

### 3 Road Layout and Access

#### 3.1 Existing Layout and Linkages

The subject site can be accessed from the south from Old Cross Square roundabout via Slí Ógie Uí Dhufaigh road which crosses the Shambles River into Rooskey Avenue, refer to Figure 3-1: Overview of existing access and linkages. This road also provides access to Monaghan Harps GAA Club.

North of the site can be accessed via existing pedestrian routes from Glaslough Street and St Davnets Hospital. The west access is provided by an existing path (Davnets Row) from Diamond apartments, and the southeast access is provided by an existing pedestrian link (Infirmary Hill link) from Old Cross Square.

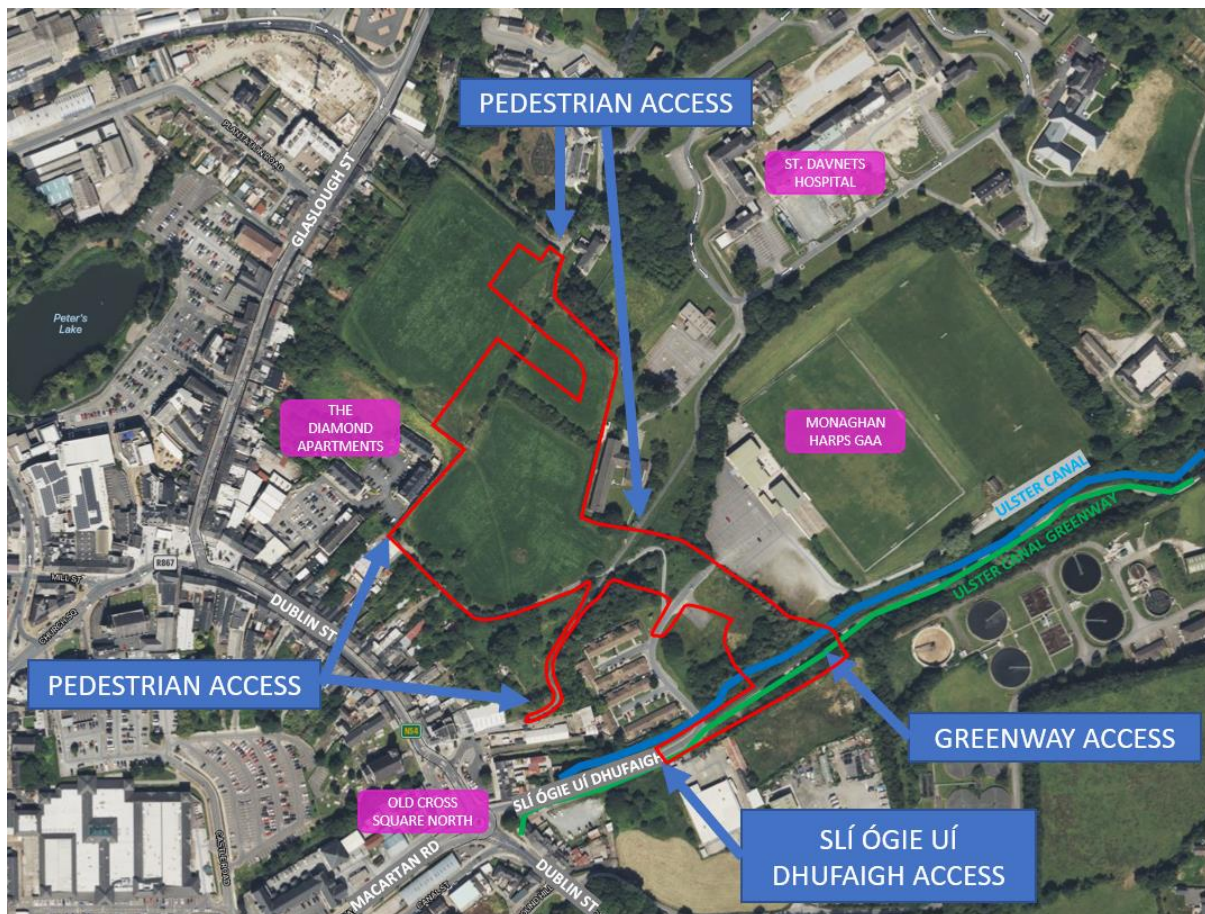


Figure 3-1: Overview of existing access and linkages



### 3.2 Proposed Layout

The proposed infrastructure for the access and active travel links consists of various components as shown in Figure 3-2 below. These include the extension of the existing vehicular route on Slí Ógie Uí Dhufaigh along the route of the existing Ulster Canal Greenway for approximately 120m before crossing the River Shambles. The existing greenway will be re-aligned to run parallel to the new carriageway.

