or new roads.

Traffic management measures will be designed on a case by case basis for each route.

F4.9 Wellpark & Mervue



Corridor Proposed Infrastructure Summary			
Category	Location	Type of Facility	Length
Secondary	Wellpark Road	Currently no facility in place. Proposal to install an inbound bus lane between Cluain Mhuire (GMIT) and Moneenageisha Cross, and an outbound bus lane between Cluain Mhuire (GMIT) and the junction with Connolly Avenue. These bus lanes shall be wide enough to cater for cyclists as well as buses, and on-road cycle lanes are proposed in the opposite directions on the other side of the road, ensuring a cycle facility in both directions along the full length of Wellpark Road.	830 m
	Joyce Road	Currently no facility in place. Proposal to install on-road cycle lanes on both sides of this road from the junction with Wellpark Road to the junction with the Tuam Road.	320 m
	Tuam Road	Currently no facility in place. Proposal to install on-road cycle lanes on both sides of this road from the junction with Joyce Road to the junction with the N6 Bóthar na dTreabh.	290 m
Feeder	Tuam Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists between Joyce Roundabout (Cemetery Cross) and the junction with Joyce Road.	1.3 km
	Monivea Road	There are currently some traffic calming measures in place on the Monivea Road, i.e. speed ramps on the approach to Ballybane Road. Proposal to examine these measures, upgrade if necessary, and install signage to reduce motorised traffic speeds and advertise the presence of cyclists between the junction with Wellpark Road/Connolly Avenue, and the junction with Ballybane Road.	890 m

	Connolly Avenue / Michael Collins Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists between the junction with Wellpark Road and the junction with St. James' Road, next to the Holy Family Church.	750 m
	St. James' Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists between the junction with the junction with Michael Collins Road, next to the Holy Family Church, and the junction with the Ballybane Road.	460 m

Corridor Assessment

Existing Route Corridor Characteristics	<p>Land Use: The land use in this area is mainly residential and commercial/light industrial. There are also some amenity and community facilities, including a church, a primary and secondary school, Mervue United soccer grounds and St. James' GAA grounds.</p> <p>Geometry / Lane Allocation: Roads in this area are generally two-way single carriageway, with turning lanes at some junctions. Cross-section width varies between 7-11m kerb to kerb, with widening at junctions. Footpath and verge widths vary considerably in this area, with localised pinch points and extensive continuous wide verges. There are no existing cycle lanes.</p> <p>Parking / Loading: There is no formal on-street parking along the roads listed above; however parking does take place along some of the residential roads in the eastern section. Parking is available on internal residential roads and in surface car parks in the retail and industrial parks in Mervue and Liosban. Loading facilities are required within the industrial sites, which are all off-road, and for commercial properties which are a mix of on the public road and on private self-contained sites.</p> <p>Bus Operations: The 403 and 405 bus routes travel along this corridor, as well as some regional services.</p>
	<p>The primary constraint on this corridor is the built up nature of the area, leading to pinch points for provision of dedicated facilities for active modes. This sector is a major trip attractor due to the employment centres here. Compromises are therefore needed to facilitate journeys by all modes.</p> <p>Wellpark Road and the northern section of the Tuam Road are key links for the bus network, joined by either Joyce Road or a link through Mervue Business Park. The bus lanes along Wellpark Road are important to facilitate bus priority to the junctions at either end, so these should be wide enough to also cater for cyclists. Cycle lanes on the opposite sides and extended up Joyce Road ensure continuous cyclist facilities from Moneenageisha Cross to the N6/N17 junction.</p> <p>The Tuam Road to the south of the Trappers Inn has numerous accesses at both signalised and priority junctions, as well as direct entrances to properties. It also leads to the five arm Joyce Roundabout at Cemetery Cross, which is an unsafe junction for cyclists but difficult to convert to a signalised junction. For these reasons, the Tuam Road was not selected as a main cycle thoroughfare, and the routes to either side (i.e. Wellpark Road and the Headford Road/Bóthar na dTreabh) are provided with dedicated cycling facilities. Traffic calming measures are to be provided along the Tuam Road to increase awareness of cyclists to motorised users. Traffic calming measures and signage are also proposed along Monivea Road, Connolly Avenue, Michael Collins Road and St James' Road for the same reasons, and to reduce rat-running. Permeability through the residential and commercial areas will be examined as part of the</p>
Engineering Constraints and Mitigation Measures	

