

DART+ West

OPTION SELECTION REPORT

ASHTOWN REVISED PREFERRED OPTION REPORT

March 2022



Table of Contents

| | | |
|-----------|---|-----------|
| | Executive Summary | iv |
| 1. | Introduction | 1 |
| 1.1 | Purpose of the Report | 1 |
| 1.2 | Format of the Report | 2 |
| 2. | Options Selection and Public Consultation | 4 |
| 2.1 | Introduction | 4 |
| 2.2 | Public Consultation and Stakeholder Engagement | 4 |
| 2.3 | Option 2 (Ashtown Preferred Option) | 7 |
| 2.4 | Re-assessment of Options | 8 |
| 3. | The Need for Vehicular Access at Ashtown..... | 10 |
| 3.1 | Iarnród Éireann and DART+ West Objectives in Relation to Level Crossings..... | 10 |
| 3.2 | Road Layout in the Vicinity of Ashtown Level Crossing | 11 |
| 3.3 | Planning Context | 12 |
| 3.4 | Transportation Assessment..... | 15 |
| 3.5 | Conclusions | 23 |
| 4. | Options Description..... | 24 |
| 4.1 | Introduction | 24 |
| 4.2 | Options Description | 25 |
| 5. | Options Assessment | 42 |
| 5.1 | Introduction | 42 |
| 5.2 | Options Assessment Stage 1 - Ashtown | 42 |
| 5.3 | Stage 2 Options Assessment / Multi-Criteria Analysis | 48 |
| 6. | Summary and Recommendations - Ashtown | 59 |
| 7. | Next Steps | 62 |

List of Appendices made available for individual Download

Appendix 1 – Photomontages

Appendix 2 – Drawings

Appendix 3 – Ashtown Revised Multi-Criteria Analysis MCA1

Appendix 4 - Ashtown Revised Multi-Criteria Analysis MCA2

Glossary

| Abbrev | Meaning | Abbrev | Meaning |
|------------|---|--------|---|
| AA | Appropriate Assessment | EIA | Environmental Impact Assessment |
| AACH | Architectural, Archaeological and Cultural Heritage | EIAR | Environmental Impact Assessment Report |
| AADT | Annual Average Daily Traffic | EMC | Electromagnetic compatibility |
| ABP | An Bord Pleanála | EMF | Electromagnetic field |
| AC | Alternating Current | EMI | Electromagnetic Interference |
| ACA | Architectural Conservation Area | EMR | Electromagnetic Radiation |
| ASP | Auxiliary Supply Point | EMRA | Eastern and Midland Regional Assembly |
| ATC | Automatic Traffic Count | EMU | Electric Multiple Unit |
| bgl | Below ground level | ERM | Eastern Regional Model |
| BRT | Bus Rapid Transit | ESB | Electricity Supply Board |
| CA | Conservation Area | FDP | Fingal Development Plan |
| CAF | Common Appraisal Framework | GDA | Greater Dublin Area |
| Cant | Superelevation / cross fall of the rails | GHG | Greenhouse gas |
| CAPEX | Capital expenditure | GI | Geotechnical Investigations (Same as Site Investigations) |
| CCRP | City Centre Re-signalling Project | GSM | Global System for Mobile communications (originally from the French: Groupe Spécial Mobile) |
| CDP | City Development Plan | GSM-R | As above, GSM – Railway |
| CCTV | Closed Circuit Television | GSWR | Great Southern & Western Railway |
| CIÉ | Córas Iompair Éireann | GUI | Graphical user interface |
| CRR | Commission for Railway Regulation | ha | Hectare |
| D&B | Design & Build | HGV | Heavy goods vehicle |
| DART | Dublin Area Rapid Transit (IÉ's Electrified Network) | hr | Hour |
| DC | Direct Current | HV | High voltage |
| DCDP | Dublin City Development Plan | IAMS | Infrastructure Asset Management System |
| DCHG | Department of Culture, Heritage, and the Gaeltacht | ICNIRP | International Commission on Non-Ionising Radiation Protection |
| DMRB | Design Manual for Roads and Bridges | IÉ/IR | Iarnród Éireann/Irish Rail |
| DMURS | Design Manual for Urban Roads and Streets | JTC | Junction Turning Count |
| DNO | Distribution Network Operator | KCDP | Kildare County Development Plan |
| Down track | The track carrying trains travelling away from Dublin | LAP | Local Area Plan |
| DTTAS | Department of Transport, Tourism and Sport | LOC | Location cabinet |
| DU | DART Underground | LV | Low voltage |

| Abbrev | Meaning | Abbrev | Meaning |
|--------|---|----------|---|
| m | Metre | RO | railway order |
| MASP | Metropolitan Area Strategic Plan | RPG | Regional Planning Guidelines |
| MCA | Multi-Criteria Analysis | RPS | Record of Protected Structures |
| MDC | Multi-Disciplinary Consultant (i.e. IDOM) | RRV | Rail Road Vehicles |
| MEP | Multiple Equipment Provisioning | RSES | Regional Spatial and Economic Strategy |
| MGWR | Midlands Great Western Railway | SAC | Special Area of Conservation |
| min | Minute | SDRA | Strategic Development and Regeneration Area |
| MRI | Magnetic Resonance Imaging | SDZ | Strategic Development Zone |
| MV | Medium Voltage | SEB | Signalling Equipment Building |
| NAPSI | National Action Plan for Social Inclusion | SEM | Scanning Electron Microscope |
| NDP | National Development Plan 2018–2027 | SER | Signalling Equipment Room |
| NHA | Natural Heritage Area | SET | Signalling, Electrical, Telecommunication |
| NIAH | National Inventory of Architectural Heritage | SIFLT | Strategic Investment Framework for Land Transport |
| NMI | National Museum of Ireland | SMR | Sites and Monuments Record |
| NPF | National Planning Framework | SPA | Special Protection Area |
| NSO | National Strategic Outcomes | T | Tesla |
| NTA | National Transport Authority | TBM | Tunnel Boring Machine |
| OB | Overbridge | TER | Telecommunication Equipment Room |
| ODMH | Ordnance Datum Malin Head | TII | Transport Infrastructure Ireland |
| OHLE | Overhead Line Equipment | TOD | Transit Oriented Development |
| OPEX | Operating expenses | TOR | Top of Rail |
| OSR | Option Selection Report | TPHPD | Trains Per Hour Per Direction |
| PC1 | Public Consultation No.1 | TSS | Train Service Specification |
| PC2 | Public Consultation No.2 | TTA | Traffic and Transport Assessment |
| PLUTO | Planning Land Use and Transport Outlook 2040 | UPS | Uninterrupted Power Supply |
| pNHA | proposed Natural Heritage Area | Up track | The track carrying trains travelling towards Dublin |
| POSR | Preliminary Option Selection Report | V | Volt |
| PPT | Phoenix Park Tunnel | UIC | International Union of Railways (Union Internationale des Chemins de fer) |
| PSP | Principal Supply Point | WHO | World Health Organisation |
| QBC | Quality Bus Corridor | yd | Yard |
| RAM | Reliability, availability and maintainability | W | Watt |
| REB | Relocatable Equipment Building | | |
| RMP | Record of Monuments and Places | | |

Executive Summary

This document supersedes elements of Volumes 1 to 4 of the Option Selection Report in relation to Ashtown which were published as part of the second round of public consultation on 26th July 2021. It reports on a review and update of the option selection process and describes a revised preferred option taking into account feedback received during public consultation. It will be presented to the public as part of further consultation local to Ashtown. The principal Ashtown concerns raised in consultations include the following:

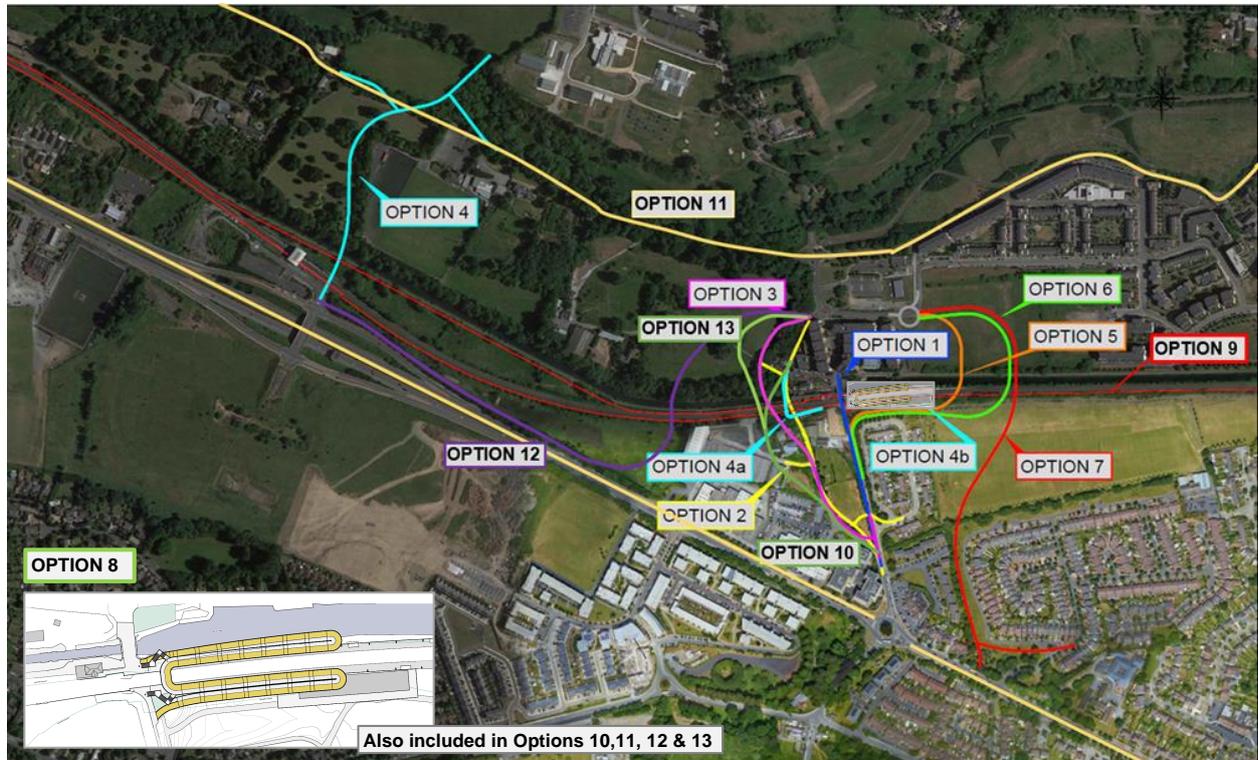
- Community severance;
- Loss of green space in Martin Savage Park;
- Concerns about flooding in Martin Savage Park;
- Impact on Ashtown Stables;
- Safety of underpass and anti-social behaviour;
- Human health and wellbeing, and impacts on women;
- Impacts on Rathborne: access to the shops and facilities;
- Need to feel safe;
- Further Consideration of Option 9 for Track Lowering at Ashtown;
- Concerns regarding adherence to universal design principles to ensure equal access for all;
- Need for well-lit and preserved pedestrian ways to ensure that residents feel safe;
- Concerns regarding the noise impacts, and impact on residents in proximity to the rail line;
- Concerns regarding the provision of adequate parking facilities at the stations;
- Impact on the Royal Canal navigation for boating activities along the canal.