From the bridge crossing, approximately 430m of Link Street (Quarry Walk) through the Roosky Lands will provide access to the MCC Civic offices and future development lands. Provision of active travel paths (cycle and footpath) are proposed to run alongside the Link Street. Replacement access to Monaghan Harps GAA club and associated pedestrian infrastructure links will be provided. The existing pedestrian links to St Davnets, Glaslough Street, and to the alternative route to the Ulster Canal greenway will be incorporated into Quarry Walk, providing links to the development area and adjacent destinations.

The existing Davnets Row pedestrian route (200m) and Infirmary Hill Path (160m) will be upgraded to form active travel shared and pedestrian links to the town centre from the Diamond Apartments car park and Old Cross Square respectively. These linkages will be tied into the proposed Quarry Walk.

The junctions along Slí Ógie Uí Dhufaigh, access, at Rooskey Vale Avenue, and the entrance to Monaghan Bottlers will be upgraded to form pedestrian and active travel priority crossings.



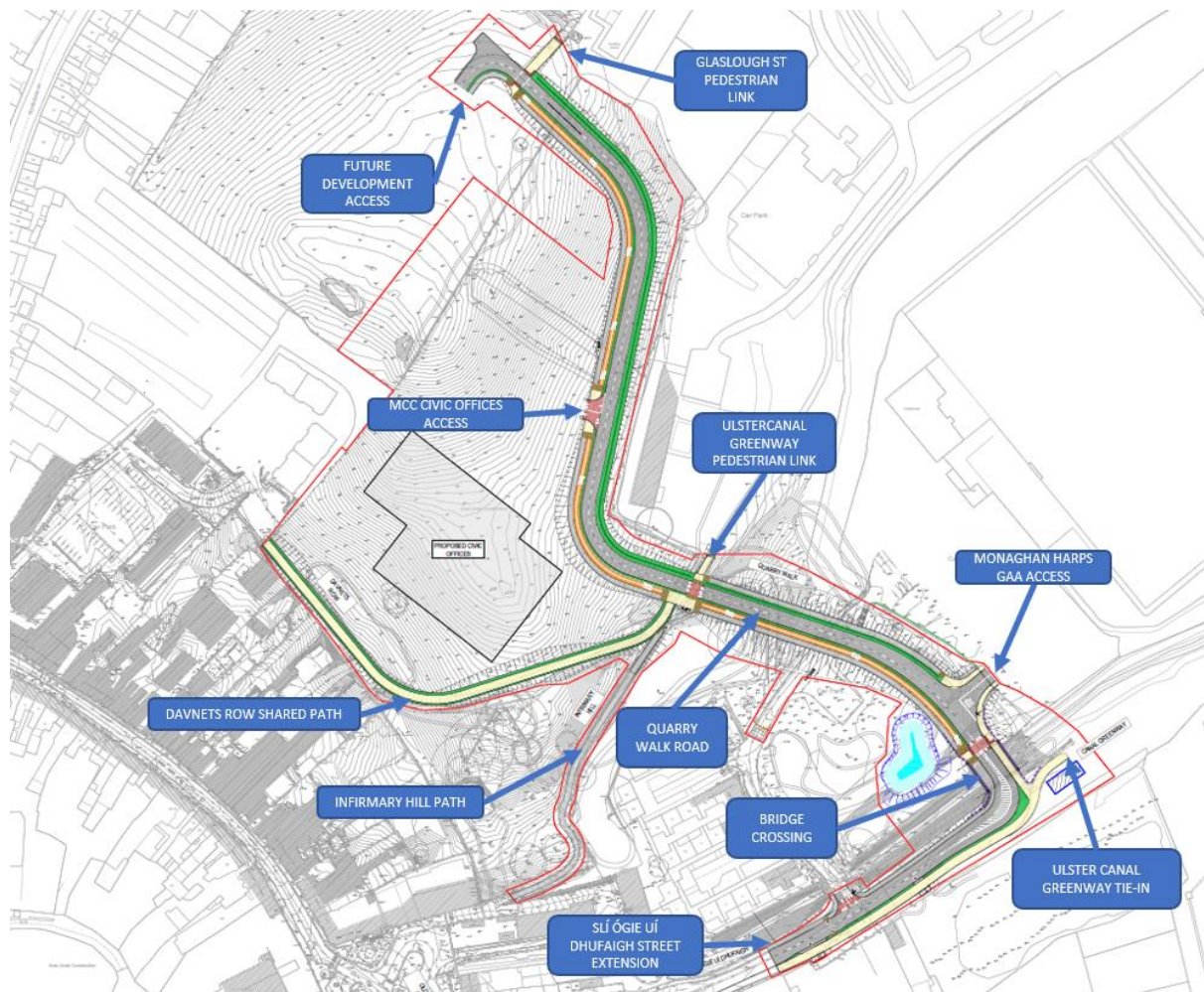


Figure 3-2: Overview of road access and active travel links

### 3.3 Design Guidance

The access road and active travel links have been designed with reference to the Design Manual for Urban Roads and Streets (DMURS 2019), the National Transport Authority National Cycle Manual (NCM), and the Transport Infrastructure Ireland Rural Cycleway Design (Offline & Greenway) guidelines.

