

Appendix 3

NMU Audit

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Castlebar Town, Co. Mayo

Non-Motorised Road User Accessibility
Assessment

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Non-Motorised Road User Accessibility Assessment

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1 Introduction

1.1 Assessment Overview and Scope

This Non-Motorised Road User (NMU) Accessibility Assessment has been undertaken as part of the Area-Based Transport Assessment (ABTA) for Castlebar, Co Mayo.

The purpose of this NMU Accessibility Assessment is to identify gaps in the existing non-motorised road user provisions in Castlebar, including cycle lanes/tracks, greenways, footpaths and crossings from the perspective of all users, including people with disabilities, and to recommend improvements where considered appropriate.

The scope of this Accessibility Assessment includes: -

- I. Assessment of the local road network conditions;
- II. Identify the key active travel destinations;
- III. Identify existing/likely NMU routes;
- IV. Classify the routes;
- V. Identify any issues within each route/area;
- VI. Propose measures to address any issues identified; and
- VII. Suggest priorities for implementing recommended measures.

1.2 Castlebar Town

1.2.1 Overview

Castlebar is located in west County Mayo and has a population of just over 12,000. The Castlebar River passes through the Town Centre and a number of National Roads pass around the town, including the N5, which connects the town to Westport and Dublin, and the N60 and N84, which connect the town to Galway. The Scope of this Assessment includes the Castlebar Urban Electoral Division (ED) as shown in Figure 1-1. In addition, other residential and recreational areas located at the periphery of the urban ED were included as part of the Assessment.

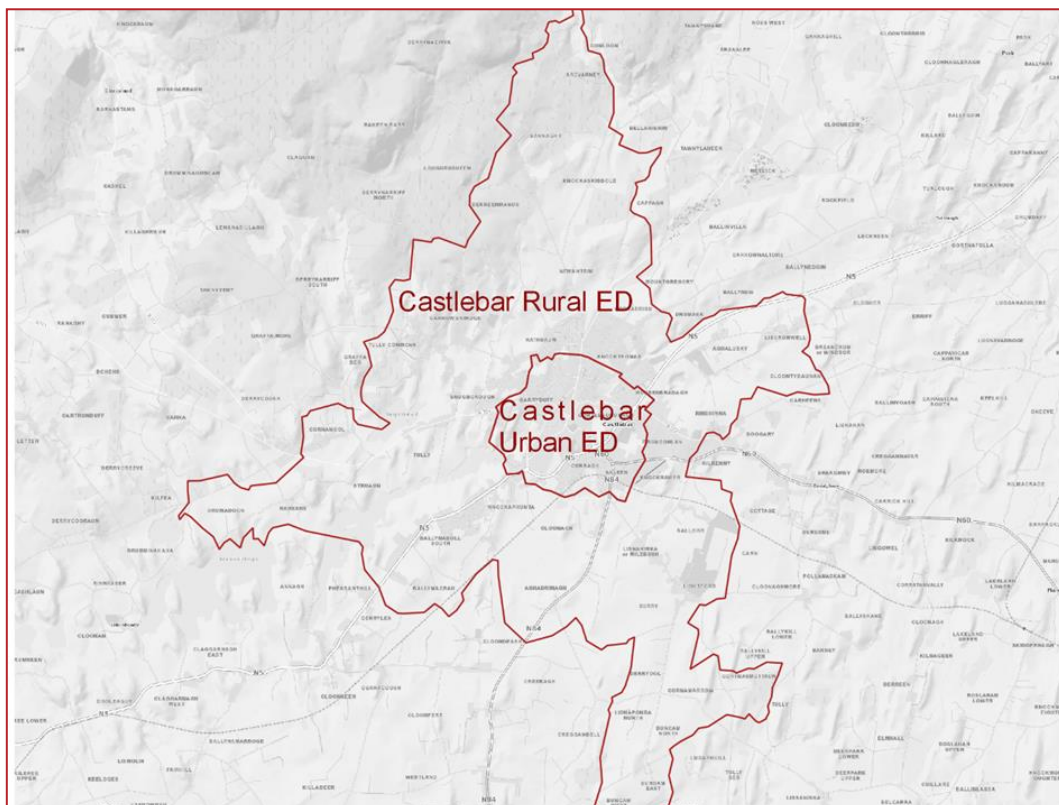


FIGURE 1-1: LOCATION PLAN (SOURCE: (SOURCE: WWW.CSO.IE & WWW.OSI.IE)

Figure 1-2 shows the population density of the areas within Castlebar. The data was obtained from the Central Statistics Office Census survey of 2016. The map shows the population density per square kilometre. Figure 1-3 shows the number of people with disabilities within each area.

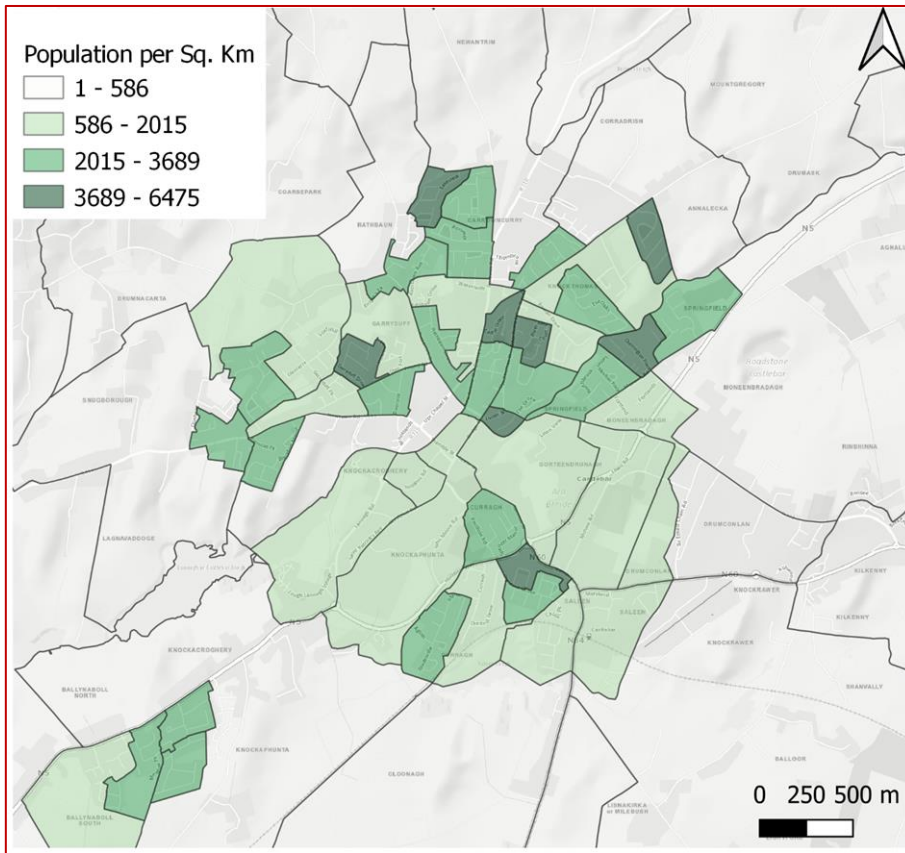


FIGURE 1-2: CENSUS 2016 SMALL AREAS POPULATION DENSITY (SOURCE: WWW.CSO.IE & WWW.OSI.IE)

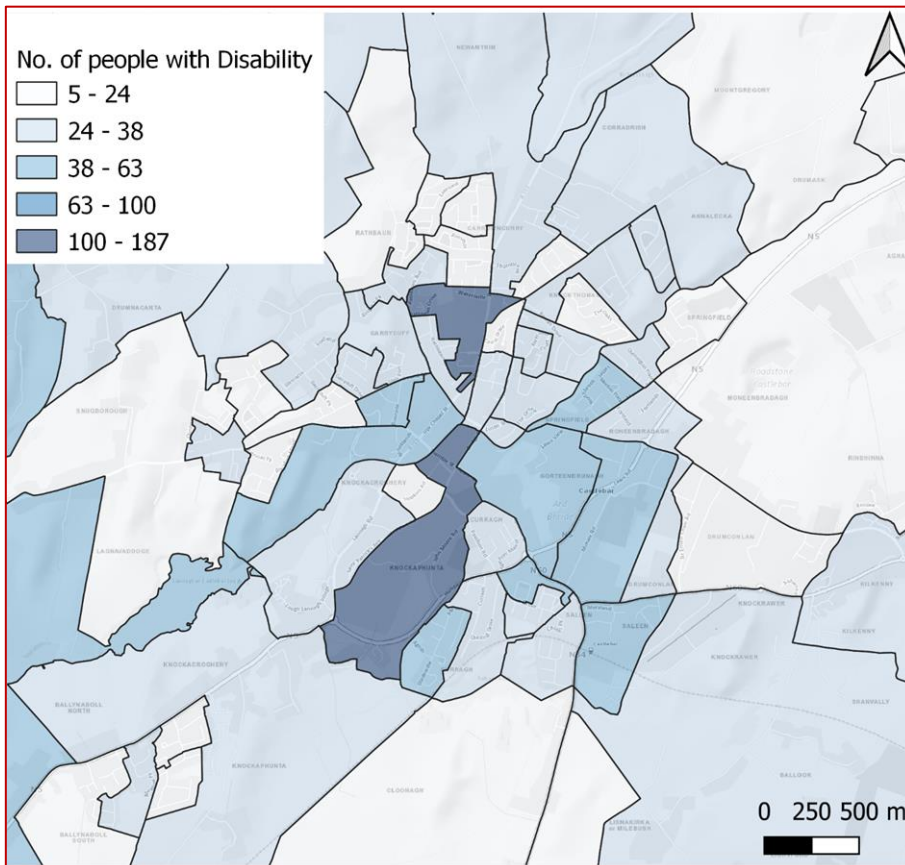


FIGURE 1-3: CENSUS 2016 SMALL AREAS POPULATION WITH DISABILITY (SOURCE: WWW.CSO.IE & WWW.OSI.IE)

1.2.2 Areas

FIGURE 1-4 shows the extents of Castlebar Town Centre (shown in light blue), the Urban Area (shown in green) and the the extents of Castlebar Rural ED and Urban areas (shown in purple and red respectively).

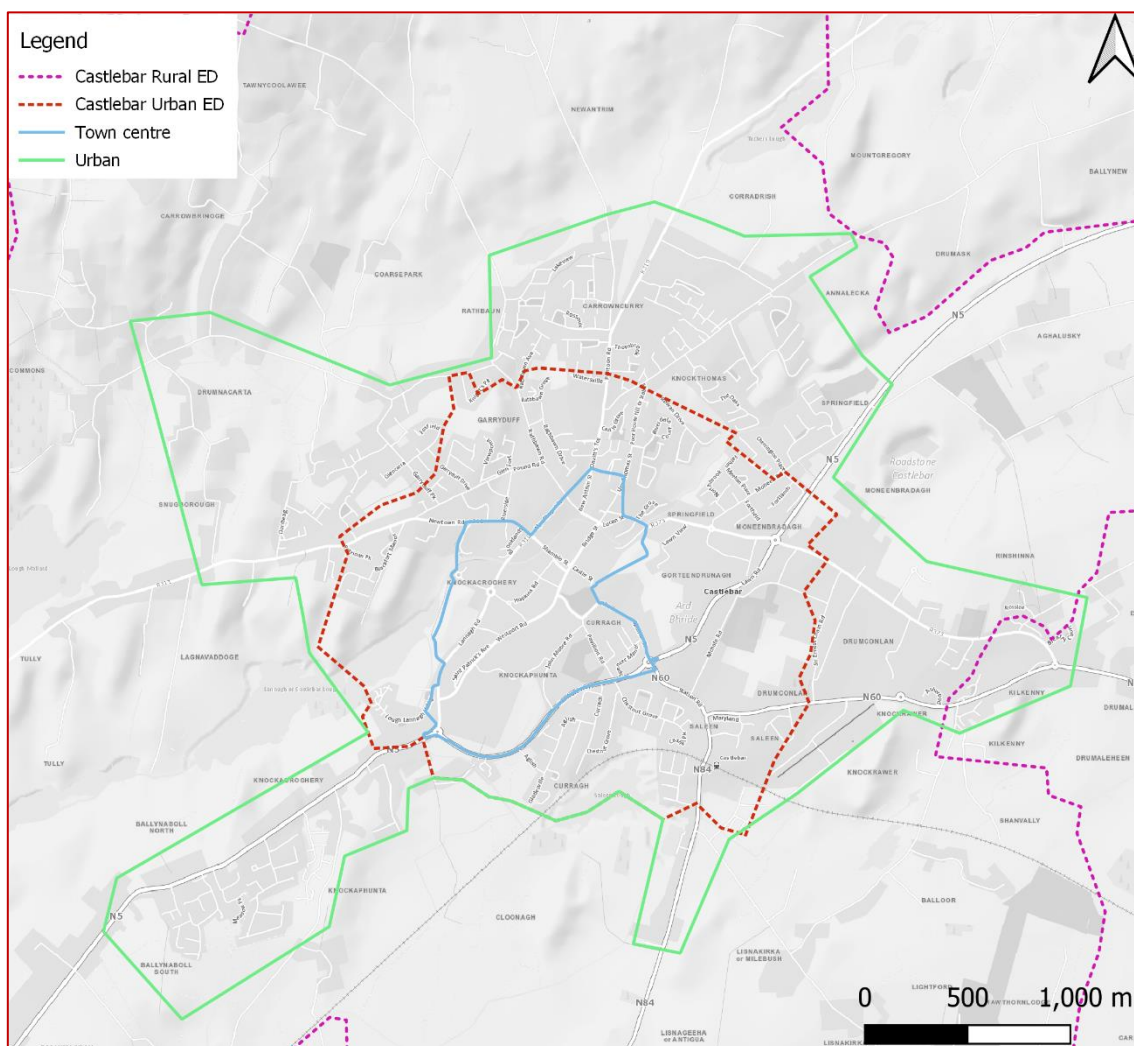


FIGURE 1-4: CASTLEBAR TOWN CO. MAYO (SOURCE: www.CSO.ie & www.OSI.ie)

The Castlebar Town Centre area includes the main shopping areas, public transport stops, banks, restaurants, offices and hotels.