The original Options were reviewed and altered to take account of the above where practicable and new options were developed as set out in tabular form below.

Summary Table of Alterations to Options and Additional Options

| PC2 Option | Changes Proposed for Consideration MCA |
|--|---|
| Opt 1 Overbridge on Ashtown Road | Opt 1 – No Change |
| Opt 2 Underbridge on Mill Lane | Opt 2 – Narrowed, walled, mini roundabout added to south, separate ped-cycle bridge added at reconfigured station, set down area reconfigured; |
| Opt 3 Overbridge on Mill Lane | Opt 3 – Narrowed, walled, mini roundabout added to south, separate ped-cycle bridge added at reconfigured station; |
| Opt 4&4a Navan Parkway Station Link Road, Ped / Cycle Underbridge at Ashtown | Opt 4&4a – No change; |
| Opt 4&4b Navan Parkway Stn Link Road, Ped / Cycle Overbridge at Ashtown | Opt 4&4b – separate ped-cycle bridge at reconfigured station included in place of proposed pedestrian cycle bridge, Set down area reconfigured; |
| Opt 5 Low clearance underbridge east of existing crossing. | Opt 5 – No change; |
| Opt 6 Overbridge east | Opt 6 – No change; |
| Opt 7 Overbridge east with R147 Link | Opt 7 – No change; |
| Opt 8 Pedestrian / Cycle Bridge only | Opt 8 – Replace with reconfigured station and pedestrian cycle bridge only. No upgrade to the local road network; |
| Opt 9 Lower the Railway | Opt 9 – No change; |
| | Opt 10 – New option – underbridge, west of mill, cycleway on roadway, separate ped-cycle bridge added at reconfigured station; |
| | Opt 11 – New option - pedestrian cycle bridge at reconfigured station, upgrades to local road network; |
| | Opt 12 – New option - road link from Navan Parkway Interchange with bridge over the railway crossing through Ashton House lands, separate ped-cycle bridge added at reconfigured station; |
| | Opt 13 - New Option – over, west of mill, cycleway on roadway, separate ped-cycle bridge added at reconfigured station; |

The figure below provides a graphic illustration of all options identified for assessment as part of the review following public consultation feedback.



Ashtown PC2 Review Options

A more detailed description of each of the updated options and additional options is provided in Chapter 4. With the inclusion of Option 11: Pedestrian Cycle Bridge at Reconfigured Station and upgrades to the local road network, it was necessary to give further consideration to the appropriateness of removing vehicular access at the level crossing as part of the project. Consideration of this issue is provided in Chapter 3. It concludes that it is appropriate to consider the removal of vehicular access in the context of a multi-criteria analysis against other proposed options.

The multi-criteria analysis process was carried out in two stages, the first to remove less likely options, the second to confirm the preferred option. The outcome of MCA1 is provided in tabular form below.

| Criteria | Do-Nothing | Do Min | Options | | | | | | | | | | | | | | |
|------------------------------------|------------|--------|---------|----|----|------|------|----|----|----|----|----|----|-----|-----|-----|-----|
| | | | 1 | 2 | 3 | 4+4a | 4+4b | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| Economy | | | | | | | | | | | | | | | | | |
| Integration | | | | | | | | | | | | | | | | | |
| Environment | | | | | | | | | | | | | | | | | |
| Social Inclusion | | | | | | | | | | | | | | | | | |
| Safety | | | | | | | | | | | | | | | | | |
| Physical Activity | | | | | | | | | | | | | | | | | |
| Shortlisted for Stage 2 MCA | No | No | No | No | No | No | Yes | No | No | No | No | No | No | Yes | Yes | Yes | Yes |

The Outcome of MCA2 is provided in tabular form below.

| Criteria | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|------------------------------------|-------------|-----------|-----------|-----------|-----------|
| Economy | | | | | |
| Integration | | | | | |
| Environment | | | | | |
| Accessibility and Social Inclusion | | | | | |
| Safety | | | | | |
| Physical Activity | | | | | |
| Preferred Option | No | Yes | No | No | No |

Option 10 has been identified as the revised preferred option for Ashtown. It provides for a new train station to be constructed on the footprint of the existing station incorporating new bridging facilities to accommodate all users, except those in vehicles. The design is proposed to embrace high architectural and aesthetic value and will use steel construction to minimise the visual impact of the proposed works. Direct stepped access will be provided across the railway at the Ashtown Road for mobility enabled users. Shallow ramps with segregated cycle access are proposed in addition to the stepped access. The proposed new substation will be provided for within the footprint of the station. Access over the railway will be available on a 24hr basis. High quality urban landscaping will be provided on the approaches to the station and throughout.

In addition to replacement non-motorised access at the location of the level crossing, it is proposed to construct a roadway and cycleway passing along Mill Lane, west of the existing mill and associated outbuildings to pass under the canal and railway. This proposed roadway will link into Mill Lane north of the Canal and will accommodate vehicular connectivity between Rathborne/Pelletstown and the Navan Road/M50. A plan layout of the proposed scheme is provided in the figure below. The design has been configured to be as open as practicable, incorporating shallow landscaped sideslopes where possible. Furthermore, the heritage setting of Ashtown will be reflected in the finishes to structural elements through the use of masonry to match existing walls. It is proposed that the temporary construction site compounds will be located in the demesne of Ashton House, on Mill Lane north of the railway and on the lands West of Mill Lane and the Mill south of the railway.



Option 10 – Revised Preferred Option

In respect of the principal concerns raised during public consultations the following observations are made;

- Community severance; The preferred option secures access for all in close proximity to the level crossing and the village.
- Loss of green space in Martin Savage Park; The proposed option curtails the loss of greenspace at the train station. The proposal to reconstruct the train station incorporating the bridge within its footprint mitigates any impact on the adjacent green space.
- Concerns about flooding in Martin Savage Park; The proposed option will be designed to ensure flooding does not occur at Martin Savage Park.



Proposed New Station

- Impact on Ashtown Stables; The preferred option facilitates Ashtown Stables remaining in Ashtown to support the local community. By relocating the proposed roadway to the west of the mill no significant land acquisition is required from Ashtown Stables. There will be some minor impact at the southern extremity of Ashtown Stables lands at Mill Lane to accommodate road widening and there are likely to be some impacts due to construction activity. The revised preferred option results in profound impact on Burke Brothers commercial enterprise west of the mill. The proposed option will result in the demolition of several bays of warehousing, will occupy a significant portion of the yard space and will require access to the lands to be accommodated over a new bridge crossing of the proposed roadway.
- Safety of underpass and anti-social behaviour; The preferred option provides for primary pedestrian and cycle traffic to be located above ground at Longford Bridge rather than along Mill Lane. High quality urban landscape design is provided for, and the location is not isolated. The proposed underbridge is intended for vehicle and through cyclist use, and will be open, 5.3m high, and well lit. It is also proposed that, CCTV supervision will be provided for in the design in support of public safety.
- Human health and wellbeing and impacts on women; The preferred option seeks to maintain the integrity of the Ashtown and Rathborne communities with the provision of safe, direct access for all while maintaining facilities and the links to them. The proposal to include a new train station incorporating integral high amenity access at street level and above means the users have the security of accessing local facilities in an open, well-lit urban landscape.
- Impacts on Rathborne: access to the shops and facilities; As set out above, access to shops and facilities will remain available to all on implementation of the proposed scheme.
- Need to feel safe; Public safety has been an essential component of the review. The proposed option is considered to best meet this need through the provision of open, well lit, high amenity direct access over the railway via a pedestrian/cyclist overbridge over the station and the provision of high quality public lighting with CCTV cover at the proposed underbridge and at the entrance to Ashton House;
- Further Consideration of Option 9 for Track Lowering at Ashtown; This option was further examined as part of the review but was set aside at MCA1 stage due primarily to the environmental and construction stage impacts associated with this option;
- Concerns regarding adherence to universal design principles to ensure equal access for all; The universal design principals in respect of access will be aggressively pursued in the design development of the scheme. This will be further pursued during the preliminary and detailed design stages with disability user groups, the planning authorities and the gardai;
- Need for well-lit and preserved pedestrian ways to ensure that residents feel safe; This has been provided for in the options selection process and will be an important part of design development of the scheme;

- Concerns around the impact on residents in proximity to the rail line; Construction and long-term impacts have been considered in the option selection process and the preferred option will be subject to design development and environmental assessment which will characterise such impacts in accordance with accepted standards. Where significant, the design team will propose measures to mitigate those effects;
- Concerns regarding the provision of adequate parking facilities at the stations; Parking at the station in Ashtown will be discouraged. Provision will be made for set down and disabled only. The adjacent Navan Parkway station provides parking facilities and, one can presume, those needing to park up are likely to use that station, rather than risk not being able to park in Ashtown.
- Impact on the Royal Canal navigation for boating activities along the canal; Once construction is complete, there will be no impact on Royal Canal navigation.

The revised preferred option described in the report will be presented as part of the local Ashtown consultations. The feedback received from this consultation will be captured and feedback will be considered.

Once the public consultation process is complete all feedback and submissions received will be reviewed and assessed as part of the finalisation of the design development. Following a full appraisal of the feedback, including that received on this revised preferred option, a public consultation no.2 consultation findings report will be prepared and published to document the process.