- DMURS provided comprehensive guidelines for urban road and street design, ensuring efficiency, safety, and suitability for the specific urban context.
- The NCM guided the design of cycling infrastructure, promoting safe and convenient cycling through considerations such as cycle lane design, signage, and junctions.
- The Transport Infrastructure Ireland Rural Cycleway Design guidelines were followed, ensuring enjoyable and safe experiences on rural cycleways.



By adhering to these standards, the designs prioritized safety, functionality, and the promotion of sustainable and inclusive transportation options.

### **3.4 Road Alignment**

The proposed horizontal alignment is largely based on the road corridor identified in the statutory Roosky Masterplan. Horizontal curves were designed to comply with the proposed design speed 30km/h and are generally between 26 – 100m Radius. At the low-speed areas such as access entrances and bridge approaches the horizontal radius was determined by vehicle tracking, as discussed in section 3.11. Refer to DBFL drawing 220084-RY-04-Z00-XXX-DR-DBFL-CE-1201 and 1202 for the general arrangement.

The subject area has a very steep topography with approximately 27m level gain between the bank level at the Shambles River and the termination of the vehicle route in the vicinity of the proposed future development lands, thus a comparative options analysis for Quarry walk was conducted.

The design balances constructability, integration with proposed and existing links, cost-effectiveness, and lower overall environmental impact. Measures such as rest areas, speed reduction measures have been incorporated to accommodate active travel users. All sections with gradient > 5% are less than 150m in length in accordance with TII Rural Cycleway design (offline & Greenway) recommendations.

The vertical curves were designed with a maximum gradient of 8% and Vertical sag curves K Value of 2.3 for 30km/h design speed. Refer to DBFL drawings 220084-RY-04-Z00-XXX-DR-DBFL-CE-3201 and 3202 for Quarry Walk Long sections.

#### **3.4.1 Davnets Row Shared Path**

The horizontal alignment closely tracks the existing path, a slight realignment of the path was completed to accommodate the proposed Civic office building and to maximise spatial usage without affecting the surrounding environment. Refer to DBFL drawing 220084-RY-04-Z00-XXX-DR-DBFL-CE-1201 for the general arrangement.

The vertical alignment was designed to ensure that cyclist and pedestrians can comfortably utilize the route, this resulted in a maximum gradient of 5% and vertical curves of minimum k-value of 2. Refer to DBFL drawing 220084-RY-04-Z00-XXX-DR-DBFL-CE-3203 for the longitudinal Section.



### **3.5 Design Speed**

The vehicular design speed for the scheme is 30km/hr which is appropriate for an urban site and reflects the high pedestrian and cyclist activity associated with the Canal Greenway and Monaghan Harps GAA Club.

### **3.6 Traffic Calming**

DMURS recommends the use of the physical and psychological measures used in combination to have an impact on driver behaviour. The scheme includes measures such as narrowed carriageway widths, speed reduction bends, tabletop ramps and raised side road entries to ensure low vehicle speed. Segregated cycle lanes have been provided with chicanes at 40m centres for the downhill cycle lane as a speed control element.

### **3.7 Sightlines**

Sightlines for the new Civic offices and Monaghan Harps GAA vehicular entrances are 2.4m x 23m (Set back and Sight stopping distance) as per the DMURS for a 30kmph speed limit, refer to DBFL drawing 220084-RY-04-Z00-XXX-DR-DBFL-CE-1201 to 1202 for sightlines.

### **3.8 Road Cross Sections**

The proposed cross sections have been developed in conjunction with the project landscape architect and have been agreed with MCC's Transportation Department during the pre-planning design stage following a rigorous options assessment. These cross sections comply with DMURS 2019 and NTA National cycle manual.

Cross sections at 10m intervals can be seen Quarry Walk on DBFL drawings 220084-RY-04-Z00-XXX-DR-DBFL-CE-3211 to 3216 and for Davnets row on 220084-RY-04-Z00-XXX-DR-DBFL-CE-3221 to 3223.

The typical cross-section details for the proposed works is detailed below:

The proposed extension of Slí Ógie Uí Dhufaigh typical cross section (see, Figure 3-3) has a total width 12.4m and consists of the following elements: