

# Section 38 Report

Parkmore Road Bus Priority Scheme

Galway City Council

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Quality information

Prepared by	Checked by	Verified by	Approved by
Cliona Murphy Graduate Engineer	David Joyce Principal Engineer	Colin Acton Regional Director	Eoin Greene Technical Director

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### Prepared for:

Galway City Council  
Galway Transport Unit  
GCC  
Galway

### Prepared by:

Clíona Murphy

AECOM Ireland Limited  
4th Floor  
Adelphi Plaza  
Georges Street Upper  
Dun Laoghaire  
Co. Dublin A96 T927  
Ireland

T: +353 1 238 3100  
aecom.com

### Prepared in association with:

Galway City Council

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# 1. Introduction

## 1.1 Background

AECOM have been appointed by Galway City Council (GCC) to carry out consultancy services and PSDP role for the concept design of infrastructure, approximately 900m in length, to facilitate bus priority along the Parkmore Road, from Parkmore Roundabout to the Monivea Road Junction.

The Parkmore area has had issues with traffic congestion for many years. Works have been carried out in recent years to reduce queuing on Parkmore Road and in Parkmore West Business and Technology Park. While these measures have been largely successful, Galway City Council and the National Transport Authority (NTA) are committed to improving the accessibility of the area with bus priority. In 2020, the NTA published the Parkmore Area Strategic Transport Framework (PASTF), a document which outlined plans for various projects that would “enable the efficient movement of people and goods” in the region. The PASTF outlines several short-, medium- and long-term-measures that are to be carried out in the area. The Parkmore Road Bus Priority scheme is based on the short-term scheme P1\_01 Parkmore Road Multi-Modality as outlined in the PASTF, with some adaptations.

## 1.2 Objectives

The overall objective of the Parkmore Road Bus Priority Scheme is to implement the following elements of P1\_01 in the PASTF:

- Southbound bus priority for buses departing the Parkmore area along Parkmore Road
- Continuous high-quality pedestrian footpaths along both sides of Parkmore Road to provide access to bus facilities
- New pedestrian crossings to increase pedestrian safety while accessing bus facilities
- Improved layouts at priority junctions on Parkmore Road, including improved pedestrian crossing facilities

The completion of the proposed development will improve bus priority on the east side of Galway City and provide high-quality, continuous pedestrian facilities in the Parkmore area. This will increase the safety and permeability of the area, in line with the aims laid out in the Galway Transport Strategy.

The provision of enhanced bus facilities to Parkmore will improve public transport journey times, encouraging more commuters to use this service and reducing private traffic on the roads. The delivery of an enhanced and safer pedestrian environment is key to providing access to the enhanced public transport network, and to connecting the various businesses and amenities in Parkmore. Improving the layout of the various priority junctions and providing additional signalised crossings on Parkmore Road will help in creating this safer pedestrian environment. The combination of these measures will improve the accessibility of the Parkmore area and support its future development.

## 2. Need for Scheme

The Parkmore area has been highlighted in various policy documents (such as the Galway Transport Strategy, the Galway City Development Plan and the PASTF) as a key location in Galway City requiring development to its transport network. These documents will be discussed in detail in Section 3 - Planning Context, but in summary they outline the traffic issues that are currently faced in the Briarhill/Parkmore area east of Galway City, the impact this has on the rest of the transport network in the region, and a proposed solution to the problem.

The Parkmore area is identified in the Galway City Development Plan as having much potential to accommodate increased commercial investment in the future. There are currently a large number of medical device companies in the region, and it is expected that by 2025, the workforce of the Parkmore business parks will have increased by 35% on the 2020 figures. The current transport network in the area is already at saturation capacity, with 2019 traffic surveys suggesting that queues on the southbound arm of Parkmore Road reached up to 100m at peak hour. The same survey showed that vehicle occupancy was low, with an average of 1.1 passengers per car, and the modal share was 86% for cars with only 5% for bus and 3% for pedestrians, and 3% for cyclists.

Bus services to and from Parkmore have been increased in recent years, with the 401 and 409 routes both terminating on the Parkmore Road. There are also plans to increase bus permeability into the Parkmore East and West business parks in the near future. To allow all these services to operate effectively, bus priority is required on Parkmore Road.

The existing facilities on Parkmore Road will be discussed in detail in Section 4, however the main issues include:

- No existing bus priority on Parkmore Road
- Significant variation in pedestrian footpath widths - footpath widths ranging from over 4m at the widest point to 0.8m at the narrowest pinch point on Parkmore Road
- Lack of safe waiting areas for pedestrians at bus stops and crossing points due to narrow footpaths
- Wide T-junctions with no pedestrian crossing facilities making it difficult for pedestrians to traverse safely
- Lack of pedestrian crossing facilities on Parkmore Road making it difficult for pedestrians to cross safely

The proposed scheme will improve the public transport service in the Parkmore area by ensuring faster travel times with priority bus lanes, supported by the provision of appropriate pedestrian facilities on Parkmore Road. Implementation of the proposed works on Parkmore Road will encourage and reward the use of public transport, promoting the move away from single occupancy vehicles.

### 3. Planning Context

The Parkmore area is a key development zone for Galway city due to its large employment and commercial potential. It is referred to in various planning documents as summarised below.

#### 3.1 National Development Plan 2021-2030

The recently published National Development Plan points out the importance of improving the sustainable mobility of Galway City in light of the expected 50-60% increase in jobs and population in the region over the next 10 years. It references the 2016 Galway Transport Strategy, and the bus route through the Parkmore area is shown as part of the Proposed Galway Public Transport Network (Figure 3.1).