pedestrian network, and any measures proposed for pedestrians shall also cater for cyclists in accessing the external road network.

Concept Design for Junctions

Raised adjacent cycle lanes will transition to on-road cycle lanes at junctions to facilitate crossing at the signals. Pedestrian and cyclist crossing facilities will be included in any junction designs.

Concept Design for Links

At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. Proposed cycle lanes will require 2m of the carriageway or land on either side of existing or new roads.

Traffic management measures will be designed on a case by case basis for each route.

F4.10 Renmore & Dublin Road



Corridor Proposed Infrastructure Summary

Category	Location	Type of Facility	Length
Greenway	Dublin-Galway Greenway	The Dublin-Galway Cycleway will form a segregated cycleway to the east of the city linking to the city centre. As discussed in section F4.7, this will need to either cross or circumnavigate Lough Atalia near the city centre. If possible, the paved cycle and walking tracks along the southern section of Ballyloughaun Road, and around the northern extremity of Lough Atalia from Lakeshore Drive to Lough Atalia Road may be incorporated into the Greenway. The Greenway will then extend east as far as Oranmore and tie into the Dublin Cycleway east of this, but an exact route has not yet been fixed and is subject to detailed design.	11 km
Primary	Ballyloughaun Road	The section of Ballyloughaun Road to the south of the railway line has an off-road cycle path in place, which may connect to or form part of the Dublin-Galway Greenway. To the north of the railway bridge, traffic calming measures and signage are proposed to reduce	650 m

		motorised traffic speeds and advertise the presence of cyclists.	
	Dublin Road	Currently an outbound bus lane on the Dublin Road from Moneenageisha Cross to Renmore Road, and an inbound bus lane from Doughiska Road to Renmore Road. It is proposed to extend these bus lanes, which may also be used by cyclists, along the full length of the Dublin Road. Skerritt Roundabout will be converted to a signalised junction. An off-road two-way cycle path is also proposed along the Dublin Road to connect to the current entrance to Merlin Park Hospital. This will be located primarily on the northern side but will switch to the southern side towards the western end of the road. Cycle track will transition to on-road for crossing facilities at junctions.	3.9 km
	Merlin Park	A new entrance is proposed for Merlin Park Hospital for motorised traffic. The existing entrance will be maintained for cyclist and pedestrian use only, extended through Merlin Park Woods and connected to Doughiska Road.	1.8 km
	Old Doughiska Road	A new public transport-only bridge is proposed over Bóthar na dTreabh, along the line of the Old Doughiska Road. This will link Doughiska and Ardaun, and the hospitals in these areas. The bridge will include cycle lanes and footpaths, providing direct access for pedestrians and cyclists, and will link with the cycle network of the future Ardaun development area. Cyclists will also be permitted to use the proposed bus exit from Merlin Park Hospital and the link along Merlin Park Lane.	400 m
	Doughiska Road	Currently no cycle facilities in place to the south of the Dublin Road. Proposal to install on-road cycle lanes on both sides from the Dublin Road to the Dublin-Galway railway line crossing. Traffic calming measures and signage proposed to reduce motorised traffic speeds and advertise the presence of cyclists from the railway crossing to the Coast Road and further south to connect to the Greenway.	850 m
Secondary	College Road	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists between the junction with Lough Atalia Road and Moneenageisha Cross.	200 m
	Dublin Road	From Doughiska Road to Merlin Park Gate, the current cycle facilities include an inbound bus lane. It is proposed to extend these bus lanes, which may also be used by cyclists, along the full length of the Dublin Road as described in the Dublin Road Primary Route above, and to maintain the bus lane along this section.	
Feeder	Renmore Road / Renmore Avenue / Rowan Avenue	Currently no facility in place. Proposal to provide traffic calming measures and signage to reduce motorised traffic speeds and advertise the presence of cyclists.	840 m
	Gleann Rua / Murrough Avenue	Currently no facility in place. Proposal to provide traffic calming measures and signage between the Dublin Road and the railway crossing to reduce motorised traffic speeds and advertise the presence of cyclists.	590 m