All information gathered by the project team will be used to inform the design development of the project which will be the subject of the Environmental Impact Assessment (EIA) and Appropriate Assessment (AA), as part of the Railway Order application that will be submitted to An Bord Pleanála.

1. Introduction

This document supersedes elements of Volumes 1 to 4 of the Option Selection Report in relation to Ashtown which were published as part of the second round of public consultation on 26th July 2021. It reports on a review and update of the option selection process and describes a revised preferred option taking account of concerns raised by the public.

The preliminary options selection and design development for the DART+ West Project was undertaken for the development of the emerging preferred option which was presented during the first round of public consultations held between 26 August 2020 and 21 October 2020. All feedback and submissions received were reviewed and assessed as part of the next stage of the design development.

The Option Selection Report presents the development of the preferred option following further studies, assessments and consultations that have led to the development of the selected option. As part of the public consultation process, the public were invited to submit observations and comments on the preferred option. Public consultation no.2 commenced on 26th July 2021 and continued until 6th October 2021.

During consultation significant public feedback was received in relation to the preferred option being presented for Ashtown Level Crossing. As committed to by the project team, all feedback was analysed and a re-assessment of the option selection process was undertaken. This re-assessment exercise has introduced additional and modified options for Ashtown and has identified a revised preferred option for Ashtown.

Further localised consultation in the Ashtown environs will be undertaken to gather feedback and inform the ongoing design development of the project which will then be the subject of the Environmental Impact Assessment (EIA) and Appropriate Assessment (AA) (if required), and ultimately the railway order application to be submitted to An Bord Pleanála.

1.1 Purpose of the Report

This report – OSR: Supplementary Technical Report: Ashtown reflects consideration of feedback received during public consultation no.2, further design development and re-evaluation of the design options at Ashtown.

The OSR is presented in four Volumes. This document is supplementary to the set. Any information on Ashtown in the OSR Volume 1-4 is superseded by the Revised Ashtown Preferred Option OSR. The documents are listed below:

- **OSR – Volume 1: Preferred Option Report** - presents a summary of the preferred option consequent on the options assessment process and a description of the public consultation process;
- **OSR – Volume 2: Technical Report** - contains the technical detail, supporting information, assessments and recommendations identifying the preferred option for the project;
- **OSR – Volume 3: Drawings** - contains the drawings of the options considered, key environmental constraints and the drawings of the preferred option;
- **OSR – Volume 4: Annexes** - contain information additional to the OSR Technical Report, and some previous studies used in identification of the preferred option.
- **Revised Ashtown Preferred Option – Option Selection Report** (this document) - contains the technical detail, supporting information, further assessments and recommendations identifying the preferred option for the project at Ashtown;

1.2 Format of the Report

Option Selection Report - Volume 2: Technical Report is structured to bring the reader through the key design elements and the associated options assessment processes (multi-criteria analysis process), and present the summary and recommendation, under the main design elements. This Revised Ashtown Preferred Option OSR describes updated considerations specific to Ashtown. This layout is as follows:

- Chapter 1: Introduction;
- Chapter 2: Option Selection and Public Consultation;
- Chapter 3: The Need for Vehicular Access at Ashtown;
- Chapter 4: Options Description;
- Chapter 5: Options Assessment;
- Chapter 6: Summary, Recommendation and Next Steps.

Chapter 2 of this report summarises the principal concerns which were raised in public submissions on the preferred option at Ashtown presented at public consultation no.2 and the approach to the review of the option selection process at Ashtown. Chapter 3 documents considerations on the need for vehicular access over the canal and railway at Ashtown. Chapter 4 provides a description of alterations proposed to the options presented at public consultation no.2 to address issues and concerns raised during public consultation no.2. It also provides description of additional options which have been added in seeking to address the concerns raised. Chapter 5 presents the two stages of multi criteria analysis which have been implemented in selection of a revised preferred option for Ashtown. Chapter 6 recommends the revised preferred option for Ashtown and provides the principal reasons for its emergence ahead of other options. It also sets out the next steps in the design development leading to publication of the railway order for the project.

1.2.1 Authors of the Report

Iarnród Éireann have commissioned IDOM to develop a preliminary design and prepare the railway order for the DART + West project. This Option Selection Report has been developed by IDOM ROD and has been compiled with assistance from a range of technical and environmental specialists who have provided input into the option selection process. Table 1-1 and Table 1-2 show the qualifications and years of experience of key contributors.

Table 1-1 Report Contributors

| Topic | Specialist Contributors | Qualifications | Experience (Years) |
|--|-------------------------|---|--------------------|
| Chapters 1 Introduction | Mark Kilcullen | BE (Civil), MSc, CEng MIEI, FCons EI | 27 |
| Chapter 2 Option Selection and Public Consultation | Mark Kilcullen | BE (Civil), MSc, CEng MIEI, FCons EI | 27 |
| Chapter 3 The need for Vehicular access at Ashtown | Thomas Leonard | BEng (Hons), BE, CEng MIEI | 12 |
| | Seamus MacGearailt | BE, CEng, FIEI, FCons EI | 30 |
| Chapter 4 Options Description | Mark Kilcullen | BE (Civil), MSc, CEng MIEI, FCons EI | 27 |
| | Barry Corrigan | B.Sc, PGrad Dip EIA & SEA, M.I.E.M.A., C.Env. | 22 |
| Chapter 5 Options Assessment | Barry Corrigan | B.Sc, PGrad Dip EIA & SEA, M.I.E.M.A., C.Env. | 22 |
| | Frances O'Kelly | MSc, BSc, MIPI | 13 |
| | Mark Kilcullen | BE (Civil), MSc, CEng MIEI, FCons EI | 27 |
| Chapter 6 Summary, Recommendations, Next Steps | Thomas Leonard | BEng (Hons), BE, CEng MIEI | 12 |
| | Mark Kilcullen | BE (Civil), MSc, CEng MIEI, FCons EI | 27 |

Table 1-2 Specialist Contributors

| Environmental Specialists | Name | Company | Qualifications | Experience (Years) |
|---|---------------------|-------------------------|---|--------------------|
| Noise and vibration | Stephen Smyth | AWN | B.Sc. PhD | 13 |
| Air Quality & Climate | Dr. Avril Challoner | AWN | CSci, BSc, MSc, MIAQM MIEEnvSc | 9 |
| | Dr. Edward Porter | AWN | BSc Hons, PhD | 22 |
| Landscape and Visual (including Light) | Thomas Burns | Brady Shipman Martin | BAgrSc (Landscape), DIP EIA, Adv Dip Planning and Environmental Law | 25 |
| Biodiversity | Patrick O'Shea | ROD | BA, MSc | 8 |
| | Kate Moore | ROD | BSc (Hons) | 5 |
| Cultural, Archaeological and Architectural Heritage | Faith Bailey | IAC | BA, MA, MCIFA | 15 |
| | Rob Goodbody | IAC | BA(MOD), DIP Env P, DIPABRC, MUBC, MA | 30 |
| Water resources | John P Rooney | ROD | B.A., B.A.I., C.Eng. M.I.E.I., MA.I. | 20 |
| | Warren Vokes | ROD | BA, MSc, MCIWEM | 5 |
| Agriculture and Non-Agricultural | John Bligh | John Bligh & Associates | BA.Ag, MSc MASA MACA | 20 |
| Soils and Geology | Paul Kissane | ROD | BA, BAI, PhD, CEng, MIEI, RoGEP | 18 |
| Radiation & Stray Current | Nigel Duignan | CEI | MSc | 11 |
| | John McAuley | CEI | MSc, BSc | 35 |

2. Options Selection and Public Consultation

2.1 Introduction

Consideration of public and stakeholder feedback has been a key facet of the option selection process from the outset of the project. This chapter documents the principal concerns expressed by the Ashtown community in response to public consultation no.2. It also describes, in summary, the modifications to existing options and additional options developed for consideration in the options selection process consequent on the feedback.

Chapter 4 of OSR Volume 2: Technical Reports describes the Multi-Criteria Analysis (MCA) technique used to inform the option selection process that has been applied to determine the end-to-end preferred option of the DART+ West Project, and the detailed application of the process as applied to the level crossings is addressed in the relevant chapter.

2.2 Public Consultation and Stakeholder Engagement

2.2.1 Introduction

Stakeholder engagement and consultation during the design process is a key element to the delivery of major infrastructure projects such as DART+ West. The purpose of these consultations is to engage the public in the scheme's delivery process, inform the public of the statutory process and likely timescales, seek the public's cooperation and understanding of the project and to capture local knowledge to inform the design, Environmental Impact Assessment (EIA) and Railway Order (RO) process.

Public participation is welcomed and encouraged throughout the design development process. It is planned that there will be three main project consultation stages which provide the opportunity to learn about the design development and provide feedback which will inform the next stage as appropriate. The main public participation stages in the project development are illustrated below:

- Non-statutory public consultation no.1 emerging preferred option (Closed 21st October 2020);
- Non-statutory public consultation no.2 preferred option and amended preferred option (Launched 28th July 2021, Current stage);
- Statutory Consultation Period as part of the railway order application process.

2.2.2 Methodology

DART+ West implemented a communications process to maximise public and stakeholder engagement for the project. To ensure effective engagement with the public during the non-statutory public consultation process, various engagement techniques were established. Due to the COVID-19 restrictions in place during the public consultation process - the strategy for public consultation focused predominantly on digital / online consultations engagement methods. To comply with public health restrictions, no physical roadshow / public hall events could take place. Instead, all consultations were conducted online through the website (online forms), email, Skype, MS Teams and/or telephone. A limited number of on-site meetings with affected landowners/residents took place.

All submissions received either via post, hand delivery, telephone communication, online form feedback or email were analysed. The issues, comments and suggestions were logged and considered by the design teams as appropriate. A summary of key issues or concerns raised during public consultation in respect of Ashtown are described below.

2.2.3 Summary of Key Issues or Concerns Raised

During public consultation no.1 a total of 83 submissions was received on the emerging preferred option for Ashtown. To date, a total of 6341 written submissions have been received as part of public consultation no.2 on the preferred option for Ashtown.