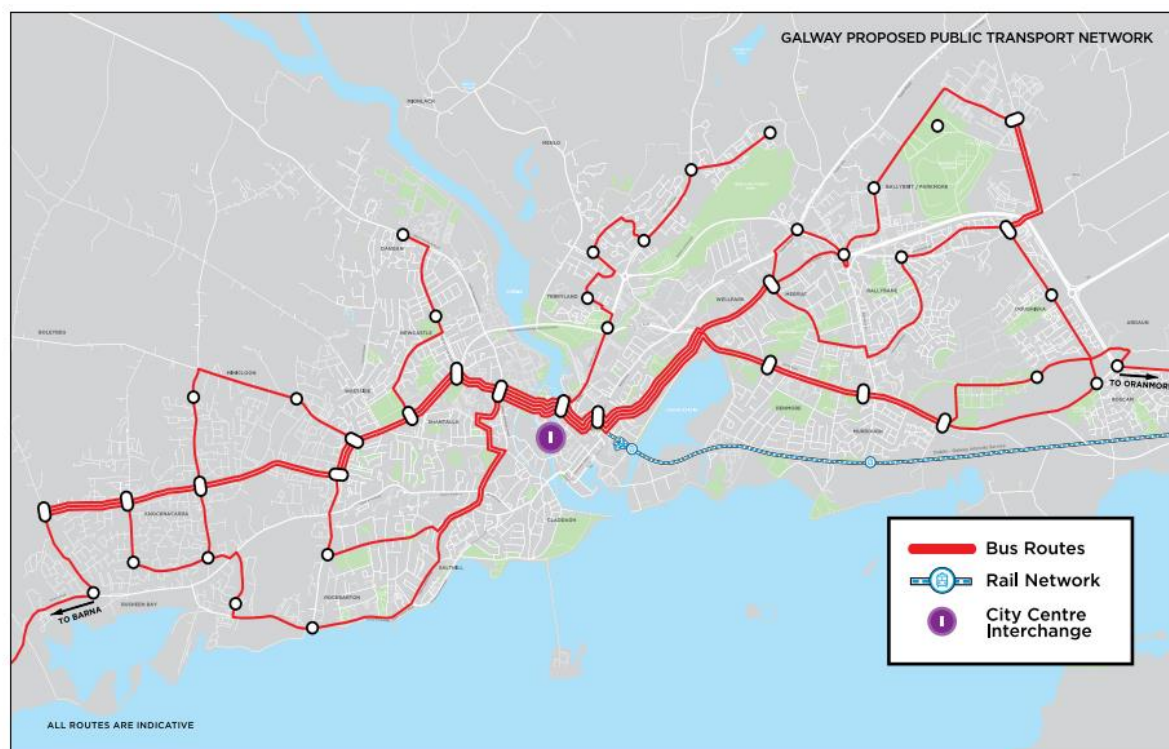
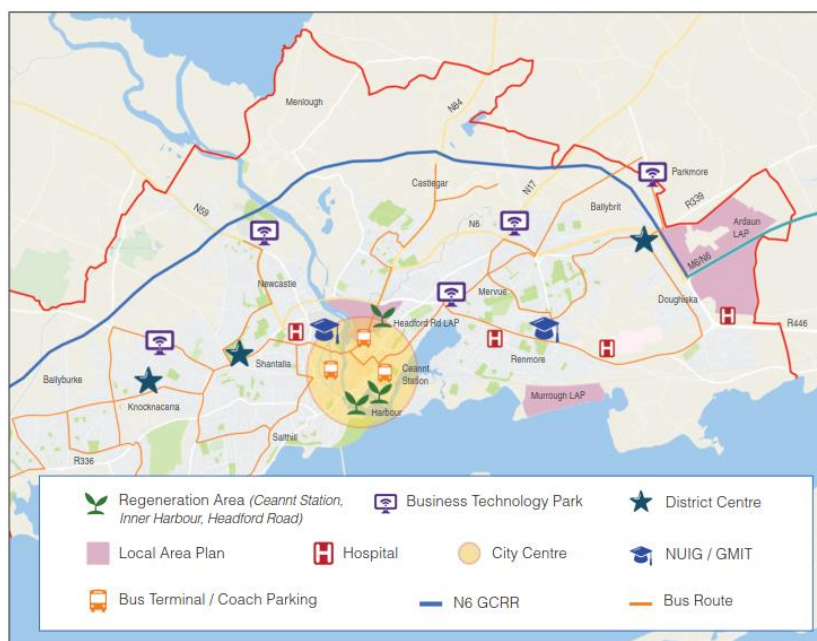


Figure 3.1: Proposed Galway Transport Network, National Development Plan 2021 - 2030

#### 3.2 Galway City Development Plan (GCC, 2017)

The Galway City Development Plan was published in 2017 and sets out the policies and strategies for the sustainable development of Galway City between 2017 and 2023. The Parkmore area is mentioned in several sections of the plan.

Parkmore is mentioned within the core strategy for the area with potential to accommodate future Foreign Direct Investment and is identified as a 'Business Technology Park' in the Core Strategy diagram included in the document.



**Figure 3.2: Galway City Development Plan Core Strategy diagram**

The existing concentration of medical device companies in Ballybrit, Mervue, Oranmore and Parkmore make it likely that future large-scale operations will gravitate towards the area. Policy 5.1 in the Plan sets out the prioritisation of “*investment and expansion in high tech manufacturing, research and development*” in the area.

The Parkmore area has been designated as a low-density residential area in the development plan. The constraints are that the maximum density of developments will typically be 5 houses per hectare; and wherever possible hedgerows and stone walls are to be retained. The development plan also refers to the Galway Transport Strategy document – which itself makes several references to the Parkmore area.

### 3.3 Galway Transport Strategy (GCC, 2016)

The Galway Transport Strategy published in August 2016 builds on previous transport studies carried out for the Galway region and sets out an overview of the proposed actions and measures for implementation, covering infrastructural, operational and policy elements. Parkmore has been identified in the strategy as a location in Galway city with one of the highest trip destination volumes – shown in the figure below. This is in accordance with the fact that the area is a focal employment centre for the wider Galway area.

Figure 2.3 The origins and destinations with the highest trip volumes



Figure 3.3: Galway Transport Strategy – Trip Volumes

### 3.3.1 GTS Bus Routes

One of the aims set out in the Local Public Transport section of the Galway Transport Strategy is to 'maximise patronage attraction by providing a high-frequency public transport network'. In order to achieve this, several main bus corridors through and around the city are targeted for upgrade to 'high-frequency' routes. Since the Strategy was published in 2016, the bus services to Parkmore have been improved as per the recommendations. These are outlined in Section 4 -Existing Conditions.

### 3.3.2 GTS Walking and Cycling

Section 7 of the Galway Transport Strategy discusses cycling, walking and the public realm within the study area.

Section 7.3 of the strategy relates to walking. The strategy highlights the importance of "*updating pedestrian networks, increasing pedestrian safety and maximising pedestrian accessibility to the public transport network*" and "*Specific emphasis is also placed on improving connectivity and permeability within and to the industrial sites to the east of the city, including to, from and between Ballybrit and Parkmore Industrial Parks*".

## 3.4 Parkmore Area Strategic Transport Framework (NTA 2020)

The Parkmore Area Strategic Transport Framework (PASTF) is a plan for the Parkmore Area that aims to enable the efficient movement of peoples and goods. The framework describes the Parkmore area as a '*key employment location in the North-East of Galway City, with approximately 13,500 employees commuting to the zone daily*'. The area is described as '*a major but peripheral employment zone within the city, with significant daily impact on the overall transport network*'. Within the area, each individual business park has its own single point of vehicular access/egress and permeability for walking or cycling between business estates is almost non-existent. Even within each business park, the walking and cycling facilities are extremely limited.

### 3.4.1 Modal Split

When the document was published in 2020, there was high car dependency among commuters to/from the Parkmore area, generating ~11,000 car trips each weekday. The modal split in the Parkmore area, derived from the 2011 and 2016 Census data, was approximately 3% on foot, 3% cycling, 5% by bus, 4% by van or lorry and 86% by car. Of the car users, 81% are drivers and 5% passengers.