Corridor Assessment

Existing Route Corridor Characteristics

Land Use: The land use in this area is mainly residential and recreational. There are some isolated commercial sites, mostly hotels, as well as several schools, GMIT, three hospitals, the Galway Hospice, and Galwegians rugby grounds.

Geometry / Lane Allocation: Roads in this area are two-way single carriageway, with turning lanes at some junctions and bus lanes on the Dublin Road as described above. Cross-section width varies between 7-15m kerb to kerb, although the wider sections tend to include existing bus lanes. Footpath and verge widths vary considerably and there are some gaps in footpath provision, although footpaths are generally present along all roads. There are existing off-road cycle tracks near the coast but no dedicated on-road cycling facilities in this area.

Parking / Loading: Some on-street parking is permitted along side roads and residential roads in this area, but not along the main Dublin Road. There are several private surface car parks, chiefly serving the hotels, GMIT, churches, hospitals and Wellpark Retail Park Centre.

Bus Operations: The 402, 409 and 410 bus routes travel along this corridor, as well as some regional services.

Engineering Constraints and Mitigation Measures

The primary constraint on this corridor is travel demand and the consequential requirement to provide for all modes. The Dublin Road is currently the main access route to the city for traffic coming from East and South County Galway, so motorised traffic will remain present on this road to a greater or lesser degree. However, this is also a largely residential area, with key trip attractors such as GMIT and the hospitals, and therefore provision for use of public transport and active modes must also be a high priority. A Park & Ride site is proposed along this corridor to reduce private traffic and to increase use of public transport. Bus lanes along the length of the Dublin Road will also provide a through route for cyclists, particularly commuter cyclists, while the off-road paths both along the Dublin Road and around the coast will provide for more vulnerable cyclists and recreational cyclists. Regular connections between these are proposed to offer safe access to these facilities. The cycle-only link through Merlin Park creates a shorter route from Doughiska to GMIT and onwards to the city centre, increasing permeability of this area for cyclists, and for pedestrians. Permeability generally through the residential areas will be examined as part of the pedestrian network, and any measures proposed for pedestrians shall also cater for cyclists in accessing the external road network and the above off-road cycle network.

Concept Design for Junctions

Skerritt Roundabout will be upgraded to a signalised junction with crossing facilities for pedestrians and cyclists. The off-road cycle path along the Dublin Road will cross the Ballybane Road at this junction. Raised adjacent cycle lanes will transition to on-road cycle lanes at junctions to facilitate crossing at the signals. Pedestrian and cyclist crossing facilities will be included in any junction designs.

Concept Design for Links

At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. Proposed cycle lanes will require 2m of the carriageway or land on either side of existing or new roads. Traffic management measures will be designed on a case by case basis for each route.

