Cork Light Rail Transit - Alignment Options and Feasibility Study

Preferred Route Option Report

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Introduction

Luas Cork is a new circa 19.6km, east-west, light rail line from the Ballincollig area to Mahon Point via the city centre creating a public transport corridor serving key trip attractors such as Munster Technological University (MTU), Cork University Hospital (CUH), University College Cork (UCC), St. Patrick's Street, Kent Station, Pairc Ui Chaoimh and Mahon Point Shopping Centre.

Luas Cork has been a long-term objective for the Cork Metropolitan Area (CMA) as outlined in the Cork Metropolitan Area Transport Strategy (CMATS). The design and planning of Luas Cork is being undertaken by Transport Infrastructure Ireland (TII) in collaboration with the National Transport Authority (NTA) and Cork City Council (CCC).

Preferred Route

The key outcome of this report was the determination of the Preferred Route Option for Luas Cork. That is, the route which, based on evidence and assessment, presents the best opportunity to meet the Proposed Scheme's objectives, whilst also considering feedback received during the first Non-Statutory Public Consultation (NSPC 1) in April 2025 on the Emerging Preferred Route (EPR).

Following the feedback from NSPC 1, a number of detailed Multi Criteria Assessments (MCAs) were completed in line with the Transport Appraisal Framework (TAF) published by the Department of Transport (DoT), on localised options across four assessment areas of the EPR. The outcomes of this MCA assessment work has enabled an alignment to be presented as the Preferred Route, that offers opportunities to enhance benefits and as far as possible to minimise physical impacts. The Preferred Route is shown below in **Figure 0-1**

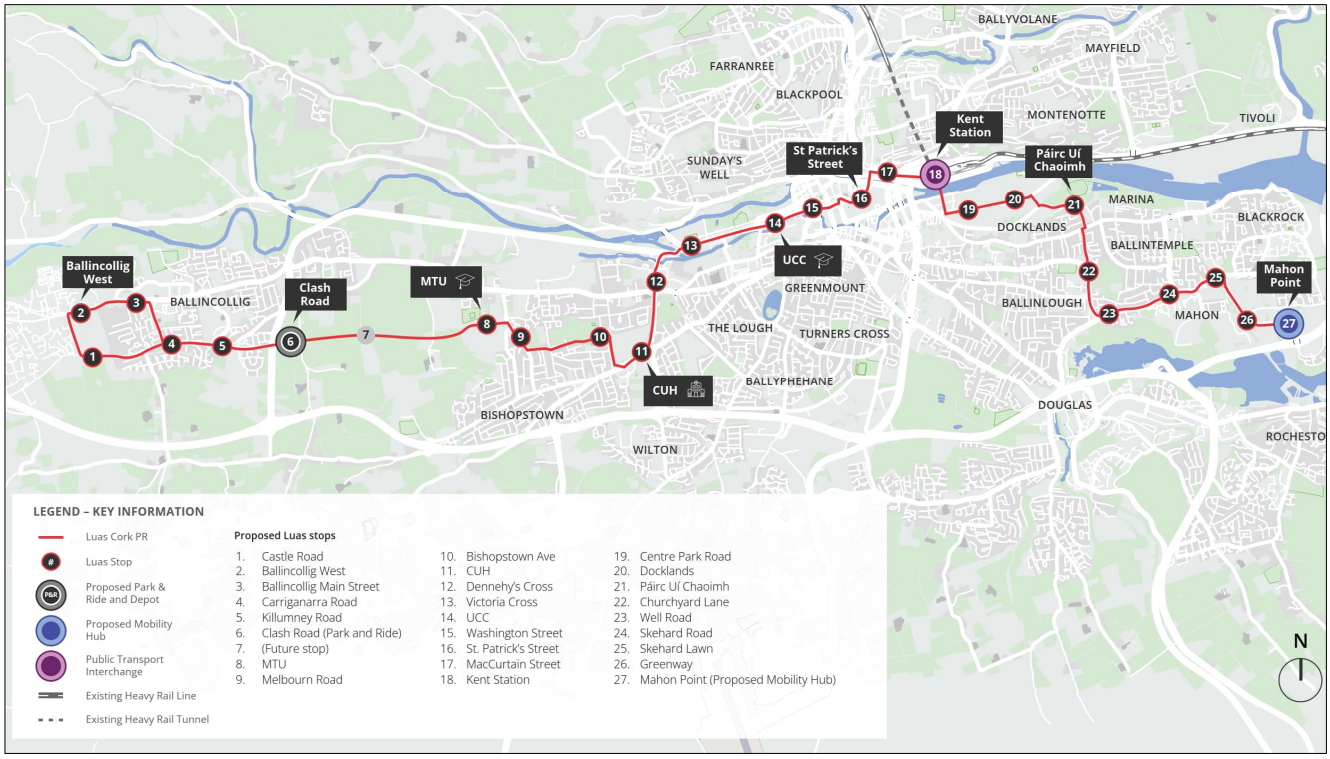

Figure 0-1 The Preferred Route alignment for Luas Cork.

The following is a description of the Preferred Route. Key changes to the route since the Emerging Preferred Route (EPR) include extending the single-track loop further west in Ballincollig, rerouting through CUH, adding stops at Victoria Cross and Centre Park Road, and repositioning stops at University College Cork (UCC), Páirc Uí Chaoimh, and Woodvale Road.

Ballincollig to Munster Technological University

The Preferred Route starts in Ballincollig. In a change from the Emerging Preferred Route (EPR) it begins at the Carriganarra Road/Station Road junction in a single-track loop running on to Castle Road, Flynn's Road, Ballincollig Main Street (Main Road / Carrigrohane Road) before turning southwards onto Station Road. Here the loop is complete, and the line continues eastwards in a more typical double-track arrangement. The tram is largely segregated from general traffic through Ballincollig, but shares with southbound traffic on Station Road. Beech Park/Barley Grove will be accessible to general traffic from Main Street and from Carriganarra Road but there will be no northbound through-traffic. Some diversion of traffic onto Old Fort Road will help reduce traffic volumes in the village.

Once back on Carriganarra Road, at the bottom of Station Road, the tram travels eastbound on a twin track arrangement across the N22 towards MTU. As per the EPR, there is a proposed 1,000 vehicle Park and Ride and Depot facility in what is currently farmland, immediately to the east of the N22 and to the west of Clash Road. A parallel, two-way cycle-path from Ballincollig connects to the Curraheen Greenway at the Curraheen River end of this stretch of the route.

Munster Technological University to Wilton Road

The Preferred Route continues through Munster Technological University's campus on Rossa Avenue. It continues southwards onto Melbourn Road. In a change from the EPR, it turns eastwards and runs uphill past Bishopstown Community School, Ballinaspig Lawn, Bishopstown GAA, Highfield Rugby Club, Coláiste an Spioraid Naoimh, Saint Columba's Convent and then through CUH campus.

Wilton Road to Washington Street

At the western side of the CUH campus, the route travels south to Bishopstown Road and Wilton Road towards Dennehy's Cross and Victoria Cross, turning eastwards onto Western Road towards the city centre. In a change from the EPR, an additional stop is being provided at Victoria Cross to better serve residents and recreational and hospital facilities around the Carrigrohane junction with Victoria Cross. The University College Cork (UCC) stop is being moved closer to the main UCC gates at Donovan Road to improve accessibility to the campus.

Washington Street to Kennedy Quay

From Washington Street to Kent Station, the route remains unchanged from the EPR – proceeding through St Patrick's Street, MacCurtain Street and Kent Station, with a tram stop at each of these locations. The stop at Kent Station will be integrated into the proposed public transport interchange at the rear of the station allowing intermodal transfer to commuter and intercity rail services, buses and cycling facilities. The detail of this stop will be subject to a multi-party design process to be carried out at the next stage. The Preferred Route then travels southwards on a new public transport bridge over the River Lee from Horgan's Quay to the South Docklands. We have been engaging with representatives of the maritime community about the impact this new bridge will have on river activity and will continue to engage on this issue. We are also engaging with Cork City Council to ensure that the wider development of the docklands is designed in cooperation and as part of an integrated transport and development strategy for Cork Docklands.

Kennedy Quay to Páirc Uí Chaoimh

The route continues southwards before turning east on to Centre Park Road, where the tracks will be fully segregated from other traffic. An additional stop at Docklands accommodates the future development of 20,000 new homes and almost 25,000 jobs. At the Centre Park Road/Marquee Road junction the line turns southwards before reaching Monahan Road, where it runs along the southern boundary of the newly developed Marina Park. The Páirc Uí Chaoimh stop has been relocated and refined to allow for better crowd circulation, segregation and to facilitate a tram turnback.

Páirc Uí Chaoimh to Boreenmanna Road

From Páirc Uí Chaoimh, the line runs southbound on Maryville, up the incline, to reach the junction with Blackrock Road, sharing with local access traffic for part of the route. It continues uphill on Churchyard Lane sharing with southbound traffic as far as the Churchyard Lane/Boreenmanna Road junction but segregated

in a northbound direction. Existing on-street parking on Churchyard Lane will be relocated where possible - including within the Ashcroft Estate. Local traffic diversions will be put in place as part of a traffic management plan for the wider area.

Boreenmanna Road to Mahon Point

From the Boreenmanna Road junction, the line runs alongside the kerb, primarily segregated from general traffic and with staggered platforms at Beaumont Quarry and Cork Constitution. It then proceeds along Skehard Road and travels eastwards, with a stop located at the junction with Well Road. A staggered platform is provided in place of the previous Woodvale stop location, removing impacts to private driveways. The westbound Luas stop platform will be at Kilbrack Grove and the eastbound stop platform will be at Woodvale Road. The Preferred Route then continues on Skehard Road, before turning southwards onto Mahon Link Road. A kerbside arrangement will share with buses as far as the terminus at Mahon Point.

Assessment Areas

Having regard to the feedback from the NSPC 1 and the scheme objectives, in tandem with ongoing design, associated assessments, operational analysis and statutory stakeholder engagement, identified 4 assessment areas along the EPR for MCA. Alternatives in these assessment areas were taken forward for MCA to understand to what extent they may realise benefits and reduce impacts from the scheme.

In addition to the 4 assessment areas, there were a number of more localised areas of the EPR that were reviewed in further detail but did not warrant application of a strategic MCA due to either having already been documented in the initial MCA process for the Emerging Preferred Route; or that the potential changes represented minor local design improvements that will be investigated further at subsequent design phases.

The 4 assessment areas for MCA Assessment were as follows:

Table 0-1 4 assessment areas along the EPR for assessment

Assessment Area No.	Section of EPR	Alternative to be assessed	
1	**Ballincollig Single Track Loop**	**Option A (Double Track)**	A double-track arrangement that extends further west into Ballincollig. The double track would bypass Ballincollig town centre, utilising a southern approach along the Carriganarra Road, terminating prior to the junction at Flynn's Road and the R608.
		Option B (Extended Loop)	A single-track loop arrangement that extends further west into Ballincollig. The alternative loop would extend along Castle Road, then turn north onto Flynn's Road, before coming to the town centre via the R608 and utilising Station Road for a southern approach back to Carriganarra Road.
2.	**Melbourn Road/Curraheen Road**	**Option A (CUH South)**	Traversing 3rd party lands, introducing new, dedicated track infrastructure and an opportunity for increased level of priority along the alignment. Travelling eastbound, the alternative alignment travels south within the CUH campus to rejoin the main route at Bishopstown Road, before proceeding North at Wilton Road.
		Option B (CUH North)	Traversing 3rd party lands running parallel to Curraheen Road, introducing new, dedicated track infrastructure and an opportunity for increased level of priority along the alignment. Travelling eastbound, the alternative alignment remains North of CUH campus and rejoins the

Assessment Area No.	Section of EPR	Alternative to be assessed	
			main route at Wilton Road (via a new signalised junction).
3.	**Churchyard Lane**	**Passage to Blackrock Greenway**	Assessment of the Passage to Blackrock Greenway, utilising a two-way single-track arrangement. Assessment of this will also be supplemented by operational analysis separate to this report.
4.	**Mahon Link Road**	**Option A** **(Skehard Road / Ballinure Ave / The Maples)**	Assessment of an alternative alignment to continue along Skehard Road (through the Skehard Road / Mahon Link Road junction), through Ballinure Ave and the Maples, before terminating at Mahon Point.
		Option B **(Skehard Road / Bessboro Rd / Estuary Drive)**	Assessment of an alternative alignment to divert off Skehard Road to Bessboro Road, to run past the Blackrock Business Park, before bridging over the greenway to join with Estuary Drive before terminating at Mahon Point.

Recommendations of MCA Assessment

The project team have undertaken a series of Mult Criteria Assessments (MCA) of localised options within four assessment areas of the EPR of the Luas Cork scheme. These localised options for the 4 assessment areas of the EPR were assessed by applying a MCA approach in line with the Transport Appraisal Framework (TAF), published by the Department of Transport (DoT). The MCA is aligned with and utilised the main criteria and associated sub-criteria contained within the TAF. The outcomes of the MCA assessment were used to determine the best option in each assessment area, and adopted as part of the PR. The outcomes are summarised in **Table 0-2** below.

Table 0-2 Outcomes of the MCA assessment

Assessment Area	Option	Option Description	Recommendation
1: Ballincollig	**Option A** **(Double Track)**	Double Track extended further west of Ballincollig town centre	Do not take forward to PR
	Option B **(Extended Loop)**	Single Track Loop extended further west of Ballincollig town centre	Take forward for PR design
2: Curraheen Rd / CUH	**Option A** **(CUH South)**	Double Track utilising alignment via Bishopstown GAA, Highfield Rugby club and CUH Campus South	Take forward for PR design
	Option B **(CUH North)**	Double Track utilising alignment via Bishopstown GAA, Highfield Rugby club and CUH Campus North	Do not take forward to PR
3: Churchyard Lane / Greenway	**Passage to Blackrock Greenway**	Repurposing the Greenway to fully segregated two-way running via single track arrangement.	Do not take forward to PR
4: Mahon / Skehard / Bessboro	**Option A** **(Skehard Road / Ballinure Ave / The Maples)**	Alternative alignment to continue along Skehard Road (through the Skehard Road / Mahon Road junction), through Balinure Ave and the Maples.	Do not take forward to PR

Assessment Area	Option	Option Description	Recommendation
	Option B **(Skehard Road / Bessboro Rd / Estuary Drive)**	Alternative alignment to divert off Skehard Road to Bessboro Road, to run past the Blackrock Business Park, before bridging over the greenway to join with Estuary Drive.	Do not take forward to PR

Next Steps

A second NSPC (NSPC2) will commence on the 17th of April 2026 to share the PR and capture feedback from stakeholders including the general public. The feedback will be presented in a second consultation report for the PR, to be released between Q3-Q4 of 2026. The project will then proceed into Phase 3, and the PR will be subject to a Preliminary Design process. Feedback from the second NSPC will be used to refine the Preliminary Design.

The aim for the project is to design a route that captures key destinations in health, education, industry, retail, housing, recreation and sporting, while also accommodating commuting and everyday journeys. But there are trade-offs. Luas Cork must serve the people of Cork and yet no line can be constructed without impacting on some residents and businesses. However, the project will continue to engage impacted stakeholders and, if possible, seek to incorporate meaningful mitigation measures into the design. Following completion of the Preliminary Design, the project will begin preparation for a Railway Order (planning permission).

1. Introduction

1.1 Background

Luas Cork is a new circa 19.6km, east-west, light rail line from the Ballincollig area to Mahon Point via the city centre creating a public transport corridor serving key trip attractors such as Munster Technological University (MTU), Cork University Hospital (CUH), University College Cork (UCC), St. Patrick's Street, Kent Station, Pairc Ui Chaoimh and Mahon Point Shopping Centre. Luas Cork has been a long-term objective for the Cork Metropolitan Area (CMA) as outlined in the Cork Metropolitan Area Transport Strategy (CMATS).

The design and planning of Luas Cork is being undertaken by Transport Infrastructure Ireland (TII) in collaboration with the National Transport Authority (NTA) and Cork City Council (CCC).

1.2 Previous and Ongoing Study Stages

This section briefly outlines the previous work and ongoing work on the study. The study has three main stages as follows:

- **Stage 1:** Option Selection Process;
- **Stage 2:** Non-Statutory Public Consultation (NSPC) on the Emerging Preferred Route (EPR); and
- **Stage 3:** Preferred Route (PR) Concept Design and Appraisal (current stage of study).

The study is currently at Stage 3, the Preferred Route (PR) Concept Design and Appraisal. Stage 1 identified 12 End-to-End Route Options which were comparatively assessed through a Multi Criteria Assessment (MCA). The outcome of the MCA identified the EPR to be taken to NSPC. Stage 2 launched the EPR to the public through an NSPC, with the engagement process generating over 1000 responses from the public and other stakeholders. The feedback was then summarised and included within the project consultation report and was made available on the Luas Cork website in October 2025.

At the outset of Stage 3, the consultation feedback was used to inform a multi-disciplinary design review of the EPR, identify any additional assessment needs, and explore potential optimisations that continue to meet scheme objectives while delivering additional benefits and reducing environmental impacts.

The feedback from the NSPC, in tandem with ongoing design development, associated assessments, operational analysis and statutory stakeholder engagement, identified 4 key areas along the EPR that, due to the scale of potential change they would bring to the alignment, would require further MCA assessment. The four assessment areas are as follows:

- **Ballincollig (start / end of the line):** Further assessment of the single-track loop, with alternative options developed to extend further west beyond current start/end of line, by increasing the extent of the loop or utilising a double track alignment to the south of the EPR;
- **Melbourn Road/ Curraheen Road:** Further assessment of the EPR along Melbourn and Curraheen Road, with alternative options developed that utilise 3rd party lands to bypass Curraheen Road and further increase levels of operational priority and segregated running;
- **Churchyard Lane**: Further assessment of the Passage to Blackrock Greenway option as alternative to Churchyard Lane to further increase levels of operational priority and segregated running;
- **Mahon Link Road / Skehard Road:** Assessment of alternative alignments to continue along Skehard Road (through the Skehard Road / Mahon Road junction) and Bessboro Road (Blackrock Business Park) as options to optimise integration with other modes (including BusConnects) and reduce requirement for additional priority and capacity at the Skehard Road / Mahon Road junction – a key link to/from the N40 corridor.

In addition to the MCAs of the four assessment areas, a multi-disciplinary design review was undertaken of the full EPR, including individual areas of feedback from the NSPC. An overview of this design review and other considerations is provided in Chapter 2.6.

1.3 Scope of this Report

The project team have undertaken a series of sensitivity assessments for the four assessment areas of potential optimisations to the EPR of the Luas Cork Scheme. These sensitivity assessments follow on from the conclusion of the NSPC in June 2025, of which the consultation report was made publicly available in early October 2025.

The four assessment areas of potential optimisations to the EPR were assessed by applying a MCA approach in line with the Transport Appraisal Framework (TAF), published by the Department of Transport (DoT). The MCA utilises the main criteria and associated sub-criteria contained within the TAF.

These areas are shown in **Figure 1-1** below.

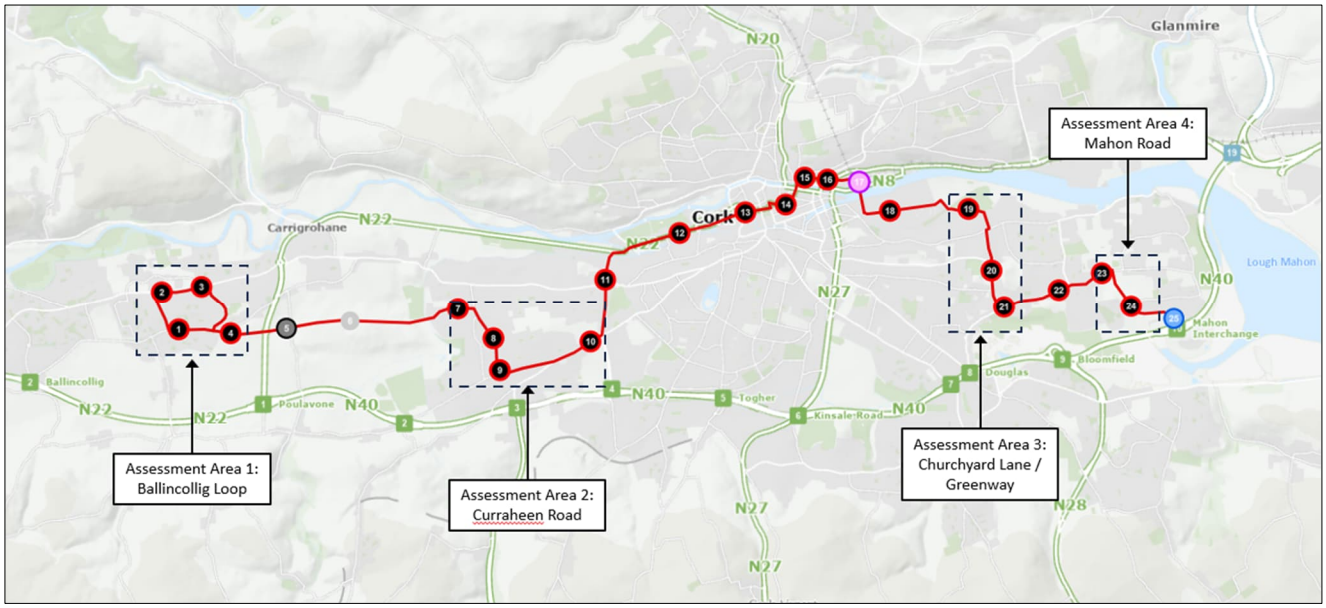

Figure 1-1 Map of the four assessment areas of the EPR under consideration.

The purpose of this report is to determine the PR following the feedback received during the first NSPC. Localised alternative options were developed for each of these four assessment areas to assess if they present an opportunity to bring further benefits to optimise the EPR and potential to reduce scheme impacts. The outcomes of these assessments was also used to inform the PR for Stage 3 of the project, which will be subject to a further NSPC and used to inform the next phase of the project. The areas and associated alternatives that will be assessed are as follows:

Table 1-1 Areas and Associated Alternative Routes

Assessment Area No.	Section of EPR	Alternative to be assessed	
1	**Ballincollig Single Track Loop**	Option A (Double Track)	A double-track arrangement that extends further west beyond Ballincollig town centre. The double track would bypass Ballincollig town centre, utilising a southern approach along the Carriganarra Road, terminating prior to the junction at Flynn's Road and the R608.
		Option B (Extended Loop)	A single-track loop arrangement that extends further west beyond Ballincollig town centre. The alternative loop would extend along Castle Road, then turn North onto Flynn's Road, before coming to the town centre via the R608 and utilising Station Road for a southern approach back to Carriganarra Road.

Assessment Area No.	Section of EPR	Alternative to be assessed	
2.	**Curraheen Road**	Option A (CUH South)	Traversing 3rd party lands running parallel to Curraheen Road, introducing new, dedicated track infrastructure and opportunity for an increased level of priority along the alignment. Travelling eastbound, the alternative alignment travels south within the CUH campus to rejoin the main route at Bishopstown Road, before proceeding North at Wilton Road.
		Option B (CUH North)	Traversing 3rd party lands running parallel to Curraheen Road, introducing new, dedicated track infrastructure and opportunity for an increased level of priority along alignment. Travelling eastbound, the alternative alignment remains North of CUH campus and rejoins the main route at Wilton Road (via a new signalised junction).
3.	**Churchyard Lane**	Passage to Blackrock Greenway	Assessment of the Passage to Blackrock Greenway, utilising a two-way single-track arrangement. Assessment is also supplemented by operational analysis separate to this report.
4.	**Mahon Road**	Option A (Skehard Road / Ballinure Ave / The Maples)	Assessment of an alternative alignment to continue along Skehard Road (through the Skehard Road / Mahon Road junction), through Ballinure Ave and the Maples, before terminating at Mahon Point.
		Option B (Skehard Road / Bessboro Rd / Estuary Drive)	Assessment of an alternative alignment to divert off Skehard Road to Bessboro Road, to run past the Blackrock Business Park, before bridging over the greenway to join with Estuary Drive before terminating at Mahon Point.

This Report provides the supporting analysis, commentary and assessment, with reference to the Transport Appraisal Framework (TAF) and is configured as follows:

- Chapter 2 provides a description of the localised alternatives for each assessment area. In addition to the 4 assessment areas, this chapter includes a sub-section of other areas that were also reviewed following NSPC1.
- Chapters 3 will set out the methodology and scoring criteria of the multi-criteria assessment.
- Chapters 4, 5, 6, and 7 will outline the assessment for each of the four assessment areas.
- Chapter 8 will outline changes and updates to the Emerging Preferred Route to inform the Preferred Route.
- Chapter 9 will provide a description of the Preferred Route.
- Chapter 10 will set out the Next Steps for the project.

2. Areas of the Emerging Preferred Route (EPR) for further MCA assessment

2.1 Introduction

The NSPC for the EPR concluded in June 2025, with over 1000 responses received from stakeholders. Based on the NSPC feedback, a review was undertaken of the full EPR alignment and associated stop locations. From this review, four assessment areas of the EPR alignment were identified for further sensitivity assessment and MCA. In addition to the four assessment areas, there were a number of more localised areas of the EPR that were reviewed in further detail but did not warrant application of a strategic MCA (outlined in section 2.6).

The four assessment areas and drivers for the MCA were as follows:

- **Assessment Area 1 - Ballincollig (start / end of the line):** Assessment of the single-track loop, with alternative options to extend further west for greater catchment and coverage of Ballincollig. This would require extension beyond the current start / end of line, by increasing the extent of the loop or utilising a double track alignment to the south of the EPR.
- **Assessment Area 2 – Melbourn Road/ Curraheen Road:** Assessment of alternative alignments to the EPR by utilising 3rd party lands to bypass Curraheen Road, allowing mitigation of geometrical and operational pinch points, and increase levels of operational priority and segregated running for Luas.
- **Assessment Area 3 - Churchyard Lane**: Re-assessment of an alternative alignment to the EPR by utilising and repurposing the Greenway to further increase levels of operational priority and segregated running.
- **Assessment Area 4 – Mahon Link Road / Skehard Road:** Assessment of alternative alignments to continue along Skehard Road (through the Skehard Road / Mahon Road junction) and optimise integration with other modes (including BusConnects) and reduce requirement for additional priority and capacity at the Skehard Road / Mahon Road junction.

Localised options were developed within each of the above areas, as alternatives to corresponding sections of the EPR alignment. The options were then individually assessed, to understand where optimisations to the EPR may be introduced whilst still meeting the objectives of the scheme, and if the options have the potential to deliver further benefits and reduce environmental impacts.

Several site visits were also undertaken across each of the 4 areas during the development of the localised options, to validate and shape emerging proposals. The localised alternative route options for each area are outlined in the following sections.

2.2 Assessment Area 1: Ballincollig

There were two options (A and B) in the Ballincollig area assessed against corresponding sections of the EPR. These options were developed based on a combination of NSPC feedback, whilst also seeking to operationally enhance the Luas and how it sits within and interacts with the receiving environment. **Figure 2-1** below shows Option A (green line) and Option B (blue line) against the EPR (red line).

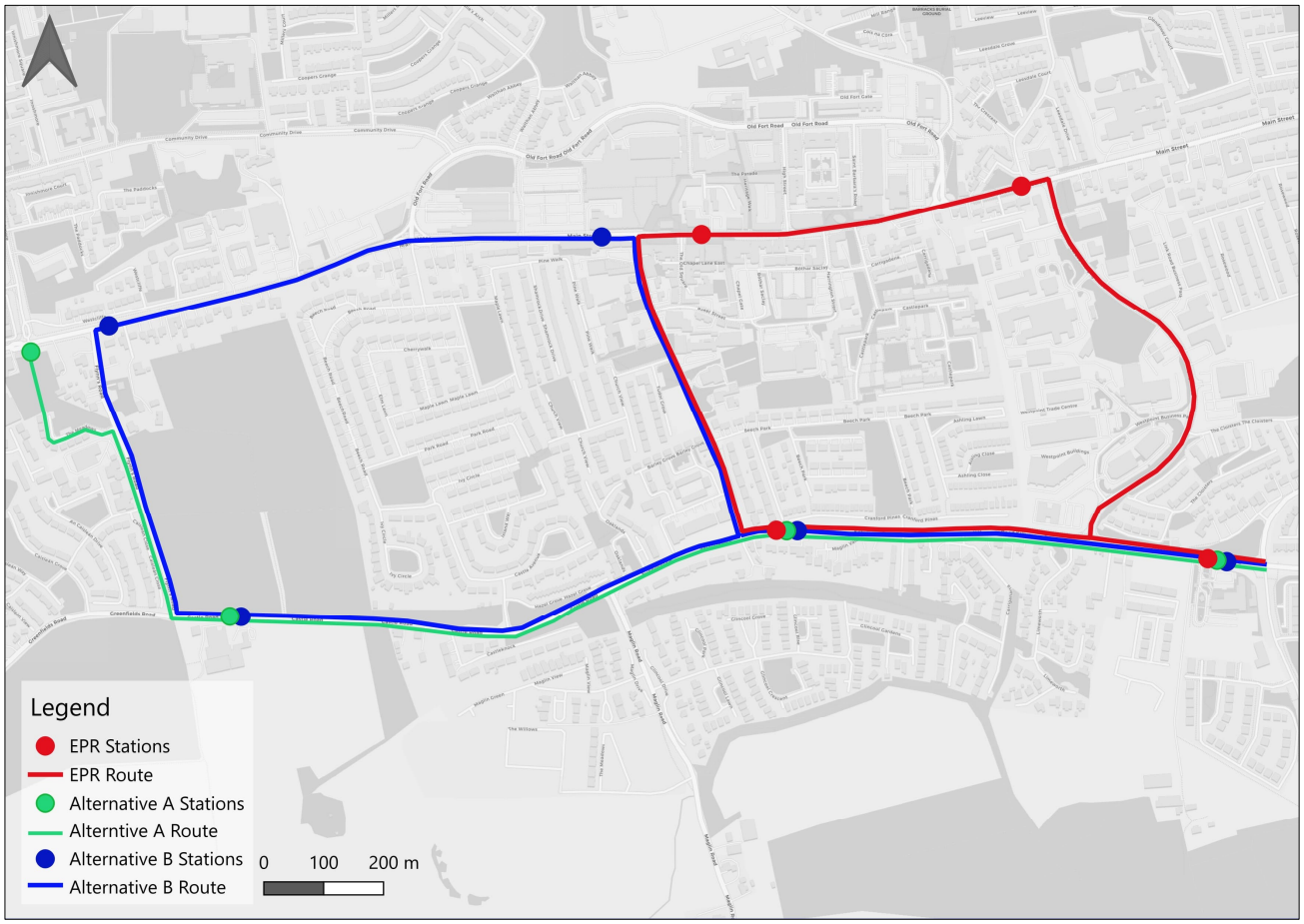

Figure 2-1 Ballincollig EPR and Alternative Route Alignments

2.2.1 Option A (Double Track Extended West)

Option A presents a double track section, running to the south of Ballincollig town centre, along the Carriganarra Road and Castle Road, before heading North along Flynn's Road, terminating in the open space southeast of the White Horse gastropub. Option A would run segregated from vehicular traffic on the northside of the existing roadway along the Carriganarra Road. Beyond the Carriganarra Road/Station Road junction, the option runs with vehicular traffic along Sunningdale and Castle Road for a short section until crossing the Castle Road/Castle Avenue junction. From here it runs along a separated alignment immediately north of Castle Road up to the junction with Flynn's Road. The route then continues along a segregated section east of Flynn's Road up to the Flynn's Road/The Meadows junction, where the alignment crosses Flynn's Road diagonally in a north westerly direction to terminate in the green space southeast of the White Horse.

2.2.2 Option B (Extended Loop)

Option B would provide a single-track loop extending further to the west through Ballincollig than currently proposed by the EPR alignment. Option B runs segregated north of the Carriganarra Road as double track up to the Carriganarra Road/Station Road junction, similar to Option A. From there a westbound single-track loop continues. This single-track runs segregated from traffic along Sunningdale and Castle Road until the Castle Road/Castle Avenue junction. From here, the track runs segregated along an alignment north of Castle Road up to the Castle Road/Flynn's Road junction. The route then runs northbound along a segregated alignment east of Flynn's Road, up to the Flynn's Road/The Meadows junction. The route alignment is then mixed with general traffic north to the Flynn's Road/R608 junction. From this junction, Option B proceeds eastbound along the

R608, segregated from other traffic but sharing with other public transport, up to the R608/Station Road junction, where it heads south along Station Road.

2.3 Assessment Area 2: Curraheen Road / Cork University Hospital (CUH)

There were two options (A and B) in the Curraheen Road / CUH area assessed against corresponding sections of the EPR. These options were developed based on a combination of NSPC feedback, whilst also seeking to operationally enhance the Luas and how it sits within and interacts with its receiving environment. **Figure 2-2** below shows Option A (green line) and Option B (blue line) against the EPR (red line) on Curraheen Road.

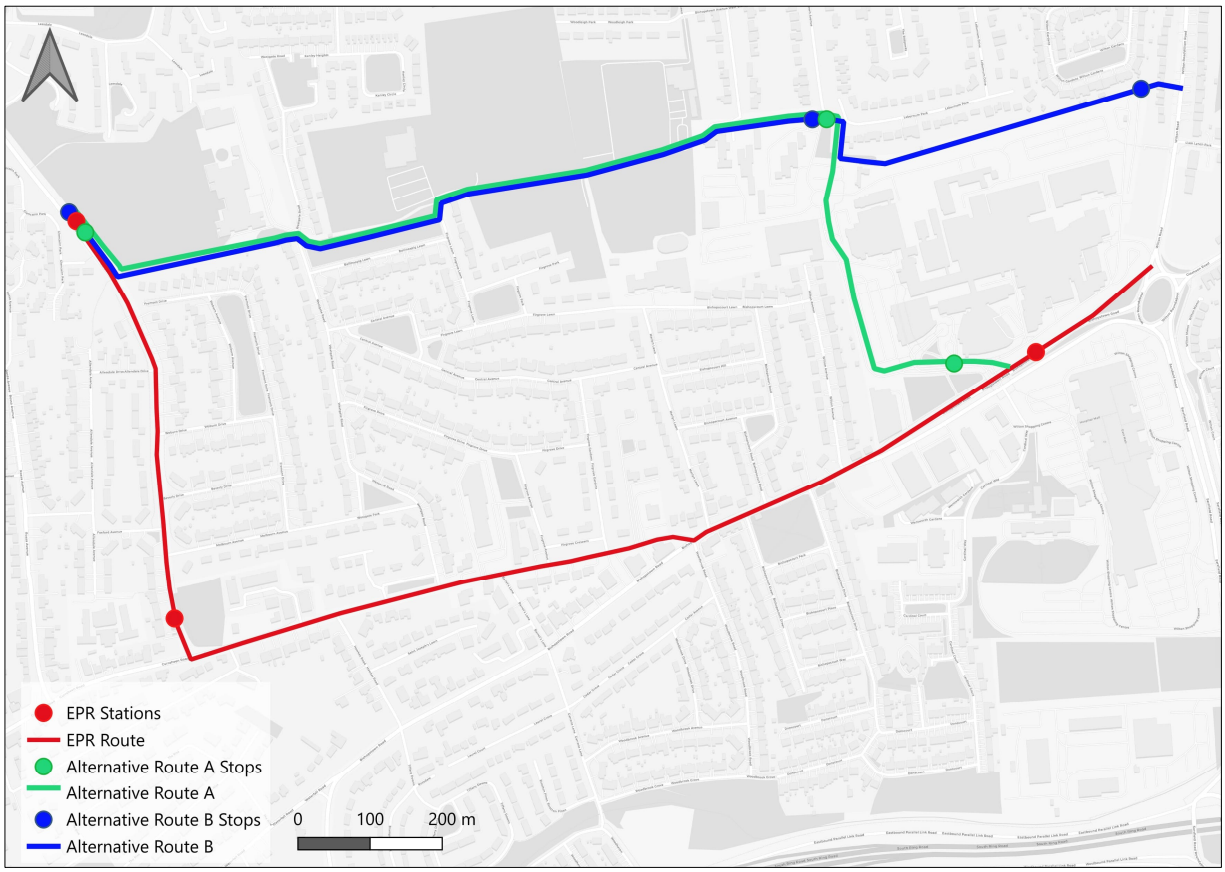

Figure 2-2 CUH EPR and Alternative Route Alignments

2.3.1 Option A (CUH South)

Option A provides an alternative track alignment fully segregated from the road network, enabling full priority for Luas for the section between Munster Technological University (MTU) and Cork University Hospital (CUH). Option A would see the Luas Cork diverging from the EPR at the junction between Melbourn Road and the access road to the Bishopstown Community School, continuing along an alignment south of the school, across lands immediately south of Bishopstown GAA, Highfield Rugby club and Woodleigh Park and connecting to Bishopstown Avenue at the Bishopstown Avenue/Laburnum Park junction. Here the alternative route runs south along Bishopstown Avenue and the western ring road of the hospital campus. The alignment is fully segregated from other traffic. Melbourn station would be re-located slightly north, Curraheen station would be replaced by a station at Bishopstown Avenue, and Wilton station would be replaced by a station directly south of the CUH.

2.3.2 Option B (CUH North)

Similar to Option A, Option B also provides an alternative track alignment fully segregated from the road network, enabling full priority for Luas for the section between Munster Technological University (MTU) and Cork University Hospital (CUH). **Option B would see the Luas Cork diverging from the EPR at the junction between the Melbourn Road and the access road to the Bishopstown Community School, continuing along an alignment south of the school, across lands immediately south of Bishopstown GAA, Highfield Rugby club and Woodleigh Park and connecting to Bishopstown Avenue at the Bishopstown Avenue/Laburnum Park junction. Here the alternative route stays to the north side of the hospital campus past the helipad, connecting to Wilton Road through a new signalised junction. Melbourn station would be re-located slightly north,**

Curraheen station would be replaced by a station at Bishopstown Avenue, and Wilton station would be replaced by a station directly south of the CUH.

2.4 Assessment Area 3: Churchyard Lane / Passage to Blackrock Greenway

There was one option in the Churchyard Lane area assessed against corresponding sections of the EPR – the Passage to Blackrock Greenway. This option was assessed during the option selection for the EPR but warranted further assessment following NSPC feedback as an alternative to the EPR alignment through Churchyard Lane and Skehard Road. **Figure 2-3** below shows Passage to Blackrock Greenway (green line) against the EPR (red line) on Churchyard Lane / Skehard Road.