Between 2020, when the framework was published, and the year 2025, there is predicted to be a 35% growth in people employed in the Parkmore area. If the current car use % remains the same, in 2025 there will be an additional 3,800 vehicles using the road network, which is already saturated. The PASTF outlines the challenge moving forward which will be '*to accelerate this move towards bus, bicycle and walking, in order to significantly reduce the over-dependence on the car and vans for trips to the Parkmore Area*'.

### 3.4.2 Vehicular Issues

Issues relating to vehicular access in and out of the business parks are described in the document as follows:

- The various Parkmore area junctions were developed at a time when vehicular congestion was not problematic. However, the signalised junctions currently operate above capacity, and the priority junctions are inappropriate for heavy prolonged peak traffic. There is an absence of bus priority, cycle facilities or controlled pedestrian provision at any of these access points.
- Parkmore Road becomes a very busy two-way road (with significant queuing at each end) during the PM peaks.
- Due to extended queues, it is very difficult to access Briarhill Business Park and (to a lesser extent) Ballybrit Crescent from the Tuam Road direction during the afternoon/evening peak, without driving down the opposing lane.
- Employers in the Parkmore Area have responded to the limited road capacity by spreading the arrival/departure times across more than 2 hours, through flexi-working and shift scheduling (as well as many other best practice mobility management measures for bus, bike and walking).

The PASTF highlights developments that have occurred in the Parkmore Area in recent years in an attempt to reduce traffic congestion, including the introduction of an additional left turn lane to reduce vehicular delay from Parkmore to the Tuam Road. However, *“significant delays exist between Doughiska Road and Parkmore Area”* and *“Delays exiting the estates remain problematic, with the most acute difficulties arising for those businesses located furthest from the (single) exit of the business park”*.

According to the document, *‘approximately 15% of trips to the study area originate within 500m walking distance of an existing direct bus service stop. If cross-city routes and transfers are taken into account this increases to an estimated 25% of trips.’*

### 3.4.3 Walking and Cycling

The PASTF outlines several issues with walking and cycling currently within the Parkmore area, as follows:

- Current junction layouts can be difficult to cross safely (excessive widths and sweeps), including the entrances to business parks and within the estates themselves. Signal time delay is significant at major junctions (e.g. crossing the N6), with pedestrians and cyclists waiting minutes to cross the road at peak times.
- There are no permeability links (i.e., connectivity / shortcuts) between the estates for pedestrians or cyclists within the Parkmore Area.
- The absence of basic facilities (e.g., footpaths, waiting areas, safe crossing points etc.) discourages walking.
- Access to / from public transport is entirely dependent on a well-functioning pedestrian network. For commuters leaving the Parkmore Area, access to bus stops across busy roads and junctions represents a specific challenge.
- The N6 has segregated cycle facilities in both directions from Tuam Road to Quincentenary Bridge. However, the lack of continuity, coupled with difficulties at key links or key junctions, has resulted in only limited uptake of the cycling mode for trips to / from the Parkmore Area. Critically, with the exception of Doughiska Road, there is an absence of high-quality cycling infrastructure connecting the residential areas on the East of the city (i.e., those close to Parkmore Area) into and through the Parkmore Area.
- Within the Parkmore Area, some employers have encouraged both walking and cycling by introducing mobility management measures in efforts to facilitate employees to use more sustainable means of travel (e.g., showers, lockers, bike-to-work, Taxsaver public transport tickets etc.), or reduce peak-hour congestion (e.g., flexi-working, car-sharing etc.)

### 3.4.4 Short Term Measures

In order to address the issues identified in the previous sections, the PASTF has identified a set of short/medium/long term interventions. Those which are relevant to this scheme are summarised below:

- Public Transport Interventions:
  - Southbound bus priority for buses departing the Parkmore Area along Parkmore Road

- Bus penetration into the Parkmore Area to reduce pedestrian walk times and the overall journey time
- New bus stops / road crossings where pedestrian permeability has been provided through the various business estates
- Cycling and Walking Interventions:
  - Permeability within the business parks, such that pedestrians and cyclists approach from the nearest entrance (whether Tuam Road, N6 or Parkmore Road) to reach their destination, during peak hours (including darkness)
  - Improved junction design, with acceptable pedestrian and cycling provision, for both signalised and non-signalised junctions
  - Continuity of footpath / cycle track along routes, including a shared cycle/pedestrian facility along the entirety of Parkmore Road from the Briarhill Underpass to the Parkmore Road roundabout
- Traffic Management Interventions:
  - Revised junction management, to reduce the pedestrian / cycle wait penalty at key locations for those modes;
  - Provision of safe crossings and entrances (including the narrowing of junction mouths where possible)

### 3.4.5 Proposed Projects

The P1\_01 Parkmore Road Multi-Modality scheme is detailed under section 8 of the PASTF, as a proposed short-term project:



Project Code	Phase 1 Projects	Location	Description	Lead agency (and dependant agencies)	Approx. Cost	Delivery Timelines Est.	Mode
P1_01	Parkmore Road Multi-modality	Parkmore Road, from Parkmore Roundabout to Monivea Junction	<ul style="list-style-type: none"> <li>Provision of Bus Lane towards Monivea Junction (Bus lane replaces inner traffic lane, stopping approximately 50m before Monivea Road junction)</li> <li>Provision of shared pedestrian / cycle facility (on west side of road only)</li> <li>Alterations to T-junctions, to facilitate pedestrians and cyclists crossing mouth of junction, and address safe movement of traffic in evening peak</li> <li>Provision of cycle facilities entering / exiting business parks, where possible</li> <li>Provision of New Toucan crossings of Parkmore Road to access bus stops / SPAR</li> <li>Signalised crossings approaching Parkmore Roundabout, near mouth of Parkmore East and Parkmore West</li> </ul>	GCC	€€	2021	Walking Cycling & Bus

Figure 3.4: PASTF - Parkmore Road multimodality

The Parkmore Road Bus Priority Scheme is based on P1\_01 Parkmore Road Multi-Modality project outlined in the PASTF (shown in Figure 3.4). There are, however, a number of key differences between the scheme outlined in the PASTF and that which is proposed in this Section 38 application:

- The bus lane southbound on Parkmore Road will stop approximately 180m before Monivea Road junction. The reasoning for this will be discussed further in Section 7.1 – Geometric Design.
- The constraints of the scheme mean that it will not be possible to provide a shared pedestrian/cycle facility on the west side of the road. Cycle facilities will be provided as a separate scheme in line with the projects identified in PASTF.
- Signalised crossings approaching the Parkmore Roundabout in Parkmore East and West were considered to be outside of the current scheme extents. They will be provided as part of a separate PASTF project, P1\_02 Parkmore Internal Bus Routing Scheme, which will be progressed separately.