While a wide variety of issues were raised in the submissions, a summary of the principal concerns related to Ashtown is provided below:

- **Community severance** concerns due to the closure of the level crossing and the circuitous diversion route for the local elderly and mobility impaired residents accessing shops or the opposite platform at Ashtown Station;
- **Loss of green space** in Martin Savage Park;
- **Concerns about flooding** in Martin Savage Park.
- **Impact on Ashtown Stables:** Respondents expressed strong concerns over the demolition of Ashtown Stables. A significant number of comments highlighted that the Ashtown Stables have been a common amenity to the community of Ashtown as well as tourists and have objected to the demolition of the stables.
- **Safety of underpass and anti-social behaviour:** Respondents have stated concerns regarding anti-social behaviour and the safety of the pedestrian under pass. Particular concern was related to safety of vulnerable users and women that would be unlikely to use the proposed underpass.
- **Human health and wellbeing:** Respondents expressed concerns in relation to the safety of the tunnel for women in particular. Requests were also included for open public areas and safe access for vulnerable users, including women, children, and elderly. The concerns particularly relate to the difficulties that the local vulnerable users will face due to the potential unsafe environment of the underpass.
- **Impacts on Rathborne:** Respondents expressed concern regarding impacts on the access to the shops and facilities in Rathborne. Concerns were raised regarding the tunnel and pedestrian access to and from Rathborne, specifying the need for well-lit and preserved pedestrian ways to ensure that residents feel safe.
- **Request for Further Consideration of Option 9 for Track Lowering at Ashtown:** Respondents requested reconsideration of option 9 as the “preferred” option to the Ashtown community. Option 9 is commented as being the most favourable to the local and wider community as it would avoid demolition of the Ashtown Stables and would comprise lowering of the track.

There were a number of recurring issues raised across the project which also relate to Ashtown, these include:

- Concerns regarding **adherence to universal design principles** to ensure equal access for all;
- Concerns regarding the **noise impacts**;
- Concerns regarding the provision of **adequate parking facilities** at the stations;
- Impact on the **Royal Canal navigation** for boating activities along the canal;
- Concerns regarding the **impact on residents** in proximity to the rail line.

2.2.4 Further Assessment of Options at Ashtown.

Based on the submissions received during PC2 consultations, it has been noted that Ashtown Stables represents a significant community resource, the value of which was not evident during the earlier options selection activity. Concern over local community impacts of the preferred option were also more evident in the submissions.

It was decided to carry out a review of the preferred option at Ashtown in cognisance of the concerns raised, considering additional options and mitigation measures to address the concerns. With the introduction of additional and modified options it was also necessary to re-evaluate the multi-criteria analysis for the options selection.

The options presented at public consultation no.2 are outlined below:

2.2.4.1 Do-Nothing and Do-Minimum Options

The Do-Nothing option provides for leaving the level crossing in place under CCTV control without further infrastructural measures to address the impact of the change. The Do-Minimum scenario for level crossings considers the closure of the crossings with no alternative access provided. This option is wholly consistent with the project objectives but is not appropriate in this instance. For this scenario all traffic would be diverted to alternative routes around the crossing location and the traffic impact would be unacceptable based on current and future development in the area. The Do-Nothing and Do-Minimum baseline options along with the Do Something options described below are in accordance with the *Guidelines on a Common Appraisal Framework for Transport Projects and Programmes*.

2.2.4.2 Do Something Scenario - Option Development

In addition to the Do-Minimum and Do-Nothing scenarios described in Section 2.2.4.1, the Do-Something Options assessed as Stage 1 MCA are described in Section 4.2:

Table 2-1 Original Ashtown Level Crossing Do Something Options

| Option | Description |
|---------------|--|
| Option 1 | Closure of the level crossing and online Overbridge along Ashtown Road |
| Option 2 | Closure of the level crossing and Underbridge on Mill Lane |
| Option 3 | Closure of the level crossing and Overbridge on Mill Lane |
| Option 4 & 4a | Closure of the level crossing and provision of link from River Road to Navan Parkway Station grade separated junction and the construction of an underbridge structure at existing Ashtown level crossing for pedestrian and cycle access. |
| Option 4 & 4b | Closure of the level crossing and link from River Road to Navan Parkway Station grade separated junction and the construction of an overbridge structure at existing Ashtown level crossing for pedestrian, cycle access. |
| Option 5 | Closure of the level crossing and provision of low clearance underbridge east of existing crossing. |
| Option 6 | Closure of the level crossing and road overbridge 250 m east of existing crossing connection to Ashtown. |
| Option 7 | Closure of the level crossing and road overbridge 250 m east of existing crossing with new link to Navan Road. |
| Option 8 | Closure of the level crossing and provision of a pedestrian/cycle overbridge only – as Option 4b. |
| Option 9 | Closure of the level crossing and lowering of the railway vertical alignment with bridge over railway and canal at Ashtown level crossing, retention of the canal and locks west of the level crossing. |

Figure 2-1 presents the options considered in Stage 1 MCA on aerial photography. Drawing **MAY-ROD-HRW-LC01-DR-C-0006** provided in **Appendix 2.0** shows the Options considered in MCA Stage 1 on aerial photography and OS mapping background.

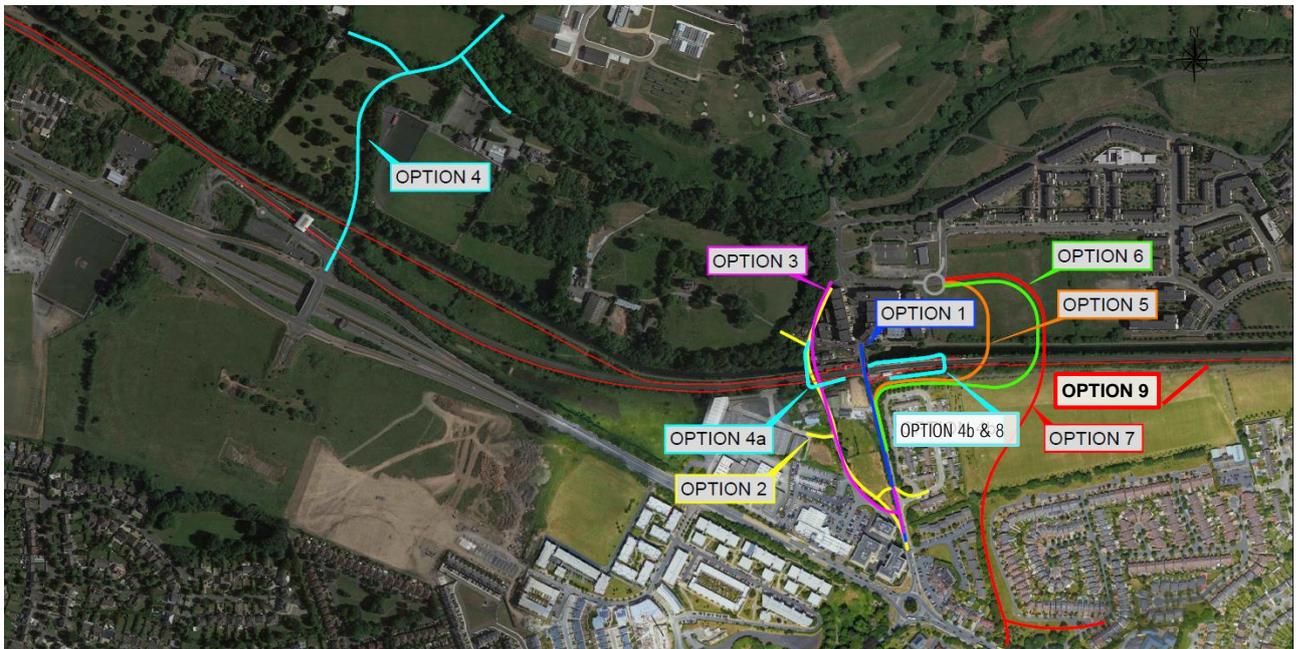


Figure 2-1 Original Ashtown PC2 Options

2.3 Option 2 (Ashtown Preferred Option) presented at Public Consultation (26th July 2021)

Option 2, the original preferred option for Ashtown, was presented at public consultation on 26th July 2021. **Figure 2-2** below provides a graphic illustrating the detail of the option.

This option entails re-routing Ashtown Road along its old alignment (pre-Royal Canal) on Mill Lane and passing under both the railway and the Royal Canal. The option can accommodate a cross section of a 6.5 m carriageway with 1.8 m footpaths on both sides and 2.5 m two-way cycle track on the eastern side. It is proposed to curtail the footpath along the west of the alignment fronting the listed Ashton House curtilage to a 0.5 m rubbing strip and provide a pedestrian crossing at this location to minimise the impact on the heritage property. An at-grade turning head and drop-off are proposed to be provided each side of the railway.

The length of the option is approximately 150 m on the northern side and 300 m south of the rail line. The option would drop to an approximate level of 37.5 m ODMH under the railway which is at a level of 45.6 m ODMH at the bridging point. On both sides of the railway a separate pedestrian and cycle link is proposed to provide enhanced access for non-motorised users. These shared spaces would have a width of 3.0 m.

It is feasible to cross at this location, as it is upstream of the double lock on the canal and the canal is at the same approximate level as the adjacent railway. This option would require some property acquisition and modifications to existing accesses.