The Urban Area would include the schools and other shopping areas located in the periphery of the town as well as residential areas.

The N60 serves a number of housing estates on its northern side, has multiple direct accesses along both sides and passes through Castlebar's enterprise and employment areas.

- **N84 National Road:** is a two-way National Primary Road with a posted speed limit of 50kph within Castlebar urban area which changes to 60kph west of its junction with the L1704.

There are pedestrian footpaths and cyclist facilities along the N84 from its junction with the N60 to its junction with The Waterways.

The N84 serves a number of housing estates on both sides and multiple direct accesses along its western side.



- **R373 (Springfield Road/Moneen Road):** is a two-way Regional Road with a posted speed limit of 50kph and a footpath along both sides. The road commences at its junction with the R310 within the town centre to its junction with the N60.

There are no cyclist facilities on the road, which serves a number of housing estates and which also has multiple direct accesses.

It also links major trip attractors such as the town centre, Castlebar Greenway, schools, enterprise and employment areas.



- **Davitts Terrace (R310):** Davitts Terrace is a narrow two-way road with footpaths on both sides which serves a number of housing estates along with multiple direct access on both sides, with some sections including on-street parallel parking along the eastern side.

There are cyclist facilities along Davitts Terrace, however these are located on the western side of the road only.



- **Pontoon Road(R310):** is a two-way Regional Road with a posted speed limit of 50kph and a footpath along both sides.

There are cycle facilities on both sides of the road, and the road serves a number of housing estates and multiple direct accesses.



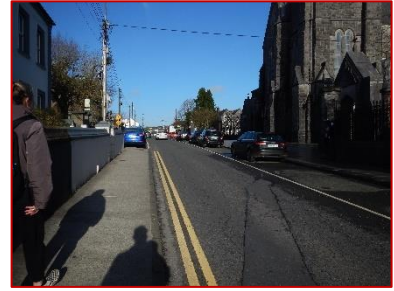
- **Main Street/Linenhall Street/New Antrim Street (R310):** Main Street, Linenhall Street & New Antrim Street form a one-way street within the town centre.

Traffic on this route travels in southerly direction with footpaths on both sides, however there are no cyclist facilities along the route. There is parallel parking along one side of the carriageway.



- **Market Street/ Upper Chappel Street (R310):** is a one-way road with footpaths along both sides there are no cyclist facilities along this route.

The route serves traffic traveling northbound along the R310 within Castlebar town centre.



- **Ellison Street (R310):** is a narrow two-way road with footpaths on both sides of the road. There is on-street parallel parking along both sides of the road, but no cyclist facilities.



- **Mountain View (R310):** is a two-way Regional Road with footpaths on both sides. There are no cycle facilities on the road. There is on-street parallel parking along both sides of the road.



- **Westport Road (R310):** a wide two-way road with footpaths on both sides of the road. There is on-street parallel parking along northern side. There is no cyclist facilities along this road.



- **R311 (Newport Road):** is a two-way Regional Road with a posted speed limit of 50kph and footpaths along both sides. The road commences at its junction with the R310 within the town centre.

The road serves a number of housing estates and have multiple direct accesses. There are cyclist facilities along both sides of the road west of its junction with Pound Grove.



- **L5786:** is cul-de-sac local road that runs parallel to the N5 and serves a number of housing estates.



- **L1719 (Turlough Road):** is a two-way Local Road with footpaths on both sides. The road commences at its junction with the R310.

There are cyclist facilities along both sides of the road, which serves a number of housing estates and have multiple direct accesses.



- **Rathbawn Road:** is a narrow two-way road in the vicinity of the town centre, which widens outside of the town centre area.

There are footpaths on both sides of the road, but no cyclist facilities, and it serves a number of housing estates and have multiple direct accesses.



1.2.4 Existing Cycle Facilities

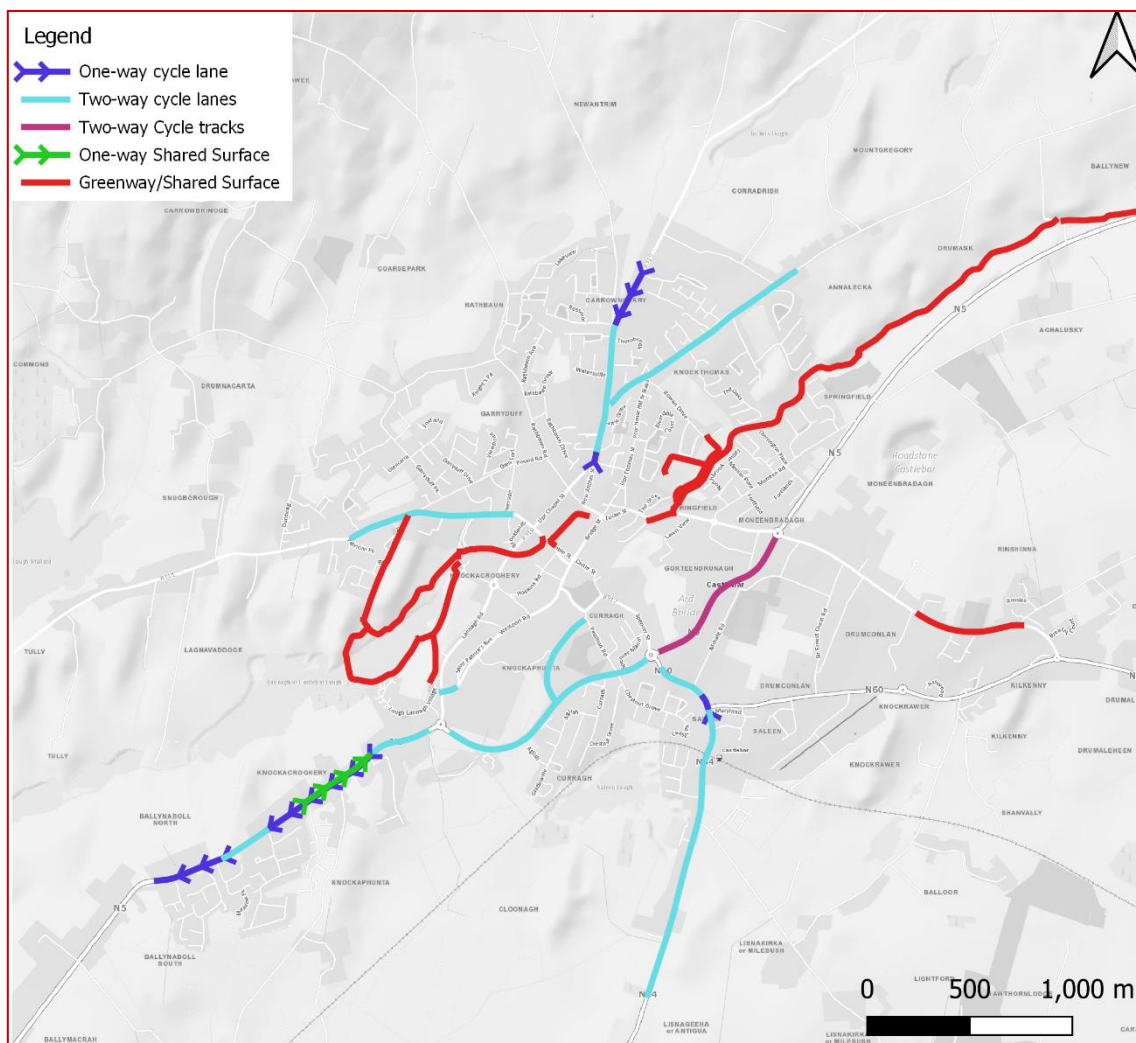


FIGURE 1-6: EXISTING CYCLIST FACILITIES (SOURCE: WWW.OSI.IE)

Figure 1-6 shows the existing cycle facilities within Castlebar, which are comprised of discrete sections of cycle lanes, cycle tracks and/or shared paths of varying lengths.

The majority of the existing facilities do not extend through/across the town centre, with many terminating at the periphery of the town centre with no dedicated facilities to cater for cyclists to/from many of the main trip attractors (i.e. schools, shops and recreational areas). In addition, all existing cycle facilities terminate at major junctions (i.e. roundabouts) with no provisions to assist cyclists traversing the junction.

2 Methodology

The methodology adopted for the assessment was as follows: -

- collection of available data/information on the Study Area, including Ordnance Survey mapping, historical collision data and traffic flow/volume data;
- a Desktop Review of the collected data/information, and the identification of key routes for NMUs within the town as well as key facilities and trip attractors in Castlebar for pedestrians, cyclists and the mobility- or visually-impaired;
- a site visit, undertaken on the 22nd and 23rd February 2022, where all roads/areas within the town were reviewed to identify gaps, or areas for improvement, in the existing NMU provisions with a particular focus on the key routes identified in the previous step; and
- the collation of all issues identified, categorised by the road user-type affected and whether the issue identified was an accessibility or a safety issue.

The extents of the area within the scope of this assessment are indicated in Figure 1-1. Weather conditions during the site visit were wet, traffic volumes were moderate and pedestrian & cyclist volumes were moderate.

3 Key Routes and Areas

3.1 Active Travel Trip Attractors

A number of trip attractors were identified that would likely generate demand to/from each high-density population area, as follows: -

- **Town Centre:** Castlebar Town centre includes the main shopping areas, public transport stops (Figure 3-2 shows the Trian and Bus stops), banks, restaurants, offices and hotels;
- **Schools:** these are shown in Figure 3 1. Ten schools were identified within the urban town centre, with Table 3-1 summarising the school populations.

TABLE 3-1: CASTLEBAR SCHOOLS POPULATION

School	Number of Students
Davitt College	800
St. Gerald's College DLS	620
St Joseph's Secondary School	600
St Patrick's Boys National School	500
Scoil Naomh Padraig	462
St Angelas National School	350
Gaelscoil Raifteir	218
St Anthony's Special School	44
St Brides Special School	22
Castlebar Educate Together	12

- **Recreational Areas:** a number of recreational areas were identified, including attractions like Lough Lannagh Amenity Park, Great Western Greenway (GWG) and the Leisure Complex at Lough Lannagh, located west of Castlebar Town. Other areas include the ATU Mayo Campus (1,000 students).