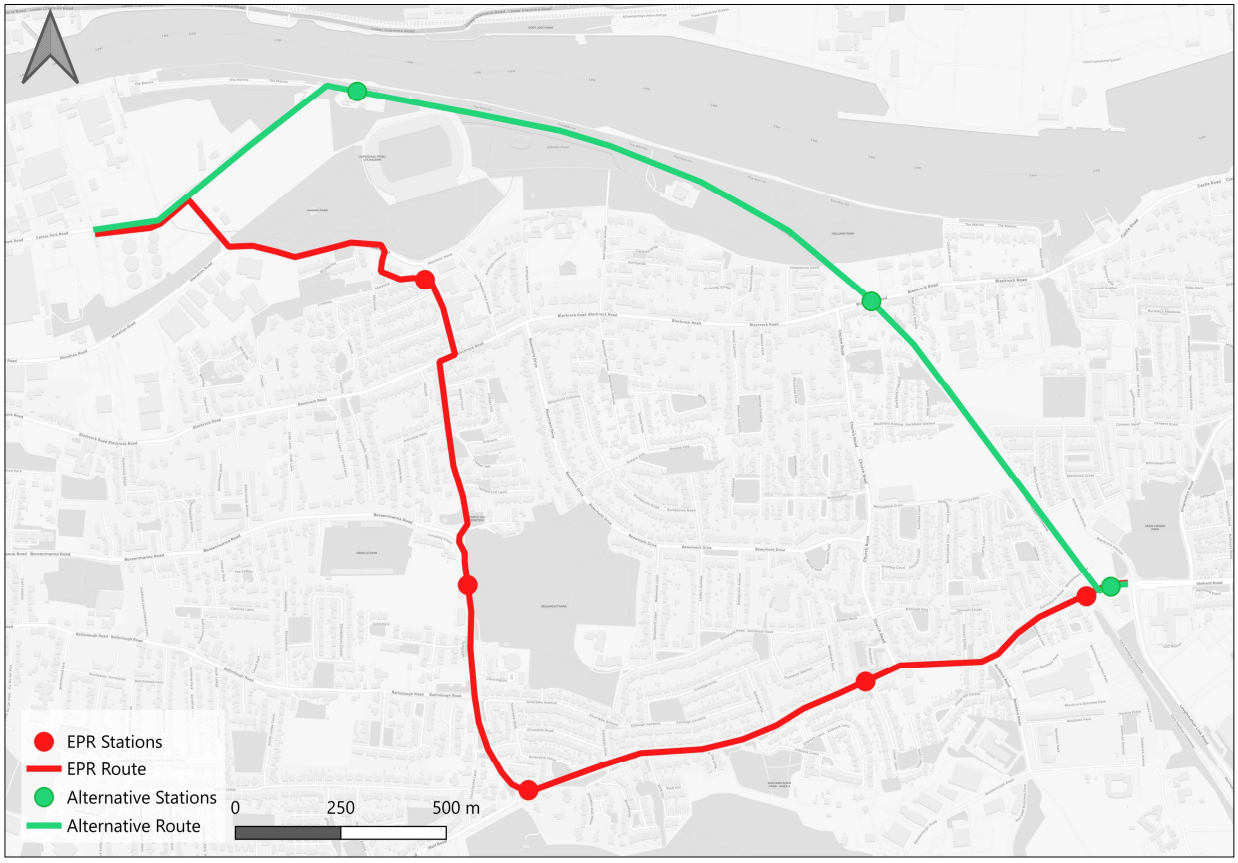

Figure 2-3 City East EPR and Alternative Route Alignments

The Cork City East area comparatively assesses an alternative to the EPR along Churchyard Lane to Skehard Road by reassessing the alignment along the Passage to Blackrock Greenway. The alternative route utilises the active travel greenway between Páirc Uí Chaoimh and Skehard Road, rejoining the EPR at Skehard Road. The route is fully segregated from other traffic between Marquee Road and Skehard Road. The alignment would propose a two way, single-track with one passing loop, with three stops (compared to five for the EPR).

The proposed EPR stops at Ballintemple, Churchyard, Well Road, and Woodvale Road would be replaced with stops at the Marina, Blackrock, Greenway, and with Skehard Road station located slightly further to the east

2.5 Assessment Area 4: Mahon Road

There were two options (A and B) in the Mahon Road / Skehard Rd / Bessboro Road area assessed against corresponding sections of the EPR. These options were developed based on a combination of NSPC feedback, whilst also seeking to operationally enhance the Luas and how it sits within and interacts with its receiving environment. **Figure 2-4** below shows Option A (green line) and Option B (blue line) against the EPR (red line) to Mahon Point.

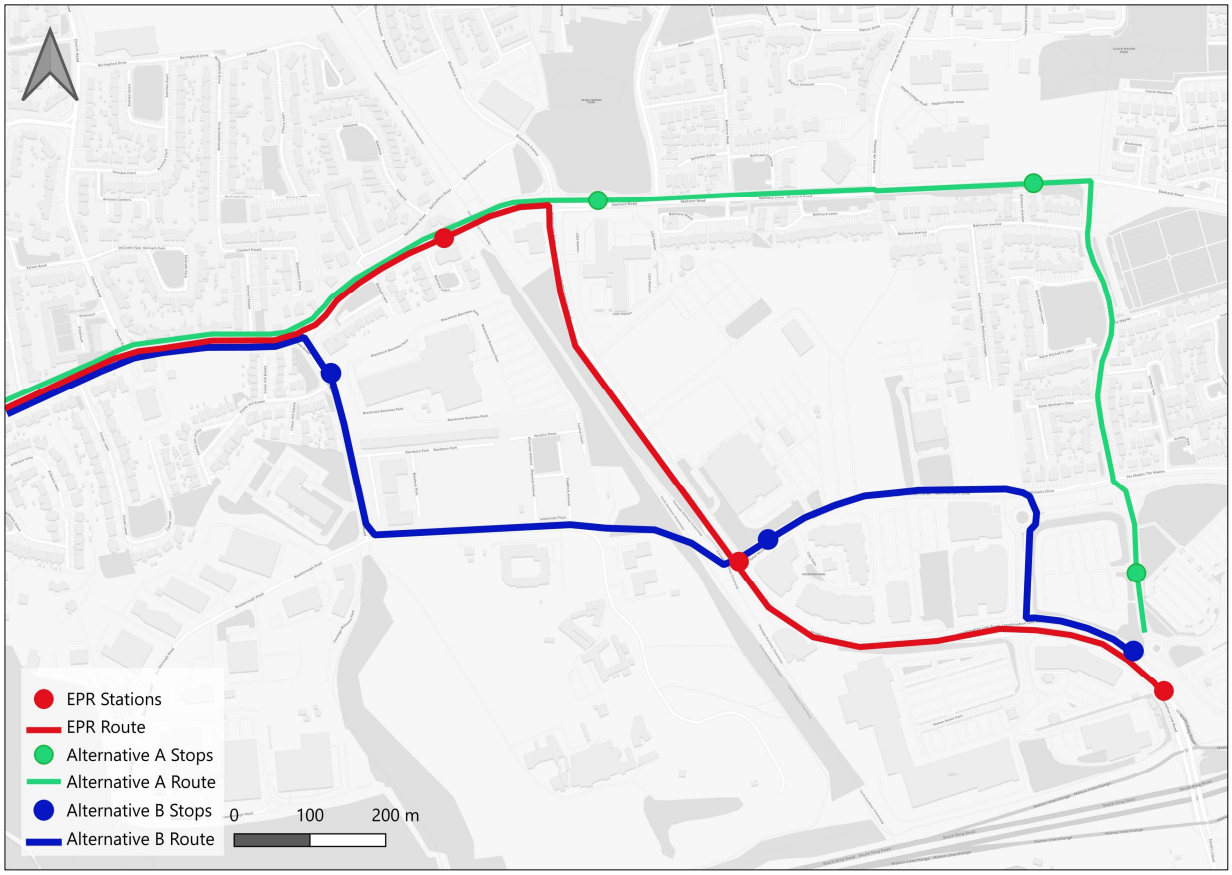

Figure 2-4 Mahon Point EPR and Alternative Route Alignments

2.5.1 Option A (Skehard Road)

Option A runs segregated from other traffic along Skehard Road up to the Skehard Road/Ballinure Avenue junction. Here the alignment runs south along Ballinure Avenue down to the southern end of St. Michael's Cemetery with the southbound track sharing a lane with general traffic, while the northbound track runs separate from traffic in its own lane. The route then continues down the residential area of The Maples, with both the southbound and the northbound track sharing lanes with general traffic. The alternative route then crosses Estuary Drive and the roundabout at City Gate, before running its last 200m segregated to its terminus.

The proposed stop at Skehard Road would be retained. The EPR station at the Tech Park would be replaced with a stop located further east along Skehard Road at Ballinure Avenue, with the Mahon Point Shopping centre stop situated marginally north, rather than west.

2.5.2 Option B (Bessboro Road)

Option B runs segregated from other traffic along Skehard Road up to the Skehard Road/Bessboro Road junction. Here the alignment runs south along Bessboro Road past the Blackrock Business Park and Birch Lane, before going into a section of 200m of sharing with general traffic. A new bridge structure would then span the Passage to Blackrock Greenway to allow the Luas to progress to Estuary Drive via a signalised junction. The route then continues segregated along Estuary Drive to the roundabout at City Gate, before running its last 200m segregated to its terminus.

The proposed stop at Skehard Road would be replaced via a new stop at Blackrock Business Park. The EPR stop at the Tech Park would be replaced with a stop located at Estuary Drive, with the Mahon Shopping centre stop situated marginally north, rather than west.

2.6 Other Considerations

This report documents areas which, due to their more extensive extents and nature were subject to Multi Criteria Analysis (MCA).

Other areas, of a more local nature were also subject to review – these reviews did not necessarily require MCA for the following reasons:

- Already documented in the initial MCA process for the EPR; or
- Changes represented minor local design improvements and will be investigated further at subsequent design phases.

This included a series of multi-disciplinary design reviews of the full EPR concept design, undertaken following a review of the feedback from the NSPC. These design reviews and considerations, included the following:

- Stops at Victoria Cross and Centre Park Road
    - Demand sensitivity analysis indicated that there is merit to the project in adding new stops at these locations. These have been added to the Preferred Route design. Furthermore, a relocation of the UCC stop east closer to the main gates was adopted to improve campus accessibility.
- Kent Station Bridge and any viable alternatives, including the viability of using the existing Éamon de Valera and Michael Collins bridges.
    - This review re-examined the assessments carried out as part of the EPR identification and considered whether it was feasible to re-route the Luas alignment on one of the existing bridges as opposed to a new bridge at Kent Station. In addition to a review of Cork City's Development Plan and the Cork Docklands Masterplan, the review included operational considerations and transport planning, amongst others. Kent Station Bridge is viewed by both, as being necessary and positive for the city, in terms of connectivity and accessibility. It will provide a critical north-south linkage, creating enhanced north-south connectivity within Cork Docklands and will enable Kent Station as a multi-modal public transport hub. In this regard the review concluded acceptance of the EPR assessment and report findings. The proposed bridge was first adopted as a Cork City Council strategic planning policy in 2008, and was subsequently included in the 2009, 2015 and 2022 City Development Plans. The location of Kent Station Bridge in the recently adopted policy updates for Cork Docklands (July 2025) has regard to the Emerging Preferred Route for Luas Cork.
    - TII recognises the importance and sensitivity of the proposed bridge location and seeks to ensure the future bridge design will be of an exemplar design quality and will examine all feasible ways to support river use and activity. The outputs of Cork City Council's River Lee Use Study will be a key input into the design process and TII will continue to engage with concerned stakeholders.
- Review of the use of the Quays and the associated network relationship with MacCurtain Street.
    - This entailed revisiting pre-EPR MCA options, examining the engineering viability and transport and planning case for Luas running along the quays, aligning with Cork City Council's strategic objectives for the city and examining constraints and opportunities of the EPR route. Luas operating along the quays would displace arterial traffic resulting in higher congestion both north and south of the river. In order to align with Kent Bridge, the Kent Station stop would have to move further west, which would make it less accessible and less integrated with proposed multi-modal interchange at the station. In this regard, the review concluded acceptance of the EPR assessment and report findings.
- Consideration of options within the Docklands, to minimise or avoid impacts between Kennedy Quay and Centre Park Road;
    - Comprised of a re-examination of discounted pre-EPR options, an interrogation of local engineering and route options, an examination of the wider strategic proposals for the Cork Docklands area and for Kent Station. The review concluded acceptance of the EPR assessment and report findings. It should be noted that the concept design for the PR is subject to further

preliminary design and detailed design at the next phases of the project. Therefore, it is essential that engagement with stakeholders continue as part of the next phase of the project.

- Gradient and road issues at the light rail stop at Pairc Ui Chaoimh
    - The proposed repositioning of the light rail stops at Pairc Ui Chaoimh and the proposed additional land take at Maryville arose from further consideration of gradient and road issues, the requirement for operational flexibility to enable expanded service options and the consideration of crowd management, permeability and access issues. This will result in increased land-take on adjacent sites and will require ongoing engagement with stakeholders and landowners.
- Review of alternatives to Churchyard Lane / Maryville.
    - Consideration was given to possible alternative north/south links to connect Beaumont/Ballinlough to Páirc Uí Chaoimh and the Cork Docklands, such as Beaumont Drive, potential cut-throughs at mid-point of Boreenmanna Road to Docklands, as well as a Boreenmanna Rd / N27 route. This entailed revisiting and consideration of pre-EPR MCA options, which were discounted on the grounds that constraints were equal to or greater than the EPR. The review concluded acceptance of the EPR assessment and report findings.
- Various road configurations, stop configurations and traffic management considerations across the route.
    - Proposed smaller changes arose from the objective of improving Luas operations and reliability, reducing impact where possible and in consideration of ongoing alignment with the Bus Connects Cork scheme.

3. Methodology and Scoring Criteria

3.1 Assessment Methodology of options

The purpose of this report is to determine the PR following MCA assessment of the four assessment areas identified through feedback from the NSPC. Localised options were developed for corresponding sections of the EPR within the assessment areas to determine if they present an opportunity to bring further benefits and optimise the EPR. The options for the four assessment areas of the EPR were assessed by applying an MCA approach in line with the Transport Appraisal Framework (TAF) guidance.

The four assessment areas were as follows:

1. Ballincollig Single Track Loop (Options A and B)
2. Melbourn Road/ Curraheen Road (Options A and B)
3. Churchyard Lane (Passage to Blackrock Greenway Option)
4. Mahon (Options A and B)

The comparative assessment of the different route options utilises a five-point scale, to compare the localised alternative options against the EPR across six primary TAF Criteria:

1) Transport User Benefits & Other Economic Impacts.
2) Accessibility Impacts.
3) Social Impacts.
4) Land Use Impacts.
5) Safety Impacts.
6) Local Environmental Impacts.

Climate change impacts were not considered for this assessment as the variation in route options was deemed to be of a scale too minor to have a significant impact. The criteria considered under each of the categories are outlined in **Table 3-1** below.

Table 3-1 MCA Criteria

Number	TAF Criteria	Sub-Criteria
1	**Transport User Benefits and Other Economic Impacts**	Travel Time
		Demand
		Benefits
		Costs
		Reliability
		Resilience
2	**Accessibility Impacts**	Population Catchment
		Access to Key Services
		Access to Recreational Facilities
		Access to Jobs
3	**Social Impacts**	Deprivation
4	**Land Use Impacts**	Change in Quality of Public Realm

Number	TAF Criteria	Sub-Criteria
		Existing Transport Network & Service Impact
5	**Safety Impacts**	Collisions & Related Impacts
		Other Safety Impacts
6	**Local Environmental Impacts**	Air Quality
		Noise and Vibration
		Biodiversity
		Water Resources & Soil Quality
		Landscape and Visual
		Cultural Heritage
		Material Assets (Cork City East MCA only)

Table 3-2 to Table 3-7 below outlines how each of the criteria above were assessed. Each criterion was assessed through an indicator and related bandings. Based on this indicator, a scoring was assigned accordingly.

Table 3-2 Assessment of Transport User Benefits and other Economic Impacts Criteria Used in the MCA

MCA Criteria – Transport User Benefits and Other Economic Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
Travel Time	Journey time based on extractions from Southwest Regional Model (SWRM) runs.	**Significant disadvantages:** >+90 seconds **Some disadvantages:** +30 to +89 seconds **Comparable to the EPR:** 0 to + or -29 seconds **Some advantages:** -30 to -89 seconds **Significant advantages:** >-90 seconds
Demand	Total demand for public transport (including Luas, rail and bus), expressed as total Public Transport boardings in a 24-hour period.	**Significant disadvantages:** >-5% **Some disadvantages:** -2.5 to -4.99% **Comparable to the EPR** 0 to + or -2.49% **Some advantages:** +2.5 to +5% **Significant advantages:** >+5%
Benefits	Benefits based on the aggregated (monetised) benefits of the route options for transport users, as well as the wider impact on the public finances.	**Significant disadvantages:** >-€100m **Some disadvantages:** -€50m to -€99m **Comparable to the EPR:** €0 to + or -€49m **Some advantages:** +€50m to €99m **Significant advantages:** >€100m
Costs	Capital Cost Comparison of costs for the construction of the Luas Cork infrastructure, based on the length of track and the number of stops.	**Significant disadvantages:** >+€100m **Some disadvantages:** +€50 to +€99m **Comparable to the EPR:** €0 to + or -€49m **Some advantages:** -€50 to -€99m **Significant advantages:** >-€100m
Reliability	Reliability of journey times based on the level of interaction with other traffic, which is assessed through the level of segregation of the route. Routes are assessed on the proportion of the route running, on-street mixed with traffic, on-street but segregated from traffic, or fully off-street. Routes with a higher proportion of their route running segregated score higher, as running times are considered to be more reliable. Routes with a higher proportion of the route running on street mixed with traffic score lower.	**Significant disadvantages:** Higher likelihood of irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR. **Some disadvantages:** Some likelihood of greater irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR. **Comparable:** Similar levels of reliability compared to EPR. **Some advantages:** Some likelihood of enhanced reliability for timetabling due to levels of Luas priority and potential for delays compared to EPR. **Significant advantages:** Higher likelihood of regular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR.
Resilience	Ability and headway of proposed alignment to meet varying levels of Luas	**Significant disadvantages:** No capacity to respond to network shocks compared to EPR.

MCA Criteria – Transport User Benefits and Other Economic Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
	demand from the transport network at peak times and recover from disruption / network shocks and stresses.	**Some disadvantages:** Minimal capacity to respond to network shocks and stresses. Option presents a reduced level of operational flexibility compared to the EPR. **Comparable:** Similar levels of resilience compared to EPR. **Some advantages:** Some capacity to respond to network shocks. Option presents an enhanced level of operational flexibility compared to the EPR. **Significant advantages:** High capacity to respond to network shocks and stresses compared to EPR, without degrading the service.

Table 3-3 Assessment of Accessibility Impacts Criteria Used in the MCA

MCA Criteria – Accessibility Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
Population Catchment	Population catchment within a 800m walking distance of stop locations on route.	**Significant disadvantages:** >-1000 **Some disadvantages**: -250 to -999 **Comparable** to the EPR 0 to + or -249 **Some advantages**: +250 to +999 **Significant advantages**: >+1000
Access to Key Services	The number of retail, healthcare, education, and public services in a catchment area of 500m around the route. Routes with higher numbers of services within the catchment area score higher.	**Significant disadvantages:** >10 decrease in number of total services across the option compared to EPR **Some disadvantages**: 3 to 10 decrease in number of total services across the option compared to EPR **Comparable** Similar number of total services across the option compared to EPR (+ or – 2) **Some advantages:** +3 to +10 increase in number of total services across the option compared to EPR **Significant advantages:** >10 increase in number of total services across the option compared to EPR
Access to Recreational Facilities	The number of parks, playgrounds, and sports facilities in a catchment area of 500m around the route. Routes with a higher number of recreational facilities in the catchment area score higher.	**Significant disadvantages:** >10 decrease in number of total services across the option compared to EPR **Some disadvantages:** 3-10 decrease in number of total services across the option compared to EPR **Comparable:** Similar number of total services across the option compared to EPR (+ or – 2) **Some advantages:** 3-10 increase in number of total services across the option compared to EPR **Significant advantages:** >10 increase in number of total services across the option compared to EPR
Access to Jobs	The number of jobs in a catchment area of 800m around the proposed stops on the route. Routes with a	**Significant disadvantages:** >-1000 **Some disadvantages**: -250 to -999

MCA Criteria – Accessibility Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
	higher number of jobs within the catchment area score higher.	**Comparable:** 0 to + or -249 to the EPR **Some advantages:** +250 to +999 **Significant advantages:** >+1000

Table 3-4 Assessment of Social Impacts Criteria Used in the MCA

MCA Criteria – Social Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
Deprivation	The number of deprived areas within a 500m catchment around the proposed stops on the route. Whether or not areas are considered deprived, is determined using the 2022 POBAL Deprivation Index.	**Significant disadvantages:** <-5 number of deprived areas **Some disadvantages:** -2 to -5 number of deprived areas **Comparable** 0 to + or -1 in number of derived areas compared to EPR **Some advantages:** +2 to +5 number of deprived areas **Significant advantages:** >+5 number of deprived areas

Table 3-5 Assessment of Land Use Impacts Criteria Used in the MCA

MCA Criteria – Land Use Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
Change in Quality of Public Realm	The extent to which different route options can be accommodated in the existing public realm without negatively impacting it. Additionally, opportunities for public realm approvement in areas with significant footfall are taken into consideration.	**Significant disadvantages:** Significant adverse effects compared to EPR e.g. permanent loss or diminishment of pedestrian / community space **Some disadvantages**: More constrained public realm potential compared to EPR **Comparable:** Similar public realm potential compared to EPR **Some advantages:** Delivers some benefits to the streetscape compared to EPR **Significant advantages:** Enables transformation public realm enhancement and improved streetscape compared to the EPR
Existing Transport Network & Service Impact	The impact of the route options on the existing transport network, assessed based on the level of segregation of the route. Higher levels of segregation reduce impact on the rest of the transport network, resulting in a higher score. Reductions of the capacity of the existing transport network in order to accommodate Luas Cork are taken into account where relevant.	**Significant disadvantages**: Significant adverse effects to surrounding network and impact on services, with reduced resilience and poor integration compared to EPR **Some disadvantages:** Some reduced network efficiency and integration compared to EPR **Comparable:** Similar potential compared to EPR **Some advantages:** Delivers some incremental benefits to network efficiency, integration and performance compared to EPR **Significant advantages:** Enables network efficiency, greater modal shift, higher levels of resilience and network balancing / rationalisation compared to the EPR

Table 3-6 Assessment of Safety Impacts Criteria Used in the MCA

MCA Criteria – Safety Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
Collisions & Related Impacts	The likelihood of collisions of the route options, assessed through the level of interaction with other traffic, based on the level of segregation of the route. Higher levels of interaction with other traffic increase the probability of collisions, resulting in a lower score.	**Significant disadvantages:** Significant material increase in collision risk and/or frequency compared to EPR and deterioration in wider network safety **Some disadvantages:** Some new collision risks compared to EPR with other modes and diminishment of active travel interfaces **Comparable**: Similar potential compared to EPR **Some advantages:** provide some improvements in safety compared to EPR with reduced number of network variables from other modes & active travel **Significant advantages:** Enables significant reduction in collision risk compared to the EPR, with significant improved interactions with network variables & active travel
Other Safety Impacts	The likelihood of anti-social behaviour, and challenges of policing along the routes. Routes with more active frontage and social oversight score higher. Routes that are more isolated receive lower scores.	**Significant disadvantages:** Significant adverse effects to passive surveillance and additional required lighting infrastructure, more isolated compared to EPR **Some disadvantages:** Some reduction to passive surveillance and risk of anti-social behaviour compared to EPR **Comparable**: Similar potential compared to EPR **Some advantages:** Delivers some incremental benefits compared to EPR with increased active frontages and visibility **Significant advantages:** Significantly active and overlooked infrastructure compared to EPR

Table 3-7 Assessment of Local Environmental Impacts Criteria Used in the MCA

MCA Criteria – Local Environmental Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
Air Quality	Qualitive assessment. Review of baseline data. Assessment includes the identification of sensitive receptors to pollutants and associated potential impacts in terms of distances, configuration of the proposed scheme, and the mitigation measures implemented.	**Significant disadvantages:** Significant adverse potential effects to air quality and sensitive receptors compared to the EPR. **Some disadvantages**: More potential air quality effects and potential impact to sensitive receptors compared to the EPR. **Comparable**: Similar air quality effects and impacts to sensitive receptors compared to the EPR. **Some advantages:** Delivers some benefits to air quality compared to EPR. **Significant advantages:** Provides improved air quality benefits compared to the EPR.
Noise and Vibration	Qualitive assessment. Review of baseline data. Assessment includes the identification of sensitive noise and vibration receptors and review of the associated impacts in terms of distances and configuration of the proposed option.	**Significant disadvantages:** Potential for significant adverse noise and vibration effects at sensitive receptors compared to the EPR. **Some disadvantages:** Potential disadvantages for noise and vibration effects to sensitive receptors compared to the EPR. **Comparable**: Similar noise and vibration impacts to sensitive effects to receptors compared to the EPR. **Some advantages**: Delivers some advantages for noise and vibration when compared to the EPR.

MCA Criteria – Local Environmental Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
		Significant advantages: Provides improved noise and vibration impacts compared to the EPR.
Biodiversity	Qualitive Assessment. Review of the baseline data. Review options for the potential impact on the type of trees/hedges removal, number of trees lost and their potential ecological value, including potential for bat roots and passerine birds, construction works through green field sites, conservation areas, potential impact to bats and other mammals, high ecological value sites etc. Review of options potential for biodiversity net gain through option of planting of replacement trees or the creation of new habitats where applicable, and other mitigation measures.	**Significant disadvantages:** Significantly more adverse effects on biodiversity receptors compared to EPR. E.g. impact on biodiversity of international importance within or outside a European site where EPR does not, in proximity (within 10m) to a watercourse where EPR is not, significantly more (101 or more) loss of trees of comparable ecological value compared to EPR. **Some disadvantages:** Some adverse effects on biodiversity receptors compared to EPR or the EPR has opportunities to improve the value of local biodiversity. E.g. impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where EPR does not, some (31-100 more) loss of trees of comparable ecological value compared to EPR. Ecologically driven seed mixes, bat boxes, lighting plans, etc, may improve the value of local biodiversity. **Comparable:** The same or negligible difference in effects on biodiversity receptors compared to EPR. E.g. the same impacts to the aforementioned receptors, similar (0-30 more) loss of trees of comparable ecological value compared to EPR, loss of habitats with a similar ecological value, for example loss of amenity grassland compared to loss of roads/footpaths is comparable as the impacts from loss of amenity grassland are negligible to biodiversity **Some advantages:** Fewer adverse effects on biodiversity receptors compared to EPR or option has opportunities to improve the value of local biodiversity where EPR does not. E.g. EPR impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where option does not, EPR has some (31-100 more) loss of trees of comparable ecological value compared to option. Ecologically driven seed mixes, bat boxes, lighting plans, etc, may improve the value of local biodiversity. **Significant advantages:** Significantly fewer adverse effects on biodiversity receptors compared to EPR. E.g. the EPR impacts biodiversity of international importance within or outside a European site where option does not, EPR is in proximity (within 10m) to a watercourse where option is not, EPR has significantly more (101 or more) loss of trees of comparable ecological value compared to option.
Water Resources & Soil Quality	Qualitative assessment. Review of baseline data. Review of potential impacts on hydrogeology and hydrology or water resources e.g. rivers / streams arising from the works and new structures, and mitigation measures and potential flooding impacts in the option. Review of potential impacts arising from land acquisition and ground excavation as well as potential to encounter	**Significant disadvantages:** Significantly more adverse effects on water and soils compared to the EPR. E.g. increased number of watercourse crossings which may require significant in-stream works (i.e. piers), increased interaction with mapped flood risk leading to floodplain loss/displacement. Increased interaction with potential ground contamination and increased disturbance of soils. These effects are likely to require significantly more mitigation compared to the EPR. **Some disadvantages:** A few more adverse effects on water and soil compared to the EPR. E.g. increased number of watercourse crossings but don't require significant in-stream works, increases in interactions with mapped flood risk areas leading to minimal floodplain loss/displacement. Minimal increased interaction with potential ground contamination. These effects are likely to require minimal additional mitigation compared to the EPR.

MCA Criteria – Local Environmental Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
	ground contamination from historical industries, and mitigation measures.	**Comparable**: Similar effects on water and soils compared to the EPR. **Some advantages:** Fewer adverse effects on water and soils compared to EPR. E.g. fewer number of watercourse crossings, slight reductions in interaction with mapped flood risk areas. Slight reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a slight reduction in the required mitigation measures compared to the EPR. **Significant advantages:** Significantly fewer adverse effects on water and soils compared to the EPR. E.g. fewer number of watercourse crossings, significantly reduced interaction with mapped flood risk areas. Reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a significant reduction in the required mitigation measures compared to the EPR.
Landscape and Visual	Qualitative assessment including a baseline review. This criterion considers physical and perceptual changes to the landscape and townscape elements and character, impacts on landscape designations and impacts on visual receptors, visual amenities and protected views.	**Significant disadvantages:** Significantly more adverse effects on landscape and visual receptors compared to EPR e.g. change of landscape / townscape character, loss of mature trees or a significant number of trees (landscape / townscape elements), adverse effect on designated landscapes or views, large number of highly sensitive visual receptors (such as residential receptors) affected. **Some disadvantages:** A few more adverse effects on landscape and visual receptors (see above) compared to EPR. **Comparable:** Similar effects on landscape and visual receptors, on balance, compared to EPR. **Some advantages**: Fewer adverse effects on landscape and visual receptors compared to EPR. **Significant advantages:** Significantly fewer adverse effects on landscape and visual receptors compared to EPR such as minor change of landscape / townscape character, lower number or less mature trees lost, lesser effect on designated landscapes or views, fewer highly sensitive visual receptors (such as residential receptors) affected.
Cultural Heritage	Qualitative assessment including a baseline review data. The review of the potential impacts includes direct loss, impact, disturbance to archaeological remains, buildings (including individual areas), landscapes and parks, protected structures, historic landscapes with cultural and heritage significance, and mitigation measures.	**Significant disadvantages:** Significantly more adverse effects on the cultural heritage resource compared to EPR e.g. full or partial removal of archaeological remains or built heritage assets, adverse alteration of an assets setting, adverse effect on designated assets, such as National Monuments or Protected Structures. **Some disadvantages:** A few more adverse effects on the cultural heritage resource (see above) compared to EPR but no impacts on designated assets. **Comparable**: Similar effects on the cultural heritage resource, on balance, compared to EPR. **Some advantages:** Fewer adverse effects on the cultural heritage assets compared to EPR. **Significant advantages:** Significantly fewer adverse effects on the cultural heritage resource compared to EPR such as a lower

MCA Criteria – Local Environmental Impacts		
Sub-Criteria	**Indicator**	**Indicator Banding**
		number of archaeological remains that would be removed or no/less effects on designated assets compared to the EPR.
Material Assets (non-transport related)	The scoring is primarily determined by the potential for service interruptions during the construction phase and the required upgrades for the operational phase	**Significant disadvantages**: Major, long-term disruption of a critical utility (e.g. a trunk foul or water main, high-voltage power lines, gas line) due to complex design interactions and / or major diversion works compared to the EPR **Some disadvantages:** Additional minor or short-term disruption to local utilities (e.g., small bore water mains, telecomms) during enabling or main works compared to the EPR **Comparable:** Comparable level of disruption or diversions required **Some advantages:** Minor necessary upgrades to local surface water drainage are included as part of the scheme, improving existing conditions compared to EPR **Significant advantages**: Minimal to minor upgrades along the corridor, that provide long-term benefits and increased capacity for the area when compared to the EPR

3.2 Scoring Criteria

The alternative options were scored comparatively against the relevant section of the EPR.

The options were scored on a comparative five-point scale. For illustrative purposes, this five-point scale is colour coded as presented below in **Table 3-8**, with the scoring system showing significant advantages over the other options graded "dark green", significant disadvantages over the other options graded "red", orange and light green being adopted for "some" advantages/disadvantages between the options, and "yellow" being used for when all options deliver comparable results.

Table 3-8 Comparative MCA Scoring System

Description	Colour
Significant disadvantages over other options	
Some disadvantages over other options	
Comparable to other options	
Some advantages over other options	
Significant advantages over other options	

4. Ballincollig Multi-Criteria Analysis (Assessment Area 1)

4.1 Introduction

The MCA results for the assessment (in line with TAF), of Options A and B for Area 1 (Ballincollig) are set out in the chapter below. Both the alignment of the localised alternative routes and the corresponding section of the EPR are shown below in **Figure 4-1** below.

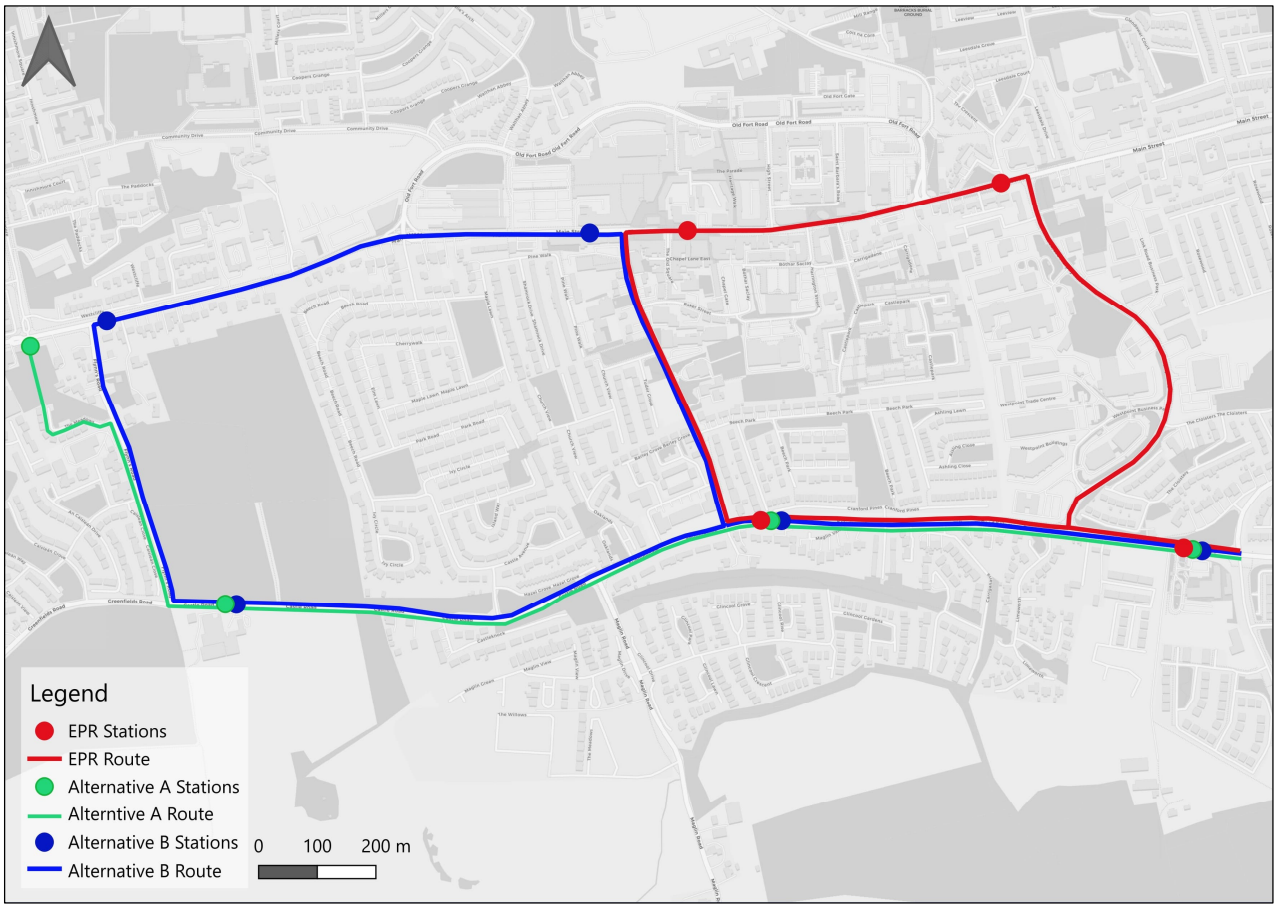

Figure 4-1 Ballincollig EPR and Alternative Route Alignments

4.2 Ballincollig: Transport User Benefits & Other Economic Impacts

Table 4-1 to Table 4-6 shows the 'Transport User Benefits & Other Economic Impacts' MCA outcomes for Area 1 (Ballincollig).

4.2.1 Travel Time

Table 4-1 Ballincollig Transport User Benefits & Other Economic Impacts Assessment (compared to EPR) – Travel Time

Transport User Benefits & Other Economic Impacts				
MCA Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Travel Time	Journey time based on extractions from SWRM runs	**Significant disadvantages:** >+90 seconds **Some disadvantages** +30 to +89 seconds **Comparable to the EPR** 0 to + or -29 seconds **Some advantages:** -30 to -89 seconds **Significant advantages:** >-90 seconds	• Eastbound 2.00 minutes longer than EPR. • Westbound 2.00 minutes longer than EPR. `	• Eastbound 2.30 minutes longer than EPR. • Westbound 2.06 minutes longer than EPR.

Both Option A (Double Track) and Option B (Extended Loop) result in longer journey times when compared with the EPR, primarily due to differences in start and end points and the further-west alignment. Option A shows an eastbound and westbound increase of approximately 2 minutes, while option B performs slightly longer, with increases of around 2.30 minutes eastbound and 2.06 minutes westbound. Although both options present significant travel-time disadvantages overall, their performance becomes more comparable to the EPR when assessed from a common stopping point at Sunningdale.

4.2.2 Demand

Table 4-2 Ballincollig Transport User Benefits & Other Economic Impacts Assessment (compared to EPR) – Demand

Transport User Benefits & Other Economic Impacts				
MCA Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Demand	24 Hour Public Transport Boardings	**Significant disadvantages:** >-5% **Some disadvantages:** -2.5 to -4.99% **Comparable to the EPR** 0 to + or -2.49% **Some advantages:** +2.5 to +5% **Significant advantages:** >+5%	24-hour boardings by mode (2035): • Luas – 52,579 • Irish Rail – 23,844 • Urban & Other Buses – 81,124 **Total – 157,547** **Percentage Difference to EPR = -0.028%**	24-hour boardings by mode for 2035: • Luas – 52,747 • Irish Rail – 23,883 • Urban & Other Buses – 81,074 **Total – 157,705** **Percentage Difference to EPR = +0.072%**

The projected demand for public transport in 2035 (Opening year) remains broadly consistent across the EPR and the two alternative routes, with the total 24-hour boardings ranging from 157,547-157,705. Alternative Route A records just 44 fewer boardings than the EPR, while the Alternative Route B shows 114 additional boardings- differences that are negligible at this scale. Both alternatives generate slightly higher Luas demand due to their alignments extending further west into Ballincollig, but this largely represents passengers shifting from bus services. Across all cases, demand is shared between roughly 52-53k Luas trips, about 24k Dart and Irish Rail trips and around 81K Urban and Other bus trips. The EPR results show similarly stable totals, indicating only marginal variations in overall public transport demand regardless of scenario.

4.2.3 Benefits

Table 4-3 Ballincollig Transport User Benefits & Other Economic Impacts Assessment (compared to EPR) – Benefits

Transport User Benefits & Other Economic Impacts				
MCA Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Benefits	Economic benefits for each alignment option calculated using TUBA over 60-year appraisal period	**Significant disadvantages:** >-€100m **Some disadvantages:** -€50m to -€99m **Comparable to the EPR** €0 to + or -€49m **Some advantages:** +€50m to €99m **Significant advantages:** >€100m	+€52m benefits compared to EPR	+€57m benefits compared to EPR.

Analysis of monetised benefits indicates that both Option A and Option B perform with some advantages compared to the EPR, with Option B (+€57m compared to the EPR) performing slightly better than Option A (+€52m compared to the EPR).

4.2.4 Costs

Table 4-4 Ballincollig Transport User Benefits & Other Economic Impacts Assessment (compared to EPR) – Costs

Transport User Benefits & Other Economic Impacts				
MCA Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Costs	Capital Cost Comparison of costs for the construction of the LRT infrastructure, as well as the operational costs of the Luas Cork on the route. Costs are based on level of design relative for phase 2 of the project. Includes allowances for LRT infrastructure, land take, utilities, structures, rolling stock (including replacement). The contingency percentage applied to the estimated costs is 59% in accordance with the NTA Contingency Calculator	**Significant disadvantages:** >+€100m **Some disadvantages:** +€50 to +€99m **Comparable to the EPR** €0 to + or -€49m **Some advantages:** -€50 to -€99m **Significant advantages**: >-€100m	€1,909m (-€15m vs EPR)	€1,976 (+€52m vs EPR)

As outlined in Table 4-4above, Option A is comparable on cost to the EPR, with a delta of -€15m (€1,924m for EPR vs €1,909m for Option A). Despite extending further West, there is less track length with Option A, as it replaces the single-track loop with the double track remaining to the south of Ballincollig town centre. Option B has some disadvantages compared to the EPR with higher costs of +€52m (€1,924m for EPR vs €1,976m for Option B) and, whilst also extending further west of Ballincollig, it presents a larger single-track loop compared to the EPR.

4.2.5 Reliability

Table 4-5 Ballincollig Transport User Benefits & Other Economic Impacts Assessment (compared to EPR) – Reliability

Transport User Benefits & Other Economic Impacts				
MCA Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Reliability	Extent of shared running, priority track and consistency in journey times. Routes are assessed on the proportion of the route running a) on-street mixed with traffic, b) on-street but segregated from traffic or c) off-street. Routes with a higher proportion of their route running segregated score higher, as running times are considered to be more reliable. Routes with a higher proportion of the route running on street mixed with traffic score lower.	**Significant disadvantages:** Higher likelihood of irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR **Some disadvantages:** Some likelihood of greater irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR **Comparable:** Similar levels of reliability compared to EPR **Some advantages:** Some likelihood of enhanced reliability for timetabling due to levels of Luas priority and potential for delays compared to EPR **Significant advantages:** Higher likelihood of regular reliable timetabling due		

Transport User Benefits & Other Economic Impacts				
MCA Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
		to levels of Luas priority and potential for delays compared to EPR		

Option A performs better than the EPR, with 97% of the alignment operating on segregated track, compared with 68% for the EPR. Only a small proportion of Option A involves shared running with traffic or other public transport, its exposure to delays is minimal, resulting in a more reliable and consistent service.

Option B provides comparable reliability to the EPR, with broadly similar levels of segregation across its alignment. While both the EPR and Option B include notable sections of shared running, mixing with either general traffic or other public transport, these impacts are balanced by substantial lengths of segregated track. As a result, overall reliability performance for Option B aligns closely with the EPR.

4.2.6 Resilience

Table 4-6 Ballincollig Transport User Benefits & Other Economic Impacts Assessment (compared to EPR) – Resilience

Transport User Benefits & Other Economic Impacts				
MCA Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Resilience	Ability and headway of proposed alignment to absorb varying levels of Luas demand from the transport network at peak times and recover from disruption / network shocks and stresses	**Significant disadvantages:** No capacity to respond to network shocks compared to EPR **Some disadvantages:** Minimal capacity to respond to network shocks and stresses. Option presents		

Transport User Benefits & Other Economic Impacts				
MCA Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
		a reduced level of operational flexibility compared to the EPR **Comparable:** Similar levels of resilience compared to EPR **Some advantages:** Some capa city to respond to network shocks. Option presents an enhanced level of operational flexibility compared to the EPR **Significant advantages:** High capacity to respond to network shocks and stresses compared to EPR, without degrading the service		

Alternative Route A demonstrates stronger resilience than the EPR, by operating along an alignment that avoids the higher-density town centre, it is less exposed to disruption from other modes and reduces the likelihood of cascading delays. The fully segregated double-track also enhances operational flexibility, enabling more efficient service recovery and reducing vulnerability compared with the EPR's single-track loops.

Alternative Route B offers comparable resilience to the EPR reflecting similar use of a single-track loop and comparable infrastructure configuration. While is broadly matches the EPR in terms of operational robustness, its diversion towards Ballincollig town centre introduces some constraints along Main Road and Station Road, where higher interaction with local traffic and public realm activity may increase exposure to localised disruption.

4.3 Ballincollig: Accessibility Impacts

Table 4-7 to Table 4-10 shows the 'Accessibility Impacts' MCA outcome for Area 1 (Ballincollig).

4.3.1 Population Catchment

Table 4-7 Ballincollig Accessibility Impacts Assessment (compared to EPR) – Population Catchment

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Population Catchment	Population catchment within a 800m walking distance of stop locations on route based on 2035 forecast Where the stop locations are within a close proximity together, they will overlap on their catchment. The extent of this overlap has been factored into (and excluded) from the comparison and the final numbers.	**Significant disadvantages**: >-1000 **Some disadvantages:** -250 to -999 **Comparable to the EPR** 0 to + or -249 **Some advantages:** +250 to +999 **Significant advantages**: >+1000	• Carriganarra – 623 • Sunningdale – 1,670 • Castle Road – 2,566 • Flynn's Road – 3,171 **Total = 8,030** **Total (excluding overlap) = 3,779** **Difference to EPR = -5,236**	• Carriganarra – 2,377 • Sunningdale – 4,094 • Ballincollig – 3,326 • Castle Road – 2,082 • Flynn's Road – 3,285 **Total = 15,165** **Total (excluding overlap) = 10,055** **Difference to EPR = +1,048**

Assessment of the population catchment within a 800m catchment of stops shows notable variation between the two localised alternative routes and the EPR. Option A has significant disadvantages compared to the EPR serving an estimated 3,779 residents, which is 5,236 fewer than the EPR total of 9,015. This reduction is primarily due to its location further south, away from the density of main street in Ballincollig, although Option A maintains strong coverage in areas such as Sunningdale and Castle Road.

In contrast, Option B has significant advantages compared to the EPR and provides the strongest catchment performance, with 10,055 population catchments, an increase of 1,048 compared with the EPR. This uplift is driven by the extra coverage in Ballincollig and Flynn's Road, while also maintaining equivalent catchment in Carriganarra and Sunningdale.

4.3.2 Access to Key Services

Table 4-8 Ballincollig Accessibility Impacts Assessment (compared to EPR) – Access to Key Services

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Access to Key services	Evaluates the number of retail, healthcare, education, and public services in a radial catchment area of 500m around the stops along the route. Routes with higher numbers of services within the catchment area score higher.	**Significant disadvantages**: >10 decrease in number of total services across the option compared to EPR **Some disadvantages:** 3 to 10 decrease in number of total services across the option compared to EPR **Comparable** Similar number of total services across the option compared to EPR (+ or – 2) **Some advantages: +**3 to +10 increase in number of total services across the option compared to EPR **Significant advantages**: >10 increase in number	• Supermarkets = 11 • Post Offices = 1 • Pharmacies = 4 • Clothes Shops = 11 • Schools = 10 • Banks = 3 **Total = 40** Difference = -12 (to EPR)	• Supermarkets = 15 • Post Offices = 1 • Pharmacies = 6 • Clothes Shops =17 • Schools = 11 • Banks = 4 **Total = 54** Difference = +2 (to EPR)

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
		of total services across the option compared to EPR		

Access to key services is assessed based on the number of services located within a radial catchment of 500m of stops along each route. When comparing access to these services, Option A performs with significant disadvantages compared to the EPR, primarily because the alignment results in fewer nearby amenities across multiple categories due to the rural location of the alignment. Option B is comparable to the EPR, and in fact slightly exceeds the EPR, scoring 54 compared with the EPR total of 52. Although Alternative B has marginally fewer clothes shops than the EPR (17 compared with 19), it matches or exceeds the EPR in most other categories, including supermarkets, schools, and banks.

4.3.3 Access to Recreational Facilities

Table 4-9 Ballincollig Accessibility Impacts Assessment (compared to EPR) – Recreational Facilities

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Access to recreational facilities	Quantifies the number of green spaces, community centres and sports facilities in a radial catchment area of 500m around the stops along the route. Routes with a higher number of recreational facilities in the catchment area score higher.	**Significant disadvantages**: >10 decrease in number of total services across the option compared to EPR **Some disadvantages:** 3-10 decrease in number of total services across the option compared to EPR **Comparable** Similar number of total services across the option compared to EPR (+ or – 2)	• Green Spaces = 9 • Community Centres = 1 • Sports/Fitness Centre = 8 • Pitches = 6	• Green Spaces = 10 • Community Centres = 1 • Sports/Fitness Centre = 12 • Pitches = 9

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
		Some advantages: 3-10 increase in number of total services across the option compared to EPR **Significant advantages**: >10 increase in number of total services across the option compared to EPR	**Total = 24** Difference = -9 (to EPR)	**Total = 32** **Difference = -1 (to EPR)**

Access to recreational facilities is assessed based on the number of services located within a radial catchment of 500m of stops along each route. Option A has some disadvantages compared to the EPR, with a total of 24 facilities, nine fewer than the EPR benchmark. This shortfall is consistent across the recreational facilities, including green spaces, sports/fitness centres, and pitches. Option B performs comparable to the EPR, achieving a total of 32 facilities, placing it only one point below the EPR total of 33. Overall, Option B delivers a near-equivalent level of access to recreational facilities when compared with the EPR, whereas Option A exhibits a gap in recreational provision along the route.

4.3.4 Access to Jobs

Table 4-10 Ballincollig Accessibility Impacts Assessment (compared to EPR) – Access to Jobs

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Access to jobs	Quantifies the number of jobs in a catchment area of 800m around the proposed stops on the route. Routes with a higher number of jobs within the	**Significant disadvantages**: >-1000 **Some disadvantages:** -250 to -999	• Carriganarra = 623 • Sunningdale = 1,670 • Castle Road = 253 • Flynn's Road = 1,023	• Carriganarra = 623 • Sunningdale = 1,670 • Ballincollig = 2,400 • Castle Road = 253

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
	catchment area score higher. Where the stop locations are within a close proximity together, they will overlap on their catchment. The extent of this overlap has been factored into (and excluded) from the comparison and the final numbers.	**Comparable** 0 to + or - 249 to the EPR **Some advantages: +**250 to +999 **Significant advantages**: >+1000	**Total = 3,569** **Total (excluding overlap) = 2,956** Difference to EPR = -823	• Flynn's Road =1,112 **Total = 6,058** **Total (excluding overlap) = 3,768** Difference to EPR = -12

Access to employment is weaker for Option A, with some disadvantages when compared to the EPR. Option A captures of 2,956 jobs, a reduction of 823 compared with the EPR. This reflects its alignment through predominantly residential and rural areas and its lack of coverage of key employment locations such as Ballincollig town centre and Main Street. Option B is comparable to the EPR, capturing 3,768 jobs, just 12 short of the EPR. Similar to the EPR, Option B includes employment clusters in Ballincollig town centre, High Street and Leo Murphy Link Road.

4.4 Ballincollig: Social Impacts

Table 4-11 shows the 'Social Impacts' MCA outcome for Area 1 (Ballincollig).

4.4.1 Deprivation

Table 4-11 Ballincollig Social Impacts Assessment (compared to EPR) – Deprivation

Social Impacts				
Sub-criteria	**Indicators**	**Indicator Building**	**Option A (Double Track)**	**Option B (Extended Loop)**
Deprivation	This KPI considers the extent to which deprived areas are served by the route options, by assessing the inclusion of deprived areas within a radial 500m of the stops along the route. Whether or not areas are considered deprived, is determined using the 2022 POBAL deprivation index.	**Significant disadvantages**: <-5 number of deprived areas **Some disadvantages:** -2 to -5 number of deprived areas **Comparable** 0 to + or -1 in number of derived areas compared to EPR. **Some advantages: +2** to +5 number of deprived areas **Significant advantages**: >+5 number of deprived areas	• Castle Park • Beech Park • Tudor Grove • Pine Walk • Elm Lawn • Willow Drive • Holly Road • Parknamore • Mechterstadt Road **Difference to EPR = -2 deprived areas**	• Castle Park • Beech Park • Tudor Grove • Pine Walk • Elm Lawn • Willow Drive • Holly Road • Parknamore • Mechterstadt Rd • Long Range **Difference to EPR = +1 deprived areas**

Based on the assessment of deprived areas located within the catchment, both alternative routes perform broadly similarly to the EPR, with Option A comparing with some disadvantages due to some small geographic shifts in alignment.

Option A includes Mechterstadt Road but omits two deprived areas that are captured in the EPR, resulting in a difference of –2 deprived areas. While its alignment excludes some zones to the north and northeast, this is partially offset by coverage of southern and southwestern areas such as Castle Park, Beech Park, Tudor Grove, Pine Walk, Elm Lawn, Willow Drive, Holly Road and Parknamore.

Option B also includes Mechterstadt Road but additionally captures Long Range, leading to a difference of +1 deprived area relative to the EPR. Although it does not include all areas northeast of the high street, it covers locations such as Pine Walk, Long Range, and Elm Lawn that are not fully matched by the EPR alignment.

4.5 Ballincollig: Land Use Impacts

Table 4-12 to Table 4-13 shows the 'Land Use Impacts' MCA outcome for Area 1 (Ballincollig).

4.5.1 Change in Quality of Public Realm

Table 4-12 Ballincollig Land Use Impacts (compared to EPR) – Change in quality of public realm

Land Use Impacts				
Sub-criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Change in quality of public realm	This KPI assesses the extent to which different route options can enhance the public realm without negatively impacting it. Scored Qualitatively. Public realm includes (for example) streetscapes (including new stops), community / pedestrian / open space	**Significant disadvantages**: Significant adverse effects compared to EPR e.g. permanent loss or diminishment of pedestrian / community space **Some disadvantages:** More constrained public realm potential compared to EPR **Comparable** Similar public realm potential compared to EPR **Some advantages:** Delivers some benefits to the streetscape compared to EPR **Significant advantages:** Enables transformation public realm enhancement and improved streetscape compared to the EPR	Option A would provide public realm improvements to the south of the town only, with these benefits not being utilised in areas of greater densities and footfall compared to EPR.	Option B would provide a greater potential gain compared to EPR in public realm improvements due to the extended loop providing public realm enhancements to the town centre and beyond to the west.

Both alternative options offer opportunities to enhance the public realm; however, the extent and distribution of these improvements vary. Option A delivers public realm benefits primarily along the southern edge of Ballincollig, where the alignment enables targeted enhancements in areas with lower existing densities and footfall. While these improvements are valuable, they are more limited in scope compared to the EPR, as they do not extend into the town centre or higher-intensity commercial areas where public realm uplift would have a greater impact.

Option B provides a broader and more substantial public realm gain. Its longer alignment serves both the southern part of the town and the town centre gateway, enabling more comprehensive streetscape improvements in areas of higher activity and pedestrian demand. This results in a greater overall enhancement compared with the EPR.

4.5.2 Existing Transport Network & Service Impact

Table 4-13 Ballincollig Land Use Impacts (compared to EPR) – Existing Transport Network and Service Impact

Land Use Impacts				
Sub-criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Existing Transport Network and Service Impact	This KPI evaluates the impact of the route options on the existing transport network. Improvements to routes can result in a range of positive impacts such as improved journey times and experience, improved ability to interchange between modes, facilitating modal shifts to more sustainable transport, and improving network resilience.	**Significant disadvantages**: Significant adverse effects to surrounding network and impact on services, with reduced resilience and poor integration compared to EPR. **Some disadvantages:** Some reduced network efficiency and integration compared to EPR. **Comparable** Similar potential compared to EPR. **Some advantages:** Delivers some incremental benefits to network efficiency,	Segregated Double Track: 2,190m (97%) Shared Double Track: 75m (3%)	Segregated Double Track: 757m (20.4%) Segregated One-Way: 1323m (35.7%) Shared One-Way: 684m (18.4%) Shared Double Track: 24m (0.6%) Shared Public Transport: 926m (25%)

Land Use Impacts				
Sub-criteria	**Indicators**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
		integration and performance co mpared to EPR. **Significant advantages**: Enables network efficiency, greater modal shift, higher levels of resilience and network balancing / rationalisation compared to the EPR		

Option A integrates less well with the existing network due to it being more remote and rural in nature than the EPR, presenting a greater lack of opportunity for interchange with other modes to connect to high trip attractors on the main street, when compared to the EPR. Option B alignment would have a comparable level of impact on the existing transport network, with similar levels of integration with other modes within the Town Centre environment.

4.6 Ballincollig: Safety Impacts

Table 4-14 to Table 4-15 shows the 'Safety Impacts' MCA outcome for Area 1 (Ballincollig).

4.6.1 Collisions & Related Impacts

Table 4-14 Ballincollig Safety Impacts Assessment (compared to EPR)- Collision Impacts

Safety Impacts				
Sub-Criteria	**Indicators**	**Indicator Building**	**Option A (Double Track)**	**Option B (Extended Loop)**
Collision Impacts	This KPI considers the likelihood of collisions impacts from other modes. Lower degrees of segregation from other traffic, higher numbers of junctions, and running on busy roads with a more important role in the local road network result in a lower score.	**Significant disadvantages**: Significant material increase in collision risk and/or frequency compared to EPR and deterioration in wider network safety. **Some disadvantages:** Some new collision risks compared to EPR with other modes and diminishment of active travel interfaces. **Comparable** Similar potential compared to EPR. **Some advantages:** provide some improvements in safety compared to EPR with reduced number of network variables from	Segregated Double Track: 2,190m (97%) Shared Double Track: 75m (3%)	Segregated Double Track: 757m (20.4%) Segregated One-Way: 1323m (35.7%) Shared One-Way: 684m (18.4%) Shared Double Track: 24m (0.6%) Shared Public Transport: 926m (25%)

Safety Impacts				
Sub-Criteria	**Indicators**	**Indicator Building**	**Option A (Double Track)**	**Option B (Extended Loop)**
		other modes & active travel. **Significant advantages**: Enables significant reduction in collision risk compared to the EPR, with significant improved in teractions with network variables & active travel		

Option A is assessed as having a reduced collision risk compared with the EPR, primarily due to its 97% segregated double-track alignment, which avoids the town centre and minimises interactions with general traffic, junctions, and active travel modes. This high level of segregation significantly limits potential conflict points along the corridor. Option B delivers a comparable collision risk to the EPR. Although it includes a mixture of segregated double track (20.4%), segregated one-way sections (35.7%), and shared running (notably 926 m shared with public transport), its alignment through the town centre and reconfigured traffic flows on Station Road maintain a similar level of exposure to collision risks.

4.6.2 Other Safety Impacts

Table 4-15 Ballincollig Safety Impacts Assessment (compared to EPR)- Other Safety Impacts

Safety Impacts				
Sub-Criteria	**Indicators**	**Indicator Building**	**Option A (Double Track)**	**Option B (Extended Loop)**
Other Safety Impacts (for passengers connecting to / from stops)	This KPI examines the likelihood of anti-social behaviour, and challenges of policing along the routes. Routes that are	**Significant disadvantages**: Significant adverse effects to passive surveillance and additional required		

Safety Impacts				
Sub-Criteria	**Indicators**	**Indicator Building**	**Option A (Double Track)**	**Option B (Extended Loop)**
	more isolated with less passive surveillance, and routes serving destinations that have a higher likelihood of anti-social behaviour receive lower scores.	lighting infrastructure, more isolated compared to EPR **Some disadvantages:** Some reduction to passive surveillance and risk of anti-social behaviour compared to EPR **Comparable** Similar potential compared to EPR **Some advantages:** Delivers some incremental benefits compared to EPR with increased active frontages and visibility **Significant advantages:** Significantly act ive and overlooked infrastructure compared to EPR		

Option A presents disadvantages compared with the EPR due to its more remote and less populated southern alignment, which reduces passive surveillance and increases perceived vulnerability to anti-social behaviour, particularly in areas with limited frontage activity and lower levels of natural oversight. In contrast,

Option B is comparable to the EPR, as both feature substantial sections running through busier corridors, including the town centre and the R608. These locations offer improved lighting, higher footfall, and increased visibility, resulting in stronger passive surveillance for users.

4.7 Ballincollig: Local Environmental Impacts

Table 4-16 Ballincollig Local environmental Impacts Assessment (compared to EPR)- Air Quality shows the 'Local Environmental Impacts' MCA outcome for Area 1 (Ballincollig).

4.7.1 Air Quality

Table 4-16 Ballincollig Local environmental Impacts Assessment (compared to EPR)- Air Quality

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Air Quality	Qualitive assessment. Review of baseline data (including Air Quality Zones and monitoring stations). Assessment includes the identification of sensitive receptors to pollutants and associated potential impacts in terms of distances configuratio n of the proposed scheme including the number of stop locations.	**Significant disadvantages**: Significant adverse potential effects to air quality and sensitive receptors compared to the EPR. **Some disadvantages:** More potential air quality effects and potential impact to sensitive receptors compared to the EPR. **Comparable** Similar air quality effects and impacts to sensitive receptors compared to the EPR. **Some advantages:** Delivers some benefits to air quality compared to EPR. **Significant advantages**: Provides improved air quality benefits compared to the EPR.		

In relation to Option A 'Air Quality', Member States are required to establish "zones" and "agglomerations" throughout their territory. Option A is located within Zone B –Cork Conurbation under the which under the Air Quality Standards Regulations 2011 and classified as Good Air Quality. The Air Quality Standards (AQS) that are most relevant to the Proposed Scheme are those for nitrogen oxides (NOx), nitrogen dioxide (NO2) and particulate matter (PM10 and PM2.5). Air quality in the vicinity is considered to be primarily influenced from road traffic. Potential air quality impacts may arise during construction from plant equipment, machinery and increased construction traffic. The nearest Air Quality monitoring site in the area is Bishopstown MTU. Option A proposes 3 stop locations within this segment.

With Option B the nearest Air Quality monitoring site in the area is Bishopstown MTU. Air quality in the vicinity is considered to be primarily influenced from road traffic. Similar to Option A and the EPR, potential air quality impacts may arise during construction from plant equipment, machinery and increased construction traffic. This option proposes 3 stop locations within this localised alignment.

With respect to air quality, all three route options are expected to deliver similar outcomes with both Option A and B comparable to the EPR. Although construction activities may have the potential to temporarily impact negatively on-air quality, the operational phase of Luas Cork is anticipated to improve Air Quality in the area due to a modal shift from private vehicles to public transport. Climate considerations to be included at the next stage of assessment.

4.7.2 Noise & Vibration

Table 4-17 Ballincollig Local Environmental Impacts Assessment (compared to EPR)- Noise & Vibration

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Noise & Vibration	Qualitive assessment. Review of baseline data. Assessment includes the identification of sensitive noise and vibration receptors and review of the associated impacts in terms of distances and configuration of the proposed option. These specific factors have been considered using professional judgement: Likely existing baseline noise environment due to existing transport infrastructure as reflected in the EPA	**Significant disadvantages**: Potential for significant adverse noise and vibration effects at sensitive receptors compared to the EPR. **Some disadvantages:** Potential disadvantages for noise and vibration effects to sensitive receptors compared to the EPR.		

	Round 4 noise mapping; Proximity and numbers of sensitive receptors including; residential, places of worship, educational, community and health facilities etc. to the route option; Likely screening between new sources and these receptors; and Potential for increased noise effects due to wheel squeal around corners.	**Comparable** Similar noise and vibration impacts to sensitive effects to receptors compared to the EPR. **Some advantages:** Delivers some advantages for noise and vibration when compared to the EPR. **Significant advantages**: Provides improved noise and vibration impacts compared to the EPR.		

For Option A there are 578 residential receptors within 100m of this option which is a 1% increase compared to the EPR. Therefore, there is the potential for noise and vibration effects at a similar number of residential receptors to the EPR. The receptors along this route option are generally located close to existing urban roads, which is also the case for the EPR. The baseline noise environment at receptors along this route is therefore likely to be broadly similar to the receptors along the EPR. The potential for significant effects due to changes in noise level is similar to the EPR. Taking these factors together, it is considered that similar noise and vibration impacts are expected to be comparable to the EPR.

There are 828 residential receptors within 100m of Option B which is a 44% increase compared to the EPR. Therefore, there is the potential for noise and vibration effects at more residential receptors than the EPR.

The receptors along this route are generally located close to existing urban roads, which is also the case for the EPR. The baseline noise environment at receptors along this route is therefore likely to be broadly similar to the receptors along the EPR. The potential for significant effects due to changes in noise level is similar to the EPR. Option B proposes three stop locations on a single loop with four proposed corners which is comparable to the EPR. Taking these factors together, it is considered that there are potential for some disadvantages for noise and vibration effects at sensitive receptors compared to the EPR.

4.7.3 Biodiversity

Table 4-18 Ballincollig Local Environmental Impacts Assessment (compared to EPR)- Biodiversity

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Biodiversity	Qualitive Assessment. Review of the baseline data including proximity to European sites and nationally designated sites where applicable). Review options for the potential impact on the type of trees/hedges removal, number of trees lost and their potential ecological value, including potential for bat roots and passerine birds, construction works through green field sites, conservation areas, potential impact to bats and other mammals, high ecological value sites etc. Review of options potential for biodiversity net gain through option of planting of replacement trees or the creation of new habitats where applicable, and other mitigation measures.	**Significant disadvantages**: Significantly more adverse effects on biodiversity receptors compared to EPR. E.g. impact on biodiversity of international importance within or outside a European site where EPR does not, in proximity (within 10m) to a watercourse where EPR is not, significantly more (101 or more) loss of trees of comparable ecological value compared to EPR. **Some disadvantages:** Some adverse effects on biodiversity receptors compared to EPR or the EPR has opportunities to improve the value of local biodiversity. E.g. impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where EPR does not, some (31-100 more) loss of trees of comparable ecological value compared to EPR. Ecologically driven seed mixes, bat boxes, lighting plans, etc, may improve the value of local biodiversity. **Comparable:** The same or negligible difference in effects on biodiversity receptors compared to EPR. E.g. the same impacts to the aforementioned receptors, similar (0-30 more) loss of trees of comparable ecological value compared to EPR, loss of habitats with a similar ecological value, for example loss of amenity grassland compared to loss of roads/footpaths is comparable as the		

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
		impacts from loss of amenity grassland are negligible to biodiversity. **Some advantages:** Fewer adverse effects on biodiversity receptors compared to EPR or option has opportunities to improve the value of local biodiversity where EPR does not. E.g. EPR impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where option does not, EPR has some (31-100 more) loss of trees of comparable ecological value compared to option. Ecologically driven seed mixes, bat boxes, lighting plans, etc, may improve the value of local biodiversity. **Significant advantages:** Significantly fewer adverse effects on biodiversity receptors compared to EPR. E.g. the EPR impacts biodiversity of international importance within or outside a European site where option does not, EPR is in proximity (within 10m) to a watercourse where option is not, EPR has significantly more (101 or more) loss of trees of comparable ecological value compared to option.		

For Option A there are no European sites, nationally designated sites or watercourses located within this alignment. Ballincollig Cave pNHA (001249) is located approximately 240m south of the route at Castle Road, however it will not be impacted by the proposed route, located both along agricultural land, roads and amenity grassland. Ecological receptors that are likely to be impacted are medium to high value agricultural grassland, low value amenity grassland habitat, treelines, bats and breeding birds. Approximately 1,415m of tree lines and 107 trees along the route with potential for loss of all 107 trees. Has 75 trees of the highest ecological value located on agricultural fields along Flynn's Road and Castle Road due to the size of these trees and presence of scrub underneath. This is the same number as Option B.

Opportunities for biodiversity enhancement by planting trees and diverse species grassland along the route where there is currently amenity grassland. Option A is losing 75 high value trees, 32 low value trees and a small area of amenity/agricultural grassland. Despite the space available within agricultural grassland, this alternative route does not present a greater opportunity for biodiversity enhancement as the baseline habitat will likely be more species rich compared to the EPR which is only set in urban landscapes. This alternative route will result in a high loss of biodiversity compared to the EPR and so the net gain of the BNG will not be as great as BNG efforts on the EPR.

For Option B there are no European sites, nationally designated sites or watercourses are located within this route option. Lee Valley pNHA (000094) is located approximately 591m north of the route at proposed R608 Road, and Ballincollig Cave pNHA (001249) is located approximately 240m south of the route at Castle Road, however neither will be impacted by the proposed route. Ecological receptors likely to be impacted are medium to high value agricultural grassland, low value amenity grassland habitat, treelines, bats and breeding birds.

Option B has the highest number of trees along the route with approximately 2065m of tree lines and 260 trees with 171 trees potentially lost. Had 75 trees of the highest ecological value located on agricultural fields along Flynn's Road and Castle Road due to the due to the size of these trees and presence of scrub underneath. This is the same number as Option A. Sunningdale Road had 22 small to large trees with medium to high ecological value due to the size of some of these trees and presence of scrub underneath. The remaining 74 trees were small to medium trees on the R06 urban road with low ecological value. Opportunities for biodiversity enhancement by planting trees and diverse species grassland along the route where there is currently amenity grassland. Option B is potentially losing 97 high value trees and 74 small, low value trees.

Despite the space available within agricultural grassland, this alternative route does not present a greater opportunity for biodiversity enhancement as the baseline habitat will likely be more species rich compared to the EPR which is only set in urban landscapes. This alternative route will result in a loss of biodiversity compared to the EPR and so the net gain of the BNG will not be as great as BNG efforts on the EPR.

4.7.4 Water Resources & Soil Quality

Table 4-19 Ballincollig Local Environmental Impacts Assessment (compared to EPR)- Water Resources/ Soil

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Water Resources / Soil	Qualitative assessment. Review of baseline data. Review of potential impacts and distances to hydrogeology and hydrology or water resources e.g. Water Framework Directive (WFD) river / streams arising from the works and any new structures and a review of potential flood risk in the area. Review of Corine land use for soils and review of the bedrock geology, groundwater dependent terrestrial ecosystems (GWDTES) and karst landforms within the segment and potential to encounter ground contamination as a result of historical industries/landfills.	**Significant disadvantages**: Significantly more adverse effects on water and soils compared to the EPR. E.g. increased number of watercourse crossings which may require significant in-stream works (i.e. piers), increased interaction with mapped flood risk leading to floodplain loss/displacement. Increased interaction with potential ground contamination and increased disturbance of soils. These effects are likely to require significantly more mitigation compared to the EPR. **Some disadvantages:** A few more adverse effects on water and soil compared to the EPR. E.g. increased number of watercourse crossings but don't require significant in-stream works, increases in interactions with mapped flood risk areas leading to minimal floodplain loss/displacement. Minimal increased interaction with potential ground contamination. These effects are likely to require minimal additional mitigation compared to the EPR. **Comparable** Similar effects on water and soils compared to the EPR. **Some advantages:** Fewer adverse effects on water and soils compared to EPR. E.g. fewer number of		

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
		watercourse crossings, slight reductions in interaction with mapped flood risk areas. Slight reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a slight reduction in the required mitigation measures compared to the EPR. **Significant advantages**: Significantly fewer adverse effects on water and soils compared to the EPR. E.g. fewer number of watercourse crossings, significantly reduced interaction with mapped flood risk areas. Reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a significant reduction in the required mitigation measures compared to the EPR.		

There are no watercourses intersecting or in the location of either Option A or B. Therefore, there is no potential risk of flooding as neither area is not located within CFRAM or national flood hazard mapping. The bedrock geology for these Alternative Segments is dominated by Waulsortian Limestones. There are lithologies of the Little Island Formation (Massive calcilutite limestones (mudbank facies) and crinoidal (calcilutites) in the area. The area for all routes consists of a mixture of urban and till derived from Devonian sandstones. There is no identified waste contamination near the alternative routes or the EPR. The underlying groundwater body (IE_SW_G_002) has a water framework directive (WFD) status of "Good" for Ballincollig. The areas hydrology comprises a high-vulnerability, regionally important Karstified aquifer (diffuse). No Groundwater Dependant Terrestrial Ecosystems (GWDTEs) are present beneath these segments, and there are no karst landforms within the study area. In terms of water resources and soil quality, all three routes are comparable. All Segment Options do not cross any watercourses or are not located within CFRAM or national flood hazard mapping. The underlying geology, with no significant contamination risks identified.

4.7.5 Landscape & Visual

Table 4-20 Ballincollig Local Environmental Impacts Assessment (compared to EPR)- Landscape & Visual

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Landscape & Visual	Qualitative assessment including a baseline review. This criterion considers physical and perceptual changes to the landscape and townscape elements (including vegetation) and character, impacts on landscape designations (Landscape Character Area (LCA)) and impacts on visual receptors, visual amenity and protected views.	**Significant disadvantages**: Significantly more adverse effects on landscape and visual receptors compared to EPR e.g. change of landscape / townscape character, loss of mature trees or a significant number of trees (landscape / townscape elements), adverse effect on designated landscapes or views, large number of highly sensitive visual receptors (such as residential receptors) affected. **Some disadvantages:** A few more adverse effects on landscape and visual receptors (see above) compared to EPR. **Comparable** Similar effects on landscape and visual receptors, on balance, compared to EPR. **Some advantages:** Fewer adverse effects on landscape and visual receptors compared to EPR. **Significant advantages:** Significantly fewer adverse effects on landscape and visual receptors compared to EPR such as minor change of landscape / townscape character, lower number or less mature trees lost, lesser effect on designated landscapes or views, fewer highly sensitive visual receptors (such as residential receptors) affected.		.

Option A would have reduced impacts on Ballincollig Town Centre Landscape Character Area (LCA) (which is assessed to be of High sensitivity) in comparison to EPR. In contrast to EPR, there would also be no landscape or visual impacts on Ballincollig Transitional Area LCA (Medium sensitivity) or Leo Murphy Link

Road Trade Centre LCA (Low-Medium sensitivity). However, unlike the EPR, this option would result in additional impacts on the Ballincollig Farmland LCA (previously not assessed for the EPR) and a small section of Ballincollig Housing LCA (Medium sensitivity) in Hazel Grove and Castle Road, and on West Village Housing and Neighbourhood Centre LCAs (previously not assessed) west of Flynn's Rd. It is worth noting that the section of Ballincollig Farmland contained by Flynn's Rd, Castle Rd and Beech Rd is identified in the CCDP as ZO 04, Mixed Use Development and, as such, would reduce its sensitivity.

There would be no impacts on trees and hedgerows in Main Street or Station Road, unlike in the EPR. This option would, however, result in loss of hedgerows and trees along Flynn's Rd, Castle Road and Hazel Grove, not present in EPR. This loss is likely to be greater than in Option B, due to the presence of a double track instead of a single one. No visual receptors would be affected in the Main Street, Station Road and Leo Murphy Link Road, unlike in EPR. Additional visual receptors, mostly residential, would be affected in Ballincollig Housing and West Village Neighbourhood Centre and Housing LCAs in comparison to EPR.

For Option B there would be some additional impacts on Ballincollig Farmland LCA (previously not assessed) and Ballincollig Housing LCA (Medium sensitivity) in comparison to EPR, with a minor reduction in impacts on Ballincollig Town Centre LCA (High sensitivity) in comparison to EPR. There would be additional impacts on Ballincollig Farmland LCA (previously not assessed for the EPR) and Ballincollig Housing LCA (Medium sensitivity) in comparison to EPR. Minor reduction in impacts on Ballincollig Town Centre LCA (High sensitivity) in comparison to EPR. More trees could be potentially lost along the R608 than in EPR Option. Likely loss of hedgerows and trees along Flynn's Rd and Castle Road, not present in EPR Option.

There are slightly more visual receptors for Option B, particularly in Ballincollig, West Village Neighbourhood Centre and West Village Housing LCA, likely to be affected, including a large number of residential receptors, in comparison to the EPR Option.

4.7.6 Cultural Heritage

Table 4-21 Ballincollig Local Environmental Impacts Assessment (compared to EPR)- Cultural Heritage

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
Cultural Heritage	Qualitative assessment including a baseline review data. The review of the potential impacts includes direct loss, impact, disturbance to archaeological remains, buildings	**Significant disadvantages**: Significantly more adverse effects on the cultural heritage resource compared to EPR e.g. full or partial removal of archaeological remains or built heritage assets, ad verse alteration of an assets setting, adverse effect on designated assets, such as National Monuments or Protected Structures.		

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (Double Track)**	**Option B (Extended Loop)**
	(including individual areas), landscapes and parks, protected structures, historic landscapes with cultural and heritage significance, and mitigation measures.	**Some disadvantages:** A few more adverse effects on the cultural heritage resource (see above) compared to EPR but no impacts on designated assets. **Comparable** Similar effects on the cultural heritage resource, on balance, compared to EPR. **Some advantages:** Fewer adverse effects on the cultural heritage assets compared to EPR. **Significant advantages:** Significantly fewer adverse effects on the cultural heritage resource compared to EPR such as a lower number of archaeological remains that would be removed or no/less effects on designated assets compared to the EPR.		

Option A presents a low risk to recorded archaeological heritage. While the route intersects the site of a former standing stone (RMP CO073-074) north of Castle Road, the prior removal of this monument suggests that significant impacts are unlikely. This compares favourably to the Emerging Preferred Route (EPR), which poses a direct risk to an RMP ringfort and the Ballincollig Gunpowder Mills site. Although the route may affect the buried remains of six non-designated cultural heritage sites identified through historical mapping, these effects are not considered significant. However, because Alternative A traverses previously undeveloped land north of Castle Road and east of Flynn's Road, it carries a higher potential for impacting previously unknown archaeological remains compared to the EPR, which primarily follows existing road infrastructure

Similar to Option A, Option B impacts the site of the RMP CO073-074 standing stone with minimal predicted significance. However, this route could necessitate the removal of boundary walls or gate piers associated with three National Inventory of Architectural Heritage (NIAH) sites on Station Road and Main Street, including the Ballincollig Presbytery, a house on Station Road, and St Mary's and St John's Roman Catholic Church. As the church is a Protected Structure (RPS PS1233), these impacts could be significant and may require a separate planning application. Regarding designed landscapes, the route sits adjacent to the Ordnance Superintendent's House & Barracks (DL_05). Due to extensive prior redevelopment in this area, no significant effect is predicted,

which is preferable to the EPR's projected impact on DL_05. While ten non-designated features may be impacted, this is consistent with the EPR's impact profile. Like Option A, the greenfield nature of certain segments increases the risk of encountering unrecorded archaeology.

Both Option A and Option B offer a reduced impact on the receiving cultural heritage environment when compared to the EPR.

4.8 Results Summary and Outcomes for Assessment Area 1 (Ballincollig)

The overall scoring for the alternative route options is shown in **Table 4-22** below.

Table 4-22 Ballincollig MCA Overall Scoring

MCA Criteria	MCA Sub-Criteria	Option A	Option B
Transport User Benefits & Other Economic Impacts	Travel Time		
	Demand		
	Benefits		
	Costs		
	Reliability		
	Resilience		
Accessibility Impacts	Population Catchment		
	Access to services		
	Access to recreational facilities		
	Access to jobs		
Social Impacts	Deprivation Index		
Land Use Impacts	Change in quality of public realm		
	Existing Transport Network and Service Impact		
Safety Impacts	Collisions and related impacts		
	Other Safety Impacts		
Local Environmental Impacts	Air Quality		
	Noise & Vibration		
	Biodiversity		
	Water Resources / Soil		
	Landscape & Visual		
	Cultural Heritage		

As shown in the overall summary scoring table, Option A does not score well overall compared to the EPR. The more southern alignment of Option A is significantly further away from the town centre. As a result, it scores with significant disadvantages on Population Catchment and Access to Key Services. It also scores with some disadvantages on Access to Recreational Services and Access to Jobs. The more southern alignment also results in fewer opportunities for public realm improvements, and fewer

opportunities to improve the existing transport network, resulting in a negative score on Land Use Impacts.

Where Option A offers a substantially different alignment to the EPR, Option B is more comparable to the EPR. The most important differences are that the alignment stretching further west into Ballincollig, results in a greater overall population catchment with significant advantages for this alternative route.

In summary, the comparative MCA assessment demonstrates that the route variant – extended western loop (Option B) – presents an opportunity to improve benefits over the Emerging Preferred Route. It is also considered, from a wider strategic perspective, to ultimately deliver a more balanced and sustainable solution when evaluated against the current, emerging and future projected development of Ballincollig. It is also notable that public feedback sought for an extension further westward into Ballincollig.

On this basis, it is recommended that the extended western loop (Option B) be taken forward for further development and preliminary design. A focus will be maintained throughout the preliminary design process to – where possible - improve benefits further and to reduce environmental effects.

5. Curraheen Road / Cork University Hospital (CUH) Multi-Criteria Analysis (Assessment Area 2)

5.1 Introduction

The MCA results for the assessment (in line with TAF), of Options A and B for Assessment Area 2 (Curraheen Road / CUH) are set out in the chapter below. Both the alignment of the localised alternative routes and the corresponding section of the EPR are shown below in **Figure 5-1** below.

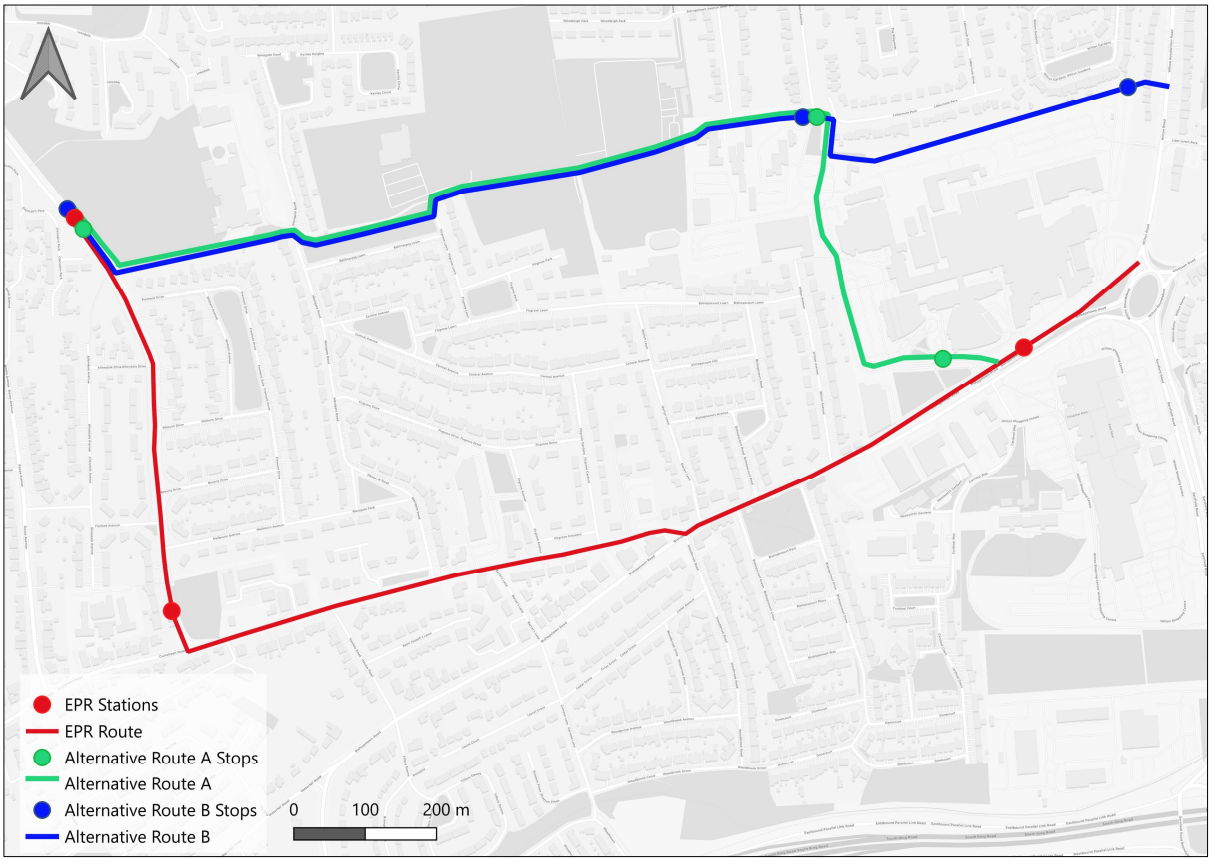

Figure 5-1 CUH EPR and Alternative Route Alignments

5.2 Curraheen Road / CUH: Transport User Benefits & Other Economic Impact

Table 5-1 to Table 5-6 shows the 'Transport User Benefits & Other economic Impact' MCA outcome for Area 2 (Curraheen Road/CUH).

5.2.1 Travel Time

Table 5-1 Curraheen Rd / CUH Transport User Benefits & Other Economic Impacts Assessment (compared to EPR) – Travel Time

Transport User Benefits & other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Travel Time	Journey time based on extractions from SWRM runs	**Significant disadvantages:** >+90 seconds **Some disadvantages** +30 to +89 seconds **Comparable to the EPR** 0 to + or -29 seconds **Some advantages:** -30 to -89 seconds **Significant advantages:** >-90 seconds	Eastbound 1.36 minutes shorter than EPR Westbound 1.30 minutes shorter than the EPR .	Eastbound 3mins 18 seconds faster than EPR Westbound 3mins 18 seconds faster than EPR

Option A demonstrated a notably stronger performance on travel time with significant advantages when compared with the EPR. Its segregated alignment enables higher average speeds resulting in improved journey times. Overall Option A is estimated to operate approximately 1 minute 55 seconds faster than the EPR. Option B also has significant advantages compared to the EPR and shows an even more pronounced improvement, delivering journey time savings of over three minutes in each direction due to its high level of segregation and priority along the corridor. Both Options are shorter routes when compared to the EPR (130m less and 510m less respectively).

5.2.2 Demand

Table 5-2 Curraheen Road / CUH Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Demand

Transport User Benefits & other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Demand	24 Hour Public Transport Boardings	**Significant disadvantages:** >-5% **Some disadvantages:** -2.5 to -4.99% **Comparable** 0 to +2.49% **Some advantages:** +2.5 to +4.99% **Significant advantages:** >+5%	**24-hour boardings by mode for 2035:** • Luas – 52,050 • Irish Rail – 23,906 • Urban & Other Buses – 81,951 **Total – 157,907** **Percentage Difference to EPR = +0.2005%**	**24-hour boardings by mode for 2035:** • Luas – 50,455 • Irish Rail – 23,764 • Urban & Other Buses – 82,113 **Total – 156,332** **Percentage Difference to EPR = -0.8053%**

Option A is forecast to generate 157,907 total boardings over a 24-hour period in 2035, representing a +0.2005%, which is comparable to the EPR (157,591). This uplift is driven mainly by the better end to end journey times for Option A, with higher Luas and bus boardings relative to the EPR, resulting in slight uplift in demand. Option B records 156,332 total boardings, which is 0.8053% lower than the EPR but still within the comparable banding. While Luas and Irish Rail boardings remain broadly comparable to the reference case, bus boardings are marginally reduced, resulting in a small overall decrease.

5.2.3 Benefits

Table 5-3 Curraheen Road / CUH Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Benefits

Transport User Benefits & other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Benefits	Economic benefits for each alignment option calculated using TUBA over 60-year appraisal period	**Significant disadvantages**: >-€100m **Some disadvantages:** -€50m to -€99m **Comparable to the EPR** €0 to + or -€49m **Some advantages:** +€50m to €99m **Significant advantages**: >€100m	+€37m benefits compared to EPR	-€38m benefits compared to EPR

Both Option A and Option B are comparable to the EPR in relation to Benefits. In terms of overall benefits, Option A demonstrates a performance broadly aligned with the EPR. The additional €37 million in benefits is relatively small when assessed against total scheme benefits and is largely attributable to journey time savings arising from the fully segregated alignment. Option B has a slight reduction in benefits compared to the EPR, primarily stemming from a reduction in demand for this Option.

5.2.4 Costs

Table 5-4 Curraheen Road / CUH Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Costs

Transport User Benefits & other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Costs	Capital Cost Comparison of costs for the construction of the LRT infrastructure, as well as the operational costs of Luas Cork on the route. Costs are based on level of design relative for phase 2 of the project. Includes allowances for LRT infrastructure, land take, utilities, structures, rolling stock (including replacement). The contingency percentage applied to the estimated costs is 59% in accordance with the NTA Contingency Calculator	**Significant disadvantages**: >+€100m **Some disadvantages:** +€50 to +€99m **Comparable to the EPR** €0 to + or -€49m **Some advantages:** -€50 to -€99m **Significant advantages**: >-€100m	€1,952m Difference to EPR = +€28m	€1,927m Difference to EPR = +€3m

Both Option A and Option B are comparable to the EPR in relation to Costs. Option A has an estimated capital cost of €1,952 million, which is €28 million higher than the EPR. While it achieves a slightly reduced overall track length, the option still requires third-party land acquisition between Melbourn Road and CUH and additional engineering works to address level differences along the corridor. Option B is estimated to cost €1,927 million, representing a €3 million increase relative to the EPR. Similar to Option A, this alternative benefits from a reduced track length but also necessitates third-party land take and engineering interventions to manage gradient variations across the same section.

5.2.5 Reliability

Table 5-5 Curraheen Road / CUH Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Reliability

Transport User Benefits & other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Reliability	Extent of shared running, priority track and consistency in journey times. Routes are assessed on the proportion of the route running a) on-street mixed with traffic, b) on-street but segregated from traffic or c) off-street. Routes with a higher proportion of their route running segregated score higher, as running times are considered to be more reliable. Routes with a higher proportion of the route running on street mixed with traffic score lower.	**Significant disadvantages:** Higher likelihood of irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR **Some disadvantages:** Some likelihood of greater irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR **Comparable**: Similar levels of reliability compared to EPR **Some advantages**: Some likelihood of enhanced reliability for timetabling due to levels of Luas priority and potential for delays compared to EPR **Significant advantages**: Higher likelihood of regular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR	Segregated-double track: 100%	Segregated-double track: 100%

Reliability is higher with significant advantages for both Option A and Option B compared to the EPR alternative routes, as both benefits from dedicated infrastructure that is not shared with general traffic. The increase on reliability compared to the EPR is a direct result of the higher level of priority achieved for

Luas Cork through the provision of segregated two-way track infrastructure for nearly the full extents, vastly reducing the operational variables compared to sharing with general traffic or other public transport modes.

5.2.6 Resilience

Table 5-6 Curraheen Road / CUH Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Resilience

Transport User Benefits & other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Resilience	Ability and headway of proposed alignment to absorb varying levels of Luas demand from the transport network at peak times and recover from disruption	**Significant disadvantages:** No capacity to respond to network shocks compared to EPR **Some disadvantages:** Minimal capacity to respond to network shocks and stresses. Option presents a reduced level of operational flexibility compared to the EPR **Comparable**: Similar levels of resilience compared to EPR **Some advantages**: Some capacity to respond to network shocks. Option presents an enhanced level of operational flexibility compared to the EPR **Significant advantages**: High capacity to respond to network shocks and stresses compared to EPR, without degrading the service		

In relation to Resilience, both Option A and Option B have significant advantages compared to the EPR as both options would have enhanced resilience to shocks and stresses on the network, with greater ability to recover headways compared to the EPR. Both Options would have greater resilience for additional headway for increasing the frequency of the LRT as a short-term response or as part of future network planning or longer-term expansion.

5.3 Curraheen Road / CUH: Accessibility Impacts

Table 5-7 to Table 5-10 shows the 'Accessibility Impacts' MCA outcome for Area 2 (Curraheen Road/CUH).

5.3.1 Population Catchment

Table 5-7 Curraheen Road / CUH Accessibility Impacts Assessment (compared to EPR)- Population Catchment

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Building**	**Option A (CUH South)**	**Option B (CUH North)**
Population Catchment	Population catchment within a 800m walking distance of stop locations on route based on 2035 forecast. Where the stop locations are within a close proximity together, they will overlap on their catchment. The extent of this overlap has been factored into (and excluded) from the comparison and the final numbers.	**Significant disadvantages**: >-1000 **Some disadvantages:** -250 to -999 **Comparable to the EPR** 0 to + or -249 **Some advantages: +**250 to +999 **Significant advantages**: >+1000	• CUH – 5490 • Bishopstown – 3680 • Melbourn New – 3695 Total = 12866 **Total Exc Overlap = 10058** **Difference = -202 (to EPR)**	• CUH – 4964 • Bishopstown – 3680 • Melbourn New – 3695 Total = 12339 **Total Exc Overlap = 9531** **Difference = -729 (to EPR)**

Option A is comparable to the EPR in relation to Population Catchment with a total population of 10058 compared to 10260 for the EPR. Option B performs with some advantages compared to the EPR, with 729 less catchment within a 800m walking distance. Option A benefits from rejoining the Bishopstown Road at the Wilton Rd junction next to the Wilton Shopping Centre before heading North, gaining catchment similar to the EPR, whereas Option B stays North of the Hospital, missing potential catchment to the south.

5.3.2 Access to Key Services

Table 5-8 Curraheen Road / CUH Accessibility Impacts Assessment (compared to EPR)- Access to Services

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Building**	**Option A (CUH South)**	**Option B (CUH North)**
Access to services	Evaluates the number of retail, healthcare, education, and public services in a radial catchment area of 500m around the stops along the route. Routes with higher numbers of services within the catchment area score higher.	**Significant disadvantages**: >10 decrease in number of total services across the option compared to EPR **Some disadvantages:** 3 to 10 decrease in number of total services across the option compared to EPR **Comparable** Similar number of total services across the option compared to EPR (+ or – 2) **Some advantages: +**3 to +10 increase in number of total services across the option compared to EPR **Significant advantages**: >10 increase in number of total services across the option compared to EPR	• Supermarkets = 4 • Post Offices = 2 • Hospitals = 1 • Pharmacies = 4 • Clothes Shops = 2 • Schools = 7 • Banks = 3 **Total = 23 (+0 EPR)**	• Supermarkets = 3 • Post Offices = 2 • Hospitals = 1 • Pharmacies = 4 • Clothes Shops = 1 • Schools = 6 • Banks = 2 **Total = 19 (-4 EPR)**

Access to key services was assessed by calculating the number of amenities located within a radial catchment area of 500m around the stops along each route. Option A is comparable with the EPR, achieving a total score of 23, identical to the benchmark. While it has fewer supermarkets and pharmacies than the EPR, this is balanced by higher coverage of schools, resulting in overall parity.

Option B has some disadvantages compared to the EPR, with a total of 19 services, four fewer than the benchmark. The lower score reflects reduced coverage across several categories, including supermarkets, pharmacies, schools, and banks. Although it maintains equivalent access to post offices and hospitals, its shortfalls in other service types result in a notable decrease in overall coverage.

5.3.3 Access to Recreational Facilities

Table 5-9 Curraheen Road / CUH Accessibility Impacts Assessment (compared to EPR)- Access to Recreational Facilities

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Building**	**Option A (CUH South)**	**Option B (CUH North)**
Access to recreational facilities	Quantifies the number of green spaces, community centres and sports facilities in a radial catchment area of 500m around the stops along the route. Routes with a higher number of recreational facilities in the catchment area score higher.	**Significant disadvantages**: >10 decrease in number of total services across the option compared to EPR **Some disadvantages:** 3-10 decrease in number of total services across the option compared to EPR **Comparable** Similar number of total services across the option compared to EPR (+ or – 2) **Some advantages:** 3-10 increase in number of total services across the option compared to EPR **Significant advantages**: >10 increase in number of total services across the option compared to EPR	• Green Spaces = 15 • Community Centres = 1 • Sports/Fitness Centres = 4 • Pitches = 10 • Pitch & Putt Course=1 **Total = 31 (+4 EPR)**	• Green Spaces = 11 • Sports/Fitness Centres = 5 • Pitches = 13 • Pitch & Putt Course= 1 **Total = 30 (+ 3 EPR)**

Access to recreational facilities was assessed by identifying the number of amenities located within a radial catchment area of 500m of stops along each route. Option A performs with some advantages compared to the EPR, achieving a total score of 31, four higher than the EPR benchmark of 27. This improvement comes primarily from higher counts of green spaces, sports/fitness centres, and pitches, while maintaining the same number of community centres and golf courses as the EPR. Option B also performs comparable to the EPR, with a total of 30 facilities, providing three more recreational amenities than the EPR benchmark. While it has fewer green spaces than the EPR, it exceeds in its number of pitches and offers greater sports/fitness coverage compared with the EPR. In both Options, the standard and scale of recreational provision is enhanced along the CUH corridor, benefiting from established rugby, football, and sports facilities when compared with the Curraheen Road alignment.

5.3.4 Access to Jobs

Table 5-10 Curraheen Road / CUH Accessibility Impacts Assessment (compared to EPR)- Access to Jobs

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Building**	**Option A (CUH South)**	**Option B (CUH North)**
Access to jobs	Quantifies the number of jobs in a catchment area of 800m around the proposed stops on the route. Routes with a higher number of jobs within the catchment area score higher. Where the stop locations are within a close proximity together, they will overlap on their catchment. The extent of this overlap has been factored into (and excluded) from the comparison and the final numbers.	**Significant disadvantages**: >-1000 **Some disadvantages:** -250 to -999 **Comparable to the EPR** 0 to + or -249 **Some advantages: +**250 to +999 **Significant advantages**: >+1000	• CUH – 5324 • Bishopstown – 4974 • Melbourn New – 1374 Total = 11,672 **Total Exc Overlap = 7097** **Difference = +518 (to EPR)**	• CUH – 4716 • Bishopstown – 4974 • Melbourn New – 1374 Total = 11,064 **Total Exc Overlap = 6,489** **Difference = -90 (to EPR)**

On this sub-criteria, Option A is anticipated to demonstrate some advantages compared to the EPR, as it provides enhanced access to the hospital as well as also serving Bishopstown Road. Option A has a total jobs catchment of 7097 compared to 6579 for the EPR. Option B is comparable to the EPR, with 6489 jobs (90 less than EPR); and scores neutral compared to the EPR.

5.4 Curraheen Road / CUH: Social Impacts

Table 5-11 shows the 'Social Impacts' MCA outcome for Area 2 (Curraheen Road/CUH).

5.4.1 Deprivation

Table 5-11 Curraheen Road/ CUH Social Impacts Assessment (compared to EPR) - Deprivation

Social Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Deprivation	This KPI considers the extent to which deprived areas are served by the route options, by assessing the inclusion of deprived areas within a radial 500m of the stops along the route. Whether or not areas are considered deprived is determined using the 2022 POBAL deprivation index.	**Significant disadvantages**: <-5 number of deprived areas **Some disadvantages:** -2 to -5 number of deprived areas **Comparable** 0 to + or -1 in number of derived areas compared to EPR **Some advantages: +**2 to +5 number of deprived areas **Significant advantages**: >+5 number of deprived areas	• Farranlea Road • CUH • Elton Lawn • Leesdale **Difference to EPR = 0 deprived areas**	• Farranlea Road • CUH • Elton Lawn • Leesdale **Difference to EPR = 0 deprived areas**

Deprivation levels were assessed using the HP Pobal Deprivation Index, focusing on the number of deprived areas captured within a radial catchment of 500m of stops along each route. Option A and Option B perform comparably to the EPR, with both options including the same four deprived areas: Farranlea Road, CUH, Elton Lawn and Leesdale. As a result, each option records a difference of 0 deprived areas compared with the EPR, indicating full equivalence in deprivation coverage.

5.5 Curraheen Road / CUH: Land Use Impacts

Table 5-12 to Table 5-13 shows the 'Land Use Impacts' MCA outcome for Area 2 (Curraheen Road/CUH).

5.5.1 Change in Quality of Public Realm

Table 5-12 Curraheen Road/ CUH Land Use Impacts Assessment (compared to EPR)- Change in Quality of Public Realm

Land Use Impacts				
Sub-Criteria	Indicators	Indicators Banding	**Option A (CUH South)**	**Option B (CUH North)**
Change in quality of public realm	This KPI assesses the extent to which different route options can either enhance the public realm, without negatively i mpacting it. Scored Qualitatively. Public realm includes (for example) streetscapes (including new stops), community / pedestrian / open space	**Significant disadvantages**: Significant adverse effects compared to EPR e.g. permanent loss or diminishment of pedestrian / community space **Some disadvantages:** More constrained public realm potential compared to EPR **Comparable** Similar public realm potential compared to EPR **Some advantages:** Delivers some benefits to the streetscape compared to EPR **Significant advantages**: Enables transformation public realm enhancement and improved streetscape compared to the EPR		

Both Option A and Option B would operate along a new off-street alignment with no existing public realm in place. As with the EPR, each alternative could therefore incorporate new landscape treatments and enhanced footways, with opportunities for associated public realm improvements. The nature and scale of these interventions are expected to be broadly comparable to those required for the EPR. In contrast, the EPR would deliver public realm improvements along existing streets-specifically sections of Melbourne Road, Curraheen Road and adjacent mixed-use frontages-reflecting its alignment within an established urban corridor rather than a new off-street route.

5.5.2 Existing Transport Network & Service Impact

Table 5-13 Curraheen Road/ CUH Land Use Impacts Assessment (compared to EPR)- Existing Transport Network and Service Impact

Land Use Impacts				
Sub-Criteria	**Indicators**	**Indicators Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Existing Transport Network and Service Impact	This KPI evaluates the impact of the route options on the existing transport network. Improvements to routes can result in a range of positive impacts such as improved journey times and experience, improved ability to interchange between modes, facilitating modal shifts to more sustainable transport, and improving network resilience.	**Significant disadvantages**: Significant adverse effects to surrounding network and impact on services, with reduced resilience and poor integration compared to EPR **Some disadvantages:** Some reduced network efficiency and integration compared to EPR **Comparable** Similar potential compared to EPR **Some advantages:** Delivers some incremental benefits to network efficiency, integration and performance compared to EPR **Significant advantages**: Enables network efficiency, greater modal shift, higher levels of resilience and network balancing / rationalisation compared to the EPR		

Option A would operate on a fully segregated alignment along Melbourn Road and Curraheen Road/Bishopstown Road. This segregation enables improved Luas journey times but results in a lower level of local interchange and modal shift in the immediate Curraheen area. Despite the segregation, the alignment would not reduce general traffic capacity on Curraheen Road. Option B provides the same level of segregation and associated journey time benefits. However, this option has some disadvantages as it requires a new signalised junction at Wilton Road to access the alignment, which introduces additional delay for traffic in that area.

5.6 Curraheen Road / CUH: Safety Impacts

Table 5-14 to Table 5-15 shows the 'Safety Impacts' MCA outcome for Area 2 (Curraheen Road/CUH).

5.6.1 Collisions & Related Impacts

Table 5-14 Curraheen Road/ CUH Collision Impacts Assessment (compared to EPR)- Collision Impacts

Safety Impacts				
Sub-Criteria	**Indicators**	**Indicators Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Collision Impacts	This KPI considers the likelihood of collisions of the route options. Lower degrees of segregation from other traffic, higher numbers of junctions, and running on busy roads with a more important role in the local road network result in a lower score.	**Significant disadvantages**: Significant material increase in collision risk and/or frequency compared to EPR and deterioration in wider network safety **Some disadvantages:** Some new collision risks compared to EPR with other modes and diminishment of active travel interfaces **Comparable** Similar potential compared to EPR **Some advantages:** provide some improvements in safety compared to EPR with reduced number of network variables from other modes & active travel **Significant advantages**: Enables significant reduction in collision risk compared to the EPR, with significant improved interactions with network variables & active travel		

Option A has some advantages compared to the EPR, with 100% doubletrack segregation, removes interactions with general traffic, private accesses, side streets and driveways along the CUH corridor. This significantly reduces collision risk compared with the EPR, as potential conflict points are eliminated. Option B is comparable to the EPR and offers the same level of segregation and associated collision reduction benefits. However, this option requires a new signalised

junction at Wilton Road to provide LRT access, introducing an additional point of conflict on a sensitive part of the network and potentially creating new sources of delay and safety risk.

5.6.2 Other Safety Related Impacts

Table 5-15 Curraheen Road/ CUH Safety Impacts Assessment (compared to EPR)- Other Safety Impacts

Safety Impacts				
Sub-Criteria	**Indicators**	**Indicators Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Other Safety Impacts (for passengers connecting to / from stops)	This KPI examines the likelihood of anti-social behaviour, and challenges of policing along the routes. Routes that are more isolated and routes serving destinations that have a higher likelihood of anti-social behaviour receive lower scores.	**Significant disadvantages**: Significant adverse effects to passive surveillance and additional required lighting infrastructure, more isolated compared to EPR **Some disadvantages:** Some reduction to passive surveillance and risk of anti-social behaviour compared to EPR **Comparable** Similar potential compared to EPR **Some advantages:** Delivers some incremental benefits to compared to EPR with increased active frontages and visibility **Significant advantages:** Significantly active and overlooked infrastructure compared to EPR		

In relation to other safety considerations, both Options perform with some disadvantages compared to the EPR. The EPR follows Curraheen Road and Melbourn Road, where active business and residential frontages, along with regular active travel and private vehicle movements, provide a high level of passive surveillance. In contrast, the alternative route runs between sports pitches (which are only used during limited hours) and the rear gardens of residential properties. This configuration increases the potential for antisocial behaviour and would likely necessitate additional policing or other mitigation measures.

5.7 Curraheen Road / CUH: Local Environmental Impacts

Table 5-16 to Table 5-21 shows the 'Local Environmental Impacts' MCA outcome for Area 2 (Curraheen Road/CUH).

5.7.1 Air Quality

Table 5-16 Curraheen Road/ CUH Local Environmental Impacts Assessment (compared to EPR)- Air Quality

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Air Quality	Qualitive assessment. Review of baseline data (including Air Quality Zones and monitoring stations). Assessment includes the identification of sensitive receptors to pollutants and associated potential impacts in terms of distances configuration of the proposed scheme including the number of stop locations.	**Significant disadvantages**: Significant adverse potential effects to air quality and sensitive receptors compared to the EPR. **Some disadvantages:** More potential air quality effects and potential impact to sensitive receptors compared to the EPR. **Comparable** Similar air quality effects and impacts to sensitive receptors compared to the EPR. **Some advantages:** Delivers some benefits to air quality compared to EPR. **Significant advantages**: Provides improved air quality benefits compared to the EPR.		

Both Option A and Option B are comparable to the EPR. Under EU air quality requirements, Member States must divide their territory into specific "zones" and "agglomerations." Option A and B is situated within Zone B (Cork Conurbation), which is currently classified as having "Good Air Quality" under the *Air Quality Standards Regulations 2011*. The most relevant standards for the Proposed Scheme include nitrogen oxides (NOx), nitrogen dioxide (NO_2), and particulate

matter (PM_{10} and $PM_{2.5}$). Monitoring for these pollutants, specifically PM_{10}, $PM_{2.5}$, and sulphur dioxide, is conducted at the nearby Bishopstown MTU station, located 205m west of Melbourn Road

5.7.2 Noise & Vibration

Table 5-17 Curraheen Road/ CUH Local Environmental Impacts Assessment (compared to EPR)- Noise & Vibration

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Noise & Vibration	Qualitive assessment. Review of baseline data. Assessment includes the identification of sensitive noise and vibration receptors and review of the associated impacts in terms of distances and configuration of the proposed option. These specific factors have been considered using professional judgement: Likely existing baseline noise environment due to existing transport infrastructure as reflected in the EPA Round 4 noise mapping; Proximity and numbers of sensitive receptors including; residential, places of worship, educational, community and health facilities etc. to the route option; Likely screening between new sources and these receptors; and Potential for increased noise effects due to wheel squeal around corners.	**Significant disadvantages**: Potential for significant adverse noise and vibration effects at sensitive receptors compared to the EPR. **Some disadvantages:** Potential disadvantages for noise and vibration effects to sensitive receptors compared to the EPR. **Comparable** Similar noise and vibration impacts to sensitive effects to receptors compared to the EPR. **Some advantages:** Delivers some advantages for noise and vibration when compared to the EPR. **Significant advantages**: Provides improved noise and vibration impacts compared to the EPR.		

Both Option A and Option B have some disadvantages compared to the EPR. Noise sensitive receptors in Option A include residential dwellings, medical facilities (Cork University Hospital including close proximity to the acute mental health facility of CUH), educations establishments and sporting facilities and amenity areas. There are 165 residential receptors within 100m of Option A which is a 68% decrease compared to the EPR.

Therefore, there is the potential for noise and vibration effects at fewer residential receptors than the EPR. The receptors along this route are generally not located close to roads, whereas the receptors along the EPR are. The baseline noise environment at receptors along this route is therefore likely to be significantly quieter than the receptors along the EPR. The potential for effects due to changes in noise level is greater than the EPR.

Option B has 270 residential receptors within 100m which is a 60% decrease compared to the EPR. Therefore, there is the potential for noise and vibration effects at significantly fewer residential receptors than the EPR. The receptors along this route are generally not located close to major roads, whereas the receptors along the EPR are. The baseline noise environment at receptors along this route is therefore likely to be significantly quieter than at the receptors along the EPR. The potential for significant effects due to changes in noise level is greater than the EPR.

5.7.3 Biodiversity

Table 5-18 Curraheen Road/ CUH Local Environmental Impacts Assessment (compared to EPR)- Biodiversity

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Biodiversity	Qualitive Assessment. Review of the baseline data including proximity to European sites and nationally designated sites where applicable). Review options for the potential impact on the type of trees/hedges removal, number of trees lost and their potential ecological value, including potential for bat roots and passerine birds,	**Significant disadvantages**: Significantly more adverse effects on biodiversity receptors compared to EPR. E.g. impact on biodiversity of international importance within or outside a European site where EPR does not, in proximity (within 10m) to a watercourse where EPR is not, significantly more (101 or more) loss of trees of comparable ecological value compared to EPR. **Some disadvantages:** Some adverse effects on biodiversity receptors compared to EPR or the EPR has opportunities to improve the value of local		

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
	construction works through green field sites, conservation areas, potential impact to bats and other mammals, high ecological value sites etc. Review of options potential for biodiversity net gain through option of planting of replacement trees or the creation of new habitats where applicable, and other mitigation measures.	biodiversity. E.g. impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where EPR does not, some (31-100 more) loss of trees of comparable ecological value compared to EPR. Ecologically driven seed mixes, bat boxes, lighting plans, etc, may improve the value of local biodiversity. **Comparable:** The same or negligible difference in effects on biodiversity receptors compared to EPR. E.g. the same impacts to the aforementioned receptors, similar (0-30 more) loss of trees of comparable ecological value compared to EPR, loss of habitats with a similar ecological value, for example loss of amenity grassland compared to loss of roads/footpaths is comparable as the impacts from loss of amenity grassland are negligible to biodiversity. **Some advantages:** Fewer adverse effects on biodiversity receptors compared to EPR or option has opportunities to improve the value of local biodiversity where EPR does not. E.g. EPR impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where option does not, EPR has some (31-100 more) loss of trees of comparable ecological value compared to option. Ecologically driven seed mixes, bat boxes,		

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
		lighting plans, etc, may improve the value of local biodiversity. **Significant advantages:** Significantly fewer adverse effects on biodiversity receptors compared to EPR. E.g. the EPR impacts biodiversity of international importance within or outside a European site where option does not, EPR is in proximity (within 10m) to a watercourse where option is not, EPR has significantly more (101 or more) loss of trees of comparable ecological value compared to option.		

Both Option A and Option B have some advantages compared to the EPR. Option A passes primarily through public roads and amenity grassland of low ecological value, with no European or nationally designated sites within its zone of influence. Biodiversity receptors include amenity grassland, scattered treelines and breeding birds. The route will result in the removal of 770 m of amenity grassland, 3 treelines (410 m / 69 trees)-including one treeline of medium and large trees with high bat roost potential-and 9 individual trees, some of which are of high ecological value. Due to spatial constraints and the narrow road corridor, opportunities for biodiversity net gain are limited.

Option B follows the same environmental context and ecological baseline as Option A, with similar receptors and the same absence of designated sites. It also removes 770 m of amenity grassland, three treelines with comparable structure and ecological value, and the same number of individual trees, including those with potential bat roost features and value for breeding birds. As with Option A, constrained space limits opportunities for replacement planting or biodiversity enhancement.

The EPR intersects public road corridors and urban areas with low ecological value but includes a longer length of treeline and individual trees affected-1690 m of treeline and 122 trees-due to its alignment along roads with more established vegetation. Some trees are medium to high ecological value with known or potential bat roost features. While this route also crosses amenity grassland, it offers fewer spatial constraints, providing a somewhat greater opportunity for biodiversity mitigation or net gain than the alternative routes.

5.7.4 Water Resources & Soil Quality

Table 5-19 Curraheen Road/ CUH Local Environmental Impacts Assessment (compared to EPR)- Water Resources/ Soil

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Water Resources / Soil	Qualitative assessment. Review of baseline data. Review of potential impacts and distances to hydrogeology and hydrology or water resources e.g. Water Fram ework Directive (WFD) river / streams arising from the works and any new structures and a review of potential flood risk in the area. Review of Corine land use for soils and review of the bedrock geology, groundwater dependent terrestrial ecosystems (GWDTES) and karst landforms within the segment and potential to encounter ground contamination as a result of historical industries/landfills.	**Significant disadvantages**: Significantly more adverse effects on water and soils compared to the EPR. E.g. increased number of watercourse crossings which may require significant in-stream works (i.e. piers), increased interaction with mapped flood risk leading to floodplain loss/displacement. Increased interaction with potential ground contamination and increased disturbance of soils. These effects are likely to require significantly more mitigation compared to the EPR. **Some disadvantages:** A few more adverse effects on water and soil compared to the EPR. E.g. increased number of watercourse crossings but don't require significant in-stream works, increases in interactions with mapped flood risk areas leading to minimal floodplain loss/displacement. Minimal increased interaction with potential ground contamination. These effects are likely to require minimal additional mitigation compared to the EPR. **Comparable** Similar effects on water and soils compared to the EPR. **Some advantages:** Fewer adverse effects on water and soils compared to EPR. E.g. fewer number of watercourse crossings, slight reductions in interaction with mapped		

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
		flood risk areas. Slight reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a slight reduction in the required mitigation measures compared to the EPR. **Significant advantages**: Significantly fewer adverse effects on water and soils compared to the EPR. E.g. fewer number of watercourse crossings, significantly reduced interaction with mapped flood risk areas. Reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a significant reduction in the required mitigation measures compared to the EPR.		

Both Option A and Option B are comparable to the EPR. The Options do not cross any rivers, watercourses, WFD waterbodies, or areas identified in CFRAM or national flood hazard mapping. The underlying geology and soils are generally well understood, dominated by artificial ground and Carboniferous bedrock with no identified contamination risks, no karst landforms, and no potential Groundwater Dependent Terrestrial Ecosystems (GWDTEs). As a result, both alternatives have similar and low levels of potential impact on water and soil resources, comparable with the EPR.

5.7.5 Landscape & Visual

Table 5-20 Curraheen Road/ CUH Local Environmental Impacts Assessment (compared to EPR)- Landscape & Visual

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Landscape & Visual	Qualitative assessment including a baseline review. This criterion considers physical and perceptual changes to the landscape and townscape elements (including vegetation) and character, impacts on landscape designations (Landscape Character Area (LCA)) and impacts on visual receptors, visual amenity and protected views.	**Significant disadvantages**: Significantly more adverse effects on landscape and visual receptors compared to EPR e.g. change of landscape / townscape character, loss of mature trees or a significant number of trees (landscape / townscape elements), adverse effect on designated landscapes or views, large number of highly sensitive visual receptors (such as residential receptors) affected **Some disadvantages:** A few more adverse effects on landscape and visual receptors (see above) compared to EPR **Comparable** Similar effects on landscape and visual receptors, on balance, compared to EPR **Some advantages:** Fewer adverse effects on landscape and visual receptors compared to EPR **Significant advantages:** Significantly fewer adverse effects on landscape and visual receptors compared to EPR such as minor change of landscape / townscape character, lower number or less mature trees lost, lesser effect on designated landscapes or views, fewer highly sensitive visual receptors (such as residential receptors) affected		

Both Option A and Option B have some advantages compared to the EPR. Option A and Option B follow existing road corridors at their eastern and western ends, passing through areas with lower sensitivity receptors such as sports grounds. This reduces visual impacts compared with the EPR. Both Options also result in the loss of far fewer trees along Melbourne Road and no tree loss along Curraheen Road, leading to less pronounced townscape and visual effects overall. Some localised impacts would still occur, including the removal of trees and hedgerows, particularly around Bishopstown and the open space at Ballinlough Lawn. However, overall landscape impacts for both options are lower than those of the EPR.

5.7.6 Cultural Heritage

Table 5-21 Curraheen Road/ CUH Local Environmental Impacts Assessment (compared to EPR)- Cultural Heritage

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
Cultural Heritage	Qualitative assessment including a baseline review data. The review of the potential impacts includes direct loss, impact, disturbance to archaeological remains, buildings (including individual areas), landscapes and parks, protected structures, historic landscapes with cultural and heritage significance, and mitigation measures. .	**Significant disadvantages**: Significantly more adverse effects on the cultural heritage resource compared to EPR e.g. full or partial removal of archaeological remains or built heritage assets, adverse alteration of an assets setting, adverse effect on designated assets, such as National Monuments or Protected Structures. **Some disadvantages:** A few more adverse effects on the cultural heritage resource (see above) compared to EPR but no impacts on designated assets. **Comparable** Similar effects on the cultural heritage resource, on balance, compared to EPR. **Some advantages:** Fewer adverse effects on the cultural heritage assets compared to EPR.		

Local Environmental Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (CUH South)**	**Option B (CUH North)**
		Significant advantages: Significantly fewer adverse effects on the cultural heritage resource compared to EPR such as a lower number of archaeological remains that would be removed or no/less effects on designated assets compared to the EPR.		

Both Option A and Option B have some disadvantages for Cultural Heritage when compared to the EPR. Option A and Option B would impact on designated ringfort RMP CO074-047. Most of the ringfort has since been developed over through the construction of houses, roads, and associated development. It is possible that any remains within the modern development areas will have been disturbed or removed. However, there is potential for traces of the south-eastern part of enclosure to survive within the grassy area that would be crossed by the route. This could result in a significant effect.

Both Option A and Option B would abut the northern edge of the proposed Melbourn Road Estates Architectural Conservation Area (ACA) but there are no impacts predicted on the ACA. Farrandahadore More Demesne (Ref. DL_20) is a former demesne landscape to the south of Bishopstown Road but there are no impacts predicted on the former demesne.

Three sites of non-designated cultural heritage features identified from historic mapping are located fully or partially within the construction footprint. There would be partial or total removal of any surviving remains but there are no significant effects predicted on the sites as the sites are of either negligible or low significance. There is the potential for impacting on previously unknown buried archaeological remains. The significance of effects is unknown. Both Options would result in one significant effect on the RMP CO074-047.

5.8 Results Summary and Outcomes for Assessment Area 2 (Curraheen / CUH)

Table 5-22 CUH Option A and B MCA Assessment Summary

MCA Criteria	MCA Sub-Criteria	Option A (CUH South)	Option B (CUH North)
Transport User Benefits & Other Economic Impacts	Travel Time		
	Demand		
	Benefits		
	Costs		
	Reliability		
	Resilience		
Accessibility Impacts	Population Catchment		
	Access to services		
	Access to recreational facilities		
	Access to jobs		
Social Impacts	Deprivation Index		
Land Use Impacts	Change in quality of public realm		
	Existing Transport Network and Service Impact		
Safety Impacts	Collisions and related impacts		
	Other Safety Impacts		
Local Environmental Impacts	Air Quality		
	Noise & Vibration		
	Biodiversity		
	Water Resources / Soil		
	Landscape & Visual		
	Cultural Heritage		

In summary, the comparative assessment demonstrates that both Option A and B provide greater opportunities to improve benefits over the EPR. This is principally as a result of increased segregation which provides for improved travel time, improved reliability and improved resilience. The benefits are more pronounced in the case of Option A as broadly indicated in the foregoing table and mainly for the following key reasons:

- Option A provides greater economic benefits (+€37m greater than the EPR, +€75m greater than Option B).
- In comparison to Option B:
    - Option A serves a slightly larger catchment area and provides better access to services and jobs, with stop locations sited in closer proximity to the primary entrance points to CUH campus and the nearby Wilton District Centre.
    - Option A provides a slightly greater opportunity to reduce the likelihood of collision impacts and to provide a greater opportunity to integrate into the existing transport network.

Opportunities will be explored in the next stage of the project development to optimise the design and to reduce impacts on organisation and properties impacted as a result of the route alignment.

Principally for the foregoing reasons, Option A has been proposed to replace the EPR as the PR between Melbourn Road and Bishopstown Road.

6. Cork City East Multi-Criteria Analysis (Assessment Area 3)

6.1 Introduction

The MCA results for of the assessment (in line with TAF), of Assessment Area 3 (Cork City East – Passage to Blackrock Greenway) are set out in the chapter below. Both the alignment of the localised alternative routes and the corresponding section of the EPR are shown below in **Figure 6-1** below.