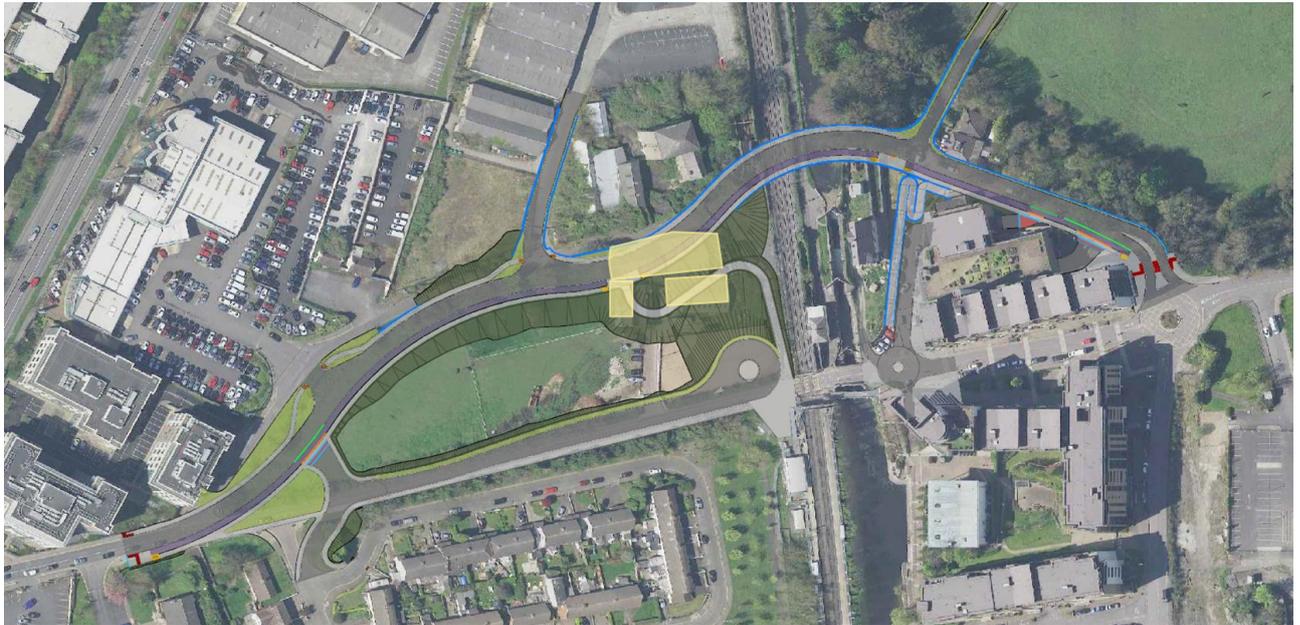


Figure 2-2 Ashtown PC2 Option 2 Underpass on Mill Lane

Feedback from the consultation process led to a review of the options for Ashtown. As part of the review alterations to the design options were considered with a view to addressing the concerns raised.

2.4 Re-assessment of Options

The amendments to options consequent on the review are summarised in **Table 2-2** below with details of additional options developed:

Table 2-2 Summary Table of Alterations to Options and Additional Options

| PC2 Option | Changes Proposed for Consideration MCA |
|---|---|
| Opt 1 Overbridge on Ashtown Road | Opt 1 – No Change |
| Opt 2 Underbridge on Mill Lane | Opt 2 – Narrowed, walled, mini roundabout added to south, separate ped-cycle bridge added at reconfigured station, Set down area reconfigured; |
| Opt 3 Overbridge on Mill Lane | Opt 3 – Narrowed, walled, mini roundabout added to south, separate ped-cycle bridge added at reconfigured station; |
| Opt 4&4a Navan Parkway Station Link Road, Pedestrian Cycle Underbridge at Ashtown | Opt 4+4a – No change; |
| Opt 4&4b Navan Parkway Station Link Road, Pedestrian Cycle Overbridge at Ashtown | Opt 4+4b – separate ped-cycle bridge at reconfigured station included in place of proposed pedestrian cycle bridge, Set down area reconfigured; |
| Opt 5 Low clearance underbridge east of existing crossing. | Opt 5 – No change; |
| Opt 6 Overbridge east | Opt 6 – No change; |
| Opt 7 Overbridge east with R147 Link | Opt 7 – No change; |
| Opt 8 Pedestrian / Cycle Bridge only | Opt 8 – Replace with reconfigured Station and pedestrian cycle bridge only; |
| Opt 9 Lower the Railway | Opt 9 – No change; |
| | Opt 10 – New Option – Underbridge, West of Mill, Cycleway on Roadway, separate ped-cycle bridge added at reconfigured station; |
| | Opt 11 – New Option - Pedestrian Cycle Bridge at Reconfigured Station, Upgrades to Local Road Network; |
| | Opt 12 – New Option - Road Link from Navan Parkway Interchange with bridge over the railway crossing through Ashton HSE Lands, separate ped-cycle bridge added at reconfigured station; |
| | Opt 13 - New Option – Over, West of Mill, Cycleway on Roadway, separate ped-cycle bridge added at reconfigured station; |

Figure 2-3 below provides a graphic illustration of all options identified for assessment as part of the review of feedback received during public consultation no.2.

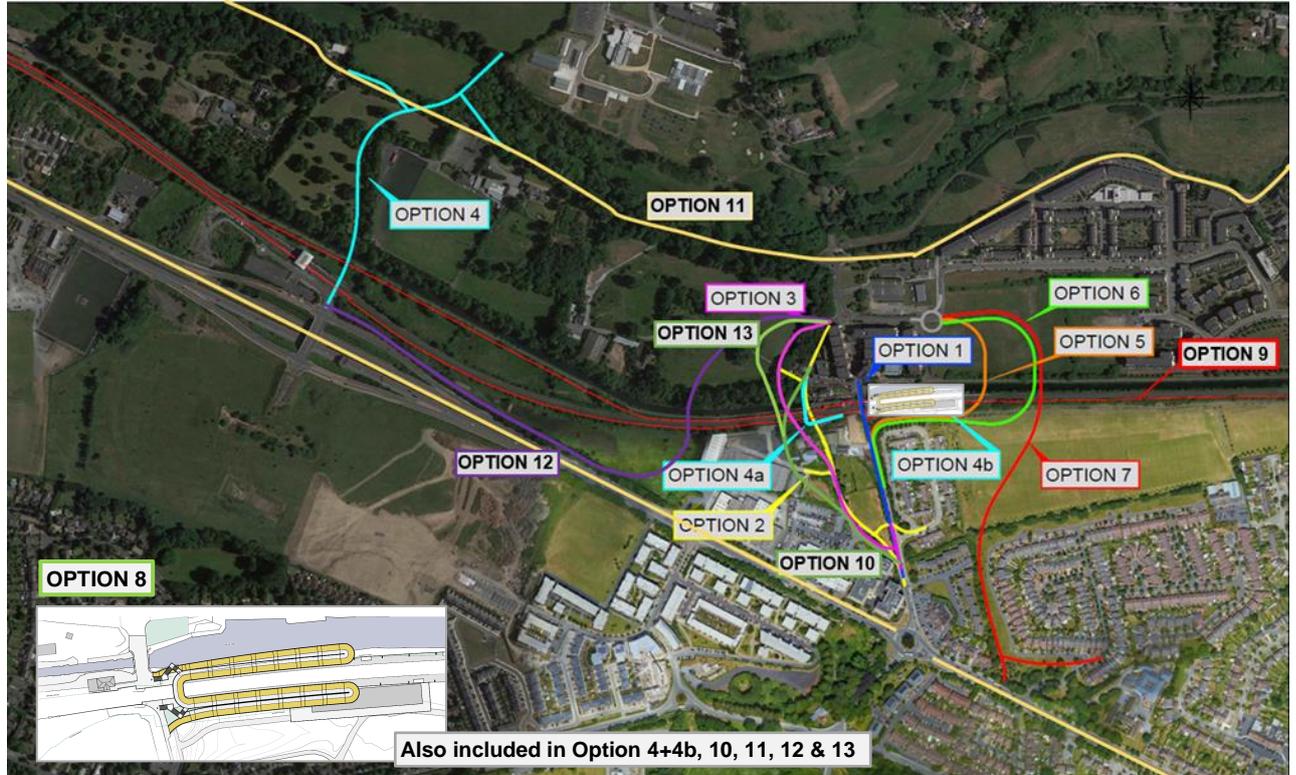


Figure 2-3 Revised Ashtown PC2 Review Options

A more detailed description of each of the updated options and additional options is provided in Chapter 4.

With the inclusion of Option 11: Pedestrian Cycle Bridge at Reconfigured Station and upgrades to the local road network, it was necessary to give further consideration to the appropriateness of removing vehicular access at the level crossing as part of the project. Consideration of this issue is provided in Chapter 3.

3. The Need for Vehicular Access at Ashtown

3.1 Iarnród Éireann and DART+ West Objectives in Relation to Level Crossings

It is the general duty of Córas Iompair Éireann (CIÉ), as detailed in Section 15 of the Transport Act 1950 (i.e. establishing legislation for CIÉ), to:

“provide or secure or promote the provision of an efficient, economical, convenient and properly integrated system of public transport for passengers and merchandise by rail, road and water with due regard to safety of operation, the encouragement of national economic development and the maintenance of reasonable conditions of employment for its employees and for that purpose it shall be the duty of the Board to improve in such manner as it considers necessary transport facilities so as to provide for the needs of the public, agriculture, commerce and industry”.

Similarly, the Railway Safety Act 2005 (the 2005 Act), section 36, provides that it shall be the general duty of a railway organisation to ensure, in so far as is reasonably practicable, the safety of persons in the operation of its railway.

There is also an underlying health and safety issue with any interface between a railway line and a public road. The function of a level crossing where there is an overlap in two different transportation modes is such that there is a heightened risk of an accident occurring. It is the duty of CIÉ to maintain the operational safety of the railway network and it is the policy of both CIÉ and Iarnród Éireann to remove all level crossings in Ireland. Reducing the risk profile is considered in the context of national infrastructure improvements, identified in the National Development Plan (2018-2027) and national policies on railway safety set out in Iarnród Éireann’s own documents and those by the Commission for Railway Regulation (CRR).

In line with Government Policy, Iarnród Éireann is seeking to enhance the national railway network to modernise and improve the existing railway infrastructure to meet passenger demand for high quality public transport. This modernisation and improvement will provide improved track corridors, electrification of lines, increased train capacity and elimination of constraints.

Currently peak train movements at Ashtown level crossing result in 12 trains running through the level crossing in the hour. A proposed working timetable has been developed and optimised for the project, taking account of proposed infrastructural enhancements and the existing constraints on the railway network. Demand modelling was carried out to project passenger usage levels throughout the proposed electrified network. The optimised baseline working timetable includes 24 trains passing through Ashtown level crossing in the peak hours .

A technical paper has been prepared evaluating the plausibility of retaining the level crossings in place once the project train service specification is implemented. It is included in of OSR Volume 4: Annex 8.1. The technical paper concludes that the level crossings should be removed from the railway network as part of DART+ West. A number of observations in respect of the level crossings are as follows:

- Currently Ashtown level crossings is closed for 36 minutes in the peak hours;
- It is intended to double the number of trains passing through the level crossings once the proposed train service specification is implemented;
- The aim of the project is to provide a ‘turn up and ride’ level of service whereby passengers are unconcerned about the timetable but can expect a train to arrive within minutes of their arrival on the platform;

- Implementation of the project train service specification is expected to lead to the peak service hours extending over a total of 6 hours in the day resulting in the effective closure of the level crossings for substantial periods of time and, more particularly, coinciding with peak periods when vehicles, pedestrians and cyclists want to cross the railway corridor;
- It is considered that any proposal to leave the level crossings in place once the project train service specification is implemented will lead to increased delay time/congestion on the road network at the level crossing and will increase risks from a road safety perspective. In this regard the following issues give rise to this concern:
 - Drivers unfamiliar with the location arriving at the level crossing during a sustained period of closure and carrying out unsafe driving manoeuvres on the road on realising they cannot pass through the level crossing;
 - Level crossing users anticipating a period of sustained closure of the level crossing behaving unsafely in the vicinity on the level crossing.
 - The increased level of gate closure will result in increased traffic queuing and impact on normal road circulation for vehicles, pedestrians and cyclist at increased radius from the level crossing.