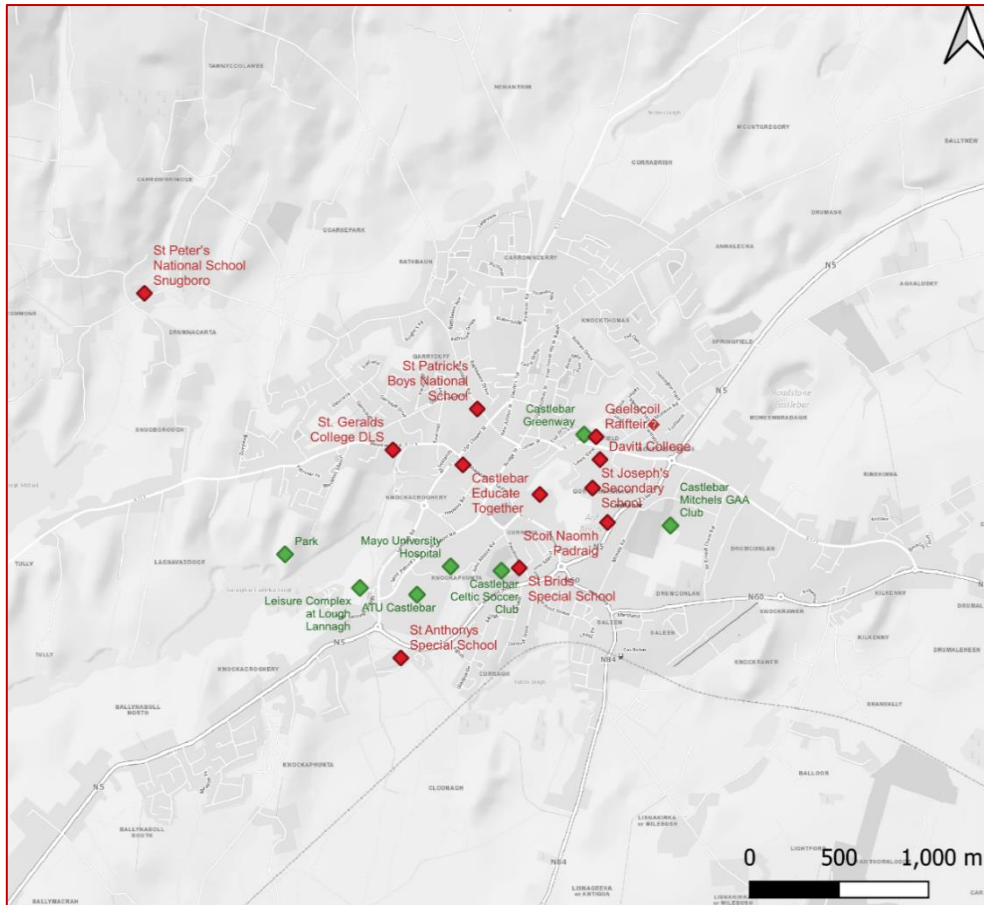


FIGURE 3-1: SCHOOLS AND OTHER TRIP ATTRACTORS (SOURCE: WWW.OSI.IE)



FIGURE 3-2: TRAIN AND BUS STOPS WITHIN CASTLEBAR (SOURCE: WWW.OSI.IE)

3.2 Active Travel Routes

3.2.1 Residential Areas-Routes

Based on the Active Travel Trip Attractors identified in Section 3.1, a number of Routes were identified which would serve the different residential areas and link them to Castlebar Town centre, the Schools and the Recreational area.

The routes have been identified by assuming an NMU journey commencing in the primary residential areas to the north, north-east, north-west, west, south-west & south respectively. The six routes identified are shown in Appendix A.

These routes were then combined/overlaid in order to identify the Key Active Travel Routes within Castlebar.

3.2.2 Core Routes

Based on the likely destinations from the primary residential areas identified in the previous section, three route groupings were identified, as follows: -

- Core Routes,
- Intermediate Routes; and
- Link Routes.

These routes (shown on Figure 3-3) link the majority of the residential areas in Castlebar with the identified main active travel trip attractors. Core Routes are those routes that pass through high trip attractors locations and where multiple routes from the residential areas to the trip attractors overlap.

Intermediate Routes are similar to the core routes, however with less overlapping of the routes from residential areas to the trip attractors. Link Routes are routes that link residential areas to the Core and Intermediate Routes.

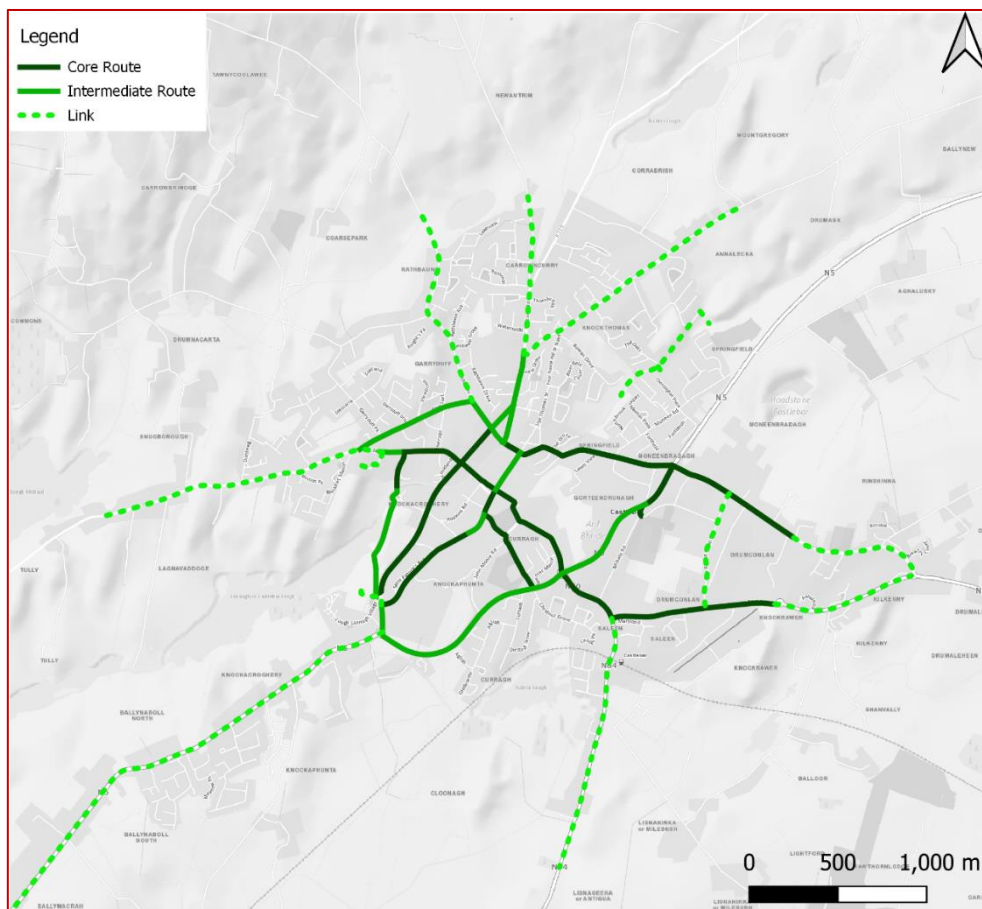


FIGURE 3-3: PRIMARY ACTIVE TRAVEL ROUTES IDENTIFIED (SOURCE: WWW.OSI.IE)

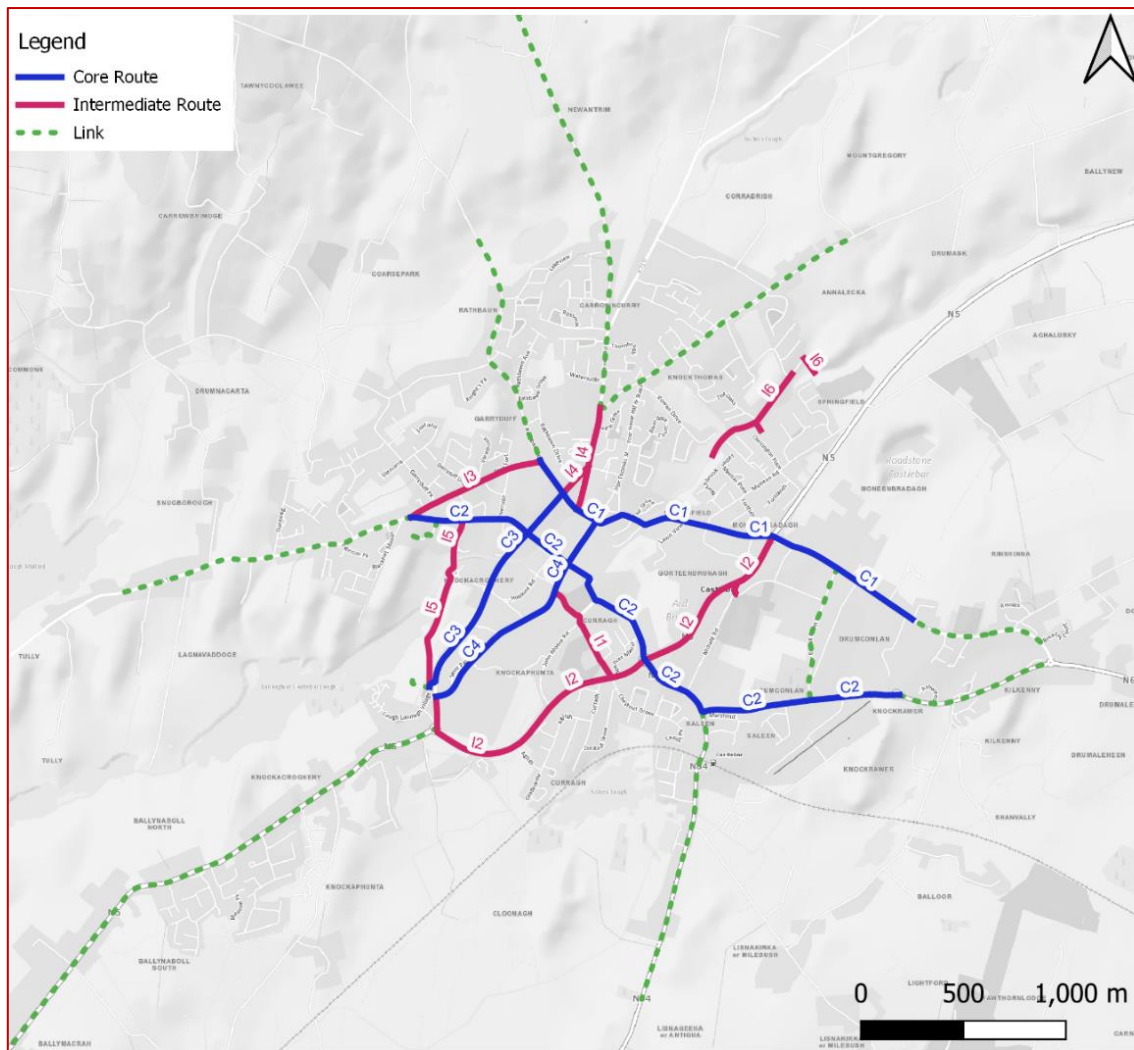


FIGURE 3-4: ACTIVE TRAVEL ROUTE REFERENCES (SOURCE: WWW.OSI.IE)

Figure 3-4 shows the Active Travel Demand Routes numbered as four Core routes (C1, C2, C3 and C4), six Intermediate routes (I1, I2, I3, I4, I5 and I6) and 10 link routes.

- **Core Route C1:** Core Route C1 travels predominantly along the R373 Regional Road and would provide access to multiple schools, the northern side of the enterprise and employment area, the Castlebar Greenway, Castlebar Mitchels GAA Club & Hastings Insurance MacHale Park.
- **Core Route C2:** Core Route C2 travels through the N60 National Road, R917 Regional Road, Castle Street, Market Square and the R311 Regional Road. It would provide access to multiple schools, the southern side of the enterprise and employment area and link the eastern & western sides of the town through the town centre.
- **Core Route C3:** Core Route C3 travels along Lannagh Road and would link the retail area located on the northern side of the town centre to Core routes C1 and C2. It would also provide access to the Leisure Complex at Lough Lannagh and to Lough Lannagh Park.
- **Core Route C4:** Core Route C4 would connect with Core Route C3, the retail area on the southern side of the town centre and to Core Routes C1 and C2. It would also provide access to ATU Castlebar and Mayo University Hospital.

- **Intermediate Route I1:** this intermediate route would provide access to St. Birds Special School and between the residential areas on the southern side of the town centre to the Core Routes.
- **Intermediate Route I2:** Intermediate Route I2 travels along the N5 National Road, along the southern side of the town centre and would link to Core Routes C1 and C2. Intermediate Route I2 would provide access to the enterprise and employment area for the residential estates located southwest of the town centre.
- **Intermediate Route I3:** Intermediate Route I3 travels along Pound Road and would link the residential areas north of the town centre to Core Routes C1 and C2.
- **Intermediate Route I4:** Intermediate Route I4 travels along the R310 Regional Road and would connect the link roads to the residential estates northeast of the town centre to Core Route C1.
- **Intermediate Route I5:** Intermediate Route I5 travels along an existing section of Castlebar greenway as well as the Link Road and would serve as an alternative route to Core Route C3 for access to/from the residential areas northwest of the of the town centre.
- **Intermediate Route I6:** Intermediate Route I6 would serve active travel to/from Cois Abhann, An Sruthán and The Oaks, and has the potential to improve pedestrian and cyclists access to the Greenway along Castlebar River for these three residential areas and also for the residential areas on the northern side of the Torough Road.

4 Assessment Findings

4.1 General Findings

4.1.1 Absence of Footpaths along Pedestrian Desire Lines

There is a lack of footpaths linking some of the residential developments to existing footpaths and/or to the town centre. In these locations Vulnerable Road Users (VRUs) must travel within the verge or carriageway, with a consequent increased risk of slips, trips and falls or of being struck by a vehicle.

In addition, an absence of dropped kerbs at appropriate locations could result in mobility-impaired pedestrians be unable to access the footpath, or cross the carriageway, which could lead to them choosing to travel within the carriageway to an appropriate access location with a resulting increased risk of being struck by a vehicle or having to ascend/descend a full-height kerb with an increased potential for trips and falls.

At locations where there are no footpaths, visually-impaired pedestrians have no safe means of accessing the town centre and other facilities independently.