## 4. Existing Conditions

The section of Parkmore Road between the Parkmore Roundabout and Monivea Road is classified as a Link Road in accordance with Table 3.1 of DMURS (Design Manual for Urban Roads and Streets). It serves mainly commercial developments, with the entrances to two major business parks located along this road (Briarhill Business Park and Parkmore Business and Technology Park), as well as the entrance to the Galway Racecourse. There are also eleven houses along Parkmore Road and one residential development of twelve houses called Ballybrit Crescent located just off the main road at the north-eastern end. The scheme is approximately 900m long and can be seen in Figure 4.1.

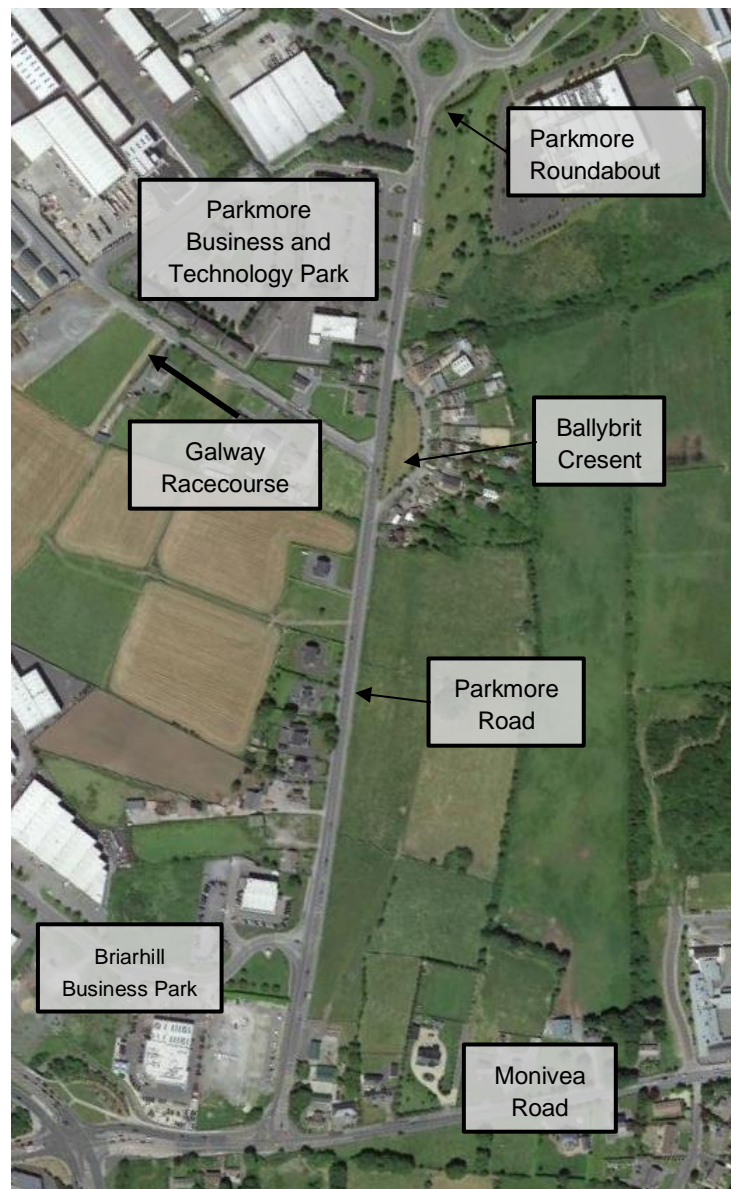


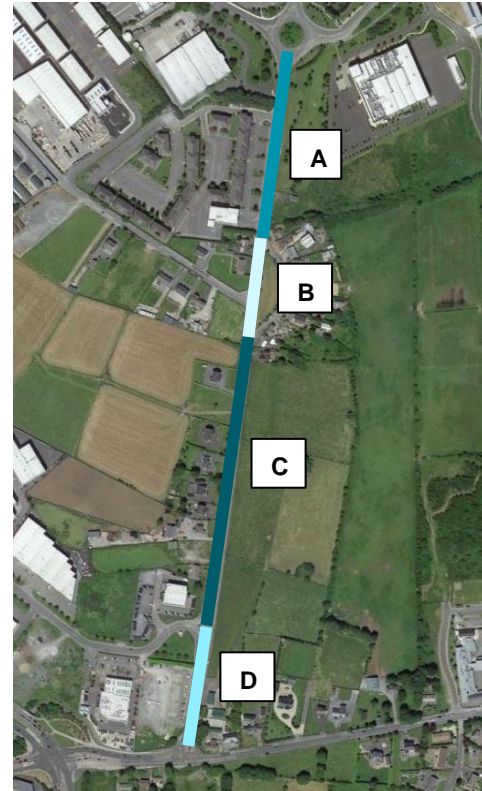
Figure 4.1 Map of Parkmore Area

## 4.1 Road Conditions

The Parkmore Road alignment currently consists of a single carriageway, with no bus lane and wide traffic lanes (up to 4m wide in places). The footpath widths vary widely, dropping to 0.8m at one short section on the western side of the road. At the widest points the footpath is up to 4m in width. Table 4.1 details the varying widths of the different sections of Parkmore Road, as shown the map in Figure 4.2.

Parkmore Road Cross Sections			
Road Section	West Footpath (m)	Road Carriageway (m)	East Footpath (m)
A - North	1.3 – 2.3	7.4 – 8.0	3.0 – 4.0
B - Crescent	0.8 – 3.5	7.5 – 8.0	No footpath
C - Central	2.9 – 4.3	7.5 – 9.5	2.8 – 3.0
D - South	1.3 – 3.0	10.5 – 11.0	1.5 – 3.0

**Table 4.1: Cross Section Measurements of Parkmore Road**



**Figure 4.2: Parkmore Road Cross Section Map**

## 4.2 Traffic

The annual Parkmore Traffic Survey from Tuesday 12<sup>th</sup> November 2019 provided a 7am-7pm traffic count of 13,082 on the Parkmore Road. The speed limit on this road is 50km/hr. Large vehicles (HGVs and LGVs) make up 14% of the 12-Hour traffic count. See Table 4.2 for details.

Parkmore Road Section	Direction of Travel	12-Hour Count	No. HGVs	No. LGVs	% Large Vehicles
A: Parkmore Business and Technology Park	Southbound	7713	229	759	13%
	Northbound	6651	222	750	15%
B: Ballybrit Crescent	Southbound	7279	243	813	15%
	Northbound	8270	253	815	13%
C: Briarhill Business Park	Southbound	6636	237	664	14%
	Northbound	5996	228	667	15%
D: Monivea Road Junction	Southbound	6039	193	499	11%
	Northbound	5089	189	503	14%

**Table 4.2 Annual Parkmore Traffic Survey**

### 4.3 Junctions

There are four simple priority junctions along the west side of Parkmore Road (entrance to Briarhill Business Park, entrance to Galway Races and two entrances to the Galway Technology Park), and two on the east (both entrances to Ballybrit Crescent housing development). These junctions vary in size – see Table 4.3 for full details. There are also multiple private accesses along the road.