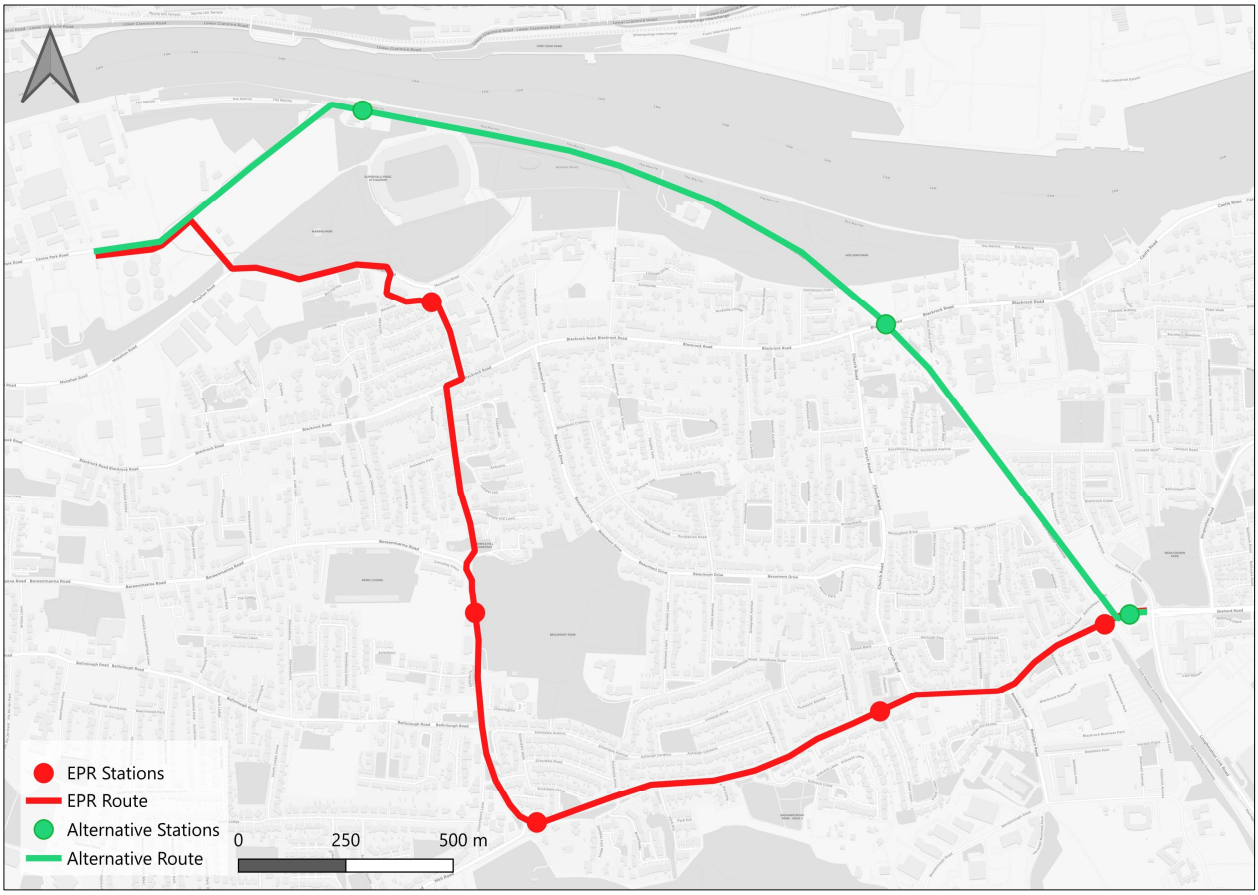

Figure 6-1 City East EPR and Alternative Route Alignments

6.2 Cork City East: Transport User Benefits & Other Economic Impacts

Table 6-1 to Table 6-6 shows the 'Transport User Benefits & Other economic Impact' MCA outcome for Area 3 (Cork City East).

6.2.1 Travel Time

Table 6-1 Cork City East Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Travel Time

Transport User Benefits & Other Economic Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Travel Time	Journey time based on extractions from SWRM runs	**Significant disadvantages:** >+90 seconds **Some disadvantages** +30 to +89 seconds **Comparable to the EPR** 0 to + or -29 seconds **Some advantages:** -30 to -89 seconds **Significant advantages:** >-90 seconds	Average running time 52 mins 06 secs eastbound (5 mins 24 secs shorter than EPR) 52mins 42 secs westbound (5 mins 36 secs shorter than EPR)

The Greenway Option performs with significant advantages compared to the EPR, with modelled SWRM outputs showing total running times over five minutes shorter in both directions. This improvement is driven by a more direct alignment and full segregation from general traffic, enabling higher and more consistent operating speeds. Unlike the EPR, the alternative route avoids street level sections and reduces interactions with traffic, public transport, and active travel users, resulting in smoother flow and fewer delay points. It should be noted that operational speeds may need to be reduced to mitigate safety associated with shared use of the greenway with active travel users.

6.2.2 Demand

Table 6-2 Cork City East Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Demand

Transport User Benefits & Other Economic Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Demand	24 Hour Public Transport Boardings	**Significant disadvantages:** >-5% **Some disadvantages:** -2.5 to -4.99% **Comparable** 0 to +2.49% **Some advantages:** +2.5 to +4.99% **Significant advantages:** >+5%	**24-hour boardings by mode for 2035:** • Luas – 50,068 • Irish Rail – 23,858 • Urban & Other Buses – 83,157 Total – 157,083 Percentage Difference to EPR = -0.322%

The Greenway Option is comparable to the EPR under this sub-criteria. It performs comparably to the EPR in terms of overall public transport demand, with total boardings of 157,083 versus 157,591 on the EPR-an insignificant difference well within the "comparable" (0–2.5%) performance band. While most modes show broadly similar levels of use, the results indicate a 3.8% reduction in Luas boardings on the Greenway option. This is offset by slight increases in other public transport categories, resulting in minimal overall change in total demand between the two alignments.

6.2.3 Benefits

Table 6-3 Cork City East Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Benefits

Transport User Benefits & Other Economic Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Benefits	Benefits based on the aggregated (monetised) journey time benefits of the route options for transport users, as well as the wider impact on the public finances	**Significant disadvantages**: >-€100m **Some disadvantages:** -€50m to -€99m **Comparable to the EPR** €0 to + or -€49m **Some advantages:** +€50m to €99m **Significant advantages**: >€100m	Similar benefits compared to EPR (€990m)

The Greenway Option is comparable to the EPR in relation to scheme Benefits, with total monetised journey time and wider public finance benefits estimated at €990 million, closely aligning with the EPR value of €991 million. This places the option firmly within the "comparable" performance band (€0–75m), indicating that the alternative alignment neither materially increases nor reduces overall scheme benefits. The results show that, while operational characteristics differ between the two routes, these variations do not translate into significant differences in aggregated economic benefits.

6.2.4 Costs

Table 6-4 Cork City East Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Costs

Transport User Benefits & Other Economic Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Costs	Capital Cost Comparison of costs for the construction of the LRT infrastructure, as well as the operational costs of Luas Cork on the route. Costs are based on level of design relative for phase 2 of the project. Includes allowances for LRT infrastructure, land take, utilities, structures, rolling stock (including replacement). The contingency percentage applied to the estimated costs is 59% in accordance with the NTA Contingency Calculator	**Significant disadvantages**: >-€100m **Some disadvantages:** -€50m to -€99m **Comparable to the EPR** €0 to + or -€49m **Some advantages:** +€50m to €99m **Significant advantages**: >€100m	Cost: €1,979m, €55m more than the EPR.

The Greenway Option would have reduced length of track required, and results in a lower cost for track infrastructure. However, engineering and environmental constraints are significantly more prominent along the Greenway compared to the EPR, with diversion of major city utilities required, resulting in some disadvantages compared to the EPR, with costs higher by €55m.

6.2.5 Reliability

Table 6-5 Cork City East Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Reliability

Transport User Benefits & Other Economic Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Reliability	Extent of shared running, priority track and consistency in journey times. Routes are assessed on the proportion of the route running a) on-street mixed with traffic, b) on-street but segregated from traffic or c) off-street. Routes with a higher proportion of their route running segregated score higher, as running times are considered to be more reliable. Routes with a higher proportion of the route running on-street mixed with traffic score lower.	**Significant disadvantages:** Higher likelihood of irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR **Some disadvantages:** Some likelihood of greater irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR **Comparable**: Similar levels of reliability compared to EPR **Some advantages**: Some likelihood of enhanced reliability for timetabling due to levels of Luas priority and potential for delays compared to EPR **Significant advantages**: Higher likelihood of regular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR	Segregated Off Street – single track: 100%

The Greenway Option presents some advantages compared to the EPR, supported by its extensive segregated alignment, which reduces operational variability relative to on-street running. The potential to increase reliability compared to the EPR is a direct result of the higher level of priority that could be achieved for Luas Cork through the provision of segregated infrastructure for nearly the full extents, reducing the operational variables compared to on-street running.

6.2.6 Resilience

Table 6-6 Cork City East Transport User Benefits & Other Economic Impacts Assessment (compared to EPR)- Resilience

Transport User Benefits & Other Economic Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Resilience	Ability and headway of proposed alignment to absorb varying levels of Luas demand from the transport network at peak times and recover from disruption	**Significant disadvantages:** No capacity to respond to network shocks compared to EPR **Some disadvantages:** Minimal capacity to respond to network shocks and stresses. Option presents a reduced level of operational flexibility compared to the EPR **Comparable**: Similar levels of resilience compared to EPR **Some advantages**: Some capacity to respond to network shocks. Option presents a enhanced level of operational flexibility compared to the EPR **Significant advantages**: High capacity to respond to network shocks and stresses compared to EPR, without degrading the service	

The Greenway Option presents significant disadvantages compared to the EPR under the resilience sub-criteria. The single track, two-way running on the greenway would introduce a potential single point of operational failure onto the Luas network, with limitations on the frequency variability. Operational flexibility during disruption / incidents would be significantly reduced compared to the EPR, which would have an adverse cascading impact on the wider network. If future demand increases, there is limits on how much capacity can be added to the system through increased services. The increased services could also in turn have a wider impact on the reliability across the wider route.

6.3 Cork City East: Accessibility Impacts

Table 6-7 to Table 6-10 shows the 'Accessibility Impacts' MCA outcome for Area 3 (Cork City East).

6.3.1 Population Catchment

Table 6-7 Cork City East Accessibility Impacts Assessment (compared to EPR)-Population Catchment

Accessibility Impacts			
Sub-Criteria	**Indicators**	**Indicator Building**	**Passage to Blackrock Greenway**
Population Catchment	Population catchment within a 800m walking distance of stop locations on route Where the stop locations are within a close proximity together, they will overlap on their catchment. The extent of this overlap has been factored into (and excluded) from the comparison and the final numbers.	**Significant disadvantages**: >-1000 **Some disadvantages:** -250 to -999 **Comparable to the EPR** 0 to + or -249 **Some advantages: +**250 to +999 **Significant advantages**: >+1000	• Marina – 2905 • Blackrock – 2671 • Skehard – 3719 **Total: 9295** **Total Excluding overlap of stop catchment: 7333** **Difference to EPR = -6286**

The Greenway Option presents significant disadvantages compared to the EPR under the Population Catchment sub-criteria. The alternative route performs less favourably, with a total of approximately 7333 residents within 800 m of proposed stop locations compared with 13,618 on the EPR. This reflects a reduction of 6286 people. The difference is largely driven by lower catchment values at fewer stops for the Greenway, versus stops with higher catchment values on the EPR.

6.3.2 Access to Key Services

Table 6-8 Cork City East Accessibility Impacts Assessment (compared to EPR)-Access to Services

Accessibility Impacts			
Sub-Criteria	**Indicators**	**Indicator Building**	**Passage to Blackrock Greenway**
Access to Services	Evaluates the number of retail, healthcare, education, and public services in a radial catchment area of 500m around the stops along the route. Routes with higher numbers of services within the catchment area score higher.	**Significant disadvantages**: >10 decrease in number of total services across the option compared to EPR **Some disadvantages:** 3 to 10 decrease in number of total services across the option compared to EPR **Comparable** Similar number of total services across the option compared to EPR (+ or – 2) **Some advantages: +**3 to +10 increase in number of total services across the option compared to EPR **Significant advantages**: >10 increase in number of total services across the option compared to EPR	• Supermarkets = 1 • Pharmacies = 1 • Schools = 5 • Banks = 1 **Total = 8 (-6 EPR)**

The Greenway Option performs with some disadvantages compared to the EPR in terms of access to key services, as illustrated in the Accessibility Impacts table. The tables show that the alternative alignment provides access to only a limited number of essential facilities-serving one supermarket, no post offices, one pharmacy, and no clothing shops-whereas the EPR captures a much higher density of services across these categories. The EPR, for example, provides access to two supermarkets, two post offices, four pharmacies, and multiple retail amenities, resulting in noticeably stronger accessibility across most service types. Both options offer similar access to schools and banks; however, the overall distribution highlights a clear reduction in service coverage for the alternative route.

6.3.3 Access to Recreational Facilities

Table 6-9 Cork City East Accessibility Impacts Assessment (compared to EPR)- Access to Recreational Facilities

Accessibility Impacts			
Sub-Criteria	**Indicators**	**Indicator Building**	**Passage to Blackrock Greenway**
Access to recreational facilities	Quantifies the number of green spaces, community centres and sports facilities in a radial catchment area of 500m around the stops along the route. Routes with a higher number of recreational facilities in the catchment area score higher.	**Significant disadvantages**: >10 decrease in number of total services across the option compared to EPR **Some disadvantages:** 3-10 decrease in number of total services across the option compared to EPR **Comparable** Similar number of total services across the option compared to EPR (+ or – 2) **Some advantages:** 3-10 increase in number of total services across the option compared to EPR **Significant advantages**: >10 increase in number of total services across the option compared to EPR	• Green Spaces = 5 • Sports/Fitness Centres =1 • Pitches = 4 **Total = 10 (-5 EPR)**

In terms of access to recreational facilities the Greenway Option has some disadvantages compared with the EPR. Although both options serve a similar number of green spaces, the Greenway alignment captures noticeably fewer recreational amenities overall, with no community centres, only one sports/fitness facility, and fewer sports pitches, and no access to a golf course or swimming pool within the catchment. In contrast, the EPR benefits from a broader spread of facilities, including additional sports/fitness centres, more pitches, and a golf course.

6.3.4 Access to Jobs

Table 6-10 Cork City East Accessibility Impacts Assessment (compared to EPR)- Access to Jobs

Accessibility Impacts			
Sub-Criteria	**Indicators**	**Indicator Building**	**Passage to Blackrock Greenway**
Access to jobs	Quantifies the number of jobs in a catchment area of 800m around the proposed stops on the route. Routes with a higher number of jobs within the catchment area score higher. Where the stop locations are within a close proximity together, they will overlap on their catchment. The extent of this overlap has been factored into (and excluded) from the comparison and the final numbers.	**Significant disadvantages**: >-1000 **Some disadvantages:** -250 to -999 **Comparable to the EPR** 0 to + or -249 **Some advantages: +**250 to +999 **Significant advantages**: >+1000	• Marina – 3981 • Blackrock – 335 • Skehard – 4176 Total = 8492 **Total Excluding overlap = 5050** **Difference = -8569 (to EPR)**

The Greenway Option has significant disadvantages compared to the EPR, providing access to an estimated 5050 jobs within 800m of its stops compared with 13,618 for the EPR. This is primarily a result of the Greenway Option's alignment being in the cutting across three stop locations compared to the EPR across four stop locations in areas of much greater catchment. The EPR achieves stronger coverage and therefore offers better support for commuter access and economic connectivity.

6.4 Cork City East: Social Impacts

Table 6-11 shows the 'Social Impacts' MCA outcome for Area 3 (Cork City East).

Table 6-11 Cork City East Social Impacts Assessment (Compared to EPR)- Deprivation

Social Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Deprivation	This KPI considers the extent to which deprived areas are served by the route options, by assessing the inclusion of deprived areas within a radial 500m of the stops. Whether or not areas are considered deprived, is determined using the 2022 POBAL deprivation index.	**Significant disadvantages**: <-5 number of deprived areas **Some disadvantages:** -2 to -5 number of deprived areas **Comparable** 0 to + or -1 in number of derived areas compared to EPR **Some advantages: +**2 to +5 number of deprived areas **Significant advantages**: >+5 number of deprived areas	• Ringmahon Road • Ballinure Road • Meadowgrove Estate • Oakdene • Cherry Lawn • Avonlea Court **Difference to EPR = -3 deprived areas**

The Greenway Option has some disadvantages compared to the EPR providing more limited coverage of deprived areas than the EPR. While it serves several deprived neighbourhoods, the EPR reaches a wider range of priority communities, capturing a greater number of areas within 500m radial catchment of its stops.

6.5 Cork City East: Land Use Impacts

Table 6-12 to Table 6-13 shows the 'Land Use Impacts' MCA outcome for Area 3 (Cork City East).

6.5.1 Change in Quality of Public Realm

Table 6-12 Cork City East Land Use Impacts Assessment-Change in Quality of Public Realm

Land Use Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Change in quality of public realm	This KPI assesses the extent to which different route options can enhance the public realm without negatively impacting it. Scored Qualitatively. Public realm includes (for example) streetscapes (including new stops), community / pedestrian / open space	**Significant disadvantages**: Significant adverse effects compared to EPR e.g. permanent loss or diminishment of pedestrian / community space **Some disadvantages:** More constrained public realm potential compared to EPR **Comparable** Similar public realm potential compared to EPR **Some advantages:** Delivers some benefits to the streetscape compared to EPR **Significant advantages**: Enables transformation public realm enhancement and improved streetscape compared to the EPR	

The Greenway Option would have significant disadvantages compared to the EPR under this sub-criteria. Utilisation of the Greenway would significantly diminish a valued pedestrian space and active travel asset (which provides health benefits) for the city that currently accommodates a wide range of active travel users within the community. Utilisation of the greenway by the Luas would adversely alter the streetscape of infrastructure that could be provided to accommodate / replicate the current active travel use, pedestrian space and associated demand level.

Current data across the city shows that walking and cycling in the Cork Metropolitan Area prevent 729 serious long-term health conditions annually, (including heart disease and type 2 diabetes), of which the Greenway is a major contributor to this prevention (2023 Cork Metropolitan Area Walking and Cycling Index).

The NPF and the Cork City Docklands Framework envision the area as a "15-minute city" where 75% of journeys are made via walking, cycling, or public transport. The Greenway is the "central spine" of this sustainable urban quarter. However, combining public transport and active travel use onto the same footprint, would diminish the cumulative gain from an active travel focused greenway, plus a further separate corridor for public transport (BusConnects and EPR)

The NPF 2040 and Cork Metropolitan Area Transport Strategy (CMATS) prioritise "compact growth". Utilising the Greenway for light rail would conflict with the mandate to expand, rather than replace, active travel networks to accommodate a projected population increase where daily walking trips are expected to grow by 63% (90 million annual trips) and cycle trips expected to grow by 19.5 million by 2040.

6.5.2 Existing Transport Network & Service Impact

Table 6-13 Cork City East Land Use Impacts Assessment (Compared to EPR)- Existing Transport Network and Service Impact

Land Use Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Existing Transport Network and Service Impact	This KPI evaluates the impact of the route options on the existing transport network. Improvements to routes can result in a range of positive impacts such as improved journey times and experience, improved ability to interchange between modes, facilitating modal shifts to more sustainable transport, and improving network resilience.	**Significant disadvantages**: Significant adverse effects to surrounding network and impact on services, with reduced resilience and poor integration compared to EPR **Some disadvantages:** Some reduced network efficiency and integration compared to EPR **Comparable** Similar potential compared to EPR **Some advantages:** Delivers some incremental benefits to network efficiency, integration and performance compared to EPR **Significant advantages**: Enables network efficiency, greater modal shift, higher levels of resilience and network balancing / rationalisation compared to the EPR	Segregated Off Street – single track: 100%

The Greenway Option would introduce a fully segregated, off-street alignment with 100% singletrack running, which reduces integration with the existing transport network and limits opportunities for interchange with other modes. By replacing a key section of the Greenway, it also diminishes an important active travel corridor, reducing connectivity and flexibility for walking and cycling. While the alignment offers higher segregation from road traffic-bringing some benefits to operational reliability and journey times-it also reduces network resilience and constrains future capacity. Overall, the alternative route results in a less connected and less adaptable transport solution when compared with the EPR.

6.6 Cork City East: Safety Impacts

Table 6-14 to Table 6-15 shows the 'Safety Impacts' MCA outcome for Area 3 (Cork City East).

6.6.1 Collisions & Related Impacts

Table 6-14 Cork City East Safety Impacts Assessments (Compared to EPR) - Collisions and Related Impacts

Safety Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Collisions and related impacts	This KPI considers the likelihood of collisions of the route options. Lower degrees of segregation from other traffic, higher numbers of junctions, and running on busy roads with a more important role in the local road network result in a lower score.	**Significant disadvantages**: Significant material increase in collision risk and/or frequency compared to EPR and deterioration in wider network safety **Some disadvantages:** Some new collision risks compared to EPR with other modes and diminishment of active travel interfaces **Comparable** Similar potential compared to EPR **Some advantages:** provide some improvements in safety compared to EPR with reduced number of network variables from other modes & active travel **Significant advantages**: Enables significant reduction in collision risk compared to the EPR, with significant improved interactions with network variables & active travel	

The Greenway Option has some advantages compared to the EPR. Physical segregation would be required to safely accommodate active travel users across all age groups. It is not clear at this stage of design if continued segregation is possible along the full extents and may require uncontrolled crossing points for

active travel users – creating areas of potential safety conflict for users of the greenway. This route would provide a fully segregated single-track alignment, minimising interaction with other modes of transport, avoiding general traffic junctions and thereby minimising the risk of vehicle collisions.

6.6.2 Other Safety Related Impacts

Table 6-15 Cork City East Safety Impacts Assessments (Compared to EPR) - Other Safety Impacts

Safety Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Other Safety Impacts (for passengers connecting to / from stops)	This KPI examines the likelihood of anti-social behaviour, and challenges of policing along the routes. Routes that are more isolated and routes serving destinations that have a higher likelihood of anti-social behaviour receive lower scores.	**Significant disadvantages**: Significant adverse effects to passive surveillance and additional required lighting infrastructure, more isolated compared to EPR **Some disadvantages:** Some reduction to passive surveillance and risk of anti-social behaviour compared to EPR **Comparable** Similar potential compared to EPR **Some advantages:** Delivers some incremental benefits to compared to EPR with increased active frontages and visibility **Significant advantages**: Significantly active and overlooked infrastructure compared to EPR	

The Greenway Option has some disadvantages compared to the EPR. The option uses the current greenway, with no active street frontage from businesses or residents. This route will therefore require active mitigation to prevent anti-social behaviour and maintain safety levels across all groups. The proposed alternative route lacks passive surveillance, marginalizing access for some groups, which would require assessment through an Equality Impact Assessment

(EQIA). The EPR alignment runs through streets with active frontages, (local businesses and with residential frontage), creating a safer environment with passive oversight.

6.7 Cork City East: Local Environmental Impacts

Table 6-16 to Table 6-22 shows the 'Local Environmental Impacts' MCA outcome for Area 3 (Cork City East).

6.7.1 Air Quality

Table 6-16 Cork City Easy Local Environmental Impacts Assessment (compared to EPR)- Air Quality

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Air Quality	Qualitive assessment. Review of baseline data (including Air Quality Zones and monitoring stations). Assessment includes the identification of sensitive receptors to pollutants and associated potential impacts in terms of distances configuration of the proposed scheme including the number of stop locations.	**Significant disadvantages**: Significant adverse potential effects to air quality and sensitive receptors compared to the EPR. **Some disadvantages:** More potential air quality effects and potential impact to sensitive receptors compared to the EPR. **Comparable** Similar air quality effects and impacts to sensitive receptors compared to the EPR. **Some advantages:** Delivers some benefits to air quality compared to EPR. **Significant advantages**: Provides improved air quality benefits compared to the EPR.	

In terms of air quality, both the Greenway Option and the EPR are comparable and expected to deliver similar outcomes. While construction activities may temporarily degrade air quality, the operational phase of the tramline is anticipated to improve conditions due to a modal shift from private vehicles to public transport. The Option is located within Zone B, which under the regulations is defined as Zone B-Cork Conurbation.

Nearest Air quality monitoring sites: Lower Glanmire Road approx.950m NW. Air quality in the vicinity is considered to be primarily influenced from road traffic. Potential air quality impacts may arise during construction from plant equipment, machinery and increased construction traffic. This option proposes 3 stop locations within this segment. Comparable for potential Air Quality impacts during the construction phase, while during the operational phase there is potential to improve air quality in the area as a result of the sustainable provision of the Luas Cork. Climate considerations to be included at the next stage of assessment.

6.7.2 Noise & Vibration

Table 6-17 Cork City Easy Local Environmental Impacts Assessment (compared to EPR)- Noise & Vibration

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Noise & Vibration	Qualitive assessment. Review of baseline data. Assessment includes the identification of sensitive noise and vibration receptors and review of the associated impacts in terms of distances and configuration of the proposed option. These specific factors have been considered using professional judgement: Likely existing baseline noise environment due to existing transport infrastructure as reflected in the EPA Round 4 noise mapping. Proximity and numbers of sensitive receptors including; residential, places of worship, educational, community and health facilities etc. to the route option; Likely screening between new sources and these receptors; and potential for increased noise effects due to wheel squeal around corners.	**Significant disadvantages**: Potential for significant adverse noise and vibration effects at sensitive receptors compared to the EPR. **Some disadvantages:** Potential disadvantages for noise and vibration effects to sensitive receptors compared to the EPR. **Comparable** Similar noise and vibration impacts to sensitive effects to receptors compared to the EPR. **Some advantages:** Delivers some advantages for noise and vibration when compared to the EPR. **Significant advantages**: Provides improved noise and vibration impacts compared to the EPR.	

The Greenway Option has some disadvantages compared to the EPR. There are 268 residential receptors within 100m of this option which is a 71% decrease compared to the EPR. Therefore, there is the potential for noise and vibration effects at significantly fewer residential receptors than the EPR.

The receptors along this route are generally not located close to roads, whereas the receptors along the EPR are. The baseline noise environment at receptors along this route is therefore likely to be significantly quieter than the receptors along the EPR. The potential for significant effects due to changes in noise level is greater than the EPR. Taking these factors together, it is considered that there are some disadvantages for noise and vibration effects at sensitive receptors compared to the EPR.

6.7.3 Biodiversity

Table 6-18 Cork City Easy Local Environmental Impacts Assessment (compared to EPR)- Biodiversity

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Biodiversity	Qualitive Assessment. Review of the baseline data including proximity to European sites and Nationally designated sites where applicable). Review options for the potential impact on the type of trees/hedges removal, number of trees lost and their potential ecological value, including potential for bat roots and passerine birds, construction works through green field sites, conservation areas, potential impact to bats and other mammals, high ecological value sites etc. Review of options potential for biodiversity net gain through option of planting of	**Significant disadvantages**: Significantly more adverse effects on biodiversity receptors compared to EPR. E.g. impact on biodiversity of international importance within or outside a European site where EPR does not, in proximity (within 10m) to a watercourse where EPR is not, significantly more (101 or more) loss of trees of comparable ecological value compared to EPR. **Some disadvantages:** Some adverse effects on biodiversity receptors compared to EPR or the EPR has opportunities to improve the value of local biodiversity. E.g. impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where EPR does not, some (31-100 more) loss of trees of comparable ecological value compared to EPR. Ecologically driven seed mixes, bat boxes, lighting plans, etc, may improve the value of local biodiversity. **Comparable:** The same or negligible difference in effects on biodiversity receptors compared to EPR. E.g. the same impacts to the aforementioned receptors, similar (0-30 more) loss of trees of	

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
	replacement trees or the creation of new habitats where applicable, and other mitigation measures.	comparable ecological value compared to EPR, loss of habitats with a similar ecological value, for example loss of amenity grassland compared to loss of roads/footpaths is comparable as the impacts from loss of amenity grassland are negligible to biodiversity. **Some advantages:** Fewer adverse effects on biodiversity receptors compared to EPR or option has opportunities to improve the value of local biodiversity where EPR does not. E.g. EPR impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where option does not, EPR has some (31-100 more) loss of trees of comparable ecological value compared to option. Ecologically driven seed mixes, bat boxes, lighting plans, etc, may improve the value of local biodiversity. **Significant advantages:** Significantly fewer adverse effects on biodiversity receptors compared to EPR. E.g. the EPR impacts biodiversity of international importance within or outside a European site where option does not, EPR is in proximity (within 10m) to a watercourse where option is not, EPR has significantly more (101 or more) loss of trees of comparable ecological value compared to option.	

Biodiversity impacts are notably higher for the Greenway Option, resulting in significant disadvantages compared to the EPR. Located along existing public roads and walkways, the Greenway Option is approximately 960m from Cork Harbour SPA, 5km from Great Island Channel SAC and 935m from Douglas River Estuary pNHA. The Greenway is also in close proximity to a number of waterbodies including the Lee (Cork) Lower Estuary which is approximately 10m from the route, the Atlantic Pond which is 38m from the route, an unnamed stream which is approximately 160m from the route and Lough Mahon which is approximately 960m from the route. Approximately 2.7km long, over 325 trees will potentially be lost. The majority of these trees are mature and semi-mature and have potential for Potential Roosting Features (PRFs) and are suitable for breeding birds. Most of the trees are located along the walkways of Marina Promenade and Passage to Blackrock Greenway and within Holland Park. These trees are in close proximity to each other creating good quality roosting, nesting and foraging habitat and creating a buffer from the surrounding urban environment. Additionally, these green spaces can act as corridors

which allow the movement of wildlife between different habitats within the city. There may also be disturbance to birds within Holland Park as wetland and water birds may use the green spaces within this park for roosting and foraging. Adjacent to the Lee (Cork) Lower Estuary and Atlantic Pond, these waterbodies provide suitable roosting and foraging habitat to wetland and water birds and may also support otters. Limited options for biodiversity enhancement as already passes through green spaces that would be used for enhancement, thus reducing the available areas that could be used.

6.7.4 Water Resources & Soil Quality

Table 6-19 Cork City Easy Local Environmental Impacts Assessment (compared to EPR)- Water Resources/Soil

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Water Resources / Soil	Qualitative assessment. Review of baseline data. Review of potential impacts and distances to hydrogeology and hydrology or water resources e.g. Water Framework Directive (WFD) river / streams arising from the works and any new structures and a review of potential flood risk in the area. Review of Corine land use for soils and review of the bedrock geology, groundwater dependent terrestrial ecosystems (GWDTES) and karst landforms within the segment and potential to encounter ground	**Significant disadvantages**: Significantly more adverse effects on water and soils compared to the EPR. E.g. increased number of watercourse crossings which may require significant in-stream works (i.e. piers), increased interaction with mapped flood risk leading to floodplain loss/displacement. Increased interaction with potential ground contamination and increased disturbance of soils. These effects are likely to require significantly more mitigation compared to the EPR. **Some disadvantages:** A few more adverse effects on water and soil compared to the EPR. E.g. increased number of watercourse crossings but don't require significant in-stream works, increases in interactions with mapped flood risk areas leading to minimal floodplain loss/displacement. Minimal increased interaction with potential ground contamination. These effects are likely to require	

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
	contamination as a result of historical industries/landfills.	minimal additional mitigation compared to the EPR. **Comparable** Similar effects on water and soils compared to the EPR. **Some advantages:** Fewer adverse effects on water and soils compared to EPR. E.g. fewer number of watercourse crossings, slight reductions in interaction with mapped flood risk areas. Slight reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a slight reduction in the required mitigation measures compared to the EPR. **Significant advantages**: Significantly fewer adverse effects on water and soils compared to the EPR. E.g. fewer number of watercourse crossings, significantly reduced interaction with mapped flood risk areas. Reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a significant reduction in the required mitigation measures compared to the EPR.	

The Greenway Option presents higher potential impacts resulting in some disadvantages for Water Resource impacts compared to the EPR. This option does not cross any waterbodies. The Greenway segment is in close proximity to a number of waterbodies including the Lee (Cork) Lower Estuary which is approximately 10m from the route, the Atlantic Pond which is 38m from the route, an unnamed stream which is approximately 160m from the route and

Lough Mahon which is approximately 960m from the route. This segment passes over Regionally Important Aquifer (Rkd)- Karstified (diffuse). The groundwater here has natural characteristics that make it highly vulnerable to contamination by human activities.

6.7.5 Landscape & Visual

Table 6-20 Cork City Easy Local Environmental Impacts Assessment (compared to EPR)- Landscape & Visual

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Landscape & Visual	Qualitative assessment including a baseline review. This criterion considers physical and perceptual changes to the landscape and townscape elements (including vegetation) and character, impacts on landscape designations (Landscape Character Area (LCA)) and impacts on visual receptors, visual amenity and protected views.	**Significant disadvantages**: Significantly more adverse effects on landscape and visual receptors compared to EPR e.g. change of landscape / townscape character, loss of mature trees or a significant number of trees (landscape / townscape elements), adverse effect on designated landscapes or views, large number of highly sensitive visual receptors (such as residential receptors) affected **Some disadvantages:** A few more adverse effects on landscape and visual receptors (see above) compared to EPR **Comparable** Similar effects on landscape and visual receptors, on balance, compared to EPR **Some advantages:** Fewer adverse effects on landscape and visual receptors compared to EPR **Significant advantages:** Significantly fewer adverse effects on landscape and visual receptors compared to EPR such as minor change of landscape / townscape character, lower number or less mature trees lost, lesser effect on designated landscapes or views, fewer highly	

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
		sensitive visual receptors (such as residential receptors) affected	

Landscape and visual impacts are more significant for the Greenway with significant disadvantages compared to the EPR. The Greenway option is expected to result in major significant adverse landscape and visual impacts on the highly sensitive Cork to Blackrock-Passage West Greenway designated walkway and cycleway as well as Centre Park Road and Marina Parkland areas, designated as Area of High Landscape Value in Cork City Development Plan, and the adjacent Landscape Preservation Zone SE9 Dundanion House and Castle. Visual receptors would include mainly walkers and cyclists (High sensitivity). The EPR avoids the highly sensitive Cork to Blackrock-Passage West Greenway, Centre Park Road and Marina Parkland area. It would, however, result in greater impacts on residential visual receptors than the alternative.

6.7.6 Cultural Heritage

Table 6-21 Cork City Easy Local Environmental Impacts Assessment (compared to EPR)- Cultural Heritage

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Cultural Heritage	Qualitative assessment including a baseline review data. The review of the potential impacts includes direct loss, impact, disturbance to archaeological remains, buildings (including individual areas), landscapes and parks, protected structures, historic landscapes with cultural and heritage significance, and mitigation measures.	**Significant disadvantages**: Significantly more adverse effects on the cultural heritage resource compared to EPR e.g. full or partial removal of archaeological remains or built heritage assets, adverse alteration of an assets setting, adverse effect on designated assets, such as National Monuments or Protected Structures.	

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
		Some disadvantages: A few more adverse effects on the cultural heritage resource (see above) compared to EPR but no impacts on designated assets. **Comparable** Similar effects on the cultural heritage resource, on balance, compared to EPR. **Some advantages:** Fewer adverse effects on the cultural heritage assets compared to EPR. **Significant advantages:** Significantly fewer adverse effects on the cultural heritage resource compared to EPR such as a lower number of archaeological remains that would be removed or no/less effects on designated assets compared to the EPR.	

Overall, the Greenway option has a greater impact on the receiving cultural heritage environment and has some disadvantages compared to the EPR (through consenting if the Protected Structure and NIAH bridges and Blackrock railway station are physically impacted on, depending on the design and assuming a worst-case scenario). There would be a significant impact on Blackrock railway station (RMP and NIAH) if the asset is removed. If the design requires work to the bridges, there could be significant impacts to Blackrock Railway Bridge (Protected Structure) and two NIAH bridges and the NIAH former railway station. The Protected Structure may require a separate planning application.

The route would potentially impact on three sites in the Record of Monuments and Places and the Sites and Monuments Record, comprising Dundanion tower house (RMP ref. CO074-49), former Blackrock railway station (RMP ref. CO074-120, also in the NIAH, ref. 20868053) and Skehard Road Bridge (RMP ref. CO074-121, also NIAH, ref. 20868052). No significant effects are predicted on these assets, however, if the former Blackrock railway station is removed, this would result in a significant effect. The route would utilise the existing railway cutting, which passes beneath the Blackrock Railway Bridge (RPS ref. PS_514, also in the NIAH, ref. 20868046). It is unlikely the bridge would be physically impacted if construction works are not required to the bridge. It is unlikely that the permanent works would materially affect the special interest or character of the bridge, depending on the scale of the works. However, if construction works are required to the bridge, it could result in a significant effect.

The Greenway Option would be proposing to utilise the existing railway cutting, which passes beneath or close to two surviving railway bridges on the NIAH, and not mentioned above, consisting of Dundanion House Bridge (NIAH Ref. 20868044) and Rockfield Avenue Bridge (NIAH ref. 20868051). It is unlikely the bridges would be physically impacted, as long as construction works are not required to the bridges. If construction works are required to the bridges, this could result in a significant effect. 13 non-designated cultural heritage features are present within the proposed footprint which may be directly impacted, including post-medieval landscape features and sites of railway infrastructure which have mostly been cleared. The significance of these impacts would be subject to the survival of physical remains of these assets but would likely be of low or negligible significance and significant effects are not predicted.

6.7.7 Material Assets

Table 6-22 Cork City Easy Local Environmental Impacts Assessment (compared to EPR)- Material Assets

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
Material Assets (non-transport related)	The scoring is primarily determined by the potential for service interruptions during the construction phase and the required upgrades for the operational phase	**Significant disadvantages**: Major, long-term disruption of a critical utility (e.g. a trunk foul or water main, high-voltage power lines, gas line) due to complex design interactions and / or major diversion works compared to the EPR **Some disadvantages:** Additional minor or short-term disruption to local utilities (e.g., small bore water	

Local Environmental Impacts			
Sub-Criteria	**Indicators**	**Indicator Banding**	**Passage to Blackrock Greenway**
		mains, telecomms) during enabling or main works compared to the EPR **Comparable:** Comparable level of disruption or diversions required **Some advantages:** Minor necessary upgrades to local surface water drainage are included as part of the scheme, improving existing conditions compared to EPR **Significant advantages**: Minimal to minor upgrades along the corridor, that provide long-term benefits and increased capacity for the area when compared to the EPR	

For Material Assets, the Greenway option presents significant disadvantages due to potential for impact main gas flow into Cork City and main pumped foul drainage coming out of the City. There are 2x1100mm pumped sewers that run from the wastewater treatment plant at The Marina heading south along the alignment towards Mahon, these head east just after the bridge at Skehard Road to the Ballinure Header Chamber. They are critical assets carrying over 60% of the city's wastewater towards Carrigrennan WWTP.

6.8 Results and Summary for Assessment Area 3 (Passage to Blackrock Greenway)

Table 6-23 Passage to Blackrock MCA Assessment Summary

MCA Criteria	MCA Sub-Criteria	Passage to Blackrock Greenway
Transport User Benefits & Other Economic Impacts	Travel Time	
	Demand	
	Benefits	
	Costs	
	Reliability	
	Resilience	
Accessibility Impacts	Population Catchment	
	Access to services	
	Access to recreational facilities	
	Access to jobs	
Social Impacts	Deprivation Index	
Land Use Impacts	Change in quality of public realm	
	Existing Transport Network and Service Impact	
Safety Impacts	Collisions and related impacts	
	Other Safety Impacts	
Local Environmental Impacts	Air Quality	
	Noise & Vibration	
	Biodiversity	
	Water Resources / Soil	
	Landscape & Visual	
	Cultural Heritage	
	Material Assets	

In summary, the comparative MCA assessment demonstrates that while the Greenway offers certain localised benefits; such as a faster journey time, better enhanced reliability and lower risks of collisions, it presents significant disadvantages in several categories compared the EPR. The EPR delivers a more balanced and sustainable solution when evaluated against the full suite of technical,

environmental, operational, and strategic criteria. It represents the option that best supports reduced risk of environmental effects and value for money.

On this basis, it is recommended that the EPR be taken forward for further development and preliminary design. A focus will be maintained throughout the preliminary design process to – where possible - improve benefits further and to reduce environmental effects.

7. Mahon Point Multi-Criteria Analysis (Assessment Area 4)

7.1 Introduction

The MCA results of the assessment (in line with TAF), of Options A and B for Area 4 (Mahon Point) are set out in the chapter below. Both the alignment of the localised alternative routes and the corresponding section of the EPR are shown below in Figure **7-1** below.