F4.11 Ballybane & Doughiska



Corridor Proposed Infrastructure Summary

Category	Location	Type of Facility	Length
Primary	Ballybane Road	Currently no cycle facility in place. Proposal to install raised adjacent cycle lanes on both sides of Ballybane Road from Skerritt Roundabout to the N6 junction.	1.3 km
	Doughiska Road	Currently raised adjacent cycle lanes in place on both sides of the Doughiska Road from the junction with the Old Ballybrit Road to the junction with Merlin Park Lane, transitioning to at-grade at all junctions and entrances. These are to be upgraded to give priority to cyclists at junctions rather than to motorists.	1.5 km
	Briarhill	The section of road through Briarhill Junction from the northern end of Doughiska Road to the southern end of Ballybrit Crescent/Parkmore Road will require redesign to accommodate bus priority measures. There is currently a pedestrian and cyclist underpass to cross the Briarhill junction, but there are two tight corners at T-junctions between this and the Doughiska Road cycle lanes, with no cycle facility in the interim. The reconfiguration for bus priority should include measures to facilitate safe movement of cyclists through these junctions.	320 m
Secondary	Monivea Road	Currently no cycle facility in place. Proposal to install raised adjacent cycle lanes on both sides from Ballybane Road to Castlepark Road, and on-road cycle lanes on both sides from Castlepark to the junction with the Old Ballybrit Road at Briarhill.	1.8 km

	Castlepark Road	Currently no facility in place. Proposal to install on-road cycle lanes on both sides from Monivea Road to Ballybane Road.	1.3 km
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Corridor Assessment

Existing Route Corridor Characteristics

Land Use: The land use in this area is mainly residential, with some concentrated areas of commercial and light industrial sites. There are also several recreational and amenity areas, particularly Merlin Park Woods, and Merlin Park Hospital is to the south.

Geometry / Lane Allocation: Roads in this area are two-way single carriageway, except for the N6 which has two lanes in each direction. Cross-section width varies between 7-9m kerb to kerb, with some narrower pinch points, particularly along the eastern section of the Monivea Road. Footpath and verge widths vary considerably but are generally wide. The only existing dedicated cycle facilities are on Doughiska Road.

Parking / Loading: On-street parking is not permitted along any of the roads listed above. Parking is available in the residential side roads and estates, and many of the commercial and industrial sites have private surface car parks. Loading is required for commercial and industrial premises, most of which do not open directly onto the main roads.

Bus Operations: The 403, 405 and 409 bus routes travel along this corridor, as well as some regional services.

Engineering Constraints and Mitigation Measures

The primary constraints on this corridor are occasional narrow sections of road, and generally built up areas. However, frequent wide carriageways, wide verges and open and permeable residential layouts should easily facilitate uptake of active modes with the provision of dedicated cycle facilities. Many of the roads in this area are quite straight and wide, which encourages increased motorist speeds. The addition of cycle lanes will have the dual effect of providing a safe, segregated corridor for cyclists to travel, while also reducing traffic speeds in residential areas by narrowing carriageways.

Concept Design for Junctions

Briarhill Junction and the surrounding junctions, i.e. from the northern end of Doughiska Road to the southern end of Ballybrit Crescent/Parkmore Road, will require a detailed redesign to cater for all movements by all modes as outlined above, and particularly for cyclists and buses crossing the N6. As Parkmore is a key employment destination, movements through this junction must prioritise safe movement of pedestrians and cyclists. The development of the Ardaun area may also have an effect on this junction, depending on its layout, and this should be taken into account as part of this design.

The junctions at the northern end of Ballybane Road, with the Monivea Road and the N6, may require reconfiguration also, depending on future traffic use of the N6.

Concept Design for Links

At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. Proposed cycle lanes will require 2m of the carriageway or land on either side of existing or new roads.

Traffic management measures will be designed on a case by case basis for each route.

F4.12 Ballybrit & Parkmore



Corridor Proposed Infrastructure Summary

Category	Location	Type of Facility	Length
Primary	N6 Bóthar na dTreabh	Currently raised adjacent cycle lanes from the N17 junction to the Ballybane Industrial Estate. Proposal to maintain these cycle lanes and to install raised adjacent cycle lanes or off-road cycle track between Ballybane Road and Briarhill. Additional recommendation to reduce speed limit here due to safety concerns of four lanes of traffic at 100kph.	2.3 km
	Ballybrit Business Park	Currently on-road cycle lanes present on both sides of the road from entrance to industrial estate on the N6 for a length of approximately 150m. Proposal to extend these along the full length of the road to the northern extremity of the estate.	840 m
	Parkmore West Business Park	Currently no facility in place. Proposal to install on-road cycle lanes on both sides of the main road from the roundabout to the western end of the business park.	790 m

	Parkmore Link Road (New)	There is currently no connection between the business parks in Ballybrit and Parkmore. However, a new road is proposed to link them, parallel to the N17. This road will have a footpath and on-road cycle lane on both sides.	1.2 km
	City North Business Park Link Road (New)	An additional new connector road is proposed between the above Parkmore Link Road and the N17, with on-road cycle lanes on both sides.	420 m
	Parkmore Road South / Ballybrit Crescent	Currently no facility in place. Proposal to install on-road cycle lanes on both sides of Parkmore Road from the roundabout to the junction at the southern end with the R339.	920 m
Secondary	N17 Tuam Road	Currently on-road cycle lanes in place on both sides of the N17 for approximately 100m from the junction with the N6. Proposal to install a two way off-road cycleway along the eastern side of the N17 as far as the junction with Parkmore Road, where the facility switches to the other side of the N17 and continues as far as Claregalway (distance for this facility only measures from the N6 to the Parkmore Road).	2.8 km
	Parkmore Road North	Currently on-road cycle lanes in place on both sides of the Parkmore Road between the roundabout and the junction with the N17. Proposal to maintain, upgrade and resurface these cycle lanes on both sides.	1 km

Corridor Assessment

Existing Route Corridor Characteristics

Land Use: The land use in this area is mainly light industrial and commercial, with low density residential sites around the fringes. Ballybrit Racecourse represents a large amenity and/or commercial site, in use for different purposes at varying times of the year.

Geometry / Lane Allocation: Roads in this area are generally two-way single carriageway, with the exception of the N6 Bóthar na dTreabh. Cross-section width varies considerably, between 7.5m-15m kerb to kerb. Internal roads in the business parks are narrower, although footpaths are usually present on both sides. The N6 and N17 have partial footpaths, and wider hard shoulders than other roads in the area.

Parking / Loading: On-street parking is not permitted along any of the roads in this area. Parking is available at no charge in private surface car parks throughout the business parks. Any loading required for industrial premises takes place on private sites.

Bus Operations: The 403, 405 and 409 bus routes travel through this corridor, as well as some regional services.

Engineering Constraints and Mitigation Measures

The primary constraints in this area are conflict of modes, permeability and availability of parking. This corridor contains key destinations of employment zones, and experiences heavy volumes of motorised traffic encouraged by large numbers of free parking spaces. It has very little existing dedicated cyclist provisions. Traffic travels at high speed along the main external roads, and therefore segregated facilities are recommended to increase safety and visibility of cyclists. The new link roads are proposed to increase permeability for all modes, including road-based public and private traffic, but cycle lanes along these will increase permeability for cyclists and provide more direct routes to and from areas of high employment.

Concept Design for Junctions

As previously discussed, Briarhill junction and the surrounding junctions will require reconfiguration, which will have a direct impact on the road network in Parkmore. This redesign must consider pedestrian and cyclist movement as a priority.

The junction of the new City North Business Park Link Road with the N17 will require signalisation, as may the junction of Parkmore Road with the

N17. Additional signalisation is likely if the N6 GCRR connects to the Tuam Road with a junction. All of these junctions shall provide safe crossing facilities for cyclists and pedestrians.

**Concept Design for
Links**

At this conceptual design stage, it is envisaged that cycle lanes will be 2m wide. Proposed cycle lanes will require 2m of the carriageway or land on either side of existing or new roads.

Traffic management measures will be designed on a case by case basis for each route.