Suggested Treatment

Continuous footpaths, with appropriate crossings, should be provided along the identified NMU desire lines linking the main trip attractors to the residential areas.

In addition, all newly developed areas should have pedestrian links/footpaths to the existing footpath network.

4.1.2 Discontinuities in Footpath Provisions

Some existing pedestrian routes are discontinuous within parts of the Town Centre and other areas. At a number of locations footpaths terminate abruptly and/or are blocked by property boundaries or parking spaces. A lack of continuous pedestrian routes results in pedestrians continuing their journey within the carriageway, where they are at increased risk of being struck by a passing vehicle.

In some locations footpaths terminate flush with the adjacent carriageway, or sections of footpath have no vertical separation from the adjacent carriageway. At these locations there is a risk that visually-impaired pedestrians may inadvertently enter the carriageway, where they are at risk of being struck by a vehicle or cyclist.

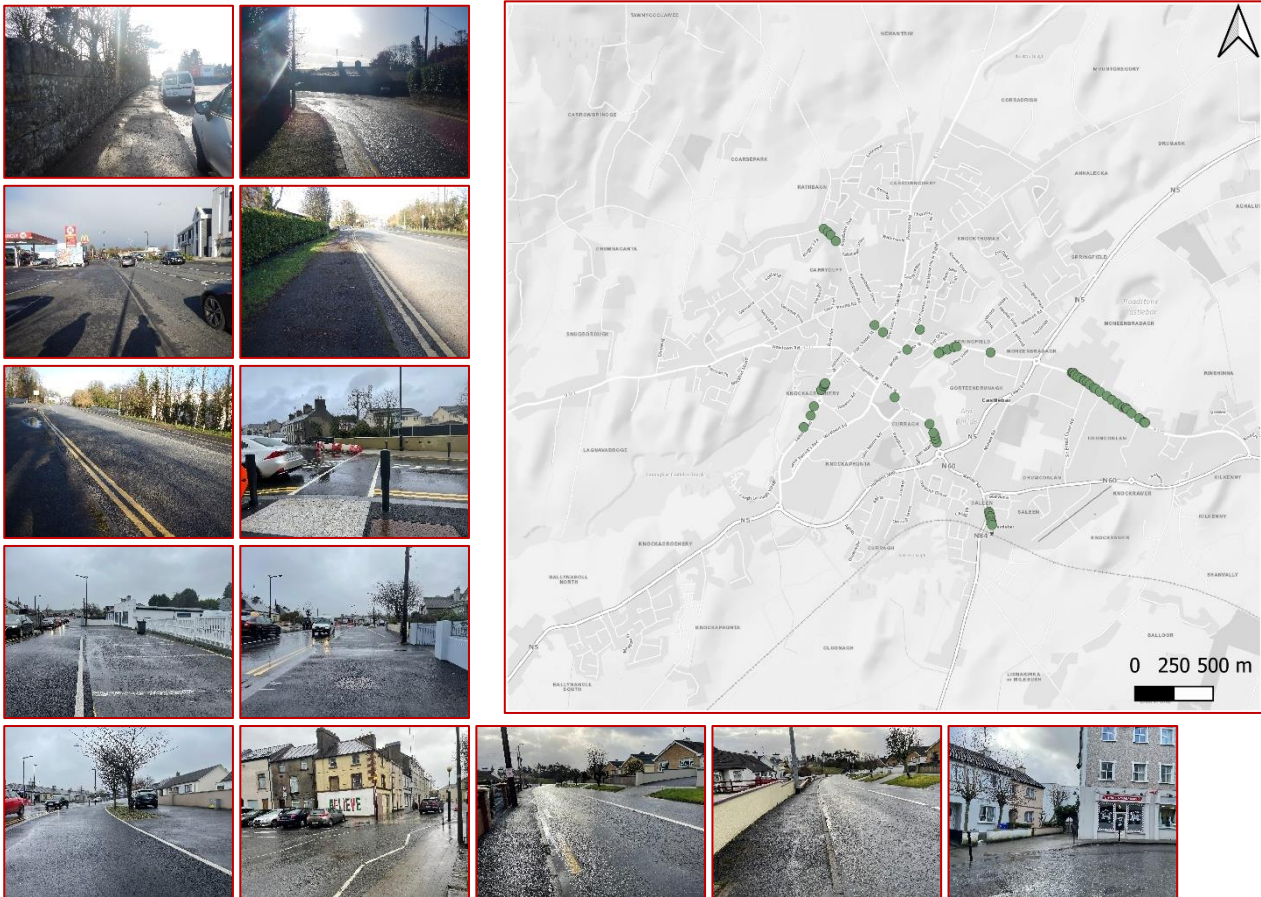


Suggested Treatment

Continuous footpaths should be provided throughout the Town Centre. Care should be exercised in the choice of materials used and the provision of an appropriate level difference between the carriageway and the footpaths.

4.1.3 Footpath/Carriageway Vertical Separation

There is no vertical separation between the carriageway and some of the footpaths within the Town Centre and also on some the other existing pedestrian routes into the Town Centre. Variations in kerb heights may lead to an increased risk of trips and falls, particularly for visually impaired pedestrians. Visually impaired pedestrians may inadvertently enter the carriageway where there is insufficient vertical separation.



Suggested Treatment

Full-height kerbs should be provided between footpaths and the adjacent carriageway, other than at crossing locations. Where this is not feasible/possible then footpaths shall have minimum of 60mm vertical separation to the carriageway, 25mm at vehicular accesses and a maximum of 6mm at pedestrian crossings.

4.1.4 Inadequate Width of Shared Paths

There are a number of existing paths which pedestrians share with cyclists. The width of these shared paths varies, and in some instances the path is narrow and is unlikely to be able to safely accommodate both cyclist and pedestrian volumes. This could result in collisions between cyclists and pedestrians or to cyclists choosing to travel within the adjacent carriageway, obviating the benefit intended by the provision of the shared path.



Suggested Treatment

Where possible segregated cyclist and pedestrian facilities should be provided. Where this not feasible the shared facilities should have a width sufficient to accommodate the expected volumes of pedestrians & cyclists, and in line with the recommendations in the National Cycle Manual.

4.1.5 Absence of Pedestrian Crossings on Likely Desire Lines

Within the Town Centre there are a number of locations where there is no pedestrian crossing along likely pedestrian crossing desire lines at junctions and between discontinuous sections of footpath. The absence of crossing facilities on likely pedestrian crossing desire lines could lead to pedestrians crossing at unsafe locations, leading to an increased risk of vehicle-pedestrian collisions.

The absence of dropped kerbs at pedestrian desire crossing points may create difficulties for mobility-impaired pedestrians undertaking crossings as they are unlikely to be able to safely descend the kerb to cross the carriageway, resulting in potential trips and falls.

Where dropped kerbs are provided to facilitate the mobility-impaired undertaking a crossing, accompanying tactile paving has not been provided in all instances. The absence of tactile paving could result in visually-impaired or partially-sighted pedestrians inadvertently entering the carriageway or encountering difficulties identifying the other side of the crossing.



Suggested Treatment

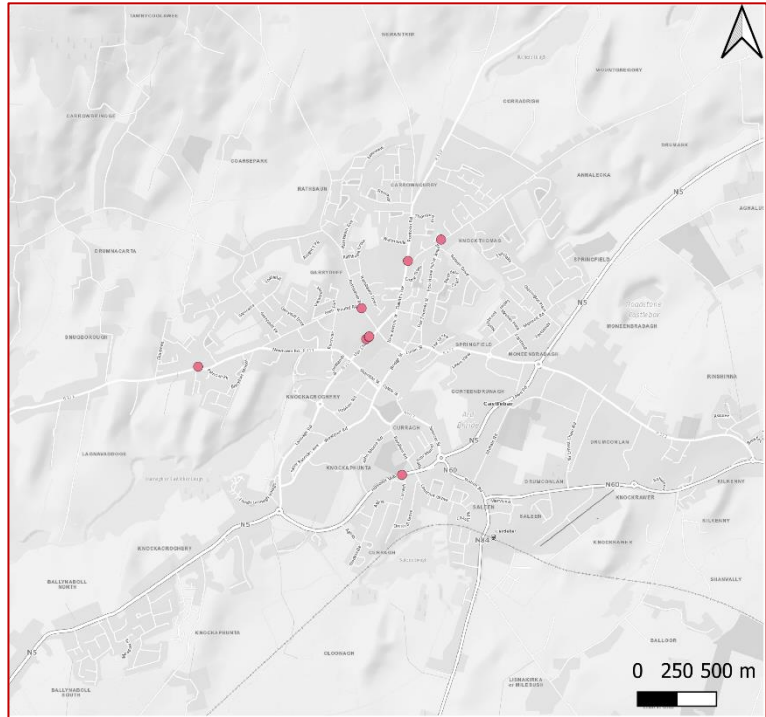
Appropriate pedestrian crossing facilities (either controlled or uncontrolled) should be provided at likely pedestrian crossing desire line locations.

Where possible, footpaths should be continuous across all private access (including private car parks, service stations, etc) with the onus on drivers to yield to pedestrians on the footpath.

Similarly, at junctions with minor, lightly trafficked, side roads a continuous footpath could also be provided, however, where this is not feasible then an appropriate crossing (i.e. dropped kerb and tactile paving or raised table and tactile paving) should be provided.

4.1.6 Insufficient Inter-visibility at Crossings

At a number of the uncontrolled pedestrian crossing locations there is a lack of adequate inter-visibility available from the crossing point between approaching drivers and a pedestrian about to commence a crossing, often as a result of the position of adjacent boundary walls or the distance the crossing is offset away from the junction mouth.



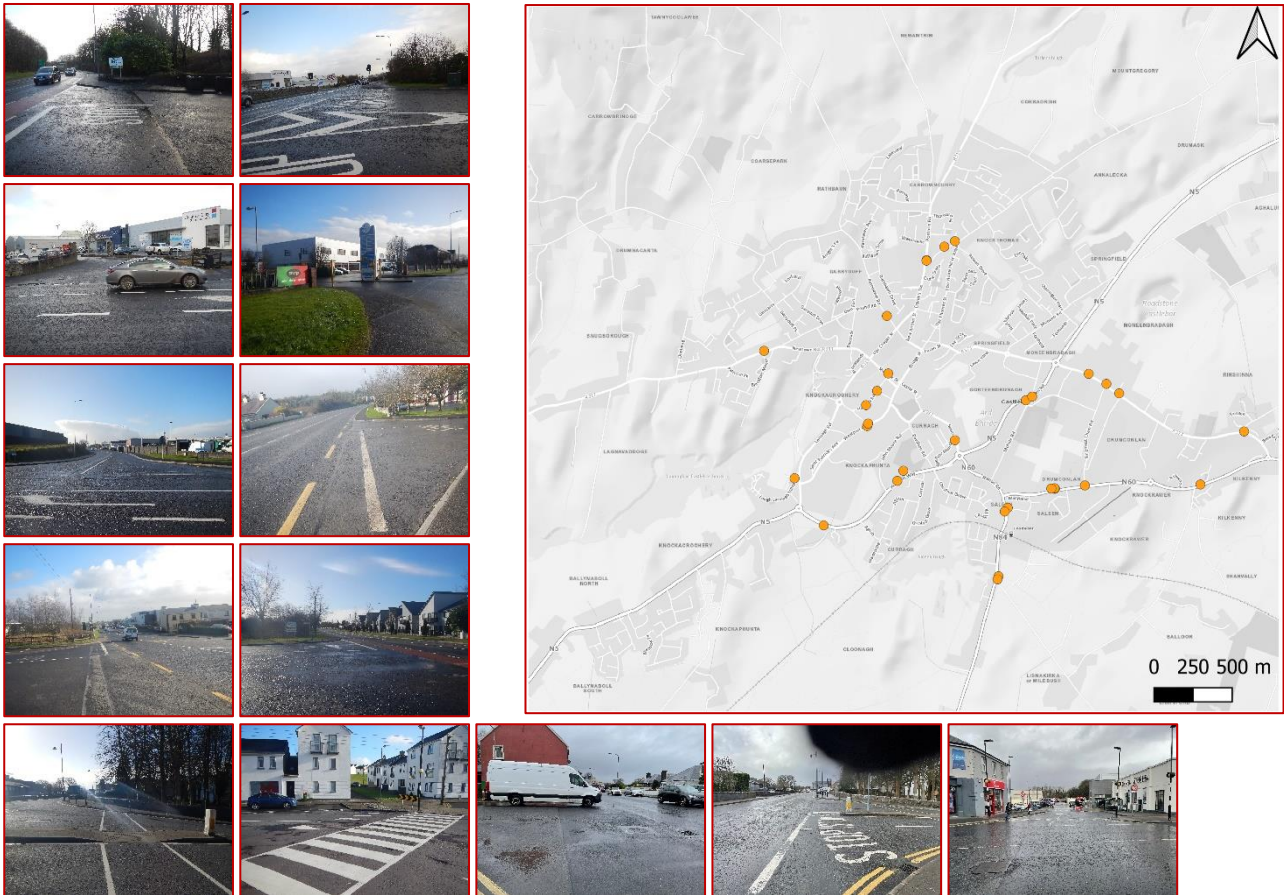
Suggested Treatment

Pedestrian crossings should be positioned such that adequate inter-visibility between approaching drivers and a pedestrian about to commence a crossing.