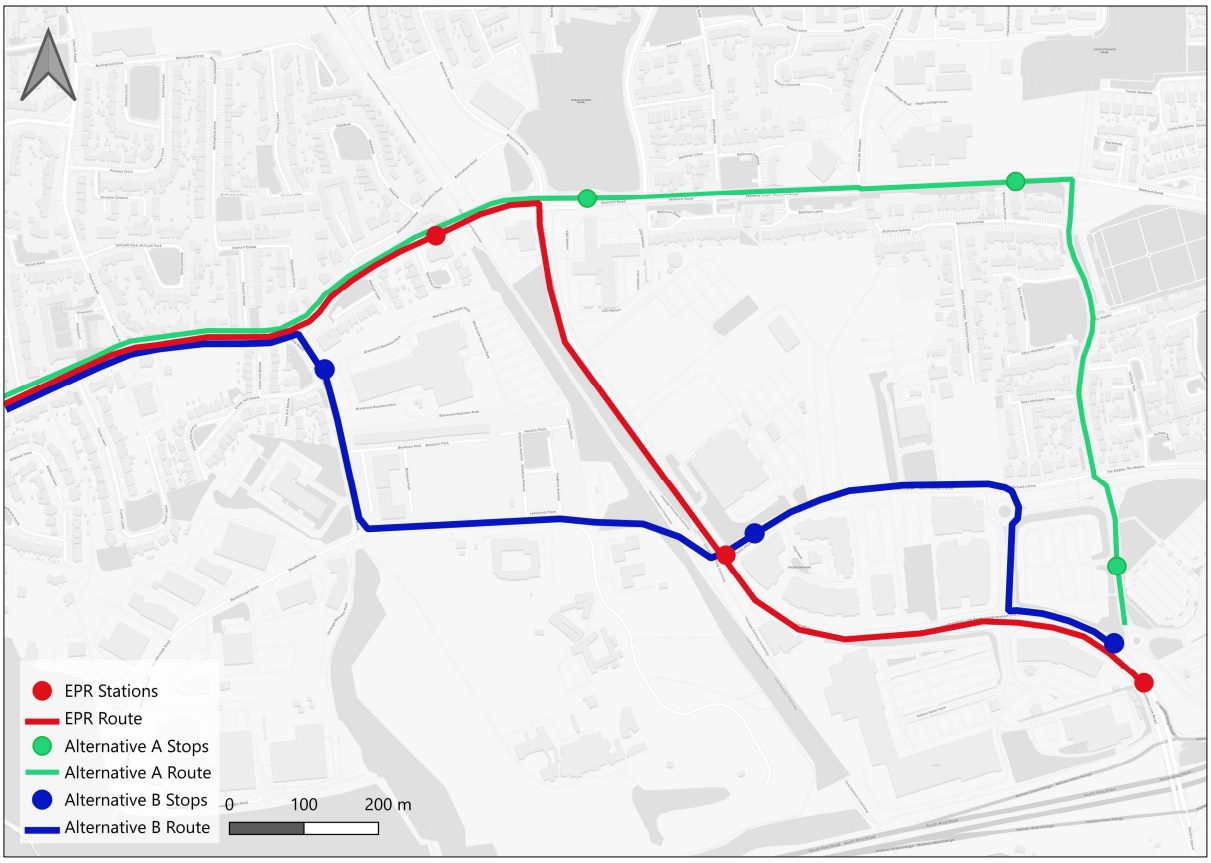

Figure 7-1 Mahon Point EPR and Alternative Routes

7.2 Mahon Point: Transport User Benefits & Other Economic Impacts

Table 7-1 to Table 7-6 shows the 'Transport User Benefits & Other Economic Impacts' MCA outcome for Area 4 (Mahon Point).

7.2.1 Travel Time

Table 7-1 Mahon Point: Transport User Benefits & Other Economic Impacts (compared to EPR)- Travel Time

Transport User Benefits & Other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B (Bessboro Rd)**
Travel Time	Journey time based on extractions from SWRM runs	**Significant disadvantages:** >+90 seconds **Some disadvantages** +30 to +89 seconds **Comparable to the EPR** 0 to + or -29 seconds **Some advantages:** -30 to -89 seconds **Significant advantages:** >-90 seconds	Average running time: 58 mins 12 seconds (54 secs longer than the EPR)	Eastbound = 57mins 18 seconds (12 secs shorter than the EPR) Westbound = 56mins 54 seconds (12 secs shorter than the EPR)

Across the options assessed, Alternative A shows a marginal increase in journey time, operating around one minute slower than the EPR baseline. Alternative B, however, provides a small but consistent improvement, with eastbound and westbound journeys running approximately 12 seconds faster than the EPR. Overall, EPR remains the benchmark, with Alternative A performing slightly below it and Alternative B offering modest travel time benefits in both directions.

7.2.2 Demand

Table 7-2 Mahon Point: Transport User Benefits & Other Economic Impacts (compared to EPR)- Demand

Transport User Benefits & Other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B (Bessboro Rd)**
Demand	24 Hour Public Transport Boardings	**Significant disadvantages:** >-5% **Some disadvantages:** -2.5 to -4.99% **Comparable** 0 to +2.49% **Some advantages:** +2.5 to +4.99% **Significant advantages:** >+5%	**24 hour boardings by mode for 2035:** • Luas – 51,768 • Irish Rail – 23,893 • Urban & Other Buses – 81,626 **Total – 157,287** **Percentage Difference to EPR = +0.192%**	**24 hour boardings by mode for 2035:** • Luas – 51,794 • Irish Rail – 23,922 • Urban & Other Buses – 81,998 **Total – 157,606** **Percentage Difference to EPR = +0.009%**

Alternative Route A is forecast to generate around 300 fewer daily public transport boardings than the EPR, while Alternative Route B shows a much smaller difference of only 15 boardings. These variations are minimal in the context of overall demand, and therefore the Demand criterion is assessed as neutral.

7.2.3 Benefits

Table 7-3 Mahon Point: Transport User Benefits & Other Economic Impacts (compared to EPR)- Benefits

Transport User Benefits & Other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B (Bessboro Rd)**
Benefits	Economic benefits for each alignment option calculated using TUBA over 60 year appraisal period	**Significant disadvantages**: >-€100m **Some disadvantages:** -€50m to -€99m **Comparable to the EPR** €0 to + or -€49m **Some advantages:** +€50m to €99m **Significant advantages**: >€100m	Similar benefits compared to EPR (€983m)	€992m Difference to EPR = +€1m

Alternative A delivers benefits broadly comparable to the EPR, showing no material difference at the strategic level. Alternative B performs slightly better, generating approximately €992m in benefits- around €1m higher than the EPR baseline. Overall, EPR remains the reference point at €991m, with Alternative A aligning closely and Alternative B offering a small net uplift in total benefits.

7.2.4 Costs

Table 7-4 Mahon Point: Transport User Benefits & Other Economic Impacts (compared to EPR)- Costs

Transport User Benefits & Other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B (Bessboro Rd)**
Costs	Capital Cost Comparison of costs for the construction of the LRT infrastructure, as well as the operational costs of Luas Cork on the route. Costs are based on level of design relative for phase 2 of the project. Includes allowances for LRT infrastructure, land take, utilities, structures, rolling stock (including replacement). The contingency percentage applied to the estimated costs is 59% in accordance with the NTA Contingency Calculator	**Significant disadvantages**: >-€100m **Some disadvantages:** -€50m to -€99m **Comparable to the EPR** €0 to + or -€49m **Some advantages:** +€50m to €99m **Significant advantages**: >€100m	€1,926m, +€2m compared to EPR	€1,948m (+€24m vs EPR)

All options sit relatively close to one another, with only small variances against the EPR baseline. Option A has an estimated cost of €1,926m, representing a small disadvantage at €2m higher than the EPR. Option B is also comparable costing €1,948m, which is €24m above the EPR. The EPR remains the lowest cost option at €1,924m, forming the benchmark for assessment. Overall, both alternatives sit within the "comparable" (€0–49m) cost classification, showing no significant cost advantages or disadvantages relative to the EPR.

7.2.5 Reliability

Table 7-5 Mahon Point: Transport User Benefits & Other Economic Impacts (compared to EPR)- Reliability

Transport User Benefits & Other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B (Bessboro Rd)**
Reliability	Extent of shared running, priority track and consistency in journey times. Routes are assessed on the proportion of the route running a) on-street mixed with traffic, b) on-street but segregated from traffic or c) off-street. Routes with a higher proportion of their route running segregated score higher, as running times are considered to be more reliable. Routes with a higher proportion of the route running on-street mixed with traffic score lower.	**Significant disadvantages:** Higher likelihood of irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR **Some disadvantages:** Some likelihood of greater irregular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR **Comparable**: Similar levels of reliability compared to EPR **Some advantages**: Some likelihood of enhanced reliability for timetabling due to levels of Luas priority and potential for delays compared to EPR **Significant advantages**: Higher likelihood of regular reliable timetabling due to levels of Luas priority and potential for delays compared to EPR	Double Track Shared: 265m - 19% Single Track Segregated On-Street/Single Track Shared: 190m - 14% Double Track Segregated On-Street: 910m - 67%	Double Track Shared: 325m - 22% Double Track Segregated On-Street: 1,160m - 78%

The MCA indicates that reliability performance for Option A has some disadvantages and Option B is broadly comparable to the EPR. Option A (The Maples) has a lower level of priority and segregated infrastructure than the EPR due to geometrical constraints on Bessboro Road, which result in sections of shared running with residential and industrial estate traffic. While some minor queuing may occur during peak periods at the proposed Estuary Drive junction, the MCA

concludes that overall reliability is expected to remain comparable to the EPR. Option B (Bessboro Road) maintains a high proportion of segregated infrastructure, with approximately 78% of the route fully segregated. However, the presence of shared running (22%) introduces potential interactions with general traffic, constraining reliability relative to the EPR. As a result, the MCA identifies no material reliability advantage over the EPR. Overall, the MCA demonstrates that both options are expected to deliver reliability outcomes in line with the EPR, with neither option providing a significant improvement under the reliability criterion.

7.2.6 Resilience

Table 7-6 Mahon Point: Transport User Benefits & Other Economic Impacts (compared to EPR)- Resilience

Transport User Benefits & Other Economic Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B (Bessboro Rd)**
Resilience	Ability and headway of proposed alignment to absorb varying levels of Luas demand from the transport network at peak times and recover from disruption	**Significant disadvantages:** No capacity to respond to network shocks compared to EPR **Some disadvantages:** Minimal capacity to respond to network shocks and stresses. Option presents a reduced level of operational flexibility compared to the EPR **Comparable**: Similar levels of resilience compared to EPR **Some advantages**: Some capacity to respond to network shocks. Option presents a enhanced level of operational flexibility compared to the EPR **Significant advantages**: High capacity to respond to network shocks and stresses compared to EPR, without degrading the service		

The MCA indicates that resilience performance for Option A has minor disadvantages compared to the EPR and Option B falls under the “comparable” category, with no option demonstrating a significant improvement in the ability to respond to network shocks or disruption. Option A (The Maples) is identified in the MCA as having a slightly reduced level of resilience compared to the EPR. This is driven by the nature of the receiving environment and associated infrastructure provision, with approximately 19% of the route operating in close proximity to residential accesses and sharing with local traffic. These factors may constrain operational flexibility and limit future expansion, which could impact the ability to manage headways and recover from disruption. Option B (Bessboro Road) similarly demonstrates resilience outcomes comparable to the EPR, with no material enhancement in network flexibility identified through the MCA. While the route benefits from a largely segregated alignment, interactions with the surrounding network limit its capacity to respond more effectively to disruption than the EPR. Both options provide resilience levels broadly in line with the EPR, with Option A showing some minor constraints relative to the EPR but no significant divergence in overall resilience performance.

7.3 Mahon Point: Accessibility Impacts

Table 7-7 to Table 7-10 shows the 'Accessibility Impacts' MCA outcome for Area 1 (Mahon Point).

7.3.1 Population Catchment

Table 7-7 Mahon Point: Accessibility Impacts (compared to EPR)- Population Catchment

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Population Catchment	Population catchment within a 800m walking distance of stop locations on route. Where the stop locations are within a close proximity together, they will overlap on their catchment. The extent of this overlap has been factored into (and excluded) from the comparison and the final numbers.	**Significant disadvantages**: >-1000 **Some disadvantages:** -250 to -999 **Comparable to the EPR** 0 to + or -249 **Some advantages: +**250 to +999 **Significant advantages**: >+1000	• Mahon= 2010 • The Maples= 4743 • Skehard Road= 4777 • Woodvale =3985 **Total: 15515** **Total Excluding overlap of stop catchment: 10292** **Difference to EPR = +2490**	• Woodvale Rd = 3,183 • Bessboro Rd = 2,988 • Tech Park = 1,616 • Mahon = 2,134 **Total = 9,921** **Total Excluding overlap of stop catchment: 6,237** **Difference to EPR = -862**

The MCA indicates a clear differentiation in population catchment performance between the options when compared to the EPR. Option A (The Maples) demonstrates a significant advantage over the EPR. The assessed stop locations provide access to a total population catchment of 15,515 within an 800 m walking distance, reducing to 10,292 once overlapping catchments are excluded. This represents an increase of approximately +2,490 residents relative to the EPR, reflecting improved accessibility to key

residential areas along the route. Option B (Bessboro Road) performs less favourably in the MCA. While the route serves several population centres, the total catchment of 9,921 (6,237 excluding overlap) represents a reduction of approximately −862 residents compared to the EPR. As a result, Option B is identified as having a disadvantage relative to the EPR under the population catchment criterion. Option A provides a significant population catchment benefit compared to the EPR, while Option B performs less well, offering reduced accessibility to the surrounding population.

7.3.2 Access to Key Services

Table 7-8 Mahon Point: Accessibility Impacts (compared to EPR)- Access to Services

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Access to services	Evaluates the number of retail, healthcare, education, and public services in a radial catchment area of 500m around the stops along the route. Routes with higher numbers of services within the catchment area score higher.	**Significant disadvantages**: >10 decrease in number of total services across the option compared to EPR **Some disadvantages:** 3 to 10 decreases in number of total services across the option compared to EPR **Comparable** Similar number of total services across the option compared to EPR (+ or – 2) **Some advantages: +**3 to +10 increase in number of total services across the option compared to EPR **Significant advantages**: >10 increase in number of total services across the option compared to EPR	• Supermarkets = 2 • Hospitals = 1 • Pharmacies = 3 • Clothes Shops = 3 • Schools = 3 • Banks -=1 **Total = 13 (+1 EPR)**	• Supermarkets =3 • Post Offices = 1 • Hospitals = 1 • Pharmacies = 3 • Clothes Shops = 3 • Banks = 1 **Total = 12 (same as EPR)**

Access to key services is comparable across Options A&B when assessed against the EPR, with only minor variations in overall performance. Option A (The Maples) demonstrates a small advantage over the EPR in the MCA. The 500 m catchment around proposed stop locations provides access to a total of 13 services, representing an increase of one service compared to the EPR. This reflects strong access to a range of retail, healthcare, education and public services along the route. Option B (Bessboro Road) performs in line with the EPR, providing access to a total of 12 services within the assessed catchment areas. While the route serves a broadly similar mix of services to Option A, the MCA identifies no net increase in access compared to the EPR.

7.3.3 Access to Recreational Facilities

Table 7-9 Mahon Point: Accessibility Impacts (compared to EPR)- Access to Recreational Facilities

Recreational Facilities				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Access to Recreational Facilities	Quantifies the number of green spaces, community centres and sports facilities in a radial catchment area of 500m around the stops along the route. Routes with a higher number of recreational facilities in the catchment area score higher.	**Significant disadvantages**: >10 decrease in number of total services across the option compared to EPR **Some disadvantages:** 3-10 decrease in number of total services across the option compared to EPR **Comparable** Similar number of total services across the option compared to EPR (+ or – 2) **Some advantages:** 3-10 increase in number of total services across the option compared to EPR **Significant advantages**: >10 increase in number of total services across the option compared to EPR	• Green Spaces = 4 • Community Centres = 3 • Sports/Fitness Centres = 1 • Pitches = 6 **Total = 14 (+7 EPR)**	• Green Spaces = 3 • Sports/Fitness Centres = 1 • Pitches =1 **Total = 5 (-1 EPR)**

When compared to the EPR Option A (The Maples) demonstrates some advantages over the EPR under this criterion. The 500 m catchment around stop locations provides access to a total of 14 recreational facilities, including green spaces, community centres and pitches. This represents an increase of +7 facilities relative to the EPR, indicating substantially improved access to recreational opportunities. Option B (Bessboro Road) performs less favourably in the MCA. The assessed catchment provides access to a total of 5 recreational facilities, representing a reduction of −1 facility compared to the EPR. As a result, Option B is identified as having a slight disadvantage relative to the EPR for access to recreational facilities. Overall, the MCA demonstrates that Option A provides a significant improvement in access to recreational facilities compared to the EPR, while Option B performs worse than the EPR under this criterion.

7.3.4 Access to Jobs

Table 7-10 Mahon Point: Accessibility Impacts (compared to EPR)- Access to Jobs

Accessibility Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B (Bessboro Rd)**
Access to jobs	Quantifies the number of jobs in a catchment area of 800m around the proposed stops on the route. Routes with a higher number of jobs within the catchment area score higher. Where the stop locations are within a close proximity together, they will overlap on their catchment. The extent of this overlap has been factored into (and excluded) from the comparison and the final numbers.	**Significant disadvantages**: >-1000 **Some disadvantages:** -250 to -999 **Comparable to the EPR** 0 to + or -249 **Some advantages:** +250 to +999 **Significant advantages**: >+1000	• Mahon 4984 • The Maples 5171 • Skehard Road 4534 • Woodvale 2033 **Total: 17065** **Total excluding overlap of stop catchment = 8714** **Difference to EPR = -44**	• Woodvale Rd = 1,875 • Bessboro Rd = 3,636 • Tech Park = 5,731 • Mahon = 4,868 **Total = 16,109** **Total excluding overlap of stop catchment = 8,640** **Difference to EPR = +174**

The MCA indicates that all options are comparable across catchment outcomes when compared to the EPR, with only marginal differences once overlapping catchments between adjacent stops are excluded. Option A (The Maples) achieves a jobs catchment of 8,714 people (excluding overlap of stop catchment) within an 800 m walking distance, placing it effectively in line with the EPR baseline. Although the raw catchment is slightly higher, overlap between nearby stop locations results in a negligible net difference of 44 fewer people compared to the EPR. As such, the MCA identifies Option A as comparable to the EPR in terms of population accessibility.

Alternative B records a catchment of 8,640 people (excluding overlap of stop catchment), representing a small increase of 174 people relative to the EPR. This modest uplift reflects the distribution of stops and higher local catchments around Bessboro Road and the Tech Park. However, the MCA notes that this improvement is limited in scale.

7.4 Mahon Point: Social Impacts

Table 7-11 shows the 'Social Impacts' MCA outcome for Area 4 (Mahon Point).

7.4.1 Deprivation

Table 7-11 Mahon Point Social Impacts Assessment (compared to EPR)- Deprivation

Social Impacts				
Sub-Criteria	**Indicators**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Deprivation	This KPI considers the extent to which deprived areas are served by the route options, by assessing the inclusion of deprived areas within a radial 500m of the route. Whether or not areas are considered deprived, is determined using the 2022 POBAL deprivation index.	**Significant disadvantages**: <-5 number of deprived areas **Some disadvantages:** -2 to -5 number of deprived areas **Comparable** 0 to + or -1 in number of derived areas compared to EPR **Some advantages: +**2 to +5 number of deprived areas **Significant advantages**: >+5 number of deprived areas		

Option A (The Maples) demonstrates a significant advantage over the EPR under this criterion. The route serves a wider number of deprived areas, resulting in an increase of +5 deprived areas relative to the EPR. This reflects improved accessibility to communities identified as deprived under the 2022 Pobal Deprivation Index and indicates a stronger contribution to social inclusion outcomes. Option B (Bessboro Road) performs in line with the EPR, serving a comparable number of deprived areas and recording no difference relative to the EPR. As such, the MCA identifies Option B as neither improving nor worsening access to deprived communities compared to the reference option.

7.5 Mahon Point: Land Use Impacts

Table 7-12 to Table 7-13 shows the 'Land Use Impacts' MCA outcome for Area 4 (Mahon Point).

7.5.1 Change in Quality of Public Realm

Table 7-12 Mahon Point: Land Use Impacts Assessment (compared to EPR)- Change in quality of public realm

Land Use Impact				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Change in quality of public realm	This KPI assesses the extent to which different route options can enhance the public realm without negatively impacting it. Scored Qualitatively. Public realm includes (for example) streetscapes (including new stops), community / pedestrian / open space	**Significant disadvantages**: Significant adverse effects compared to EPR e.g. permanent loss or diminishment of pedestrian / community space **Some disadvantages:** More constrained public realm potential compared to EPR **Comparable** Similar public realm potential compared to EPR **Some advantages:** Delivers some benefits to the streetscape compared to EPR **Significant advantages**: Enables transformation public realm enhancement and improved streetscape compared to the EPR		

The MCA indicates that both options provide opportunities to enhance the quality of the public realm compared to the EPR, though the scale and nature of potential benefits vary. Option A (The Maples) offers opportunities to improve the public realm and strengthen connectivity to the wider network, particularly along Ballinure Avenue and through The Maples. However, the alignment passes through a quieter residential area with more limited existing connectivity, and land take would be required to improve links to the wider transport network. As a result, the MCA identifies that public realm benefits are achievable but more constrained relative to the EPR. Option B (Bessboro Road) demonstrates greater potential for public realm enhancement in the MCA. The option would improve connectivity to the wider network, including the provision of new footways linking to the R852 at Mahon, and would redirect peak-hour access traffic serving Blackrock Business Park and the Dara Park Estate. However, the MCA also notes that the proposals would stop up the main access to the marina car park, affecting approximately 500 vehicles, and could limit access for local residents, moderating the overall benefit. Both options can deliver public realm improvements compared to the EPR, with Option B offering stronger transformational potential, subject to the management of localised access and amenity impacts.

7.5.2 Existing Transport Network & Service Impact

Table 7-13 Mahon Point: Land Use Impacts Assessment (compared to EPR)- Existing Transport Network and Service Impact

Land Use Impact				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Existing Transport Network and Service Impact	This KPI evaluates the impact of the route options on the existing transport network. Improvements to routes can result in a range of positive impacts such as improved journey times and experience, improved ability to interchange between modes, facilitating modal shifts to more sustainable transport, and improving network resilience..	**Significant disadvantages**: Significant adverse effects to surrounding network and impact on services, with reduced resilience and poor integration compared to EPR **Some disadvantages:** Some reduced network efficiency and integration compared to EPR **Comparable** Similar potential compared to EPR **Some advantages:** Delivers some incremental benefits to network efficiency, integration and performance compared to EPR **Significant advantages**: Enables network efficiency, greater modal	Double Track Shared: 265m - 19% Single Track Segregated On-Street/Single Track Shared: 190m - 14% Double Track Segregated On-Street: 910m - 67%	Double Track Shared: 325m - 22% Double Track Segregated On-Street: 1,160m - 78%

Land Use Impact				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
		shift, higher levels of resilience and network balancing / rationalisation compared to the EPR		

Assessment of impacts on the existing transport network shows that both options interact with the wider network in different ways, but without materially diverging from the performance of the EPR. For Option A (The Maples), the longer route length results in slightly reduced direct integration with the network; however, this is offset by the location of stops at key destinations such as Mahon Link Road and the Telus Tech Park. While additional demand may arise at the Blackrock Avenue / Mahon Link Road junction, the impacts are considered manageable, and the option retains the ability to accommodate interactions with other public transport services and strategic traffic movements. Option B (Bessboro Road) benefits from bypassing two of the three principal arterial junctions on the R852, reducing pressure on key parts of the network. This advantage is balanced by lower levels of segregation, which increase interaction with local traffic through residential areas and the Blackrock Industrial Estate. As a result, measures would be required to manage business access and reduce the potential for traffic and parking impacts. Together, the assessment indicates that neither option introduces significant adverse effects on the transport network relative to the EPR, with Option A favouring connectivity and modal integration, and Option B reducing reliance on major junctions but requiring greater local traffic management.

7.6 Mahon Point: Safety Impacts

Table 7-14 to Table 7-15 shows the 'Safety Impacts' MCA outcome for Area 4 (Mahon Point).

7.6.1 Collisions & Related Impacts

Table 7-14 Mahon Point Safety Impacts Assessment (compared to EPR)- Collisions and related impacts

Safety Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Collisions and related impacts	This KPI considers the likelihood of collisions of the route options. Lower degrees of segregation from other traffic, higher numbers of junctions, and running on busy roads with a more important role in the local road network result in a lower score.	**Significant disadvantages**: Significant material increase in collision risk and/or frequency compared to EPR and deterioration in wider network safety **Some disadvantages:** Some new collision risks compared to EPR with other modes and diminishment of active travel interfaces **Comparable** Similar potential compared to EPR **Some advantages:** provide some improvements in safety compared to EPR with reduced number of network variables from other modes & active travel **Significant advantages**: Enables significant reduction in collision risk compared to the EPR, with significant	Double Track Shared: 265m - 19% Single Track Segregated On-Street/Single Track Shared: 190m - 14% Double Track Segregated On-Street: 910m - 67% .	Double Track Shared: 325m - 22% Double Track Segregated On-Street: 1,160m - 78%

Safety Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
		improved interactions with network variables & active travel		

The safety assessment considers the extent to which each option influences collision risk and interaction with the wider transport network, with segregation and exposure to general traffic being key determinants. Option A (The Maples) would introduce new track infrastructure through a low-traffic, predominantly residential environment along Ballinure Avenue and The Maples. While this context reduces exposure to high traffic volumes, mitigation would be required to manage driveway access and limit the potential for uncontrolled traffic movements and associated parking activity. The provision of segregated infrastructure for a substantial proportion of the route supports safer operation overall, although interactions with local access traffic remain a consideration. Option B (Bessboro Road) benefits from avoiding two of the three main arterial junctions on the R852, which reduces exposure to higher-risk junction movements. However, lower levels of full segregation and the need to share space with local traffic along Bessboro Road and through the Blackrock Industrial Estate increase the potential for conflict, particularly given the higher-frequency Luas Cork environment. As a result, targeted mitigation would be required to manage business access and local traffic interactions. Overall, the assessment indicates that both options present manageable safety impacts relative to the EPR, with Option A benefiting from a lower-traffic environment but requiring residential access controls, and Option B reducing reliance on major junctions while introducing greater interaction with local traffic.

7.6.2 Other Safety Related Impacts

Table 7-15 Mahon Point Safety Impacts Assessment (compared to EPR)- Other Safety Impacts

Safety Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Other Safety Impacts (for passengers connecting to / from stops)	This KPI examines the likelihood of anti-social behaviour, and challenges of policing along	**Significant disadvantages**: Significant adverse effects to passive surveillance and additional required lighting infrastructure, more isolated compared to EPR		

Safety Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
	the routes. Routes that are more isolated and routes serving destinations that have a higher likelihood of anti- social behaviour receive lower scores.	**Some disadvantages:** Some reduction to passive surveillance and risk of anti-social behaviour compared to EPR **Comparable** Similar potential compared to EPR **Some advantages:** Delivers some incremental benefits to compared to EPR with increased active frontages and visibility **Significant advantages**: Significantly active and overlooked infrastructure compared to EPR		

Option A (The Maples) may present a slightly increased risk of anti-social behaviour compared to the EPR due to the predominantly residential nature of the receiving environment. Lower levels of activity and passive surveillance in comparison to the arterial R852 corridor reduce natural oversight, resulting in a marginally less favourable safety environment for passengers accessing stops. Option B (Bessboro Road) is subject to similar considerations. While the route benefits from proximity to employment and commercial areas, sections of the alignment also pass through residential environments where levels of passive surveillance may be lower than along the EPR. As a result, the option may experience a slight increase in perceived safety risk for passengers compared to the EPR. Overall, the MCA indicates that both options perform slightly less favourably than the EPR in terms of other safety impacts, reflecting reduced passive surveillance associated with residential environments, though impacts are limited in scale and could be mitigated through design and operational measures.

7.7 Mahon Point: Local Environmental Impacts

Table 7-16 to Table 7-21 shows the 'Local Environmental Impacts' MCA outcome for Area 4 (Mahon Point).

7.7.1 Air Quality

Table 7-16 Mahon Point: Local Environmental Impacts (compared to EPR)- Air Quality

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Air Quality	Qualitive assessment. Review of baseline data (including Air Quality Zones and monitoring stations). Assessment includes the identification of sensitive receptors to pollutants and associated potential impacts in terms of distances configuration of the proposed scheme including the number of stop locations. .	**Significant disadvantages**: Significant adverse potential effects to air quality and sensitive receptors compared to the EPR. **Some disadvantages:** More potential air quality effects and potential impact to sensitive receptors compared to the EPR. **Comparable:** Similar air quality effects and impacts to sensitive receptors compared to the EPR. **Some advantages:** Delivers some benefits to air quality compared to EPR. **Significant advantages**: Provides improved air quality benefits compared to the EPR.		

The MCA indicates that both options have no significant adverse effects identified. Option A (The Maples) is located within Cork Conurbation (Zone B) and is subject to air quality conditions primarily influenced by road traffic. Construction activities have the potential to result in temporary, localised impacts due to plant, machinery and construction traffic, particularly in proximity to sensitive receptors including Dunkettle Shore pNHA, Douglas River Estuary pNHA and Cork Harbour SPA. However, these effects are expected to be short-term and manageable through standard mitigation measures. During operation, air quality is anticipated to be comparable to the EPR, with the potential for improvement arising from modal shift associated with Luas Cork. Option B (Bessboro Road) similarly passes through an area where baseline air quality is dominated by traffic emissions. Construction-phase impacts are expected to be temporary in nature, with sensitive receptors present within the wider study area. In operation, the option is not anticipated to result in adverse air quality effects and, consistent with the EPR, may contribute to improved air quality through reduced reliance on private vehicles.

Overall, the MCA concludes that both options perform in line with the EPR for air quality, with any short-term construction impacts outweighed by the potential for longer-term operational benefits.

7.7.2 Noise & Vibration

Table 7-17 Mahon Point: Local Environmental Impacts (compared to EPR)- Noise & Vibration

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Noise & Vibration	Qualitive assessment. Review of baseline data. Assessment includes the identification of sensitive noise and vibration receptors and review of the associated impacts in terms of distances and configuration of the proposed option. These specific factors have been considered using professional judgement: Likely existing baseline noise environment due to existing transport infrastructure as reflected in the EPA Round 4 noise mapping;	**Significant disadvantages**: Potential for significant adverse noise and vibration effects at sensitive receptors compared to the EPR. **Some disadvantages:** Potential disadvantages for noise and vibration effects to sensitive receptors compared to the EPR. **Comparable** Similar noise and vibration impacts to sensitive		

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
	Proximity and numbers of sensitive receptors including; residential, places of worship, educational, community and health facilities etc. to the route option; Likely screening between new sources and these receptors; and Potential for increased noise effects due to wheel squeal around corners.	effects to receptors compared to the EPR. **Some advantages:** Delivers some advantages for noise and vibration when compared to the EPR. **Significant advantages**: Provides improved noise and vibration impacts compared to the EPR.		

Option A (The Maples), passes through established residential areas where sensitivity to noise and vibration is higher. Construction works would give rise to short-term increases in noise and vibration; however, these effects would be temporary and controllable through appropriate construction management measures. Once operational, noise and vibration levels are anticipated to reflect those associated with the EPR, with no substantive change to the existing acoustic environment. Option B (Bessboro Road) would similarly experience temporary noise and vibration effects during construction, particularly in locations adjacent to residential and employment uses. Operationally, interaction with local traffic and areas of shared running may influence background noise levels, but the assessment does not identify any meaningful divergence from the performance of the EPR. The assessment indicates that both options are expected to bring no significant long-term operational impacts.

7.7.3 Biodiversity

Table 7-18 Mahon Point: Local Environmental Impacts (compared to EPR)- Biodiversity

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Biodiversity	Qualitive Assessment. Review of the baseline data including proximity to European sites and Nationally designated sites where applicable). Review options for the potential impact on the type of trees/hedges removal, number of trees lost and their potential ecological value, including potential for bat roots and passerine birds, construction works through green field sites, conservation areas, potential impact to bats and other mammals, high ecological value sites etc. Review of options potential for biodiversity net gain through option of planting of replacement trees or the creation of new habitats where applicable, and other mitigation measures.	**Significant disadvantages**: Significantly more adverse effects on biodiversity receptors compared to EPR. E.g. impact on biodiversity of international importance within or outside a European site where EPR does not, in proximity (within 10m) to a watercourse where EPR is not, significantly more (101 or more) loss of trees of comparable ecological value compared to EPR. **Some disadvantages:** Some adverse effects on biodiversity receptors compared to EPR or the EPR has opportunities to improve the value of local biodiversity. E.g. impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where EPR does not, some (31-100 more) loss of trees of comparable ecological value compared to EPR. Ecologically driven seed mixes, bat boxes, lighting plans, etc, may improve the value of local biodiversity.		

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
		Comparable: The same or negligible difference in effects on biodiversity receptors compared to EPR. E.g. the same impacts to the aforementioned receptors, similar (0-30 more) loss of trees of comparable ecological value compared to EPR, loss of habitats with a similar ecological value, for example loss of amenity grassland compared to loss of roads/footpaths is comparable as the impacts from loss of amenity grassland are negligible to biodiversity. **Some advantages:** Fewer adverse effects on biodiversity receptors compared to EPR or option has opportunities to improve the value of local biodiversity where EPR does not. E.g. EPR impacts biodiversity of national importance (NHAs, pNHAs, species on wildlife acts) where option does not, EPR has some (31-100 more) loss of trees of comparable ecological value compared to option. Ecologically driven seed mixes, bat boxes, lighting plans, etc, may improve the value of local biodiversity. **Significant advantages:** Significantly fewer adverse		

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
		effects on biodiversity receptors compared to EPR. E.g. the EPR impacts biodiversity of international importance within or outside a European site where option does not, EPR is in proximity (within 10m) to a watercourse where option is not, EPR has significantly more (101 or more) loss of trees of comparable ecological value compared to option.		

The EPR passes through a predominantly urban environment comprising semi-natural and artificial habitats. Approximately 118 trees and 50 m of hedgerow may be lost along the 1.4 km route, the majority of which are of low ecological value and unsuitable for bats or breeding passerine birds. A small number of mature trees and hedgerow adjacent to the Greenway may have some bat and bird potential, and there is potential for disturbance to bats along this section. The route is adjacent to three amenity grasslands and presents opportunities for biodiversity enhancement through replacement planting and the provision of bird and bat boxes.

Option A (The Maples) performs broadly in line with the EPR under this criterion. No European sites, nationally designated sites or watercourses are located within the route corridor, and designated sites including Cork Harbour SPA, Great Island Channel SAC and Douglas River Estuary NHA are located at sufficient distance such that no impacts are anticipated. The option would result in the potential loss of approximately 92 trees along a 1.6 km section; however, these are of low ecological value, with no suitability for bats and limited value for breeding birds. The route is adjacent to four amenity grasslands and, consistent with the EPR, offers similar opportunities for biodiversity enhancement through replacement planting and the installation of bird and bat boxes. The MCA therefore identifies no material difference in biodiversity effects compared to the EPR.

Option B (Bessboro Road) performs less favourably than the EPR in the MCA. While no European or nationally designated sites are located within the route corridor and Cork Harbour SPA lies approximately 300 m to the south, the option would result in more substantial ecological impacts. These include the loss of a greater number of trees, including mature trees and areas of high-value woodland and scrub along the Mahon Greenway. In addition, the presence of Japanese knotweed within the route footprint introduces further environmental risk, requiring removal and strict biosecurity measures to prevent spread. As a result, the MCA identifies greater adverse biodiversity impacts relative to the EPR.

Overall, the MCA concludes that Option A delivers biodiversity outcomes broadly comparable to the EPR, while Option B presents notable disadvantages due to increased loss of higher-value ecological features and the presence of invasive species, resulting in a poorer performance under the local environmental impacts criterion.

7.7.4 Water Resources & Soil Quality

Table 7-19 Mahon Point: Local Environmental Impacts (compared to EPR)- Water Resources & Soil Quality

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Water Resources / Soil	Qualitative assessment. Review of baseline data. Review of potential impacts and distances to hydrogeology and hydrology or water resources e.g. Water Framework Directive (WFD) river / streams arising from the works and any new structures and a review of potential flood risk in the area. Review of Corine land use for soils and review of the bedrock geology, groundwater dependent terrestrial ecosystems (GWDTES) and karst landforms within the segment and potential to encounter ground contamination as a result	**Significant disadvantages**: Significantly more adverse effects on water and soils compared to the EPR. E.g. increased number of watercourse crossings which may require significant in-stream works (i.e. piers), increased interaction with mapped flood risk leading to floodplain loss/displacement. Increased interaction with potential ground contamination and increased disturbance of soils. These effects are likely to require significantly more mitigation compared to the EPR. **Some disadvantages:** A few more adverse effects on water and soil compared to the EPR. E.g. increased number of watercourse crossings but don't require significant in-stream works, increases in interactions with mapped flood risk areas leading to minimal floodplain loss/displacement. Minimal increased interaction with potential ground contamination. These effects are likely to		

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
	of historical industries/landfills.	require minimal additional mitigation compared to the EPR. **Comparable** Similar effects on water and soils compared to the EPR. **Some advantages:** Fewer adverse effects on water and soils compared to EPR. E.g. fewer number of watercourse crossings, slight reductions in interaction with mapped flood risk areas. Slight reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a slight reduction in the required mitigation measures compared to the EPR. **Significant advantages**: Significantly fewer adverse effects on water and soils compared to the EPR. E.g. fewer number of watercourse crossings, significantly reduced interaction with mapped flood risk areas. Reduction in interactions with potential ground contamination and volumes of disturbed soils. These effects are likely to see a significant reduction in the required mitigation measures compared to the EPR.		

The EPR does not cross any rivers and is not located within Catchment Flood Risk Assessment and Management (CFRAM) or national flood hazard mapping. There are no identified Groundwater Dependent Terrestrial Ecosystems (GWDTEs) or karst landforms, and soils and geology are well understood at a high level, with limited potential for contaminated land. Overall, the EPR presents a low risk to water resources and soil quality. No rivers are crossed and there is no

identified flood risk in Option A, with the route lying outside CFRAM and national flood mapping. The nearest surface water body is Lough Mahon Transitional Water Body, located approximately 280 m to the south, which has a Moderate WFD status and is listed as 'At Risk'. The route is located over a Regionally Important Aquifer; however, no GWDTEs or karst features are present, and baseline soil and geological conditions indicate limited contamination risk. As such, the MCA identifies comparable potential impacts on water resources and soils relative to the EPR.

Option B also avoids direct interaction with WFD water bodies and is not subject to flood risk. The nearest surface water body is again Lough Mahon Transitional Water Body, located approximately 300 m to the south-west, which has a Moderate WFD status and is 'At Risk'. However, the route passes over a Regionally Important, karstified aquifer with areas of high to extreme vulnerability, increasing sensitivity to potential contamination during construction. While no GWDTEs, karst landforms or historical contamination sources are present, the underlying hydrogeological conditions result in a greater level of environmental sensitivity compared to the EPR.

7.7.5 Landscape & Visual

Table 7-20 Mahon Point: Local Environmental Impacts (compared to EPR)- Landscape & Visual

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Landscape & Visual	Qualitative assessment including a baseline review. This criterion considers physical and perceptual changes to the landscape and townscape elements (including vegetation) and character, impacts on landscape designations (Landscape Character Area (LCA)) and impacts on visual receptors, visual amenity and protected views.	**Significant disadvantages**: Significantly more adverse effects on landscape and visual receptors compared to EPR e.g. change of landscape / townscape character, loss of mature trees or a significant number of trees (landscape / townscape elements), adverse effect on designated landscapes or views, large number of highly sensitive visual receptors (such as residential receptors) affected **Some disadvantages:** A few more adverse effects on landscape and		

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
		visual receptors (see above) compared to EPR **Comparable** Similar effects on landscape and visual receptors, on balance, compared to EPR **Some advantages:** Fewer adverse effects on landscape and visual receptors compared to EPR **Significant advantages:** Significantly fewer adverse effects on landscape and visual receptors compared to EPR such as minor change of landscape / townscape character, lower number or less mature trees lost, lesser effect on designated landscapes or views, fewer highly sensitive visual receptors (such as residential receptors) affected		

The MCA indicates that landscape and visual effects associated with Option A and Option B are broadly comparable to those of the EPR, with each option presenting a different distribution of localised impacts and opportunities for mitigation and enhancement.

The EPR results in a large loss of a substantial number of trees and sections of hedgerow along the R852 Mahon Link Road, adjacent to the highly sensitive Cork to Blackrock–Passage West Greenway Landscape Character Area (LCA). This would give rise to adverse effects on local landscape character and views within both the Mahon Technology and Retail LCA (low sensitivity) and the Greenway LCA (high sensitivity). Localised and generally minor visual effects are anticipated for workers and visitors within the Mahon Technology and Retail Park, while impacts on sensitive visual receptors along the Greenway are also likely. Option A (The Maples) would introduce some impacts on the Mahon LCA, which has not previously been assessed but is likely to be of medium sensitivity, as well as on the Mahon Technology and Retail LCA, which is of low sensitivity. As the route would largely follow existing roads, these effects are not

expected to be significant, although some tree loss may occur along the northern edge of Skehard Road. A greater number of residential visual receptors, which are of high sensitivity, are likely to be affected compared to the EPR. However, Option A also presents opportunities to positively influence local townscape character within the Mahon LCA, particularly if comprehensive landscape proposals are incorporated as part of the scheme.

Option B (Bessboro Road) would pass south of Skehard Road and north of the SE4 Bessboro House Landscape Preservation Zone; however, no impacts are anticipated on the LPZ. The proposed bridge crossing of the Cork to Blackrock–Passage West Greenway is expected to result in vegetation and tree loss within two Areas of High Landscape Value identified in the Cork City Development Plan. While the route may affect a slightly greater number of residential visual receptors than the EPR, significant visual impacts are anticipated for a small number of receptors located in close proximity to the proposed bridge, including users of the Bessboro Day Care Centre. Localised effects on sensitive Greenway users are also likely, although these are expected to be fewer in number than for the EPR.

7.7.6 Cultural Heritage

Table 7-21 Mahon Point: Local Environmental Impacts (compared to EPR)- Cultural Heritage

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
Cultural Heritage	Qualitative assessment including a baseline review data. The review of the potential impacts includes direct loss, impact, disturbance to archaeological remains, buildings (including individual areas), landscapes and parks, protected structures, historic landscapes with cultural and heritage significance, and mitigation measures.	**Significant disadvantages**: Significantly more adverse effects on the cultural heritage resource compared to EPR e.g. full or partial removal of archaeological remains or built heritage assets, adverse alteration of an assets setting, adverse effect on designated assets, such as National Monuments or Protected Structures. **Some disadvantages:** A few more adverse effects on the cultural heritage resource (see above) compared to EPR but no impacts on designated assets.		

Local Environmental Impacts				
Sub-Criteria	**Indicator**	**Indicator Banding**	**Option A (The Maples)**	**Option B - (Bessboro Rd)**
		Comparable Similar effects on the cultural heritage resource, on balance, compared to EPR. **Some advantages:** Fewer adverse effects on the cultural heritage assets compared to EPR. **Significant advantages:** Significantly fewer adverse effects on the cultural heritage resource compared to EPR such as a lower number of archaeological remains that would be removed or no/less effects on designated assets compared to the EPR.		

The assessment of cultural heritage considers potential effects on known and unknown archaeological remains and designated and non-designated heritage assets, with the EPR used as the reference position. While the EPR route passes in proximity to recorded monuments, including a railway bridge and a recorded excavation site, no direct impacts are predicted. As with all options, there remains a residual potential for encountering previously unknown archaeological remains during construction. Option A (Mahon Road / The Maples) performs comparably to the EPR under this criterion. No significant effects on known cultural heritage assets are predicted, and no additional consents are anticipated. The difference in heritage impacts between Option A and the EPR is considered negligible. As with the EPR, there is a low residual risk of encountering previously unknown archaeological remains. Option B (Mahon Point / Bessboro Road) performs slightly less favourably than the EPR in the MCA. While no significant heritage constraints have been identified, the route would pass immediately adjacent to a site recorded on the Sites and Monuments Record (SMR Ref. CO074-130), which indicates activity ranging from the prehistoric to post-medieval periods. Although much of the surrounding area has been affected by previous development, there is potential for associated remains to be present. In contrast, the EPR would be located at a greater distance from this site. In addition, a number of non-designated cultural heritage features, primarily associated with historic mapping, are located along or adjacent to Option B. As a result, the MCA identifies a slight disadvantage for Option B relative to the EPR

7.8 Results Summary and Outcomes of Assessment Area 4 (Mahon Point)

Table 7-22 Mahon Point Option A and B MCA Assessment Summary

MCA Criteria	MCA Sub-Criteria	Option A (The Maples)	Option B - (Bessboro Rd)
Transport User Benefits & Other Economic Impacts	Travel Time		
	Demand		
	Benefits		
	Costs		
	Reliability		
	Resilience		
Accessibility Impacts	Population Catchment		
	Access to services		
	Access to recreational facilities		
	Access to jobs		
Social Impacts	Deprivation Index		
Land Use Impacts	Change in quality of public realm		
	Existing Transport Network and Service Impact		
Safety Impacts	Collisions and related impacts		
	Other Safety Impacts		
Local Environmental Impacts	Air Quality		
	Noise & Vibration		
	Biodiversity		
	Water Resources / Soil		
	Landscape & Visual		
	Cultural Heritage		

In summary, the comparative MCA assessment demonstrates that neither of the proposed options offer significant benefits to that of the EPR. It is therefore recommended that the EPR for this section is taken forward for further development for the PR and Preliminary Design. A focus will be maintained throughout the preliminary design process to – where possible - improve benefits further and to reduce environmental effects.

7.9 Recommendations of MCA Assessment

The project team have undertaken a series of MCA assessments of localised options within four assessment areas of the EPR of the Luas Cork scheme. These localised options for the four assessment areas of the EPR were be assessed by applying a MCA approach in line with the Transport Appraisal Framework (TAF), published by the Department of Transport (DoT) in March 2023. The MCA utilised the main criteria and associated sub-criteria contained within the TAF. The outcomes of the MCA assessment were used to determine the PR. The outcomes are summarised in Table 7-23 below.

Table 7-23 Recommendations of MCA assessments

Assessment Area	Option	Option Description	Recommendation
1: Ballincollig	**Option A (Double Track)**	Double Track extended further west of Ballincollig town centre	Do not take forward to PR
	Option B (Extended Loop)	Single Track Loop extended further west of Ballincollig town centre	Take forward for PR design
2: Curraheen Rd / CUH	**Option A (CUH South)**	Double Track utilising alignment via Bishopstown GAA, Highfield Rugby club and CUH Campus South	Take forward for PR design
	Option B (CUH North)	Double Track utilising alignment via Bishopstown GAA, Highfield Rugby club and CUH Campus North	Do not take forward to PR
3: Churchyard Lane / Greenway	**Passage to Blackrock Greenway**	Repurposing the Greenway to fully segregated two-way running via single track arrangement.	Do not take forward to PR
4: Mahon / Skehard / Bessboro	**Option A (Skehard Road / Ballinure Ave / The Maples)**	Alternative alignment to continue along Skehard Road (through the Skehard Road / Mahon Road junction), through Ballinure Ave and the Maples.	Do not take forward to PR
	Option B (Skehard Road / Bessboro Rd / Estuary Drive)	Alternative alignment to divert off Skehard Road to Bessboro Road, to run past the Blackrock Business Park, before bridging over the greenway to join with Estuary Drive.	Do not take forward to PR

8. Description of the Preferred Route (PR)

8.1 Introduction

The key outcome of this report is the determination of the Preferred Option for Luas Cork. That is, the route which, based on evidence and assessment, presents the best opportunity to meet the Proposed Schemes objectives, whilst also considering feedback received during NSPC 1.

Following the feedback from NSPC 1, a number of detailed MCAs were completed in line with TAF guidance (and criteria) on localised options across four assessment areas. The outcomes of this MCA assessment work has enabled the optimal to be presented as the Preferred Route.

8.2 Overview of the Preferred Route

The following section provides a descriptive summary of the proposed alignment for the PR, starting from the western extents in Ballincollig, to the eastern extents at Mahon Point. **Figure 8-1** shows the end-to-end PR alignment.

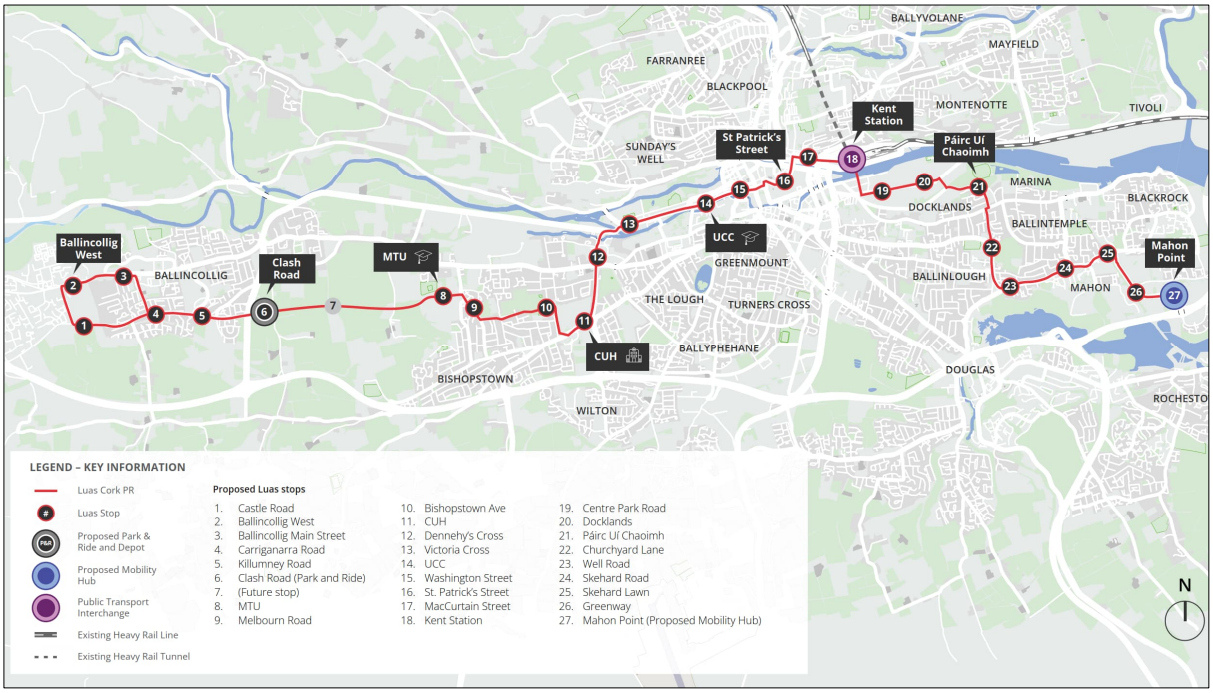

Figure 8-1 Entire Proposed Route

Ballincollig to Munster Technological University

The proposed Preferred Route starts in Ballincollig. In a change from the EPR it begins at the Carriganarra Road/Station Road junction in a single-track loop running on to Castle Road, Flynn's Road, Ballincollig Main Street (Main Road / Carrigrohane Road) before turning southwards onto Station Road. Here the loop is complete, and the line continues eastwards in a more typical double-track arrangement. The tram is largely segregated from general traffic through Ballincollig, but shares with southbound traffic on Station Road. Beech Park/Barley Grove will be accessible to general traffic from Main Street and from Carriganarra Road but there will be no northbound through-traffic. Some diversion of traffic onto Old Fort Road will help reduce traffic volumes in the village.

Once back on Carriganarra Road, at the bottom of Station Road, the tram travels eastbound on a twin track arrangement across the N22 towards MTU. As per the Emerging Preferred Route (EPR), there is a

proposed 1,000 vehicle Park and Ride and Depot facility in what is currently farmland, immediately to the east of the N22 and to the west of Clash Road. A parallel, two-way cycle-path from Ballincollig connects to the Curraheen Greenway at the Curraheen River end of this stretch of the route.

Munster Technological University to Wilton Road

The Preferred Route continues through Munster Technological University's campus on Rossa Avenue. It continues southwards onto Melbourn Road. It turns eastwards and runs uphill past Bishopstown Community School, Ballinaspig Lawn, Bishopstown GAA, Highfield Rugby Club, Coláiste an Spioraid Naoimh, Saint Columba's Convent and then through CUH campus.

Wilton Road to Washington Street

At the western side of the CUH campus, the route travels south to Bishopstown Road and Wilton Road towards Dennehy's Cross and Victoria Cross, turning eastwards onto Western Road towards the city centre. In a change from the EPR, an additional stop is being provided at Victoria Cross to better serve residents and recreational and hospital facilities around the Carrigrohane junction with Victoria Cross. The University College Cork (UCC) stop is being moved closer to the main UCC gates at Donovan Road to improve accessibility to the campus.

Washington Street to Kennedy Quay

From Washington Street to Kent Station, the route remains unchanged from the EPR – proceeding through St Patrick's Street, MacCurtain Street and Kent Station, with a tram stop at each of these locations. The stop at Kent Station will be integrated into the proposed public transport interchange at the rear of the station allowing intermodal transfer to commuter and intercity rail services, buses and cycling facilities. The detail of this stop will be subject to a multi-party design process to be carried out at the next stage. The Preferred Route then travels southwards on a new public transport bridge over the River Lee from Horgan's Quay to the south docklands. We have been engaging with representatives of the maritime community about the impact this new bridge will have on river activity and will continue to engage on this issue. We are also engaging with Cork City Council to ensure that the wider development of the docklands is designed in cooperation and as part of an integrated transport and development strategy for Cork Docklands.

Kennedy Quay to Páirc Uí Chaoimh

The route continues southwards before turning east on to Centre Park Road, where the tracks will be fully segregated from other traffic. An additional stop at Docklands accommodates the future development of 20,000 new homes and almost 25,000 jobs. At the Centre Park Road/Marquee Road junction the line turns southwards before reaching Monahan Road, where it runs along the southern boundary of the newly developed Marina Park. The Páirc Uí Chaoimh stop has been relocated and refined to allow for better crowd circulation, segregation and to facilitate tram turnback.

Páirc Uí Chaoimh to Boreenmanna Road

From Páirc Uí Chaoimh, the line runs southbound on Maryville, up the incline, to reach the junction with Blackrock Road, sharing with local access traffic for part of the route. It continues uphill on Churchyard Lane sharing with southbound traffic as far as the Churchyard Lane/Boreenmanna Road junction, but segregated in a northbound direction. Existing on-street parking on Churchyard Lane will be relocated where possible - including within the Ashcroft Estate. Local traffic diversions will be put in place as part of a traffic management plan for the wider area.

Boreenmanna Road to Mahon Point

From the Boreenmanna Road junction, the line runs alongside the kerb, primarily segregated from general traffic and with staggered platforms at Beaumont Quarry and Cork Constitution. It then proceeds along Skehard Road and travels eastwards, with a stop located at the junction with Well Road. A staggered platform is provided in place of the previous Woodvale stop location, removing impacts to private driveways. The westbound Luas stop platform will be at Kilbrack Grove and the eastbound stop platform will be at Woodvale Road. The Preferred Route then continues on Skehard Road, before turning southwards onto Mahon Link Road. A kerbside arrangement will share with buses as far as the terminus at Mahon Point

8.3 PR Performance against Proposed Scheme Objectives

The following Table 8-1 outlines the performance of the PR against the high-level objectives for Luas Cork, established at the outset of the project at Stage 1.

Table 8-1 PR performance against proposed scheme objectives

Luas Cork Scheme Objectives	PR Response
Deliver high quality public transport and journey time reliability to cater for existing and future public transport travel increased demand within the city and its suburbs.	The PR alignment integrates well with BusConnects and provides a direct route to Kent Station and Mahon, lending well to Journey time reliability for Luas Cork to a number of all day trip attractors in the city.
Support the continued important economic development of the Cork Metropolitan Area, futureproofing for NPF growth and beyond, in a cost-efficient manner	The PR brings additional resilience to the transport network, allowing for future growth and regeneration within the city centre with the ability to cater for demand. The PR will also catalyse important economic regeneration in the Docklands, at MTU and UCC, in Ballincollig and in Mahon.
Facilitate connection to key trip attractors and support public transport network integration by providing high quality passenger interchange points	The PR will serve a high number of major city trip attractors, such as Ballincollig, Munster Technology University, University College Cork, Cork University Hospital, Cork City Centre, Pairc Uí Chaoimh and Mahon. The PR for Luas Cork has been closely coordinated with the proposed BusConnects scheme, to minimise operational conflicts and provide public transport network integration.
Plan, construct and operate in an environmentally sustainable manner, facilitate a reduction in urban congestion and contribute to the environmental enhancement of the city and region.	The PR allows for a phased pathway for future construction, while at points minimising the network impacts with some sections offline from the main traffic network. The passenger capacity of the Luas service, as well as its service reliability will alleviate

Luas Cork Scheme Objectives	PR Response
	general traffic demand on the network through modal shift.
As part of the scheme, provide a 'strategic Park and Ride' for motorists who currently travel to the City Centre from the N22	The PR will provide a strategic park & ride with a capacity of circa 1,000 spaces adjacent to the Link Rd on the outskirts of Ballincollig adjacent to the N22. A further Mobility Hub will also be provided at Mahon.
Design a modern and attractive light rail system which is accessible to all users, and which integrates appropriately into the existing urban fabric and character of the city.	The PR utilises a mix of sharing the cross sections of a series of existing street links as well as sections of off-line priority. The street links that will be integrated with Luas Cork, will also benefit from improved public realm and accessibility for all.

9. Next Steps

A Non-Statutory Public Consultation (NSPC) was held for the Emerging Preferred Route (EPR), closed in June 2025. Since then, the project team has been assessing the feedback submitted during the consultation. Suggested alternative routes and concerns about the impact of the EPR have been given much consideration and a subsequent assessment to identify the Preferred Route (PR) has been undertaken.

A second NSPC is targeted for April 2026 for the PR, to capture further feedback from stakeholders. The feedback will be presented in a second consultation report for the PR, to be released between Q3-Q4 of 2026. The project will then proceed into Phase 3, and the PR will be subject to a Preliminary Design Process. Feedback from the second NSPC will be used to refine the preliminary design.

The goal for the project is to design a route that captures key destinations in health, education, industry, retail, housing, recreation and sporting, while also accommodating commuting and everyday journeys. But there are trade-offs. Luas Cork must serve the people of Cork and yet no line can be constructed without impacting on some residents and businesses. However, the project will continue to engage impacted stakeholders and, if possible, seek to incorporate meaningful mitigation measures into the design.

Following completion of the Preliminary Design, the project will begin preparation for a Railway Order (planning permission).

