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***N81 TULLOW FOOTBRIDGES  
& ASSOCIATED WORKS***

***Part 8 Planning***

***Project Description***

## **Project Description**

### **1.0 General**

Slaney Bridge, which was built circa 1855, is a four span masonry arch structure which carries the N81 National Secondary Road over the River Slaney in the town of Tullow, Co. Carlow. The structure is located in the townlands of Tullowphelim & Tullowbeg and is a protected structure on the Record of Protected Structures (RPS) within the current Carlow County Development Plan 2015 - 2021 (Ref No CW82, NIAH 10400325) and is within the archaeological inventory of Carlow (CW 008-045).

Presently, Heavy Goods Vehicles (HGV's) entering Tullow from Castledermot on the R725 (Thomas Traynor Street) and turning left over Slaney Bridge onto the N81 northbound are experiencing difficulties in carrying out this manoeuvre without conflicting with traffic in the opposing southbound carriageway of the N81 or mounting the footpath on the western side of Slaney Bridge. This poses serious problems in terms of public safety to both road users and pedestrians using the bridge.

On behalf of TII, Kildare County Council (KCC) through their National Roads Office (NRO), and under a Section 85 Agreement (Local Government Act 2001) with Carlow County Council have commissioned Atkins Consulting Engineers to examine a number of design options for the resolution of the existing conflicts in traffic / pedestrian movements across Slaney Bridge whilst maintaining safe pedestrian access.



***Photo No. 1: Heavy Goods Vehicle turning left over Tullow Bridge***

## **2.0 Existing Layout**

The junction of the N81 and the R725 Thomas Traynor Street is considered inadequate to accommodate simultaneous movements of Heavy Goods Vehicles (HGV's). This results in HGV's frequently carrying out unsafe turning manoeuvres by crossing into opposing traffic while turning north onto Slaney Bridge from Thomas Traynor Street. These unsafe manoeuvres are demonstrated in Photo No. 1. Manoeuvres of this kind can place pedestrian users of the bridge at risk as the HGV's quite often have to mount the footpaths on both sides of the bridge, but especially on the western footpath. The visibility of pedestrians for HGV drivers at this location is also hampered by the high seating level in vehicles of this kind.

The existing bridge cross section comprises a two way carriageway measuring approximately 6.45m wide kerb to kerb with two 1.40m wide footpaths and two 0.50m wide parapet walls on each side. The width of footpaths on both sides of the structure are significantly less than the recommended 2.0m standard width of footpath and as such present significant safety issues in their own right for pedestrians, in particular pedestrians with strollers and those confined to wheelchairs or other mobility aids.

## **3.0 Options**

Carlow County Development Plan lists Slaney Bridge as a Protected Structure on the Record of Protected Structures (RPS). This bridge is also noted as being of regional importance in the National Inventory of Architectural Heritage (NIAH).

Due to the width of the existing bridge, HGV's turning north over Slaney Bridge from Thomas Traynor Street are required to cross over the carriageway centreline into the opposing southbound traffic lane as well as mounting the existing pedestrian footpath on the west side of the bridge.

Various potential solutions were examined to alleviate existing conflicts in the traffic turning movements at Thomas Traynor Street / Bridge Street junction while facilitating the safe passage of pedestrians.

HGV movements were examined and all solutions which were deemed feasible necessitated works to the existing bridge superstructure and western parapet while maintaining the existing traffic and pedestrian movements. The required turning movements for HGV's would necessitate, as a minimum, a further reduction in width of the existing footpaths over the bridge, part removal of the masonry parapet in the south west corner and the realignment and widening of the existing traffic lanes to minimise the impact of the conflicts with the southbound and westbound traffic and pedestrians.

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Bridge widening options were examined at the corner of Bridge Street and Thomas Traynor Street to provide safe pedestrian movement on the existing bridge. Due to the protected status of Slaney Bridge, this option was not pursued as it would require significant material alterations to the protected structure.

To facilitate safe pedestrian movements, CCC, KCC & TII concluded that all options would require the construction of a new footbridge on both sides of the existing bridge.

Two locations for the new footbridges were considered as follows:

- Stand-alone footbridges upstream and downstream from the existing masonry bridge
- Footbridges attached to the existing bridge

Slaney Bridge area is within a Special Area of Conservation (SAC) and the surrounding area is prone to flooding in a 100 year flood. For environmental and hydrology reasons a standalone bridge over the River Slaney would be a single span structure as supports would not be permitted within the river channel. A single span bridge structure with a minimum span of 35m has the potential to be deep, 'heavy looking' structure that could obscure the masonry arch when viewed from upstream/downstream. It could also have a significant impact on Tullow Museum which is a protected structure and on their grounds which are privately owned lands.

To achieve 300mm minimum clearance above the 100 year flood level the ends of the footbridges would be above the existing footpaths levels presenting accessibility issues.

The desire line for pedestrian's movements between two points is generally the shortest and most convenient route. If the new pedestrian footbridges were to be removed from the desire lines then there would be the potential that pedestrians may not use them and could continue to cross the existing road bridge on the proposed narrow raised verges and as such the safety issue on the existing bridges relating to vulnerable road users would not be fully addressed.