4.1.7 Lengthy Pedestrian Crossings

At a number of the junctions along main routes leading to the Town Centre pedestrians are required to cross a relatively wide junction-mouth where no pedestrian refuge island is available. Lengthy crossing distances result in vulnerable road users being exposed to vehicular traffic for an extended distance/time, in particular elderly and mobility-impaired pedestrians.

Wide junction mouths often arise as a result of large-radius corners at junctions, which can encourage high speeds by turning vehicles, further increasing the risk presented to Vulnerable Road Users (VRU).



Suggested Treatment

Within the extents of the Town centre, the Overall Town Area and the sub-urban areas junction mouths should be amended in accordance with the recommendation of the Design Manual for Urban Roads & Streets (DMURS). Where crossing distances remain significant, pedestrian refuge islands should be provided.

4.1.8 Footpath Condition

The footpath condition at number of locations was noted as being in a poor condition, presenting a possible slip or trip hazard to pedestrians.

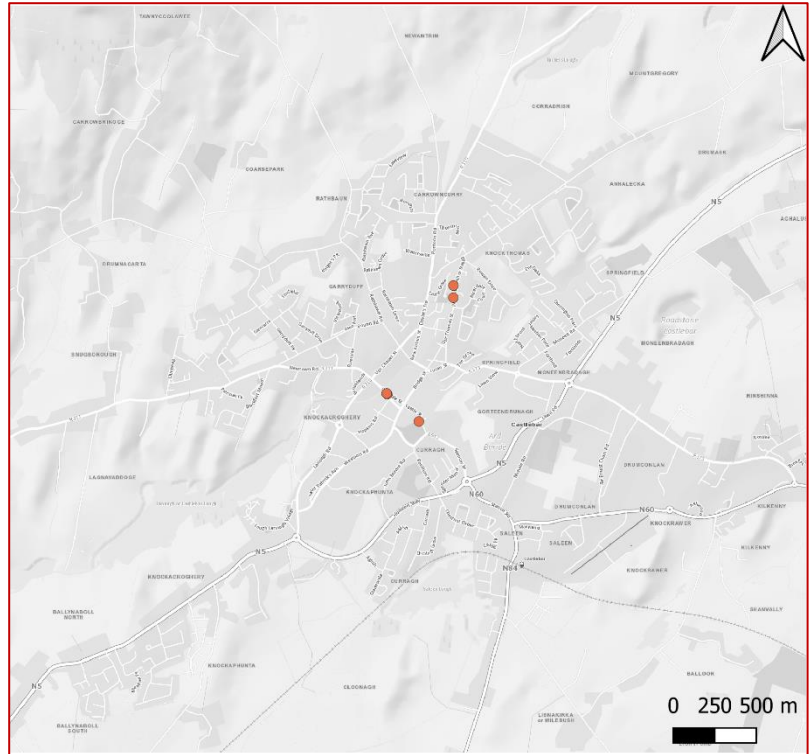


Suggested Treatment

Footpath surfaces at these locations should be renewed, ensuring that where vehicles cross the footpaths (e.g. at private vehicular accesses) that the footpath strength is sufficient to withstand the vehicular loading without deformation or deterioration.

4.1.9 Absence of Hazard Tactile Paving at Steps

Tactile paving at height hazards (i.e. corduroy tactile paving) is absent at the landings at the top and bottom of steps at a number of locations within the Town. The absence of hazard tactile paving at the top and bottom of steps may lead to visually impaired pedestrians being insufficiently aware of the height hazard resulting in an increased risk of falls.



Suggested Treatment

Hazard tactile paving should be provided at steps in accordance with the recommendations of the National Disability Authority.

4.1.10 Ladder and Tramline Tactile Paving

At the start & end of shared pedestrian and cycle facilities the roadmarkings provided (e.g. pedestrian and cyclist symbols and straight-ahead arrows) are faded and there is no 'Ladder & Tramline' tactile paving to advise visually-impaired pedestrians that they are entering/leaving an area shared with cyclists.



Suggested Treatment

Adequate warning signage, markings and 'Ladder & Tramline' tactile paving should be provided at the start and end of shared pedestrian/cycle facilities.

4.1.11 Narrow Footpaths

At number of locations the existing footpath is narrow (<1.2m) and unlikely to be sufficient to safely accommodate the likely volumes of pedestrians. This may result in pedestrians entering the carriageway where there is an increased risk of being struck by a vehicle.

In addition, items of roadside furniture are positioned centrally within the footpath reducing the effective width of the footpath, and presenting an obstacle to mobility impaired individuals using a wheelchair, possibly leading to these road users entering the carriageway in order to progress along the road where they are at an increased risk of a collision with a vehicle.



Suggested Treatment

Footpaths, where possible, should be widened to cater for the expected/likely volumes of pedestrians at the location in question. Items of roadside/street furniture should be located where they do not obstruct the path.

4.1.12 Cycle Lane Pavement Condition

At number of locations along the existing cycle lanes and shared pedestrian/cyclist facilities the pavement condition was noted as being poor. The poor surface condition within the cycle lanes could lead to erratic cyclist manoeuvres as they undertake avoidance measures with resulting increased risk of vehicle/cyclist collisions.



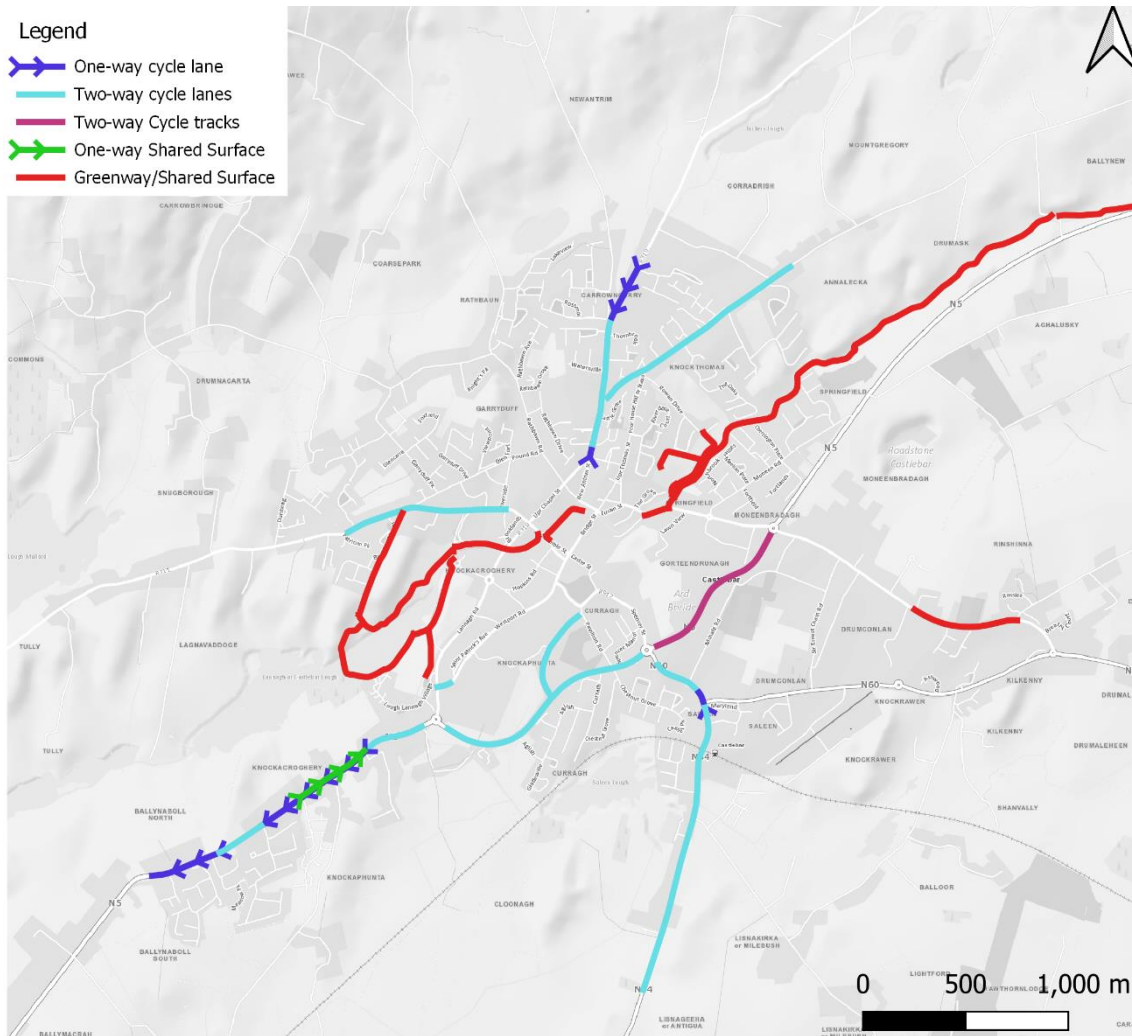
Suggested Treatment

The pavement should be repaired within the cycle lanes and where new cycle facilities are proposed along existing routes then the existing pavement condition should be assessed and improved where necessary.

4.1.13 Discontinuous Cycle Facilities

Within Castlebar the existing cycle facilities are discontinuous and are located primarily in the periphery of the Town, don't extend to/through the Town Centre and don't link all of the main amenities (i.e. schools, shops, recreational areas) to the residential areas.

This results in cyclists using the carriageway for many of the journeys, making cycling a less attractive mode of transport for the young or inexperienced, and increasing cyclists' exposure to the risk of being struck by a vehicle. Alternatively, some cyclists may choose to travel within the footpaths, with a resulting increased risk of collisions between cyclists & pedestrians.



Suggested Treatment

Cycle facilities should be provided which provide suitable links between the residential areas, the town centre and the main amenities (e.g. schools, shops and recreational areas).

4.1.14 Buffer between Cycle Lane and Parking

At number of locations along the existing cycle lanes there is no buffer area between the cycle lane and the existing parallel parking spaces. This might result in vehicle occupants opening doors into the path of an oncoming cyclist.



Suggested Treatment

Where cycle lanes are positioned adjacent to parallel parking spaces a buffer zone should be provided between them.

4.1.15 Faded Cycle Lane Red Surfacing

At number of locations along the existing cycle lanes the existing red surfacing is faded. At some locations (i.e. junctions) where no red surfacing is present there is an increased potential for conflicts between cyclists and vehicles. The absence of the red surfacing may result in drivers being insufficiently aware of the cycle lane resulting in possible conflicts with cyclists or in sudden avoidance manoeuvres to avoid cyclists.



Suggested Treatment

Red surfacing should be provided within the cycle lanes at all conflict points (i.e. junctions, access etc).

4.1.16 Step Transverse Gradient (crossfall) on Footpaths

At number of locations along the existing footpaths have relatively steep crossfalls. Steep crossfalls make it difficult for elderly or encumbered pedestrians to walk on the footway. Crossfalls steeper than 3% are uncomfortable to walk on and if the slope runs towards a road it can be dangerous, as wheeled users will tend to edge down the crossfall.

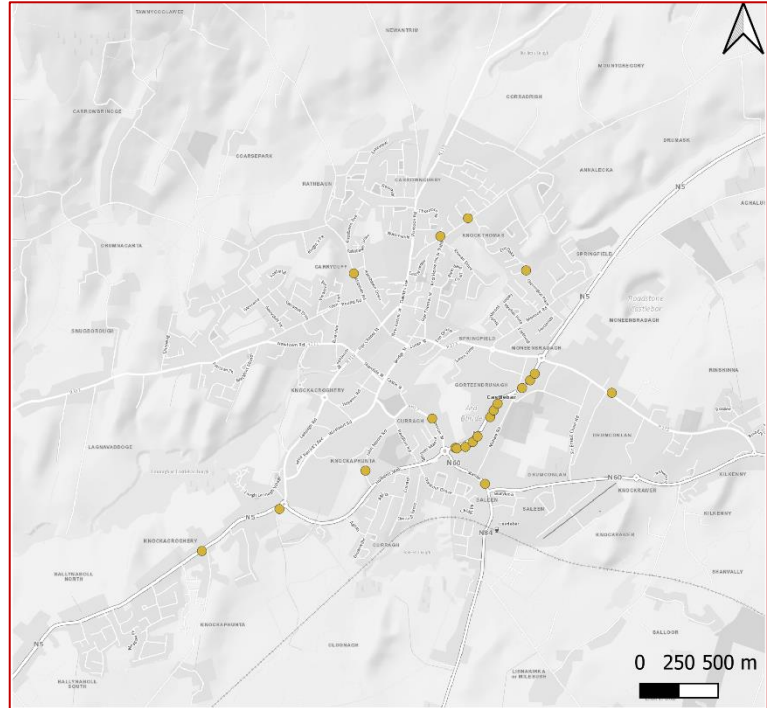


Suggested Treatment

Crossfalls at these locations should be revised to more suitable gradients.