It is proposed to remove the level crossings so capacity enhancement on the railway can be delivered and north-south connectivity for pedestrians/cyclists/vehicles is maintained, such that rail services are not constrained by having to share capacity with road users at the existing level crossings.

3.2 Road Layout in the Vicinity of Ashtown Level Crossing

The location of the level crossing is shown in the location map below.

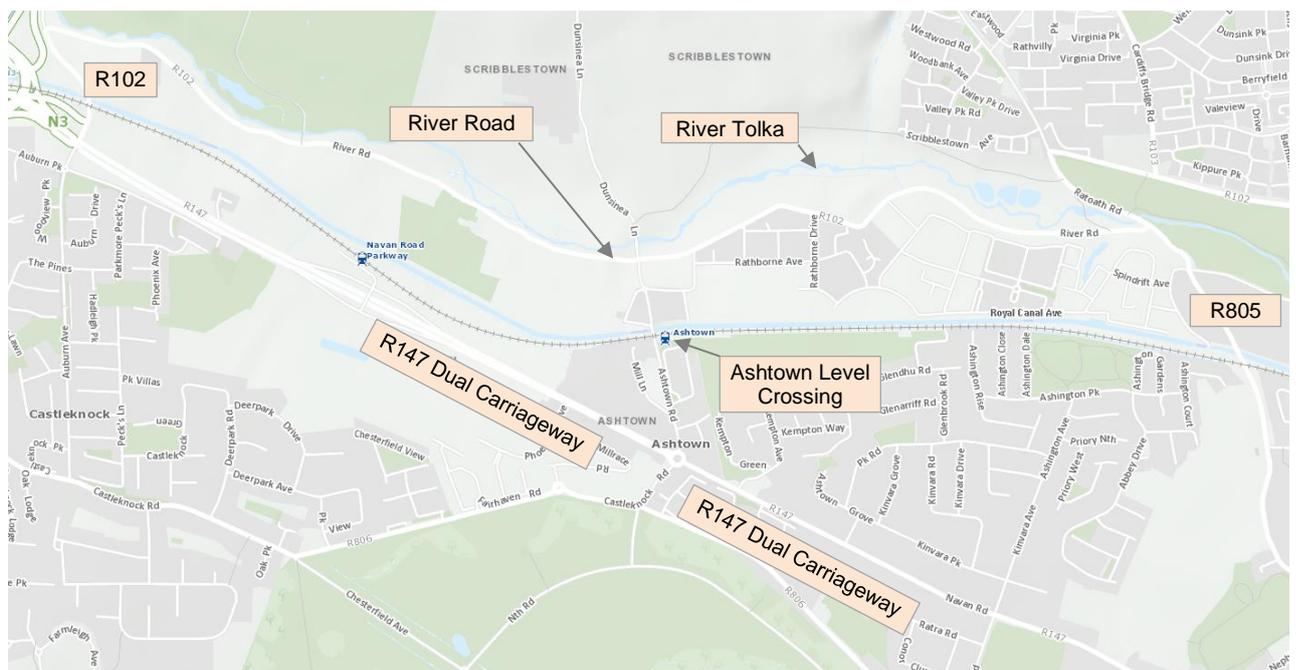


Figure 3-1 Ashtown Location Map

Ashtown Level Crossing is located approximately half way between the M50 and Regional Road R805 which crosses the railway and canal approximately 3.5km to the east. The railway and canal run east west and are bounded by River Road to the North and the R147 Navan Road dual carriageway to the south. Just south of

the Ashtown Roundabout is a principal access to the Phoenix Park. The river road is bounded immediately to the north by the Tolka River.

3.3 Planning Context

This section presents consideration of the appropriateness of severing vehicular access over the railway at Ashtown from a planning context. The location is at the boundary of the Dublin City Council and Fingal County Council municipal areas, the boundary being along Ashtown Road. The lands to the east of Ashtown Road are zoned Strategic Residential Development and Sustainable Residential Neighbourhoods. The lands to the west are zoned High Technology south of the railway and High Amenity north of the Railway. See Figure 2.

National transport strategy is defined in the Government policy for Strategic Framework for Investment in Land Transport (SFILT, DTTAS 2014). The Greater Dublin Area Transport Strategy 2016 -2035 (GDATS) is grounded in National Policy and provides a framework for the planning and delivery of transport infrastructure and services in the Greater Dublin Area (GDA).



Figure 3-2 Ashtown Zoning Map

It provides a transport planning policy for alignment of investment priorities and is an essential component for the orderly development of the GDA. Section 2.2.1 of the Strategy sets out Primary Policy. It states that “In advance of the development of a set of climate change policies and action plans / roadmaps, it is clear from existing international agreements that Ireland is required to radically reduce dependence on carbon-emitting fuels in the transport sector. The Strategy must therefore, promote, within its legislative remit, transport options which provide for unit reductions in carbon emissions. This can most effectively be done by promoting public transport, walking and cycling, and by actively seeking to reduce car use in circumstances where alternative options are available.

Section 2.3 of the GDATS states that:

“In keeping with the SIFLT, the first priority for future investment under the Strategy will be the steady state maintenance of the existing land transport infrastructure and services in the Greater Dublin Area. This will involve expenditure on maintenance and renewal to keep the existing transport system in an adequate condition, and operating and management expenditure to ensure the continuing delivery of adequate transport services.

The next priority, consistent with SIFLT, will be to address urban congestion and improve the efficiency and sustainability of the urban transport system in the Greater Dublin Area. The response will focus on improved and expanded public transport capacity, improved and expanded walking and cycling infrastructure, the use of ITS to improve efficiency and sustainability and to increase capacity and on demand management measures. Major new roads are generally not seen as part of the solution to

congestion, though capacity enhancements to existing roads coupled with demand management may be justified in limited circumstances.”

Section 5.8.2 of GDATS on regional and local roads addresses policy in respect of the road network. It notes the following intentions:

- To develop appropriate road links to service development areas;
- To address localised traffic delay locations, including on radial routes inside the M50 C-Ring, in cases where the primary reason for intervention is to address safety or public transport issues at such locations;

In Section 5.8.3 for the principles of road development it also specifies that:

- That there will be no significant increase in road capacity for private vehicles on radial roads inside the M50 motorway;
- That the travel demand or the development needs giving rise to the road proposal are in accordance with regional and national policies related to land use and development planning;

The strategic policy as set out in SFILT and GDATS is clearly focussed on sustainable transport modes ahead of road traffic capacity improvement.

In this context it may not be essential to retain a road link at Ashtown level crossing if suitable alternative local access is available.

Dublin City Development Plan identifies the lands of Ashtown and Pelletstown northeast of the level crossing as a Strategic Development and Regeneration Area (SDRA) with the objective to seek the social, economic and physical development and/or rejuvenation of an area with mixed use of which residential, enterprise and employment would be the predominant uses. Much of the area is currently developed and planning permission is already in place for much of the remaining lands.

The Ashtown and Pelletstown Local Area Plan (LAP) includes the following guiding principal in respect of general urban design: To improve connectivity throughout the area, removing existing barriers to movement and facilitating completion of a main east/ west thoroughfare with associated public squares at each end and secondary north/south routes.

The LAP characterises the level crossing at Ashtown as providing restricted access and causing significant traffic delays. It also identifies River Road (Objective MTO31) as a key road capacity improvement project.

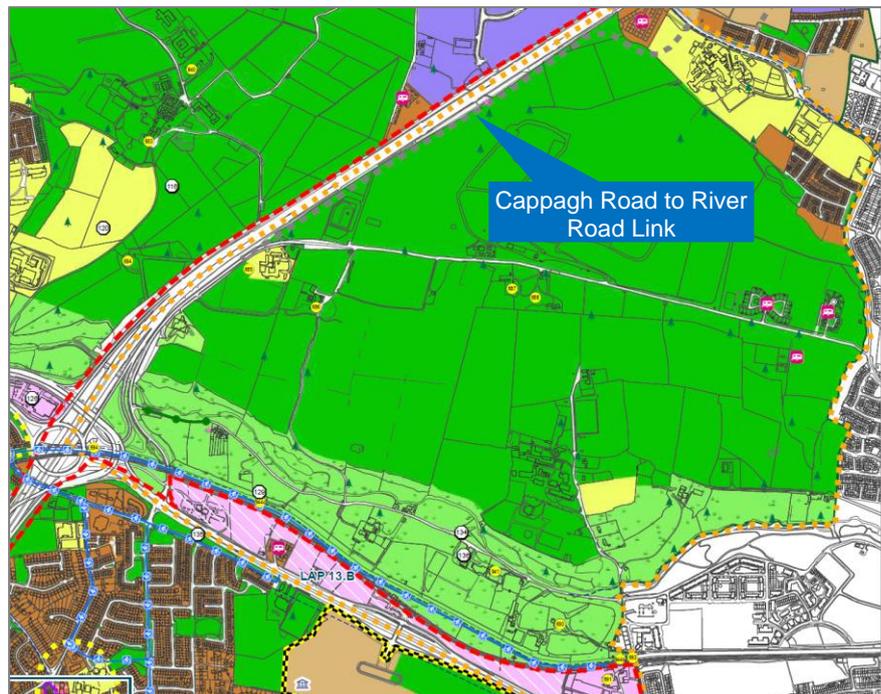
Dublin City Council Development Plan (DCCDP) includes the following objectives in respect of the Ashtown and Pelletstown areas: MTO31 - Initiate and/or implement the River Road improvement scheme. It also confirms support for the objectives of the Ashtown to Pelletstown LAP.