Junction No.	Junction	North Radius (m)	South Radius (m)	Width at Junction Mouth (m)	Aerial View	Image
1	Galway Technology Park North Entrance	8.5	8.5	21.5		
2	Galway Technology Park South Entrance (Spar)	12	7	18.5		
3	Galway Racecourse Entrance	18	15	28		
4	Briarhill Business Park Entrance	30	27	50		
5	Ballybrit Crescent Entrance North	17.5	6	25		
6	Ballybrit Crescent Entrance South	3m	26m	19.5m		

**Table 4.3: Existing Junctions – Description**

The junction at the entrance to Briarhill Business Park currently has one lane for traffic exiting the business park, with the majority of traffic turning right towards the Monivea Junction. However, the junction is wide enough that there is also effectively an unmarked left-turning lane. The Galway Racecourse junction has two exit lanes, and all other junctions listed have a single exit lane.

The northern end of the scheme terminates at Parkmore Roundabout, which is a single lane roundabout with an inscribed circle diameter of approximately 30m.

The southern end of the scheme terminates at the Monivea Road junction. This is a signalised junction with a single northbound lane and three southbound turning lanes – two turning right towards the city centre, and one left-turning lane towards Monivea. The approach lanes to this junction were realigned in 2017 to improve queueing on Parkmore Road, and there will be only very minor alignment changes in the proposed plans.

## 4.4 Pedestrian Crossings

There is currently just one pedestrian crossing on Parkmore Road, a 9m wide signalised crossing. The existing crossing is situated at the northern end of the scheme, approximately 40m south of the Parkmore Roundabout. There are no pedestrian crossing facilities at any of the junctions.

## 4.5 Public Transport

Bus Éireann has two buses which service the Parkmore area, the 401 and the 409. The 401 service begins at Dr Mannix Rd (Rockbarton Rd), travelling through the city centre, and terminates in Parkmore, with a frequency of 20 minutes. The 409 service begins in Eyre Square in the city centre and terminates in Parkmore, with a frequency of 10 minutes at peak times and 15 minutes at off peak times.

Travelling from the city centre, both bus routes enter Parkmore at the Monivea Road junction and travel north along Parkmore Road, go all the way around the roundabout and terminate at the newly upgraded bus stop on Parkmore Road southbound, opposite Spar and the offices (Stop 55431). The return journey to the city centre commences at stop 55431.

The Transport for Ireland bus route 418 from Galway Cathedral to Athenry travels through Parkmore, stopping at the Parkmore Business and Technology Park. Burkes Bus Route 428 travels along the N83 Castlegar Road to the north of the Parkmore Road, and some private bus services also travel in the Parkmore area, e.g. to serve the Ábalta Special School in Parkmore East.

There are three in line bus stops on the western (northbound) side of Parkmore Road and two on the eastern (southbound) side, including the aforementioned terminus, see Figure 4.3 below. There are plans as part of the Galway Transport Strategy to further increase the number and quality of bus services in the Parkmore area.



**Figure 4.3: Existing Bus Stops on Parkmore Road**

## 4.6 Cycle Facilities

There are currently no cycle facilities on this section of the Parkmore Road, or in the Briarhill Business Park or Galway Technology Park that are accessed via this section of road. There is a narrow, on-road cycle facility on the Parkmore Road to the north of the Parkmore Roundabout, and there is a cycle lane on both sides of the Monivea Road as far as the Parkmore Road junction.

## 5. Options Development and Assessment

### 5.1 Options Considered

A variety of options were considered for the Parkmore Road Bus Priority Scheme. A summary of the options, from the “Do Nothing/Do Minimum” option to a full road redesign with land take, is displayed below in Table 5.1 below. All options would include resurfacing and maintenance work. It is noted that the Do Nothing/Do Minimum options were combined as they are essentially the same.

Option	Improvement Type	Description
Do Nothing/ Do Minimum	Maintenance Works Only	Resurface and redo road markings, maintenance work
DS 1	Localised Pedestrian Works	Install raised table pedestrian crossings at junctions
DS 2	Localised Pedestrian & Junction Works	Install signalised crossing points on Parkmore Road and provide improvements at junctions for pedestrian movements
DS 3	Pedestrians & Junctions & Bus Priority Improvements	Install signalised crossing points on Parkmore Road and provide improvements at junctions for pedestrian movements, realign footpaths to provide bus priority improvement and ensure at least minimum width of 1.8m footpath as outlined in DMURS. Existing carriageway width only
DS 4	Pedestrians & Junctions & Shared Cycle/Pedestrian Facility Improvements	Install signalised crossing points on Parkmore Road and provide improvements at junctions for pedestrian movements, widen existing footpaths to achieve 3m width for shared cycling/pedestrian facilities as outlined in the NCM. Existing carriageway width only
DS 5	Pedestrians & Junctions & On-Road Cycle Improvements	Install signalised crossing points on Parkmore Road and provide improvements at junctions for pedestrian movements, realign footpaths and reduce existing traffic lanes to provide on road cycle facilities and ensure at least minimum width of 1.8m footpaths as outlined in DMURS. Existing carriageway width only
DS 6	Pedestrians & Junctions & Shared Cycle & Bus Priority Improvements	Install signalised crossing points on Parkmore Road and provide improvements at junctions for pedestrian movements, realign footpaths to achieve sufficient width for 3m shared cycling/pedestrian facilities as outlined in NCM, provide bus priority improvement. Existing carriageway width only
DS 7	Pedestrians & Junctions & Shared Cycle/Traffic & Bus Priority Improvements	Install signalised crossing points on Parkmore Road and provide improvements at junctions for pedestrian movements, realign footpaths to provide bus priority improvement and shared cycle/traffic facilities, ensuring footpaths meet at least minimum width of 1.8m as outlined in DMURS. Existing carriageway width only
DS 8	Pedestrians & Junctions & Shared Cycle & Bus Priority Improvements (Land Take Required)	Install signalised crossing points on Parkmore Road and provide improvements at junctions for pedestrian movements, widen existing footpaths to achieve 3m width for shared cycling/pedestrian facilities as outlined in the NCM, and provide bus priority improvement. Consultation with landowners necessary as land take would be required
DS 9	Pedestrians & Junctions & Protected Cycle & Bus Priority Improvements (Land Take Required)	Install signalised crossing points on Parkmore Road and provide improvements at junctions for pedestrian movements, ensure existing footpaths meet at least minimum width of 1.8m as outlined in DMURS, provide protected cycle lane, provide bus priority improvement. Consultation with landowners necessary as land take would be required
DS 10	Pedestrians & Junctions & Western Shared Cycle/Pedestrians Facility & Bus Priority Improvements & Removal of Eastern Footway	Install signalised crossing points on Parkmore Road and provide improvements at junctions for pedestrian movements, remove footpath on eastern side of road, widen existing footpaths on western side of road to provide 3m width for shared cycling/pedestrian facilities as outlined in the NCM, and provide bus priority improvement. Existing carriageway width only

**Table 5.1: Options for Scheme**

## 5.2 Preliminary Options Sifting

Any options that required land take outside of the existing road boundary were considered undeliverable. The scheme must be delivered in the short term, and any land take is likely to result in the requirement for a Compulsory Purchase Order with a corresponding lengthy approvals process. This caused Options DS 8 and DS 9 to be discounted.