4.1.17 Ponding

During the site visit ponding was noted within the carriageway, footway, cycle facilities and/or within the pedestrian crossings. Ponding within the cycle facilities or pedestrian crossings could result in loss of traction for cyclists, especially during icy weather, leading to loss of control type incidents and the potential for cyclists to fall from their bicycle and suffer personal injury or fall into the adjacent traffic lane where more serious injuries are likely.



Suggested Treatment

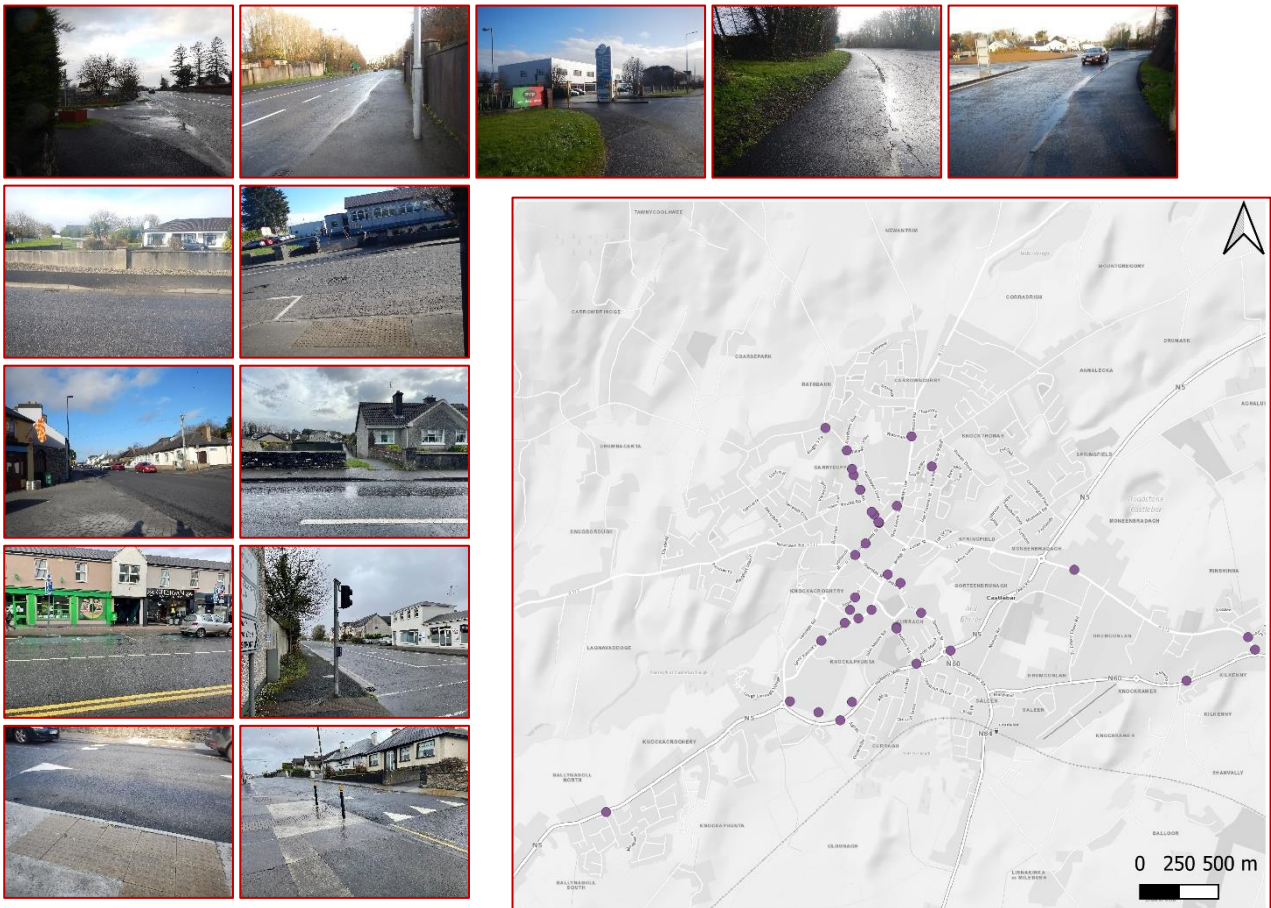
Additional drainage measures, or re-profiling of the carriageway/footpath surface, should be provided to ensure that the surfaces adequately shed surface run-off without ponding.

4.1.18 Missing or Incorrect Tactile Paving

At a number of locations there are dropped kerbs provided at crossing points without tactile paving. This may lead to visually impaired pedestrians not being aware of the upcoming carriageway, resulting in them stepping into the carriageway and being struck by a vehicle.

The tactile paving at some inline uncontrolled pedestrian crossing is not of the required depth (1.2m). This could lead to visually impaired pedestrians inadvertently stepping over the tactile paving and entering the carriageway where they are at risk of being struck by vehicles.

At some locations the tactile paving colour and layout is incorrect for the type of crossing.

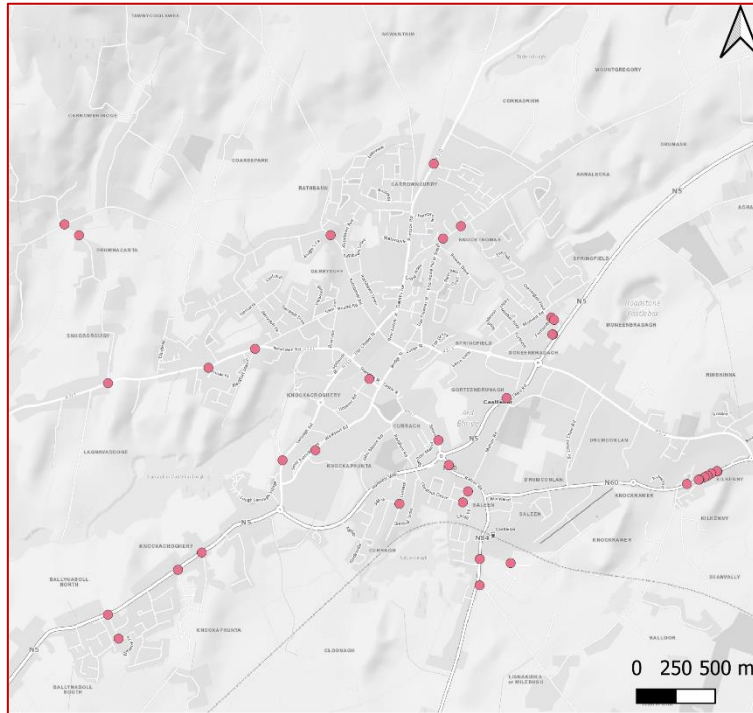


Suggested Treatment

Tactile paving should be provided at all dropped kerb locations. In addition, the correct colour, depth and layout should be provided based on the crossing type.

4.1.19 Poor Lighting

Poor lighting exists at some locations resulting in dark areas within the carriageway, in other locations there is no public lighting provision. Dark areas within the carriageway, footway or cycleway could result in cyclists/pedestrians being insufficiently visible to other road users resulting in collisions between cyclists and pedestrians or motorists.



Suggested Treatment

Adequate public lighting levels should be provided throughout the road/street network, particularly where pedestrians/cyclists are likely to be present and at pedestrian crossing locations.

4.1.20 Filtered Permeability Opportunities

A number of opportunities to improve pedestrian and cyclist permeability within the network were identified. These include the providing pedestrian and cyclist links between existing residential estates, which have the potential to save travel time. The filtered permeability opportunities identified are: -

- Cois Abhann, An Sruthán and The Oaks to Rowan Drive or Turlough Greenway;
- The Brambles to Castlehill Park;
- Summerfield to Turlough Greenway; and
- Victoria Place to Woodville.

Suggested Treatment

Provision of pedestrian and cyclist filtered permeability links at suitable locations.

4.2 Area-specific Findings

4.2.1 N5/N60 Roundabout

The footpath within the south-western quadrant of the N5/N60 roundabout is at lower level than the adjacent verge area. This results in ponding along this length of footpath. Similarly, ponding was noted at the pedestrian crossing of the roundabout's western arm.

Ponding within the footway and crossing could result in slips, especially during icy weather, leading to personal injury.



Suggested Treatment

Measures to ensure that the footpaths and crossings are adequately drained should be provided.

4.2.2 N5 Humbert Way Service Station

An existing service station is located at Humbert Way (N5) which has two wide vehicle access/egress points. At the entrance and exit to the service station the existing footpath terminates and there are no crossing facilities to the opposite footpath.



Suggested Treatment

The layout of the entrance and exit to the service station should be revised & if possible the width reduced, and continuous footpaths provided across the access/egress.

4.2.3 N5/Lannagh Road Roundabout

The existing N5/Lannagh Road roundabout has three wide approach arms, however there are no pedestrian crossing facilities or cyclist facilities on any of these relatively wide approaches.

The absence of pedestrian crossing facilities presents an obstacle for the mobility impaired proceeding past the roundabout.

No cyclist provisions are provided on the approaches to, or at the roundabout which would present challenges to less-confident cyclists in navigating the roundabout.



Suggested Treatment

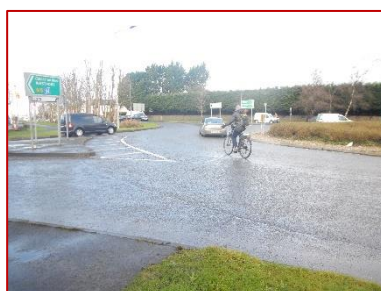
The junction should be amended/ upgraded to incorporate pedestrian crossings and cyclist facilities.

4.2.4 N5/R373 Roundabout

The existing N5/R373 Roundabout has four wide approach arms, however the existing pedestrian crossing facilities and cyclists facilities are insufficient to cater for the needs of all non-motorised road users.

Uncontrolled pedestrian crossings are provided on the roundabout arms, however these crossing facilities do not cater for visually-impaired pedestrians resulting in them being unable to cross at the roundabout safely & independently.

No cyclist provisions are provided on the approaches to, or at the roundabout which would present challenges to less-confident cyclists in navigating the roundabout.



Suggested Treatment

The junction should be amended/upgraded to incorporate pedestrian crossings and cyclist facilities.

4.2.5 Ashwood/ N60 junction

The existing footpaths within Ashwood and along the N60 are not linked, with pedestrians having to walk on the verge or in the carriageway to access to the footpath on the N60, with a consequent increased risk of slips, trips and falls or of being struck by a vehicle.



Suggested Treatment

The footpaths within Ashwood and along the N60 should be linked and an appropriate crossing provided at this residential estate access junction.

4.2.6 N60/IDA Roundabout

The existing N60/IDA roundabout has three wide approach arms, but lacks suitable pedestrian crossing facilities and cyclists facilities. The absence of pedestrian crossing facilities prevents visually impaired pedestrians from being able to cross the roundabout independently.

No cyclist provisions are provided on the approaches to, or at the roundabout which would present challenges to less-confident cyclists in navigating the roundabout.



Suggested Treatment

The junction should be amended/upgraded to incorporate pedestrian crossings and cyclist facilities.

4.2.7 Baxter Healthcare & National Learning Network Centre Accesses

There are two accesses for Baxter Healthcare & the National Learning Network Centre onto the N60 located in close proximity to each other.

The accesses have wide junction mouths resulting in lengthy crossings for non-motorised road users. In addition, the access layouts prevent the visually impaired from crossing the accesses safely and independently.



Suggested Treatment

The accesses to both facilities should be rationalised, the junction mouths narrowed and crossing facilities provided.

4.2.8 N60/N84 Signalised Junction

A number of issues were identified at the N60/N84 Signalised junction, as follows: -

- Footpath discontinuity at the north-eastern quadrant due to the access lane/parking;
- Lack of vertical separation between the footpath and the access lane/parking;
- Discontinues cycle facilities across the junction;
- Narrow pedestrian crossing; and
- Insufficient crossing/green time.

The combination of these problems creates difficulties for visually impaired pedestrians navigating the junction safely and independently. The lack of sufficient crossing time might result in the mobility-impaired and/or elderly pedestrians being stranded in the centre of the carriageway.



Suggested Treatment

The footpath facilities within the north-eastern quadrant should be revised to provide greater vertical segregation between the access lane and parking. In addition, the footpath should be continued across the access lane with onus on the driver to yield for pedestrians. The crossings at the junction should be widened and the signal timings should be revised to ensure sufficient time for all road users to complete a crossing safely. In addition, the cyclist facilities should be continued through the junction.

4.2.9 Castlebar Train Station

The footpath width at the link road between the N84 and the Castlebar Train Station is relatively narrow and the footpath along the eastern side of the carriageway terminates at an uncontrolled crossing. Insufficient footpath width for peak pedestrian volumes might lead to pedestrian entering the carriageway where they are at increased risk of being struck by vehicle. The absence of a controlled crossing presents an obstacle for visually-impaired public transport users.