Objective MA07 of the Ashtown to Pelletstown LAP commits to ‘encourage and facilitate, in cooperation with Fingal County Council and Iarnrod Eireann, the replacement of the existing manually operated rail level crossing at Ashtown Road, with a suitably designed alternative. The eventual design shall have regard to both existing and proposed developments in the immediate vicinity of the plan area and provide for high quality pedestrian and cycle facilities linking with existing and proposed pedestrian and cycle networks both within and surrounding the LAP area.’

Chapter 7 of the Fingal Development Plan 2017-2023 includes the following objectives in respect of the road system in general:

- A number of key road improvements are required to facilitate the movement of goods and people throughout the County and to ensure ease of access, especially for major areas of new development.
- Any works undertaken will include as an aim, enhanced provision for public transportation, cyclists and pedestrians, as appropriate, and will be subject to environmental considerations.
- Seek to implement the Road Improvement Schemes indicated in Table 7.1 within the Plan period, subject to assessment against the criteria set out in Section 5.8.3 of the NTA Transport Strategy for the GDA, where appropriate and where resources permit. Reserve the corridors of the proposed road improvements free of development.

Table 7.1 Road Schemes: Cappagh Road – River Road Link (as shown on the map below to run parallel to the M50 from the western end of River Road partly via Dunsink Lane).



Extract from Sheet 13 of the Fingal County Development Plan 2017 to 2023: Zoning Objectives

- There is no stated objective in the Fingal County Development Plan to improve River Road west of Ashtown.
- FCC development plan acknowledges the 'strategic location and development potential of lands at Dunsink' it notes that 'located only six kilometres from Dublin City Centre, this area provides a unique opportunity to significantly consolidate the Dublin Gateway in a sustainable manner underpinned by high quality public transport given the site benefits from close proximity to the existing heavy rail network at Ashtown and the proposed extension to the Luas to Finglas. In addition, commercial development would benefit from access to the nearby M50 motorway.'

There are currently two southern accesses to the M50 from the Dunsink Lands, west of Ashtown along Dunsink Lane and via the level crossing at Ashtown itself.

The various regional and local planning policies provide some limited support for the replacement of the level crossing at Ashtown with a new road link, albeit in the context of a hierarchy of provision that favours sustainable modes ahead of private car transport. The need for a replacement road link at this location needs to be considered in the context of reasonable alternatives.

3.4 Transportation Assessment

3.4.1 Proposed Level Crossing Closures for DART+ West

This section presents consideration on the removal of vehicular access over the railway at Ashtown from a traffic impact perspective. There are six level crossings along the Maynooth Line within the extent of DART+ West. It is proposed that all will be removed as part of the project with replacement access in the form of bridges or roadworks as necessary. Location specific proposals have been developed for each level crossing closure as follows from west to east:

1. Blakestown: Traffic diverted to existing bridge on link road to M4 Junction 6 Celbridge 0.7km to the east;
2. Barberstown: Replacement bridge proposed;
3. Clonsilla: Traffic diverted to existing bridge on Porterstown Road 1.4km to the east and west to proposed crossings at Barnhill and Barberstown;
4. Porterstown: Traffic diverted to existing bridge on Porterstown Road 0.2km to the east;
5. Coolmine: Traffic diverted to existing bridge on Porterstown Road 0.7km to the west;
6. Ashtown: Potential replacement bridge (now subject to this review).

It is proposed that 4 of the 6 level crossings will be closed and not replaced by a new vehicular bridge, with traffic diverted to an alternative existing bridge crossings at a distance of up to 1.4km away. One new vehicular bridge crossing will be provided at Barberstown. For the 6th crossing at Ashtown, this review is considering the relative merits of the provision of a replacement bridge, or if not, the impact of diverting traffic to alternative crossing bridges at a distance of up to 1.8km away.

3.4.2 Desire Lines and Road Crossings of the Maynooth Line near Ashtown

The nearest existing crossing points of the railway to Ashtown are 1.8km to east at the recently constructed Reilly’s Bridge on the Ratoath Road, and 1.8km to west at Dunsink Lane, near M50 Junction 6, both of which are grade-separated crossings. (It should be noted that the opening of Reilly’s Bridge several years ago to replace the level crossing on the Ratoath Road, greatly improved vehicular access in the surrounding area, especially for the new high-density residential development at Pelletstown immediately adjoining).

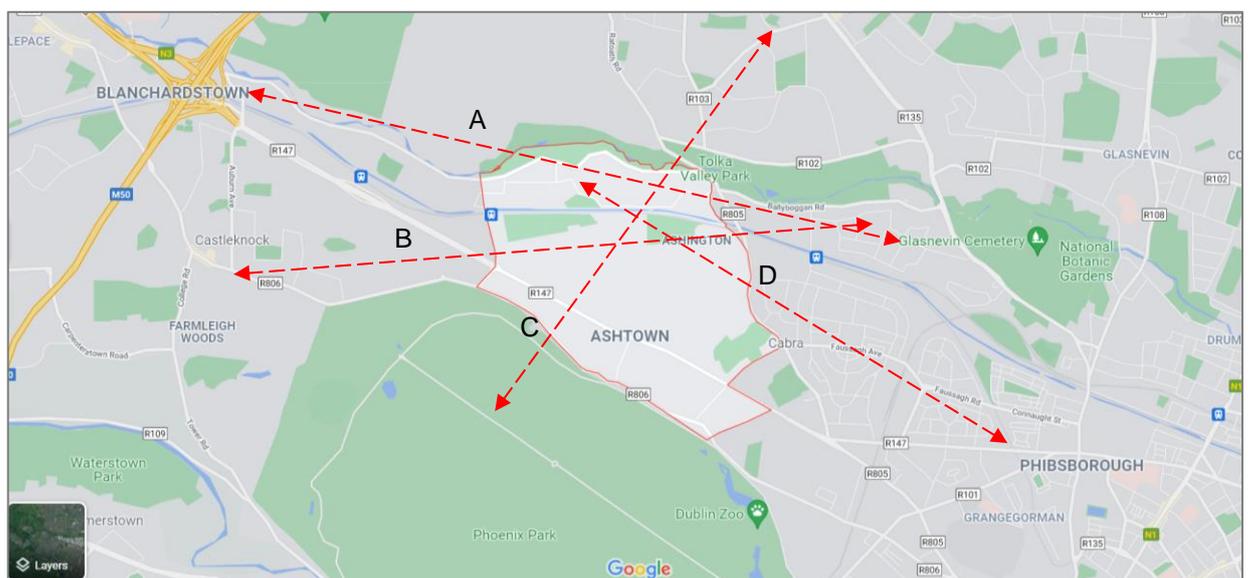


Figure 3-3 Traffic Desire Lines at Ashtown

If Ashtown level crossing is removed without the provision of a replacement crossing, the distance between crossings of the railway will increase to 3.6km. However, there is a very limited north-south road network in this area of north-western Dublin, and most traffic movements are largely parallel to the railway line and can cross the railway at a number of possible locations on the desire lines as illustrated on the following map.

Desire Line A: M50 Junction 6 – Dublin Industrial Estate at Ballyboggan Road

Traffic on this route can cross the railway line either at Dunsink Lane, or at Ashtown. Most probably takes the latter route to avoid delays at the level crossing. The River Road route north of the railway is 0.4km shorter compared to the Navan Road route south of the railway.

Desire Line B: Castleknock – Dublin Industrial Estate at Ballyboggan Road

It is most convenient for this traffic to cross the railway at Ashtown. The alternative route via Dunsink Lane and River Road would be 0.6km longer, (12% more for a 5km trip).

Desire Line C: Chapelizod (& South City) – Finglas

This traffic crosses the Phoenix Park on a 6.5km long trip via Knockmaroon Hill to the south-western corner of Finglas. The alternative route via Castleknock and Dunsink Lane to River Road would be 8.6km long with additional distance of 2.1km (+32%). Such orbital trips should preferably use the M50 instead.

Desire Line D: Pelletstown – Phibsborough (& City Centre)

Most traffic on this desire line is likely to cross the railway at Ratoath Road, which is a more direct route and avoids delays at the level crossing. Car trips on this desire line are to be discouraged under the relevant transport policies, when there are good alternative sustainable modes available.

The foregoing descriptions outline how through traffic movements would be inconvenienced by the closure of the existing level crossing at Ashtown, with an additional journey distance of between 0.6km and 2.1km, depending on the origin and destination of the trip.

3.4.3 Traffic Demand at Ashtown Crossing

A transportation study was carried out by CSEA-Systra on behalf of the NTA in respect of closure of the Ashtown level crossing in 2019. The study included traffic surveys at junctions across the local road network carried out in January / February of 2019 (considered the base year for this assessment) and the study was completed in October 2019. The study provided for the development of a local area traffic model for the Ashtown area to predict traffic figures 15 years after level crossing removal, the design period for the scheme. The survey data indicated an existing two-way traffic flow of 463 veh/hr in the AM peak period.

3.4.3.1 Traffic Distribution

The existing (2019) traffic patterns in the vicinity of the Ashtown level crossing are as follows:

Table 3-1: Base Traffic Flows at Ashtown (2019)

| Link | AM Peak (veh/hr) | PM Peak (veh/hr) |
|--------------------------|---|-------------------------|
| Ashtown Road at crossing | 463 342 Southbound 121 Northbound | 362 222 SB 140 NB |
| River Road West | 728 | 450 |
| River Road East | 778 | 585 |
| Combined (Sum/2) | 985 | 699 |

Analysis of the origins and destinations for AM traffic indicates that 45% of the traffic on Ashtown Road is through traffic that is not generated locally. This traffic flow of 208 vehicles per hour is likely to divert to an alternative route with modest additional distance in the absence of a crossing point at this location. The locally generated traffic volume was 255 veh/hr. The PM traffic flows are 70% of the AM. Southbound traffic on Ashtown Road accounts for 74% of the two-way flow in the AM, and 61% in the PM, and distributes as follows:

Table 3-2: Base Traffic Patterns at Ashtown (2019)

| Direction | % |
|------------------------|----|
| West | 37 |
| Navan Road west | 4 |
| Castleknock | 18 |
| Phoenix Park southwest | 15 |
| East | 62 |
| Navan Road east | 24 |
| Phoenix Park east | 11 |
| Blackhorse Avenue | 27 |

3.4.3.2 Scenario A: Close Level Crossing without Replacement Vehicular Access

In the absence of a road crossing of the railway at Ashtown, there would be changes to traffic on other roads as follows:

- 37% of 463 = 171 veh/hr to River Road west, which would increase moderately from 728 to 899 veh/hr (+23%).
- On River Road east, southbound through traffic is likely to bypass the area and remain on Ratoath Road, which will reduce this traffic on that section of road by about 130 veh/hr. On the other hand, the local traffic on River Road at the eastern end would increase a little with diversion from the western part of the Pelletstown area towards Ratoath Road.
- Traffic on Ratoath Road at Reilly’s Bridge over the railway and canal would increase by about 290 vehicles per hour.