Option DS 7 was also eliminated in the preliminary sifting exercise due to the high 12-hr traffic volumes which were recorded on Parkmore Road, especially a high percentage of HGVs and other large vehicles. The National Cycle Manual notes that "Mixed or shared streets are suitable in low traffic single lane environments where cyclists and pedestrians take precedence over vehicular traffic", and as a result this option was considered unsuitable.

Finally, Option DS 10 was eliminated, as it was considered unsafe to remove the existing pedestrian facilities on the eastern side of Parkmore Road due to the residential property on that side of the road which needs access to the pedestrian facility.

The remaining six options were carried forward to the Options Assessment stage.

### 5.3 Options Assessment / Multi-Criteria Analysis

The following criteria were considered when carrying out the Options Assessment process on the six options remaining after the initial sift:

- Alignment of the Option characteristics with objectives set out in the PASTF;
  - Bus Priority
  - Pedestrian Access
  - Cycle Facilities
- Quality standards set out in DMURS and the National Cycle Manual
- Expected environmental impact

A detailed explanation of the MCA can be found in Appendix A.

Option	Description	Bus Priority	Pedestrian Access	Cycle Facilities	Environmental Impact
Do Nothing/ Do Minimum	Resurface and redo road markings, maintenance work				
DS 1	Localised Pedestrian Works				
DS 2	Localised Pedestrian & Junction Works				
DS 3	Pedestrians & Junctions & Bus Priority				
DS 4	Pedestrians & Junctions & Shared Cycle/Pedestrian Facility				
DS 5	Pedestrians & Junctions & On-Road Cycle				
DS 6	Pedestrians & Junctions & Shared Cycle & Bus Priority				

Highly Positive Impact	Somewhat Positive Impact	No Change	Somewhat Negative Impact	Highly Negative Impact
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**Table 5.2: Multi Criteria Analysis**

## 5.4 Emerging Preferred Option

Option 3 is considered the most suitable for the scheme. It provides a significant improvement to bus priority on Parkmore Road with the provision of a high-quality southbound bus lane and ensures that existing pedestrian facilities will be of appropriate quality for the entire length of the scheme. Indicative cross sections for the proposed layout can be seen in Figure 5.1. There will be no cycle facilities provided, which is consistent with the existing conditions on Parkmore Road. It was concluded that, due to the constraints of the scheme, it would not be possible to provide both a bus lane and cycle facility, as the National Cycle Manual states that 3m is the minimum width of a shared cycle and pedestrian facility. However, it is noted that there are plans in place to improve the cycle provision in the entire Parkmore area under the remit of P1\_11 Pedestrian & Cycle Permeability with Lighting as laid out in the PASTF.

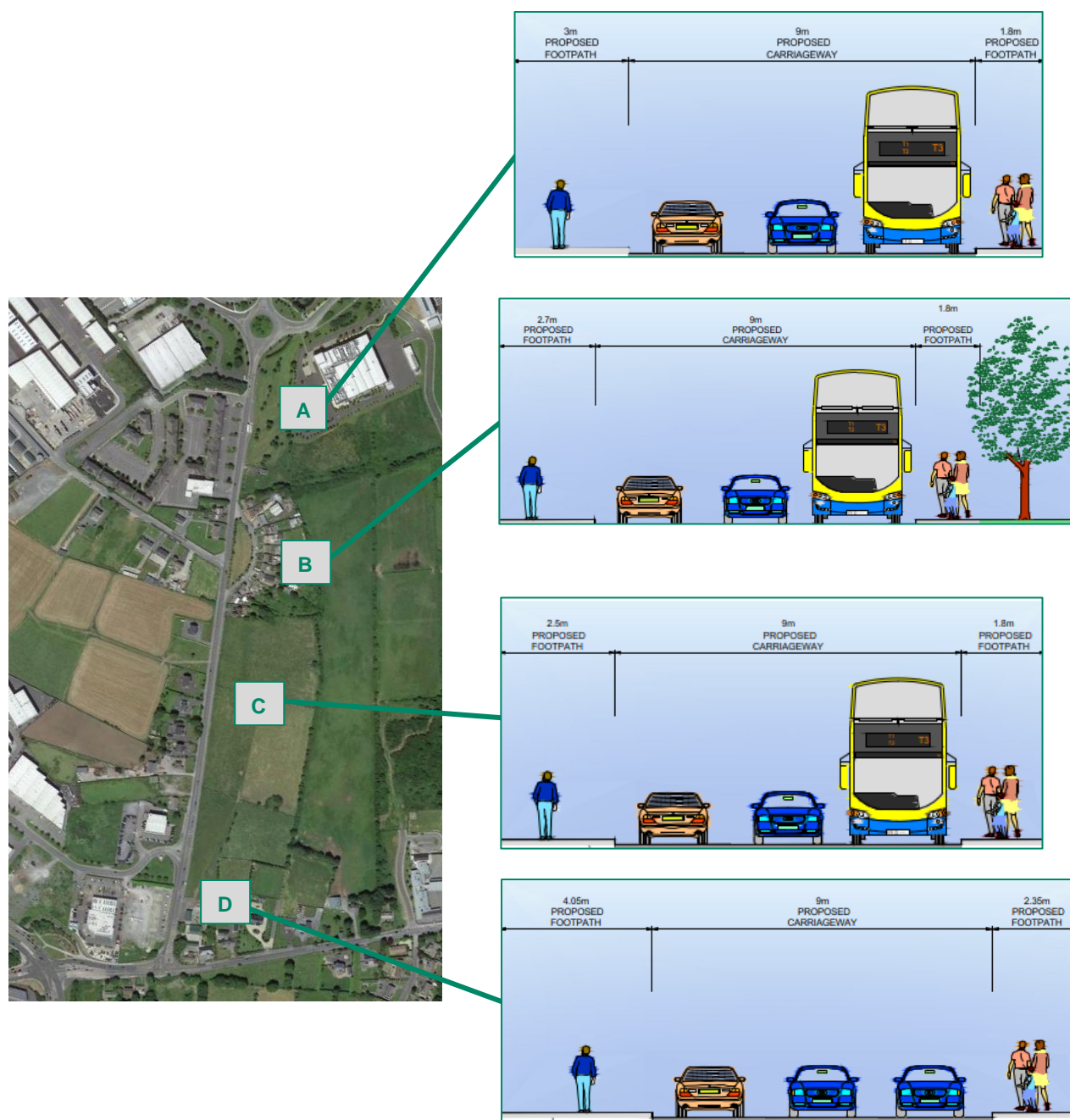


Figure 5.1: Emerging Preferred Option - Typical Cross Sections for each section A-D

## 6. Overview of the Proposed Development

A summary of the proposed development is provided below. A more detailed description is provided in Section 7. The proposed development will provide improvements for pedestrians and public transport users. The works propose to resurface the route and realign the footpath and carriageway, install signalised crossing points, provide improvement at junctions for pedestrian movements, and provide southbound bus priority. These works will all be delivered within the constraints of the existing road corridor.