Appendix A. Ballincollig

A.1 Ballincollig Key Services

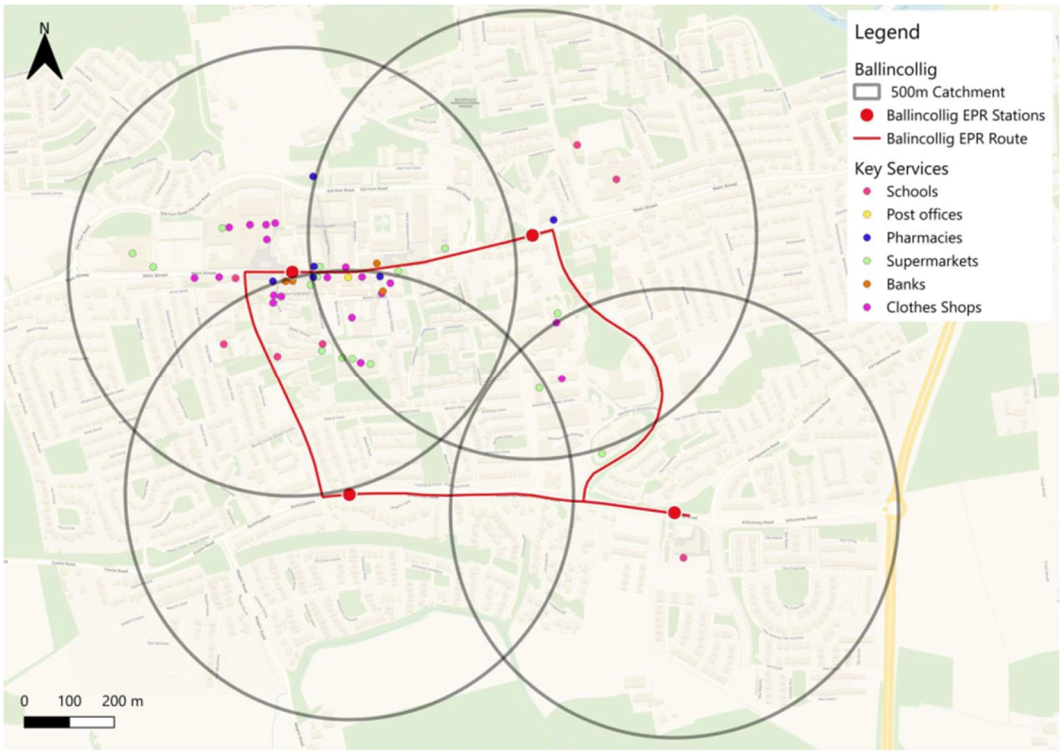

Figure 9-1 Ballincollig Key Services Catchment EPR

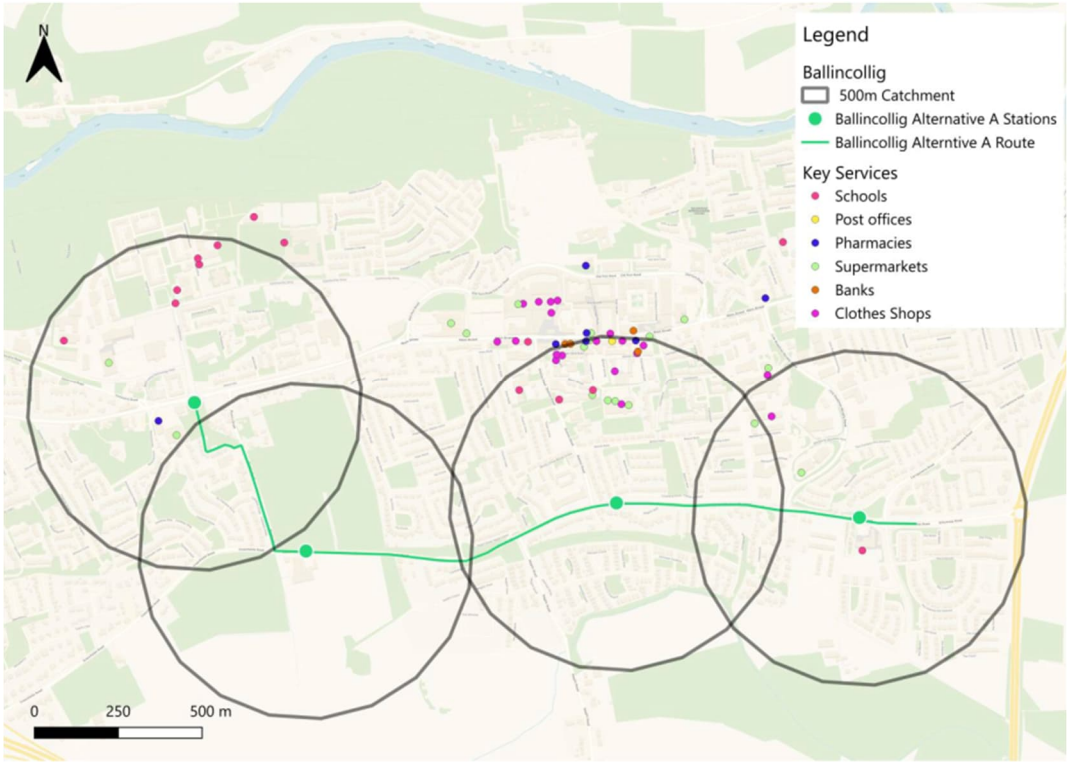

Figure 9-2 Ballincollig Key Services Catchment Option A

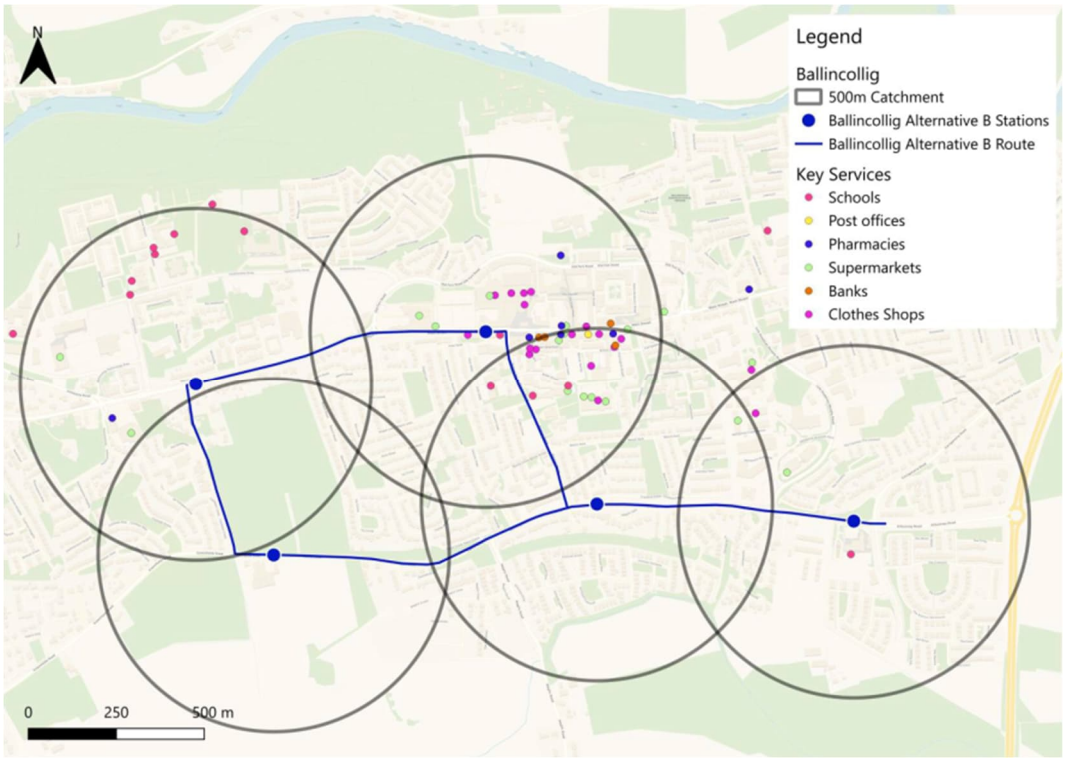

Figure 9-3 Ballincollig Key Services Catchment Option B

A.2 Ballincollig Recreational Services Catchment

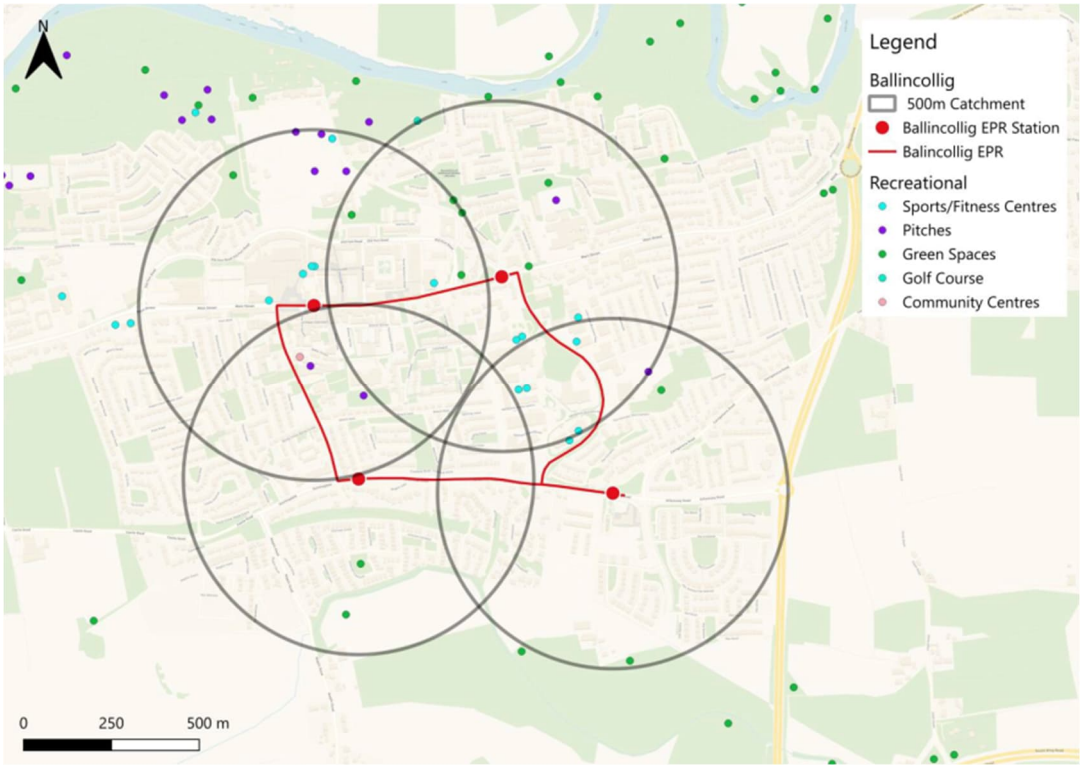

Figure 9-4 Ballincollig Recreational Services Catchment EPR

Figure 9-5 Ballincollig Recreational Services Catchment Option A

A.3

Figure 9-6 Ballincollig Recreational Services Catchment Option B

A.4 Ballincollig Deprived Areas Catchment

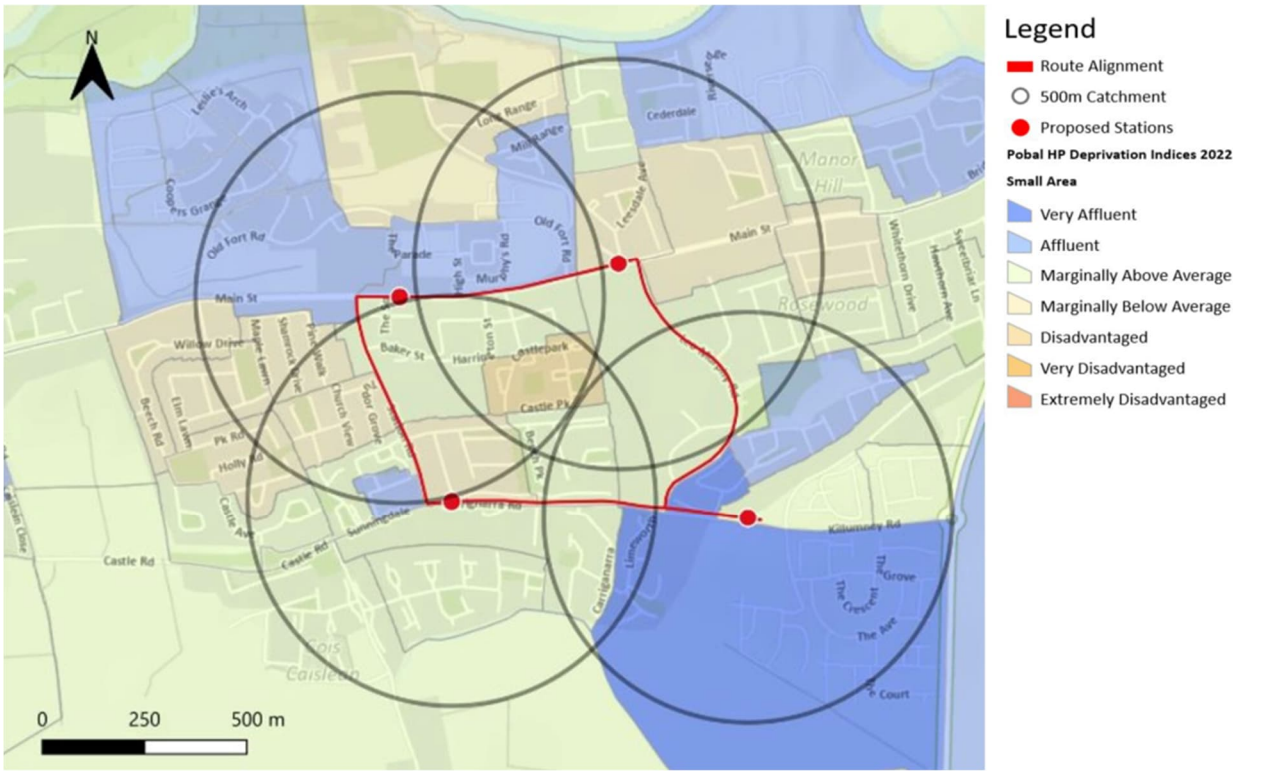

Figure 9-7 Ballincollig Deprived Areas Catchment EPR

Figure 9-8 Ballincollig Deprived Areas Catchment Option A

Figure 9-9 Ballincollig Deprived Areas Catchment Option B

Appendix B. Curraheen Road/CUH

B.1 Curraheen Road/ CUH Key Services

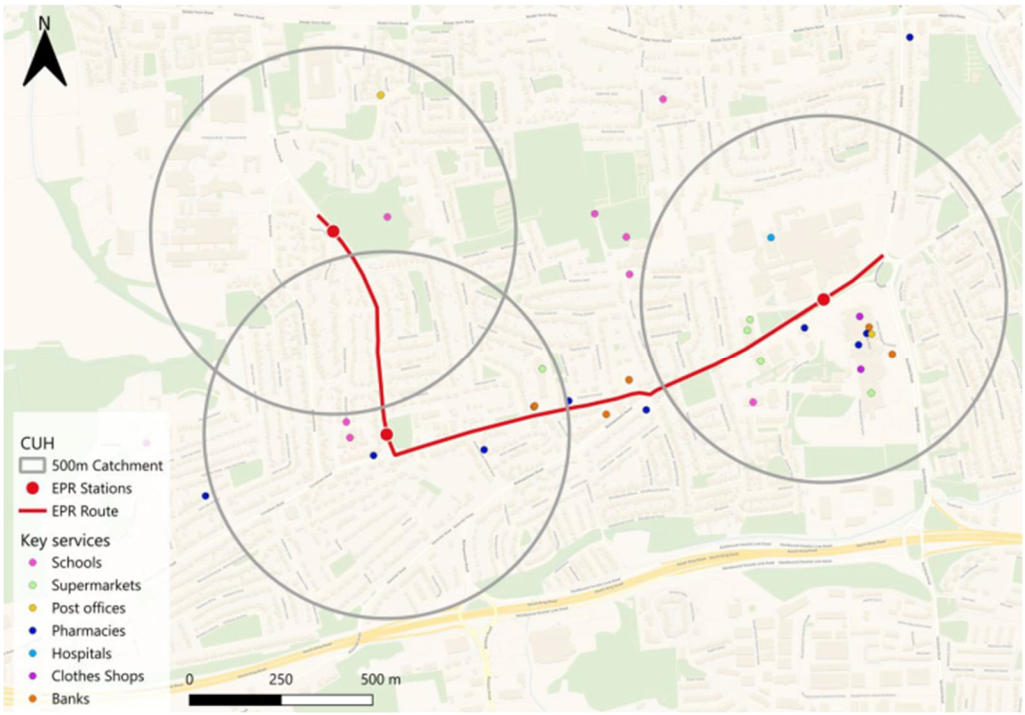

Figure 9-10 Curraheen Road/ CUH Key Services Catchment EPR

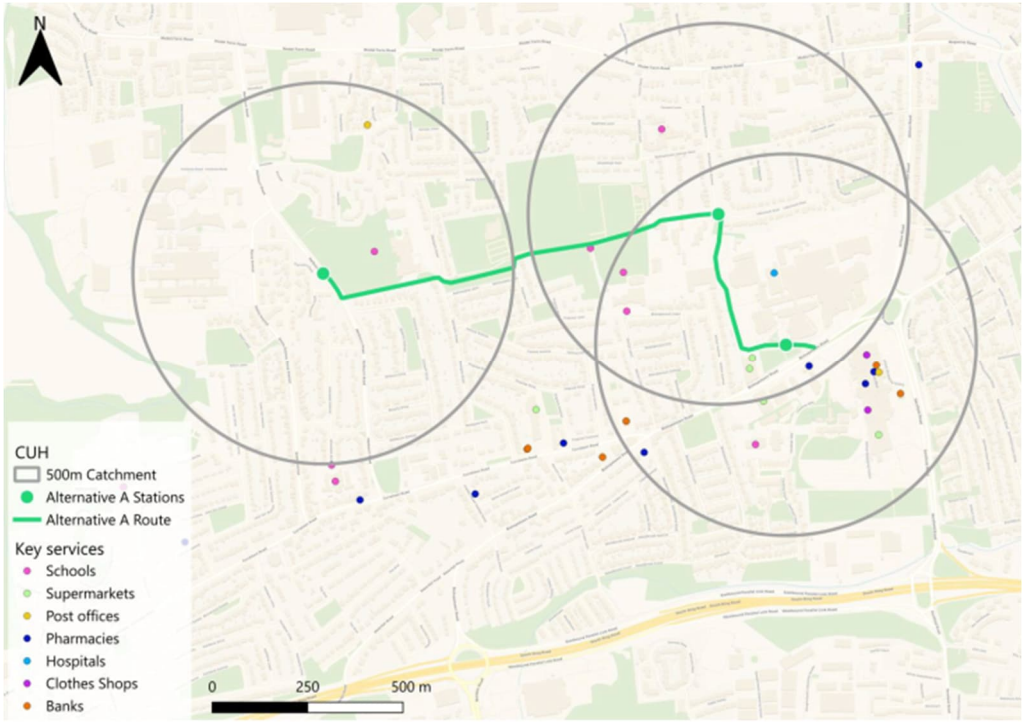

Figure 9-11Curraheen Road/CUH Key Services Catchment Option A

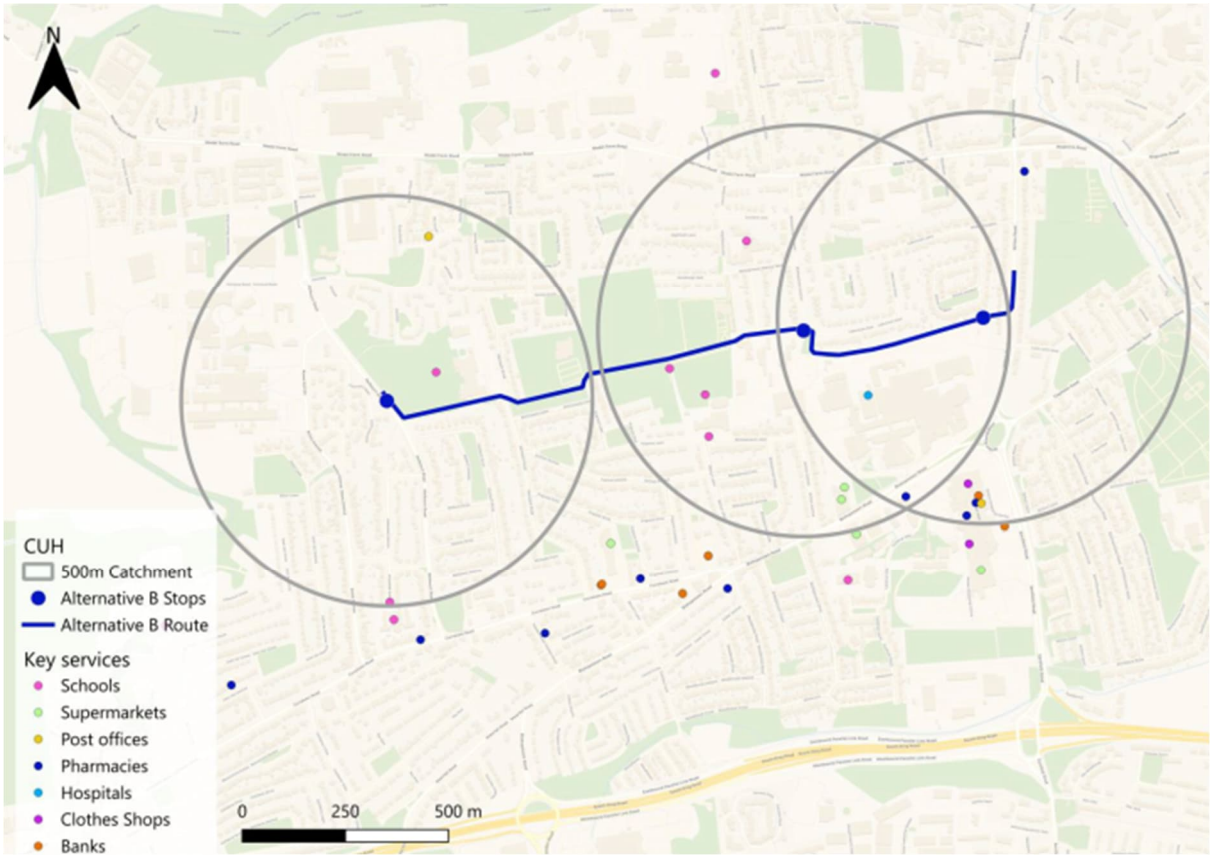

Figure 9-12 Curraheen Road/CUH Key Services Catchment Option B

B.2 Curraheen Road/CUH Recreational Facilities

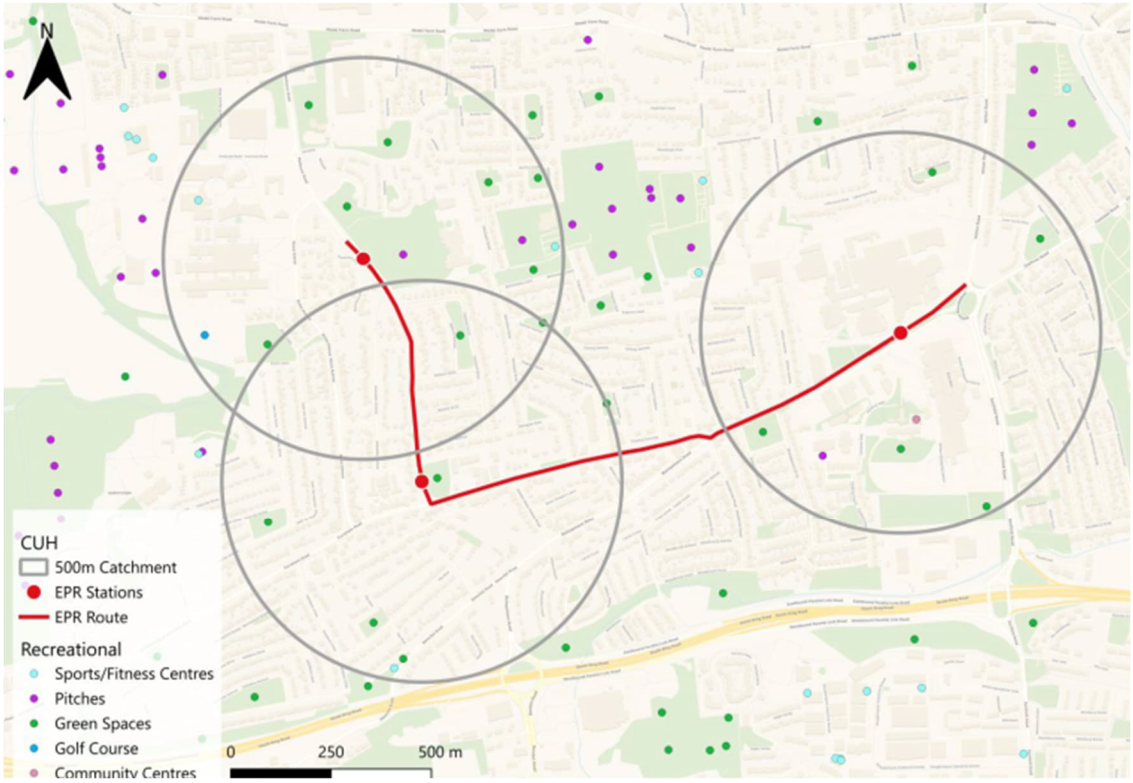

Figure 9-13 Curraheen Road/CUH Recreational Facilities Catchment EPR

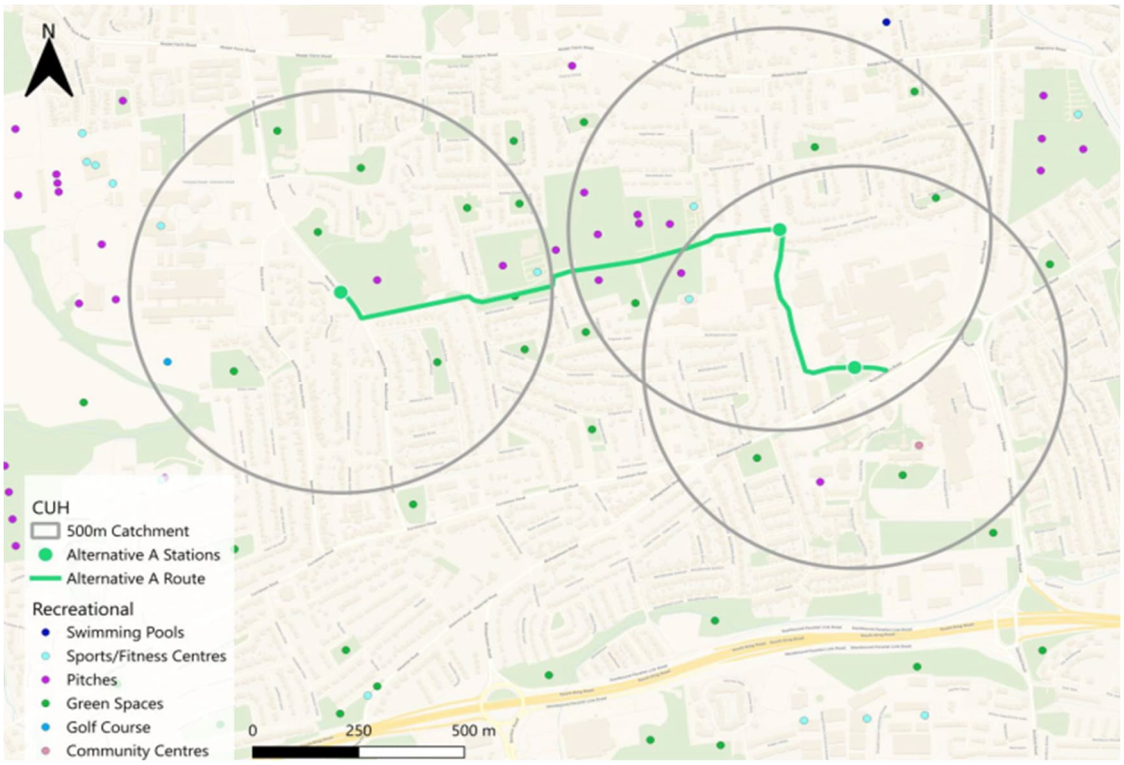

Figure 9-14 Curraheen Road/CUH Recreational Facilities Catchment Option A

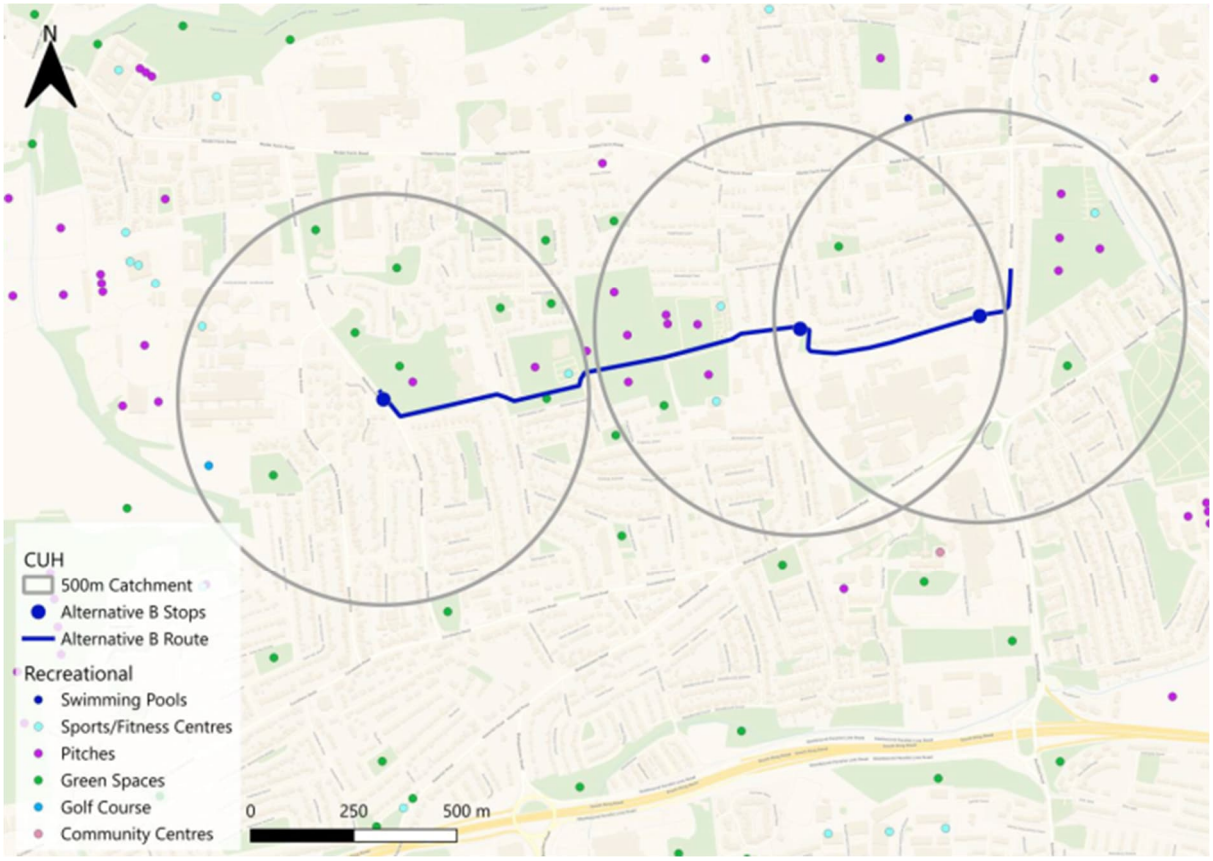

Figure 9-15 Curraheen Road/CUH Recreational Facilities Catchment Option B

B.3 Deprived Areas Catchment

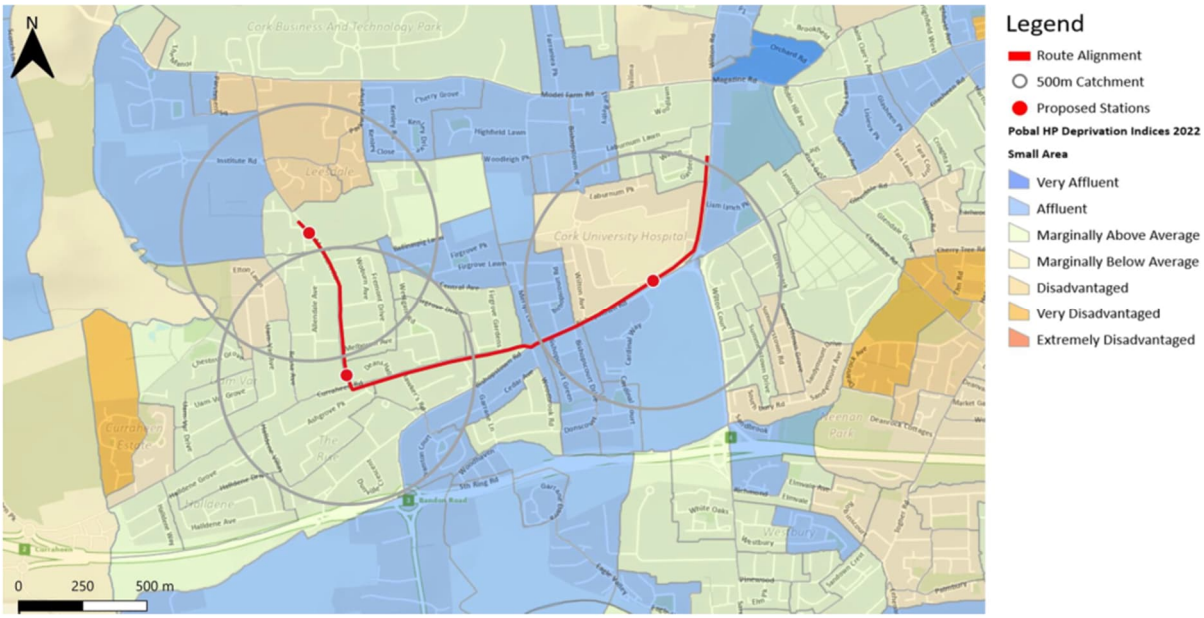

Figure 9-16 Curraheen Road/CUH Deprived Areas Catchment EPR

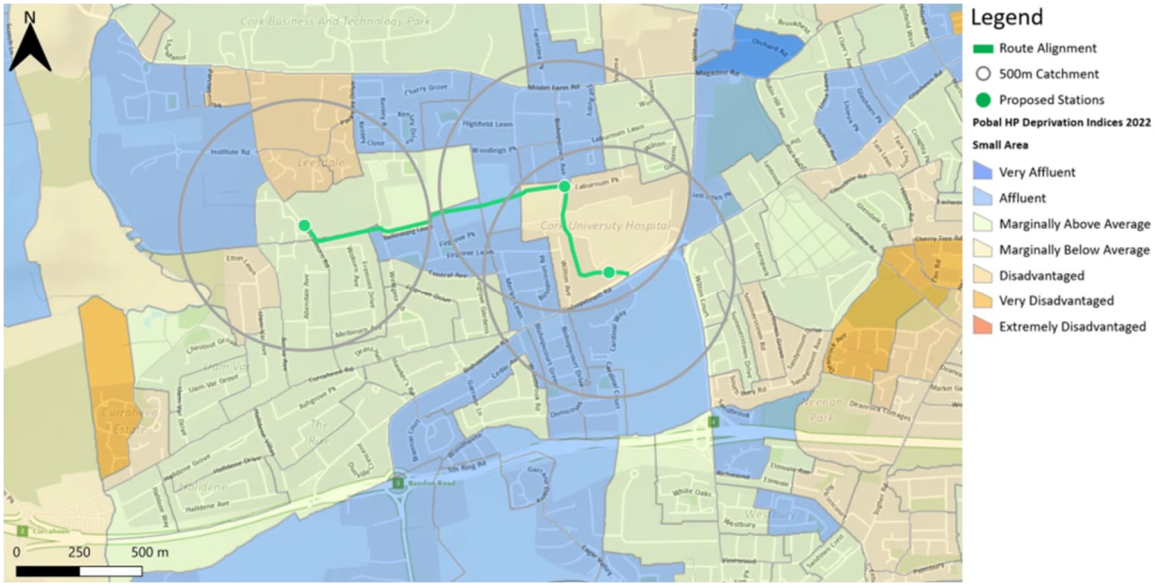

Figure 9-17 Curraheen Road/CUH Deprived Areas Catchment Option A

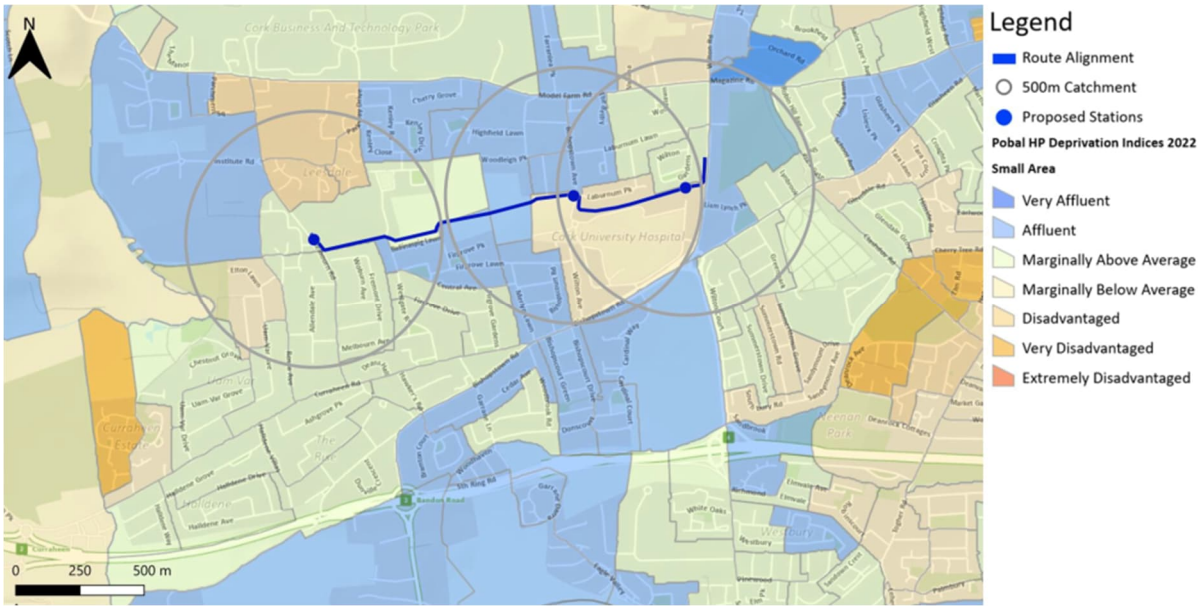

Figure 9-18 Curraheen Road/CUH Deprived Areas Catchment Option B

Appendix C. Cork City East

C.1 Key Services

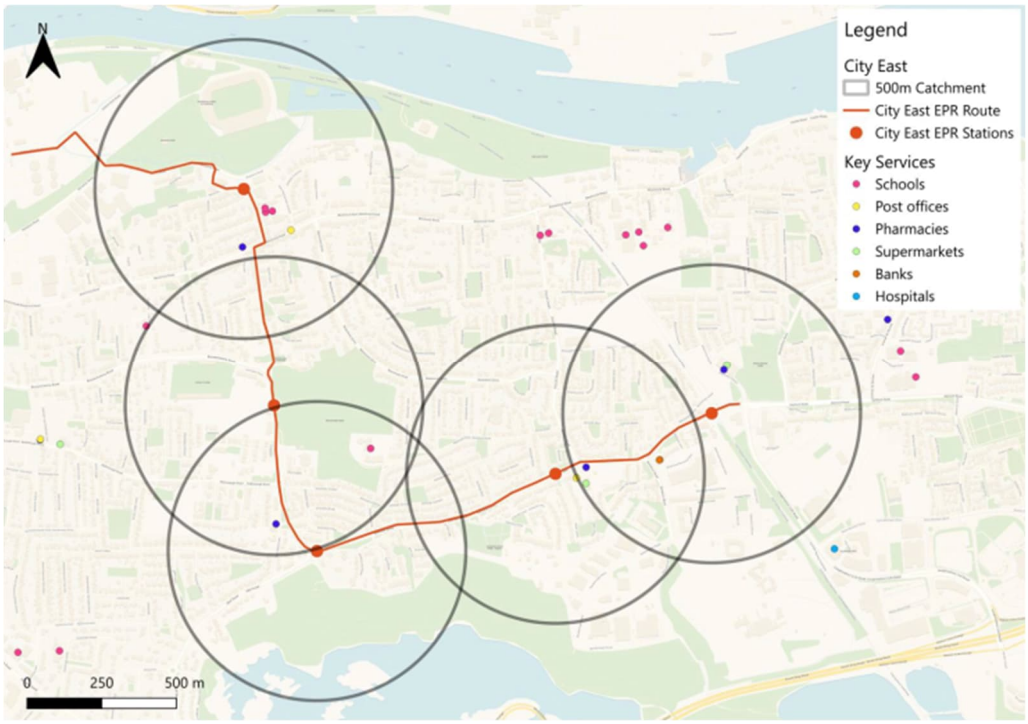

Figure 9-19 City East Key Services Catchment EPR

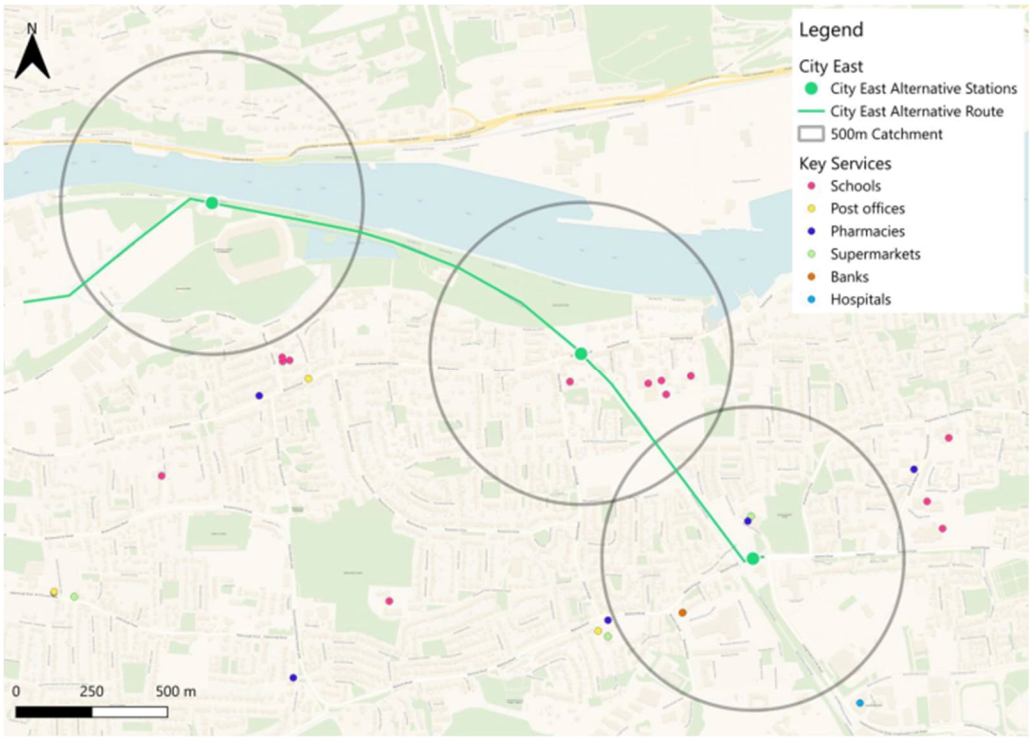

Figure 9-20 City East Key Services Catchment Option A

C.2 Recreational Facilities Catchment

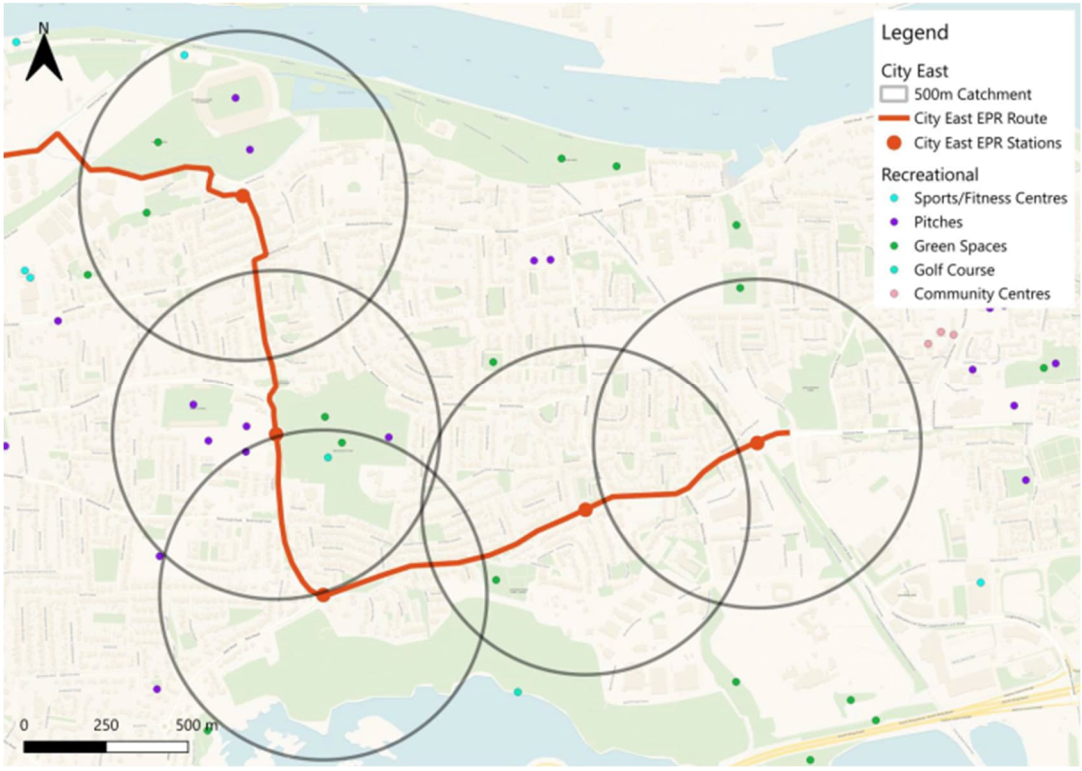

Figure 9-21 City East Recreational Facilities Catchment EPR

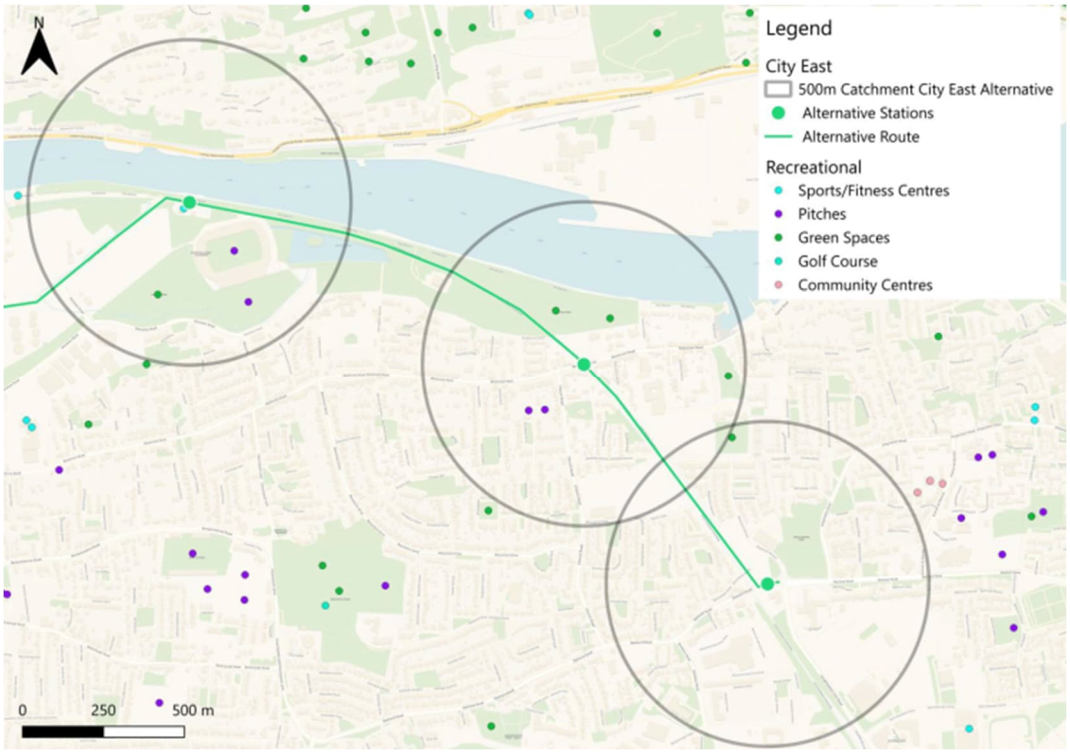

Figure 9-22 City East Recreational Facilities Catchment Option A

C.3 Deprived Areas Catchment

Figure 9-23 City East Deprived Areas Catchment EPR

Figure 9-24 City East Deprived Areas Catchment Option A

Appendix D. Mahon Point

D.1 Key Services Catchment

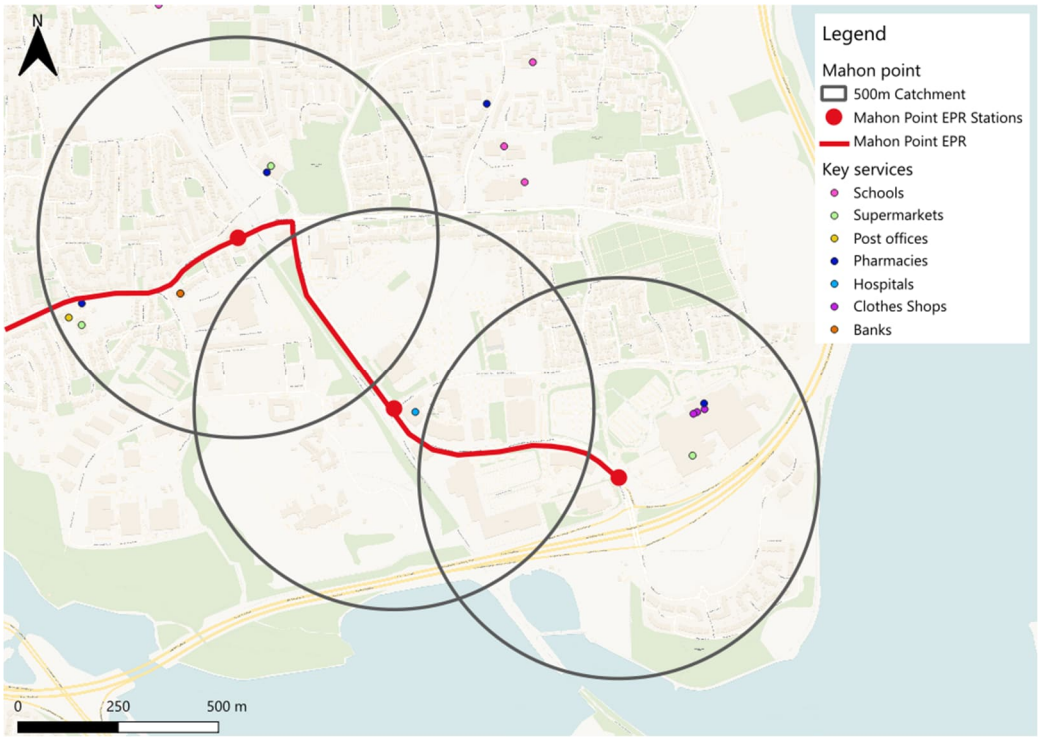

Figure 9-25 Mahon Point Key Services Catchment EPR

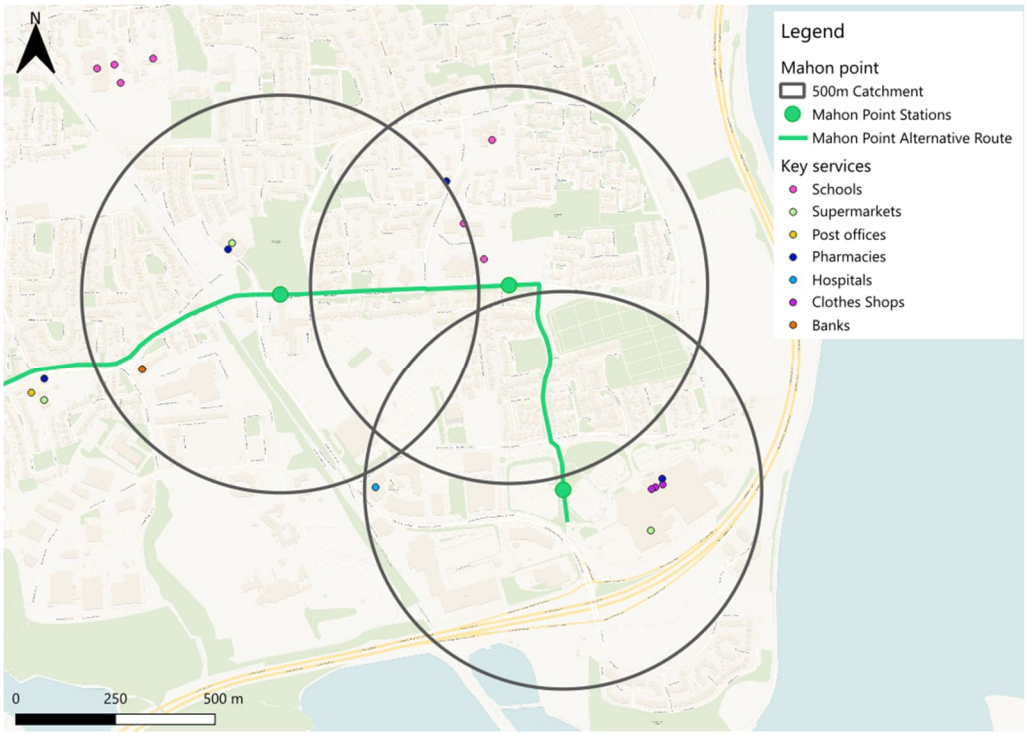

Figure 9-26 Mahon Point Key Services Catchment Option A

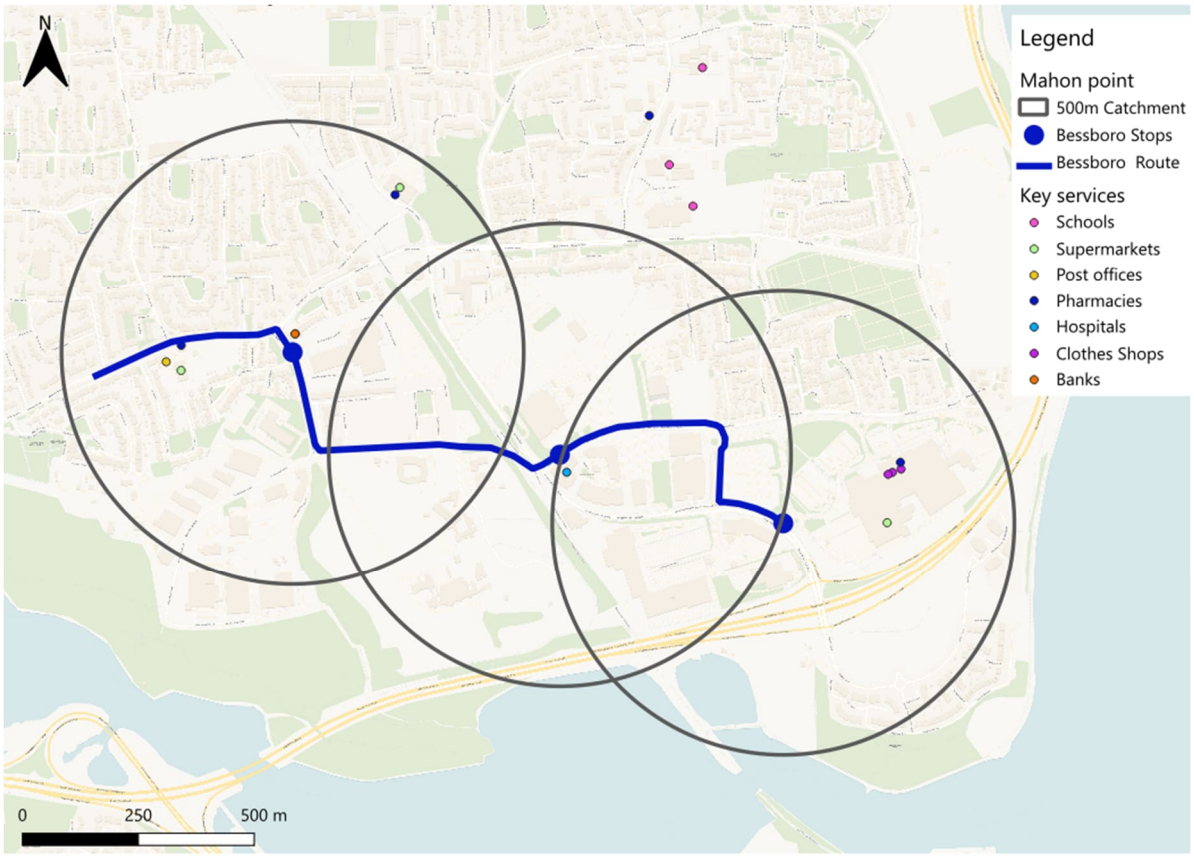

Figure 9-27 Mahon Point Key Services Catchment Option B

D.2 Recreational Facilities Catchment

Figure 9-28 Mahon Point Recreational Facilities EPR

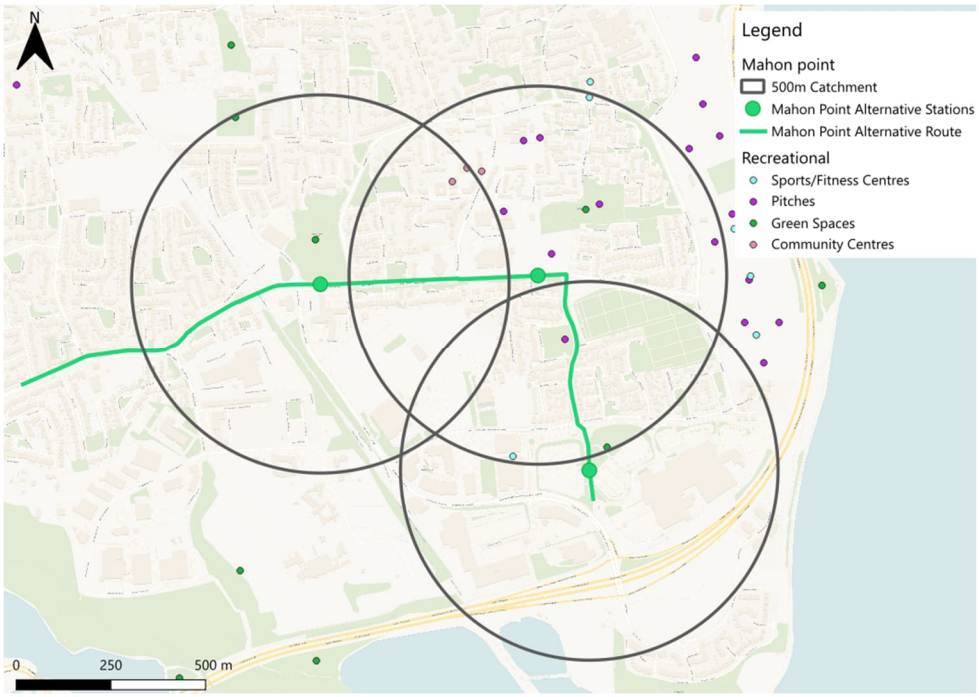

Figure 9-29 Mahon Point Recreational Facilities Option A

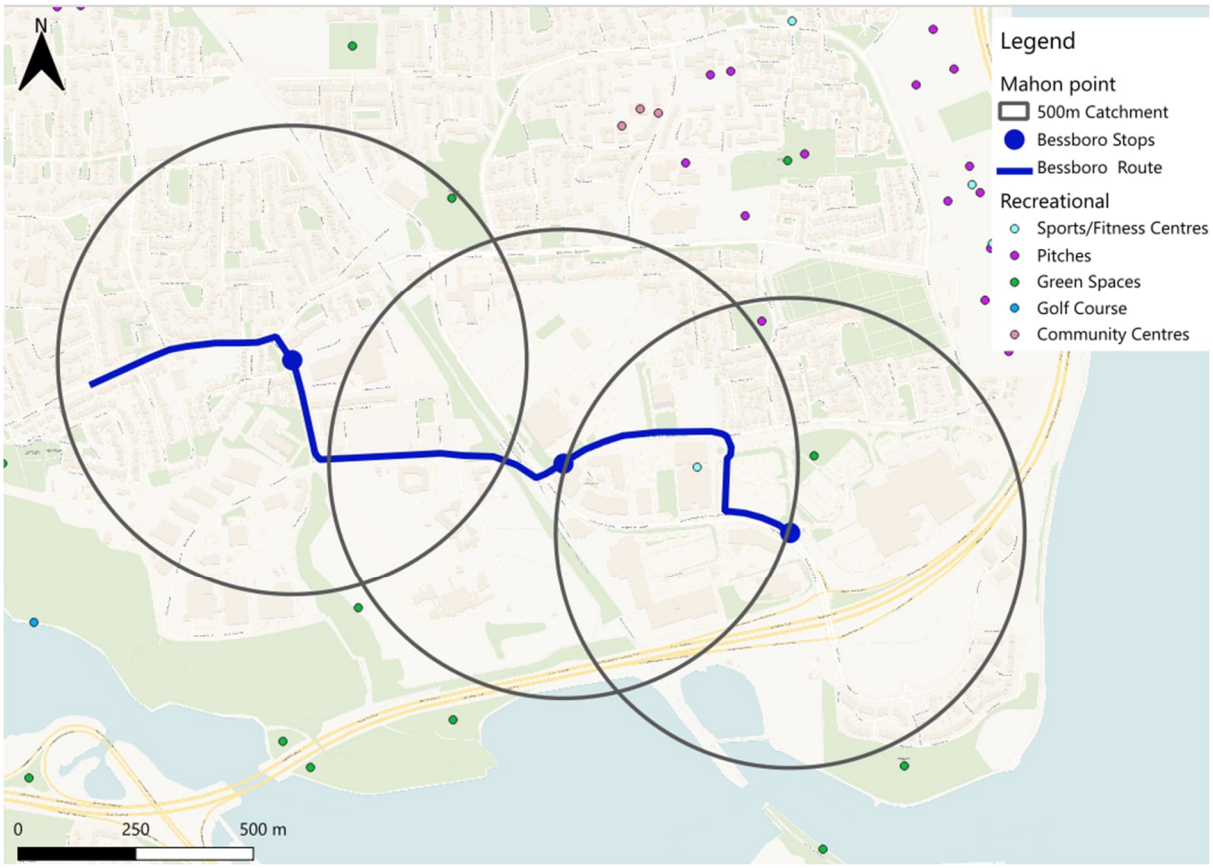

Figure 9-30 Mahon Point Recreational Facilities Catchment Option B