Suggested Treatment

The footpath widths along the link road should be widened to accommodate the expected peak pedestrian flows and to accommodate mobility-impaired road user requirements. A controlled crossing should be provided where the footpath on the eastern side of the link road terminates to facilitate visually-impaired public transport users.

4.2.10 Service Station N60 (Station Road)

An existing service station is located at Station Road (N60), which has wide accesses/egresses. The footpath along Station Road terminates at these entrances and no crossing facilities are provided. In addition, the service station includes a number of echelon (angled) parking spaces. Entry to these parking spaces would require reversing manoeuvres across the pedestrian route.

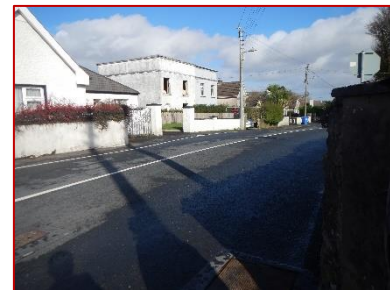
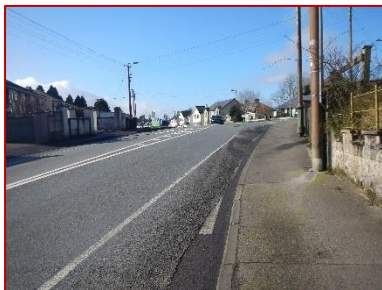
The footpath layout at this location would present difficulties for visually impaired in safely and independently travelling along Station Road.



Suggested Treatment

A continuous footpath should be provided across the entry and exit of the service station. In addition, the parking arrangements should be revised such that no reversing manoeuvres would take place across the footpath or within the N60 carriageway.

4.2.11 Newport Road (R311)/Pound Road junction



At the Newport Road (R311)/Pound Road junction a number of issues were identified as follows: -

- Wide junction mouth resulting in lengthy crossing for the mobility-impaired and/or elderly pedestrians;
- Faded red surfacing within the cycle lane which could reduce the awareness of drivers of the likely presence of cyclists;
- A lack of pedestrian crossings which would prevent visually impaired pedestrians from crossing at the junction safely and independently; and
- A lack of footpaths linking Newport Road and Pound Road.

Suggested Treatment

- The junction corner radii should be reduced in accordance with the guidance provided in the DMURS.
- A red surfacing should be provided at the cycle lane across the junction.
- A crossing linking both sides of the footpath along Newport Road should be provided.
- A footpath should be provided to link Newport Road and Pound Road.

4.2.12 Lough Lannagh Amenity Park access via Newport Road

There is an existing access to the Lough Lannagh Amenity Park from the Newport Road, compromised of a shared surface. The footpaths on either side of the access terminate with no crossing provision. The lack of a continuous footpath would prevent visually-impaired pedestrians from being able to access the park independently.

The absence of crossing facilities at the Newport Road could result in pedestrians crossing the road at unsafe location increasing the likelihood of conflicts with vehicles. In addition, the lack of crossing facilities would also prevent the mobility impaired from crossing to the opposite side of Newport Road resulting in them having to undertake a longer route to access the footpath on the other side.



Suggested Treatment

The footpath should be continued across the access and into the park. A crossing of Newport Road should be provided.

4.2.13 Lough Lannagh Amenity Park link via Newport Road

Along the link between Lough Lannagh Amenity Park and Newport Road a number of pedestrian desire lines along informal routes to and from Blackfort Manor were identified that are not catered for by formal pedestrian facilities. Pedestrian and/or cyclists traversing unpaved routes increases the risk of slips, trips or falls particularly during wet or icy weather.



Suggested Treatment

Pedestrian/cyclist facilities for access to Blackfort Manor should be provided along the link between the Lough Lannagh Amenity Park and the Newport Road.

4.2.14 L1725 to Snugborough

The L1725 local road leading to Snugborough is relatively narrow and includes a number of high demand bends where forward visibility is limited. In addition, the pavement condition was noted as being poor in places and during the site visit ponding was observed occurring frequently along the whole route.

There is no public lighting along this route and pedestrians were observed travelling within the carriageway during daylight and darkness hours. There are no footpaths along the route, and the absence of provisions for non-motorised road users coupled with the carriageway condition could increase the likelihood of pedestrian/vehicular collisions.



Suggested Treatment

Facilities for pedestrians should be provided and the carriageway surface renewed. A review should be undertaken on the need for public lighting along the route, however this may be unnecessary should a footpath be provided.

4.2.15 Pedestrian Link to Lough Lannagh Village

There is a pedestrian link from Lough Lannagh Amenity Park to Lough Lannagh Village the link leads pedestrian onto the carriageway. This might lead to visually impaired being unaware that they have entered carriageway resulting in increased risk of conflicts.



Suggested Treatment

A segregation (i.e. vertical) between the shared footpath and the carriageway should be provided.

4.2.16 Greenway Interface with Car Parks

The Greenway travels through car parks at number of locations within the Lough Lannagh Amenity Park. The arrangement at these locations is that the Greenway's shared surface terminates at the car park, and there are no routes provided to enable the visually impaired to continue safely and independently to cross the car park and rejoin the Greenway.



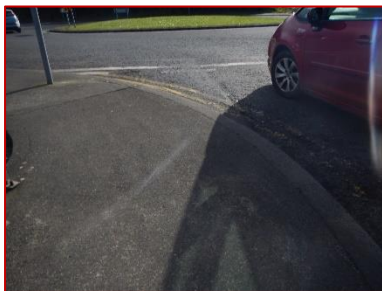
Suggested Treatment

A continuous footpath/shared surface should be provided along the Greenway route through the car park areas. Appropriate crossing facilities should be provided where the Greenway crosses a carriageway.

4.2.17 TK Maxx, Next & Aldi Car Park Roundabout

The roundabout to the southwest of the car park serving TK Maxx, Next & Aldi has three wide approach arms. Uncontrolled pedestrian crossings are provided on the roundabout arms, however these crossing facilities do not cater for visually-impaired pedestrians resulting in them being unable to cross at the roundabout safely & independently.

No cyclist provisions are provided on the approaches to, or at the roundabout which would present challenges to less-confident cyclists in navigating the roundabout.



Suggested Treatment

Measures should be provided to cater for all non-motorised road users at this junction.

4.2.18 Lannagh Road/Hopkins Road Roundabout

Lannagh Road/Hopkins Road Roundabout have four wide approach arms. The Roundabout includes one zebra crossing at the northern arm and lacks suitable pedestrian crossing facilities at the other three arms.

Uncontrolled pedestrian crossings are provided on the other roundabout arms, however these crossing facilities do not cater for visually-impaired pedestrians resulting in them being unable to cross at the roundabout safely & independently.

No cyclist provisions are provided on the approaches to, or at the roundabout which would present challenges to less-confident cyclists in navigating the roundabout.



Suggested Treatment

A review of safer and more accessible junction option for pedestrian and cyclists should be considered for this roundabout.

4.2.19 Hopkins Road/Stephen Garvey Way Roundabout



Hopkins Road/Stephen Garvey Way Roundabout have five wide approach arms. The Roundabout includes one zebra crossing at the northern arm and lacks suitable pedestrian crossing facilities at the other arms.

Uncontrolled pedestrian crossings are provided on the roundabout arms, however these crossing facilities do not cater for visually-impaired pedestrians resulting in them being unable to cross at the roundabout safely & independently.

No cyclist provisions are provided on the approaches to, or at the roundabout which would present challenges to less-confident cyclists in navigating the roundabout.

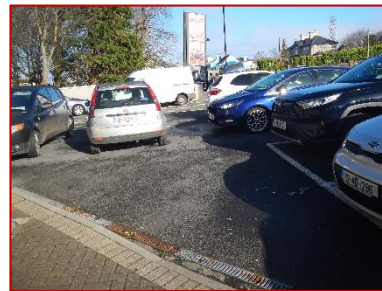
Suggested Treatment

A review of safer and more accessible junction option for pedestrian and cyclists should be considered for this roundabout.

4.2.20 The Royal Theatre and Event Centre

The footpath along Westport Road in the vicinity of The Royal Theatre and Event Centre terminates abruptly at a location where perpendicular parking spaces are provided in front of The Royal Theatre and Event Centre.

This arrangement results in pedestrians having to enter the carriageway to continue their journey resulting in increased risk of being struck by a vehicle. In addition, this arrangement would prevent visually impaired pedestrians from traversing this location safely and independently.



Suggested Treatment

A continuous footpath should be provided at this location linking the existing footpath along Westport Road.

4.2.21 Springfield Road

There is an existing shared surface along Springfield Road, located in front of a wide parking area. There is no vertical separation between the carriageway and the shared surface, and the position of the parking spaces to the rear of the shared surface increases the risk of conflicts between drivers and pedestrian/cyclists.

The lack of vertical separation between the carriageway and the shared surface could result in visually-impaired pedestrians inadvertently entering the carriageway.



Suggested Treatment

The position of the shared path and the parking arrangements at this location should be reconfigured such that the path runs to the rear of parallel parking along the roadside.

The reconfiguration should maintain access to the existing driveways at this location, and full-height kerbs should be provided between the shared surface and the adjacent carriageway/parking spaces, other than at crossing locations.

Where the provision of a full height kerb is not feasible/possible then the kerb should generally have a minimum of 60mm upstand to the carriageway, a 25mm upstand at vehicular accesses and a maximum of 6mm at pedestrian crossings.

4.3 Location-Specific Findings

During the assessment site visits a number of existing safety and/or accessibility issues were identified, the locations of which are shown on the map below and are described in the following sections.



4.3.1 N60/N84 Junction

Deteriorating pavement around a manhole cover located within crossing and cycle lane. This may lead to slips trips or falls.

Suggested Treatment

The carriageway pavement should be repaired.



4.3.2 Newport Road/Garryduff Court junction

Vegetation resulting in reduced footpath width and presenting an obstacle for the mobility-impaired and a hazard for visually-impaired pedestrians.

Suggested Treatment

Vegetation should be cut back and regular maintenance undertaken.



4.3.3 Lough Lannagh Amenity Park Access on Newport Road

There is a height restriction barrier at the entrance to Lough Lannagh Amenity Park access from the Newport Road.

The height of the barrier is low and would present a hazard for cyclists using this access and may lead to personal injury.

Suggested Treatment

The height of the barrier should be increased to a minimum of 2.5m



4.3.4 Blackfort Manor

An uncontrolled Pedestrian crossing is provided of the Blackfort Manor access, however no dropped kerbs are provided at this location resulting in the mobility-impaired being unable to use it.

Suggested Treatment

Dropped kerbs should be provided at this crossing.



4.3.5 Westport Road

The tactile paving at the uncontrolled crossing of Westport Road is damaged, resulting in pedestrian trip hazards and unstable ground.

Suggested Treatment

The tactile paving either side of the crossing should be repaired to remove any trip hazards and unstable pavement.



4.3.6 Westport Road

The colour of the tactile paving at the Zebra crossing of Westport Road is the same as the surrounding path, resulting in the crossing being difficult to locate for the partially-sighted.

Suggested Treatment

It is recommended that using any red path surfaces in the vicinity of a controlled crossing is avoided where possible.

Where this is not possible then a 150mm wide border should be provided around the blister surface that contrasts in colour and tone with the adjacent path.



4.3.7 Westport Road

A ramped access to the footpath is provided at an existing zebra crossing of Westport Road. The ramps provided are unsuitable for mobility-impaired access and may result in difficulties for these road users accessing the footpath and may result in them being stranded in the carriageway.

Suggested Treatment

An appropriate ramp or dropped kerb arrangement with accessible gradients should be provided at this crossing.



4.3.8 Greenway/Market Square

Narrow entrance to Greenway within car park with a lack of inter-visibility between pedestrians on the footpath along Market Square and the Greenway users possibly resulting in conflicts between cyclists and pedestrians.

Suggested Treatment

The access to and from the greenway from Market Square should be widened



4.3.9 Linenhall Street/ Rush Street/ Lucan Street/ Main Street Junction

There is no vertical separation between the carriageway and the footpaths at the Linenhall Street/ Rush Street/ Lucan Street/ Main Street signalised junction.

Visually impaired pedestrians may inadvertently enter the carriageway where there is insufficient vertical separation.

Suggested Treatment

Full-height kerbs should be provided between footpaths and the adjacent carriageway, other than at crossing locations. Where this is not feasible/possible then footpaths shall have minimum of 60mm vertical separation to the carriageway, 25mm at vehicular accesses and a maximum of 6mm at pedestrian crossings.