It is the view of CCC, KCC and TII that the provision of two footbridges attached to the existing structure is the preferred location and would improve safety for pedestrians by removing them from potential conflict with vehicular traffic. It is also their belief that the design of the footbridges as presented in the Part 8 Planning document are relatively discrete structures of high architectural merit that compliments the existing protected masonry structure.

The conflict between HGV's turning north over the bridge onto the N81 from Thomas Traynor Street and those turning west from the N81 onto Thomas Traynor Street has been improved but could not be satisfactorily removed while maintaining two way traffic movements and without interference with the protected bridge structure.

Careful consideration was given to the proposed scheme with regard to minimising the impact of the proposed works on the existing infrastructure. In consultation with conservation architects, the proposed works to the existing bridge structure have been kept to a minimum.

To maximise the area available for the required turning manoeuvres of traffic, especially HGV's, travelling from Castledermot on the R725 Regional Road and wishing to turn left over Slaney Bridge, the width of the existing footpath on the south side of Thomas Traynor Street between Hawkin's Lane and Abbey Street would be reduced to within a minimum of 1.80m of the existing ramped access to properties thus maintaining an adequate width of footpath for safe pedestrian movement.

The widened carriageway, and the provision of a painted traffic island with removable bollards, would allow for the two existing traffic lanes to be moved to the south thus maximising the area available for the turning movements of HGV's.

A new controlled pedestrian crossing, with flashing "Belisha Beacon" yellow lights and pedestrian guardrails to prevent pedestrians from attempting to cross the road remote from the crossing, would be provided at the junction of Thomas Traynor Street / Abbey Street to connect the proposed western footbridge to the existing footpath network.

#### **4.0 Junction Improvements at Bridge Street**

Difficulties experienced by HGV's turning right at the existing junction on Bridge Street north of Slaney Bridge and travelling east along Link Road behind the Credit Union and the County Council Offices can result in delays and cause traffic to queue due to the existing alignment of the junction.

To alleviate queueing and to facilitate this particular manoeuvre, it is proposed to remove all on street parking between Slaney Bridge and the pedestrian crossing which is located adjacent to the entrance to the SuperValu car park.

#### **5.0 New Footbridges**

The new footbridges would provide enhanced pedestrian facilities and segregation of pedestrians from live traffic hence improving safety. The proposed footbridges would be 2m wide and the vertical profile would, in so far as is possible, follow that of the existing masonry bridge. This feature of the new footbridges is due to close liaison with the conservation architect. The new footbridges structure would be above the existing masonry arched bridge soffit and piers and 100 year flood level and would not interfere with the river hydrology.

The proposed footbridges would be of a modern sustainable design complementing the existing granite masonry arch bridge. The footbridges would consist of low maintenance profiled aluminium decking on galvanised and painted structural steel

frame. The proposed bridges' parapets would be curved stainless steel posts and tensioned wires.

The steel frame would span between the piers / cutwaters and the river walls/walkways and would be anchored to the existing bridge piers at deck level.

Provision for future services ducting would be incorporated under the footbridges frames. The existing overhead ESB services which cross the Slaney River over the eastern parapet wall would be relocated to these new ducts in the eastern footbridge. In addition, ESB overhead lines on Thomas Traynor Street between Hawkin's Lane and Abbey Street would be relocated to underground ducts thus improving the streetscape in this area.

The new footbridges would break through the existing masonry parapet walls as required to connect to the existing footpath network. The footbridges layout is designed to minimise the impact on the existing bridge structure and was again developed in close liaison with the conservation architect.

As part of these works, it would be necessary to reconstruct the existing steps which access the riverside walkway adjacent to the Museum and to realign the existing boundary wall to the Museum grounds to remove an existing pinch point in the footpath width. New access steps and masonry walls to the riverside walkway would be constructed using material retained from the existing bridge structure and adjacent walls where the new footbridges break through the parapet walls.

## **6.0 Lighting**

The proposed bridge walkway and the external face of the existing masonry bridge parapet would be illuminated with LED lighting incorporated in the new pedestrian bridge parapet handrail. Suitably designed spot lighting focused on the existing masonry bridge deck soffit and piers would be attached to the new footbridges frames and supports as well as under the existing masonry arches.

Street lighting standards of a style sympathetic to the existing bridge structure but complementary to the new modern footbridges would be located at each end of the eastern footbridge to maintain existing street lighting levels across the bridge.

## **7.0 Construction**

The expected construction period for the works is 36 weeks and, for associated instream works, would span the IFI open season from July to September inclusive. It is anticipated that much of the footbridges would be prefabricated off site and lowered and anchored onto its piers and abutments. Works in the river channel would be kept to a minimum. Traffic disruption due to the works would be minimised. Any works requiring a lane closure would be restricted to night time working.





**Photomontage of Proposed Footbridge – West Side of Slaney Bridge**



**Photomontage of Proposed Footbridge – East Side of Slaney Bridge**