A bus lane will be provided from the Parkmore Roundabout at the north as far as the Briarhill Business Park Junction at the south. The bus lane terminates at the pedestrian crossing at Briarhill Business Park junction to allow for two southbound traffic lanes approaching the Monivea Road Junction, ensuring that traffic can choose a turning lane well in advance of reaching the junction. This approach has proven effective at reducing congestion on Parkmore Road since it was implemented in 2017. The carriageway does not have sufficient width to facilitate both two southbound turning lanes and a bus lane. There is potential to provide signal-controlled bus priority at the pedestrian crossing where the bus lane terminates, to allow buses to progress towards the junction in advance of general traffic. The bus lane will cease for approximately 100m between the Spar entrance on the western side and the Ballybrit Crescent northern entrance on the eastern side. This is due to the narrow carriageway width at this section.

Three new pedestrian crossings will be installed on Parkmore Road, providing safe crossing points for pedestrians to access their homes, local businesses, and public transport facilities. The existing bus stops on Parkmore Road at Ballybrit Crescent will be realigned to suit the new road design, and the southernmost bus stops either side of Parkmore Road will be relocated so that they are in close proximity to the new pedestrian crossing at Briarhill Business Park. This will ensure that public transport users can continue safely on foot to their final destinations.

The footpath on the western side of the road will be widened to a minimum width of 2.5m, except at one pinch point where it reduces to 2m for a distance of 2m. Raised table uncontrolled pedestrian crossings will be provided at the six priority junctions on Parkmore Road, and three new controlled crossings will be installed along Parkmore Road. The location of these crossing points has been chosen to provide accessibility to Parkmore Business and Technology Park and Briarhill Business Park, and to ensure that there are regular safe crossing points all the way along the Parkmore Road. The footpath on the eastern side of the road will be reduced in width in order to facilitate the new southbound bus lane, with a minimum width of 1.8m in accordance with DMURs guidelines.

Due to the physical constraints of the carriageway and the high volume of HGV traffic, it is not feasible to provide a cycle facility on Parkmore Road. There are separate plans to improve cycle permeability as part of both the short term and the long-term development of the Parkmore area. Table 6.1 outlines the projects that are planned to improve cycling permeability in the Parkmore Area. The main project is P1\_11, which will provide direct access from the Briarhill tunnel at the N6 to the Briarhill Business Park, and onwards to Ballybrit Crescent and the Tuam Road/Racecourse Junction. Short-term projects P1\_10 and P1\_22, and long-term project P3\_1 will also offer upgrades to cycle facilities in the area.

Grass along the edge of Ballybrit Crescent will be converted to bus lane/footpath in order to ensure continuous pedestrian access and bus priority along the length of Parkmore Road. The landscape design will be further developed in the detailed design phase, but it will include relocating the existing trees along this stretch.

Scheme No.	Scheme Type	Project Description
P1_11	Pedestrian & Cycle (only) Permeability with Lighting	New direct access from Briarhill Tunnel to Briarhill Business Park
		New connection from Briarhill Business Park to Ballybritt Crescent, via Racecourse Perimeter Road
		New connection from Ballybritt Crescent to Tuam Road / Racecourse Junction
		Improved connections (including upgrade and lighting) from Parkmore Road West, Racecourse Business Park, and Ballybritt Crescent to Shop (SPAR) / Restaurant
		Connection from top of Racecourse Access Road to Racecourse perimeter road to HP / Hewlett Packard
P1_10	Cycle Access from Briarhill	Upgrade of Pedestrian / cycle tunnel and approaches
		Enhanced lighting, CCTV
		Upgrade to steps, including bicycle channels
P1_22	PTAG STWC Activities (Campus wide)	Further expansion of Bike to Work scheme, Tax Saver Ticket, Bicycle Training, Group Social events (Walking & Cycling), Management and maintenance of permeability links for commuters within Parkmore.
P3_01	Parkmore Road Upgrade	Upgrade, widening, full provision for walking, cycling, bus, junction re-design and bus stop facilities etc. (Informed by the next Galway Transport Strategy, including future land use planning for the area).

Table 6.1: PASTF Future Cycle Projects

## 7. Preliminary Design & Engineering Issues

The full Parkmore Road Bus Priority Scheme design is shown in Preliminary Design Drawings 60526720-SHT-00-P1.01-CH-0140.00-140.04. The route provides for pedestrians and bus priority, generally maintaining the facilities that are in place for private vehicles with some minor alignment changes. It is proposed that the entire route be resurfaced and that the kerb line and lanes be realigned in some sections. Exact location of kerb lines is subject to development in the detailed design stage.

The Preliminary Design Drawings will be published separately to this report.

### 7.1 Geometric Design

A minimum 2.5m footpath will be provided on the western side of Parkmore Road. On the eastern side of the road the footpath will be minimum 1.8m. This includes installing a footpath along the length of Briarhill Crescent, where there is currently a grassed verge. At the widest points of Parkmore Road, the footpath width will be 4m.

Three new controlled pedestrian crossings will be installed on Parkmore Road; one to the south of the new bus stop on the eastern side of Parkmore Road, one at Ballybrit Crescent and one just north of the Briarhill Business Park junction. Six uncontrolled pedestrian crossings with raised tables will be installed, one at each of the junctions on Parkmore Road. The stop line will be located after the raised table at the mouth of the junction, with the stop sign placed further back at the approach to the crossing. All crossings will be designed as per the minimum required within DMURS (Section 4.3.2) and the Traffic Signs Manual (Section 7.16). There will remain sufficient width for two lanes of traffic exiting both the Briarhill Business Park and Ballybrit Crescent junctions onto the Parkmore Road. Autotracking has been carried out to ensure that HGVs (consisting of 3% of the traffic volume) can manage all manoeuvres with minimum disruption to the traffic flow.

The priority junctions on Parkmore Road will all be amended in accordance with Section 4.3.3 Corner Radii of DMURS to reduce the crossing widths for pedestrians.

A 3m wide single traffic lane is proposed in each direction on Parkmore Road. There will be a bus lane, also 3m wide, from the Parkmore Roundabout southbound as far as the Briarhill Business Park junction. The bus lane will terminate at the signalised pedestrian crossing to the north of the Briarhill Business Park Junction, which will allow bus priority as the bus advances towards the Monivea Road Junction. From this junction southwards to the Monivea Road Junction, there will be no bus lane, but rather two southbound traffic lanes and one northbound traffic lane. This provides drivers with 180m on approach to the Monivea Road junction to choose a turning lane. At the Monivea Road junction the current road alignment, with a left turn slip for traffic heading towards Monivea, will be maintained, with reduced length.