5 Route Issues, Priority and Treatment

5.1 Route Issues & Priority

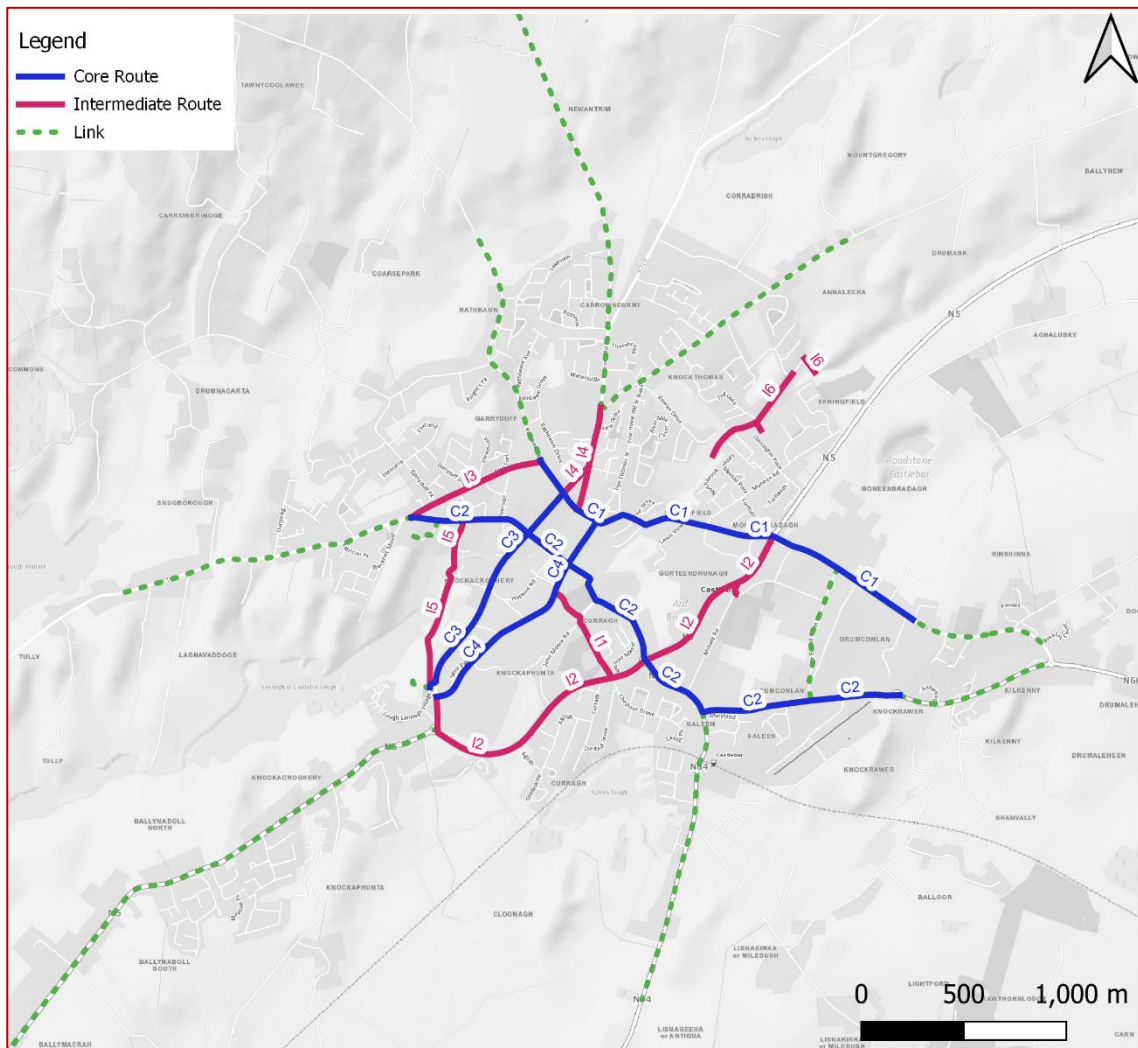


FIGURE 5-1: ACTIVE TRAVEL SIMPLIFIED ROUTES (SOURCE: WWW.OSI.IE)

Table 5-1 summarises the issues identified along each Core & Intermediate Route (Ref: Figure 3-4) and assigns a priority to each Route based on the concentration of trip attractors and the number of connecting/overlapping Link Routes along the Core Route.

TABLE 5-1: SUMMARY OF ISSUES & PRIORITISATION FOR TREATMENT OF ACTIVE TRAVEL ROUTES

Route	Main Roads	Related Issues	Priority
C1	<ul style="list-style-type: none"> Moneen Road (R373) Charles Street Lower(R373) Lucan Street (R373) Linhall Street (R373) Tucker Sreet 	<p>General Issues:</p> <ul style="list-style-type: none"> 4.1.2 Discontinuities in Footpath Provisions 4.1.3 Footpath/Carriageway Vertical Separation 4.1.5 Absence of Pedestrian Crossings on Likely Desire Lines Insufficient Inter-visibility at Crossings 4.1.6 Insufficient Inter-visibility at Crossings 4.1.7 Lengthy Pedestrian Crossings 4.1.8 Footpath Condition 4.1.11 Narrow Footpaths 4.1.13 Discontinuous Cycle Facilities 4.1.17 Ponding 4.1.18 Missing or Incorrect Tactile Paving <p>Area-specific Issues</p> <ul style="list-style-type: none"> 4.2.4 N5/R373 Roundabout 4.2.21 Springfield Road <p>Location Specific Issues</p> <ul style="list-style-type: none"> 4.3.9 :Linhall Street/ Rush Street/ Lucan Street/ Main Street Junction 	1
C2	<ul style="list-style-type: none"> Breaffy Road (N60) Station Road(N60) Spencer Street (R917) Tha Mall Castle Street Shamble Street Market Square 	<p>General Issues:</p> <ul style="list-style-type: none"> 4.1.1 :Absence of Footpaths along Pedestrian Desire Lines 4.1.2 :Discontinuities in Footpath Provisions 4.1.3 :Footpath/Carriageway Vertical Separation 4.1.5 :Absence of Pedestrian Crossings on Likely Desire Lines 4.1.7 :Lengthy Pedestrian Crossings 4.1.8 :Footpath Condition 4.1.9 :Absence of Hazard Tactile Paving at Steps 4.1.10: Ladder and Tramline Tactile Paving 4.1.11 :Narrow Footpaths 4.1.12 :Cycle Lane Pavement Condition 4.1.13 :Discontinuous Cycle Facilities 4.1.16 :Steep Transverse Gradient (crossfall) on Footpaths 4.1.17 :Ponding 4.1.18 :Missing or Incorrect Tactile Paving 4.1.19 :Poor Lighting <p>Area-specific Issues</p> <ul style="list-style-type: none"> 4.2.1 :N5/N60 Roundabout 4.2.6 :N60/IDA Roundabout 4.2.7 :Baxter Healthcare & National Learning Network Centre Accesses 4.2.8 :N60/N84 Signalised Junction 4.2.9 :Castlebar Train Station 4.2.10 :Service Station N60 (Station Road) <p>Location specific Issues</p> <ul style="list-style-type: none"> 0 : N60/N84 Junction 4.3.2 :Newport Road/Garryduff Court junction 4.3.8 :Greenway/Market Square 	1

Route	Main Roads	Related Issues	Priority
C3	<ul style="list-style-type: none"> Lannagh Road (R310) Upper Chapel Street (R310) 	<p>General Issues:</p> <ul style="list-style-type: none"> 4.1.1 :Absence of Footpaths along Pedestrian Desire Lines 4.1.2 :Discontinuities in Footpath Provisions 4.1.3 :Footpath/Carriageway Vertical Separation 4.1.5 :Absence of Pedestrian Crossings on Likely Desire Lines 4.1.6 :Insufficient Inter-visibility at Crossings 4.1.7 :Lengthy Pedestrian Crossings 4.1.8 :Footpath Condition 4.1.11 :Narrow Footpaths 4.1.16 :Steep Transverse Gradient (crossfall) on Footpaths 4.1.18 :Missing or Incorrect Tactile Paving 4.1.19 :Poor Lighting <p>Area-specific Issues</p> <ul style="list-style-type: none"> 4.2.3 :N5/Lannagh Road Roundabout 4.2.18 :Lannagh Road/Hopkins Road Roundabout 	2
C4	<ul style="list-style-type: none"> Westport Road (R310) Mountain View (R310) Elison Street (R310) Main Street (R310) 	<p>General Issues:</p> <ul style="list-style-type: none"> 4.1.1 :Absence of Footpaths along Pedestrian Desire Lines 4.1.2 :Discontinuities in Footpath Provisions 4.1.3 :Footpath/Carriageway Vertical Separation 4.1.5 :Absence of Pedestrian Crossings on Likely Desire Lines 4.1.7 :Lengthy Pedestrian Crossings 4.1.11 :Narrow Footpaths 4.1.13 :Discontinuous Cycle Facilities 4.1.18 :Missing or Incorrect Tactile Paving 4.1.19 :Poor Lighting <p>Area-specific Issues</p> <ul style="list-style-type: none"> 4.2.20 :The Royal Theatre and Event Centre <p>Location specific Issues</p> <ul style="list-style-type: none"> 4.3.5 :Westport Road 4.3.6 :Westport Road 4.3.7 :Westport Road 4.3.9 :Linenhall Street/ Rush Street/ Lucan Street/ Main Street Junction 	2
I1	<ul style="list-style-type: none"> The Mall (R917) Pavilion Road 	<p>General Issues:</p> <ul style="list-style-type: none"> 4.1.6 :Insufficient Inter-visibility at Crossings 4.1.8 :Footpath Condition 4.1.13 :Discontinuous Cycle Facilities 4.1.17 :Ponding 	4

Route	Main Roads	Related Issues	Priority
		<ul style="list-style-type: none"> 4.1.18 :Missing or Incorrect Tactile Paving 	
I2	<ul style="list-style-type: none"> Humbert Way (N5) Lawn Road (N5) 	<p>General Issues:</p> <ul style="list-style-type: none"> 4.1.1 :Absence of Footpaths along Pedestrian Desire Lines 4.1.2 :Discontinuities in Footpath Provisions 4.1.4 :Inadequate Width of Shared Paths 4.1.6 :Insufficient Inter-visibility at Crossings 4.1.7 :Lengthy Pedestrian Crossings 4.1.8 :Footpath Condition 4.1.10: Ladder and Tramline Tactile Paving 4.1.12 :Cycle Lane Pavement Condition 4.1.13 :Discontinuous Cycle Facilities 4.1.17 :Ponding 4.1.18 :Missing or Incorrect Tactile Paving 4.1.19 :Poor Lighting <p>Area-specific Issues</p> <ul style="list-style-type: none"> 4.2.1 :N5/N60 Roundabout 4.2.2 :N5 Humbert Way Service Station 4.2.3 :N5/Lannagh Road Roundabout 4.2.4 :N5/R373 Roundabout 4.2.10 :Service Station N60 (Station Road) 	3
I3	<ul style="list-style-type: none"> Pound Road 	<p>General Issues:</p> <ul style="list-style-type: none"> 4.1.1 :Absence of Footpaths along Pedestrian Desire Lines 4.1.2 :Discontinuities in Footpath Provisions 4.1.3 :Footpath/Carriageway Vertical Separation 4.1.5 :Absence of Pedestrian Crossings on Likely Desire Lines 4.1.6 :Insufficient Inter-visibility at Crossings 4.1.7 :Lengthy Pedestrian Crossings 4.1.17 :Ponding 4.1.19 :Poor Lighting <p>Location specific Issues</p> <ul style="list-style-type: none"> 4.2.11 :Newport Road (R311)/Pound Road junction 4.2.12 :Lough Lannagh Amenity Park access via Newport Road 	2
I4	<ul style="list-style-type: none"> Lower Chapel Road (R310) New Antrim Street(R310) Davitts Terrace (R310) 	<p>General Issues:</p> <ul style="list-style-type: none"> 4.1.3 :Footpath/Carriageway Vertical Separation 4.1.5 :Absence of Pedestrian Crossings on Likely Desire Lines 4.1.6 :Insufficient Inter-visibility at Crossings 4.1.11 :Narrow Footpaths 4.1.18 :Missing or Incorrect Tactile Paving 	4

Route	Main Roads	Related Issues	Priority
I5	<ul style="list-style-type: none"> • Link Road • Greenway 	<p>General Issues:</p> <ul style="list-style-type: none"> • 4.1.5 :Absence of Pedestrian Crossings on Likely Desire Lines • 4.1.7 :Lengthy Pedestrian Crossings • 4.1.10: Ladder and Tramline Tactile Paving • 4.1.13 : • 4.1.17 :Ponding <p>Area-specific Issues</p> <ul style="list-style-type: none"> • 4.2.15 :Pedestrian Link to Lough Lannagh Village • 4.2.16 :Greenway Interface with Car Parks • 4.2.17 :TK Maxx, Next & Aldi Car Park Roundabout 	4
I6	-	<p>General Issues:</p> <ul style="list-style-type: none"> • 4.1.1 :Absence of Footpaths along Pedestrian Desire Lines • 4.1.20: Filtered Permeability Opportunities 	2

Appendix A - Residential Area Active Travel Routes for Various Origins