### 7.2 Drainage

An initial high-level review has been carried out. As the proposed layout does not significantly change the extent of the existing surfaced area, it is anticipated that the existing drainage regime can be maintained with minimal alterations to the existing gully locations as necessary.

### 7.3 Earthworks and Pavement

Earthworks will be minimal, and no ground investigation is considered necessary. It is proposed that the entire length of the scheme will be resurfaced and will require realignment of kerbs and footpaths.

### 7.4 Traffic Signs and Road Markings

There are 13 signal heads and 30 road signs along the length of the scheme, some of which may need to be relocated or replaced. New road markings will be completed after the road has been resurfaced.

### 7.5 Public Lighting

There are 34 street lighting columns along the length of the scheme that may need to be relocated/replaced.

### 7.6 Utilities

A utilities search has been carried out for the Parkmore Road and surrounding areas. There are services belonging to ESB, Eir, Virgin Media, Gas Networks Ireland, and Irish Water in the vicinity of the works. It is not expected that

any significant diversions will be required as part of the works. However, further investigation will be required to determine the depth and exact location of these services.

## 7.7 Construction

### Potential Impacts on Adjacent Landowners

Residents and businesses in the area closest to the construction works may experience some level of noise, vibration and dust arising from general works. There will also be construction traffic in close proximity to their properties and access to properties will be maintained at all times.

### Construction Compounds

A construction compound will be required for the duration of the construction works, with locations to be determined by the appointed Contractor at the approval of GCC.

### Traffic Management

Temporary traffic management will be required to allow the works to be constructed safely. It is anticipated that this will require a reduction to single lane shuttle systems, permitted outside of peak hours only. It may be necessary for the final road surfacing to be completed at night, via a temporary road closure, although access to all premises will be maintained at all times.

## 7.8 Landscape Design

In order to accommodate the provision of the pedestrian and bus infrastructure, the proposed scheme requires the removal/relocation of a number of trees. Indicative landscaping is included in the preliminary design, but this will be further developed in the detailed design stage.

## 8. Impacts of Scheme

### 8.1 Scheme Benefits

The proposed works on Parkmore Road will improve the overall accessibility of the Parkmore Industrial Estates and improve safety for everyone travelling there.

The bus priority provided by the southbound bus lane on Parkmore Road will provide a shorter and more reliable journeys for those using public transport. This will incentivise the use of the bus to travel to and from the Parkmore area. The bus lane will also create the opportunity for the provision of more bus services in the area, such as the planned extension of the Parkmore bus routes into the Parkmore East and West Business Parks. These routes will link in with the existing bus services, with the new bus lane ensuring priority over private car traffic. In the long term, these improvements in bus services will lead to a reduction in queuing in the Parkmore and Briarhill area, which is currently one of the main congestion points in the Galway City transport network.

The upgrade of the existing pedestrian facilities will improve the links between businesses, homes, shops, and public transport facilities in the Parkmore area. It will ensure safer movement for pedestrians to access public transport facilities, with uncontrolled pedestrian crossings being improved at all the junctions on Parkmore Road, and three new signalised crossings of Parkmore Road being added. The realignment of footpaths and widening of pinch points will ensure that all pedestrians, including wheelchair users and those with prams, can comfortably use the pedestrian facilities in the area.

There will be no benefit to cyclists within the proposed works. An assessment was carried out on the various options for providing cycle facilities, but it concluded that, due to the constraints of the scheme, a cycle facility was not feasible for any length of the scheme. The road widths are too narrow to provide even a bus lane and shared cycle facility, as the National Cycle Manual states that 3m is the minimum width of a shared cycle and pedestrian space. The PASTF has outlined that a full cycle permeability scheme will be implemented in the Parkmore Area in the future. This will be included in Scheme P1\_11 Pedestrian & Cycle Permeability with Lighting.

### 8.2 Environmental Screening

As this scheme remains subject to development in response to submissions received during the Section 38 Consultation process and the finalising of the scheme preliminary design, environmental screenings have not yet been finalised. An Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) screening and associated supporting reports will be undertaken once the scheme layout has been finalised.

## 9. Conclusion

The proposed works in the Parkmore Road Bus Priority Scheme will provide an important upgrade to a key area in the Galway City transport network. The improvements to the bus and pedestrian facilities on Parkmore Road will improve the accessibility of the business parks in the region and make it a safer place to travel. Following a review of the existing conditions, constraints, and alternative options, the emerging preferred option is shown in AECOM Drawings 60526720-SHT-00-P1.01-CH-0140.00 – 140.04. The development and preliminary design for the preferred option has been undertaken in accordance with DMURS and the National Cycle Manual and is to be progressed to the detailed design stage.

## Appendix A Multi-Criteria Analysis

The Options Assessment for the scheme was carried out using a Multi-Criteria Analysis of the following four headings: bus priority, pedestrian access, cycle facilities, and environmental impact. The options were allocated a score for each of the headings using the scoring system shown below; 2 points given to an option with a highly positive impact in that category, 1 point for an option with a somewhat positive impact in that category, 0 points for an option that provides no change from the existing facility, -1 point for an option with a somewhat negative impact in that category and -2 points for an option with a highly negative impact. The total score was calculated as the sum of the aggregated scores for each criterion, shown in the table below.

Options DS 1, DS 2, DS 4, DS 5 and Do Nothing/Do Minimum provided no bus priority improvements. Options DS 4 and DS 6 provided cycle facility improvements with a shared cycle/pedestrian facility, but this was considered unsuitable for pedestrians due to the narrow footpath widths. With a score of 4, Option DS 3 emerges as the preferred option. It provides high-quality bus and pedestrian facilities within the existing road boundary and has a neutral environmental impact.

Option	Description	Bus Priority	Pedestrian Access	Cycle Facilities	Environmental Impact	Sum
Do Nothing/Do Minimum	Resurface and redo road markings, maintenance work	0	0	0	0	0
DS 1	Localised Pedestrian Works	0	1	0	0	1
DS 2	Localised Pedestrian & Junction Works	0	2	0	0	2
DS 3	Pedestrians & Junctions & Bus Priority	2	2	0	0	4
DS 4	Pedestrians & Junctions & Shared Cycle/Pedestrian Facility	0	-1	1	0	0
DS 5	Pedestrians & Junctions & On-Road Cycle	0	1	1	0	2
DS 6	Pedestrians & Junctions & Shared Cycle & Bus Priority	2	-2	1	0	1

Scoring		
Highly Positive Impact	H	2
Somewhat Positive Impact	M	1
No Change	N	0
Somewhat Negative Impact	L 1	-1
Highly Negative Impact	L 2	-2