Figure 3 provides an illustration of the traffic diversions which are predicted to take place in the event vehicular access at Ashtown level crossing is not replaced on removal.

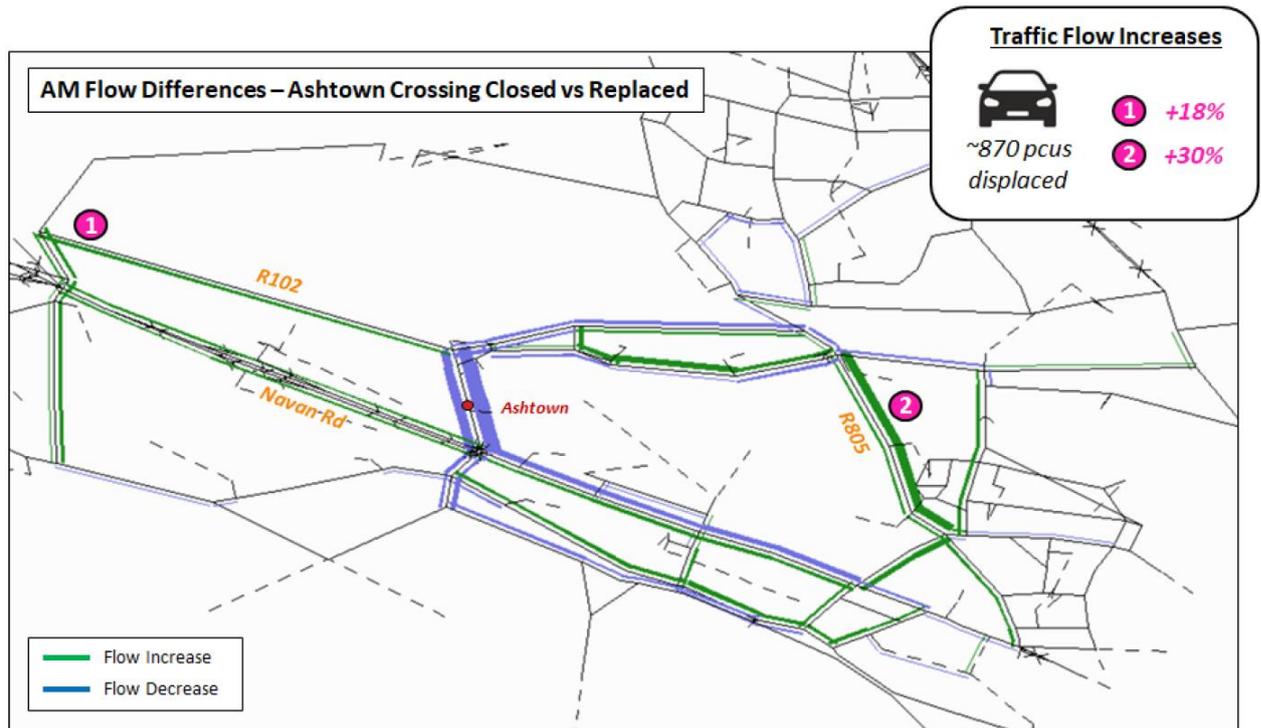


Figure 3-4 AM Peak Flow Differences – Ashtown Closed vs Replaced – Oct 2019

From the graphic increased flows (in green) are evident on the following roads.

- Ratoath Road;
- R102 River Road;
- R147 Navan Road;

As part of DART+ West updated traffic modelling was carried out. The modelling used the NTA Eastern Regional Traffic Model to predict traffic for the implementation year and the design year while taking specific account of the modal shift which is expected on implementation of the DART+ Programme, BusConnects and Metrolink. The modelling was carried out on a similar basis to the 2019 study but used the 2016 ERM and accounted for an agreed set of projects which will be implemented in parallel. In addition, it accounted for current development patterns and government transport policy.

The Covid-19 pandemic significantly affected traffic patterns across the study area since the traffic surveys were carried out. At the time of writing there is evidence that traffic patterns are returning to pre-covid levels. Table 3 illustrated the output from the updated modelling for Ashtown.

Table 3-3: Update DART+ West Traffic Projections for Ashtown

| Level Crossing | 2019 Peak Hourly | Do Min 2028 Peak Hourly | Do Min 2043 Peak Hourly | DART+ 2028 Peak Hourly | DART+ 2043 Peak Hourly |
|----------------|------------------|-------------------------|-------------------------|------------------------|------------------------|
| XG004 Ashtown | 463 | 610 132% | 658 142% | 813 175% | 832 180% |

The Do-Something traffic model demonstrates that the removal of the traffic delays at the Ashtown level crossing by provision of a new bridge, would attract more external traffic through the Ashtown area, which

would contribute to an overall increase in traffic of 75% from 463 to 813 veh/hr in the AM peak. Some of the additional traffic will migrate to the improved route in the context of growing traffic restrictions elsewhere in the city road network as a result of priority measures for public transport elsewhere. The overall traffic figures are modest in the context of road capacity.

3.4.3.3 Traffic Impact on River Road if Ashtown Crossing is Closed

A selection of photographs is provided in Figure 4 to illustrate the character of the Road.



R102 River Road West of Ashtown



R102 River Road East of Ashtown

Figure 3-5 Existing condition of the R102 River Road along the Northern Boundary of Ashtown

River Road east of the junction with Ashtown Road runs along the northern edge of the Pelletstown development zone, and the southern edge of Tolka Valley Park. It retains a largely rural character with a winding alignment, narrow cross-section and hedgerow boundaries. There is a short length of footpath on the southern side over about one third of the length where there is frontage development, but otherwise the road has no footpaths or cycle tracks and very limited verges. Some speed cushions provide a traffic calming effect along the western third of this section of the road. There are parallel routes for pedestrians and cyclists to both north and south of the road which cater well for these modes in this area. (It is not clear why there is an objective in the DCC Development Plan to improve this road, and in what respect. There are no operational problems that are evident to the author of this report, even if the road is atypical in an urban area).

If the level crossing at Ashtown were closed and not replaced, this would reduce the traffic flow along River Road East by about 290 veh/hr (37%) at peak due to the diversion of through traffic along Ratoath Road. Alternatively, if a bridge were provided at Ashtown railway crossing, then an additional 350 veh/hr would be drawn along River Road east, an increase of 45%.

River Road west of Ashtown is a fairly narrow rural road without verges or a footpath as shown in photographs below. The carriageway is generally 6m wide, and the speed limit is 60 km/h at the western end, and 50 km/h at the eastern end. The road is suitable for the current modest vehicular traffic flow, and it could cater for the projected increase in traffic if the Ashtown level crossing were not replaced.

Pedestrian demand along this section of River Road is very low due to the very limited scale of local development with just 10 dwellings along the 1.8km length of the road between Ashtown and the junction with Dunsink Lane at the western end. Coolmine Rugby Club is a significant amenity near the Ashtown end of the road that is not safely accessible by pedestrians, and off-putting for cyclists. On the other hand the Royal Canal Way nearby to the south is a very high-quality amenity for pedestrians and cyclists. However that facility is on the southern bank of the canal and is not accessible from the properties to the north of the canal.

Parallel to River Road just to the north is the River Tolka which flows through a shallow valley that is heavily wooded. The river has no formal environmental designation.

A footpath should be provided along this section of River Road, regardless of what happens for the railway crossing at Ashtown. An increase in traffic along the road would amplify the need for a footpath. This can be provided along the southern edge of the road for access to all of the frontage properties. While it would be regrettable to remove the mature hedgerow and small trees along the edge of the road, this would be appropriate to ensure suitable visibility and personal security. Replacement planting could enable the road to return to a similar character in time.

At a number of particular pinch-points, such as in front of the group of 5 cottages near the western end of the road, a short (60m) section of single traffic lane could be provided with a controlled shuttle system for traffic (i.e. a permanent, signalised, single carriageway stop/go system). This arrangement is occasionally provided at narrow bridges, or for traffic calming purposes. There are examples in the Stillorgan and Mount Merrion areas of Dublin, at the River Dodder Bridge on Bath Avenue in Irishtown, Dublin, and on Oldbridge Road at the western outskirts of Drogheda where a greenway was developed along the River Boyne.

Where there is a protected structure on the southern side of River Road (Ashton House) with a curtilage that is also protected, and associated heritage properties west of this, the road could be widened by 2m over a short distance on the northern side towards the River Tolka. This will however impact on the floodplain of the River Tolka.

For the safety and comfort of cyclists it would be appropriate to provide some traffic calming speed cushions along this section of road, as there already are to the east of the Ashtown Road junction. This would be similar to the existing provision on the Strawberry Beds Road alongside the River Liffey.

The junction of River Road and Ashtown Road is currently a crossroads where River Road has priority. Perhaps this junction should be converted to a small roundabout to give equal priority to all approaches. This would have a beneficial traffic calming effect and would also assist pedestrians and cyclists to cross the road to and from Tolka Valley Park.

3.4.3.4 Traffic Impact at Key Junctions if Ashtown Crossing is Closed

The graphic in Figure 3-6 illustrates the predicted impact that removal of the level crossing at Ashtown would have on the following adjacent junctions (based on the 2019 Transportation Study):

- Navan Road (R147) & Nephin Road - ;
- Nephin Road & Ratoath Road
- Ballyboggan Road & Ratoath Road (R805);
- Ballyboggan Road & Finglas Road
- Navan Road (R147) & Dunsink Lane / Auburn Avenue;.

The information is presented on the basis of the ratio of traffic volume to capacity of a junction, the efficiency of the junction. Where the volume equals the capacity the v/c ratio equals 100%. For traffic light junctions difficulties with functionality of the junction will arise once the efficiency exceeds 90%. For an uncontrolled roundabout difficulties arise once the efficiency exceeds 85%.

The graphic is colour coded to highlight junctions under pressure consequent on the change.

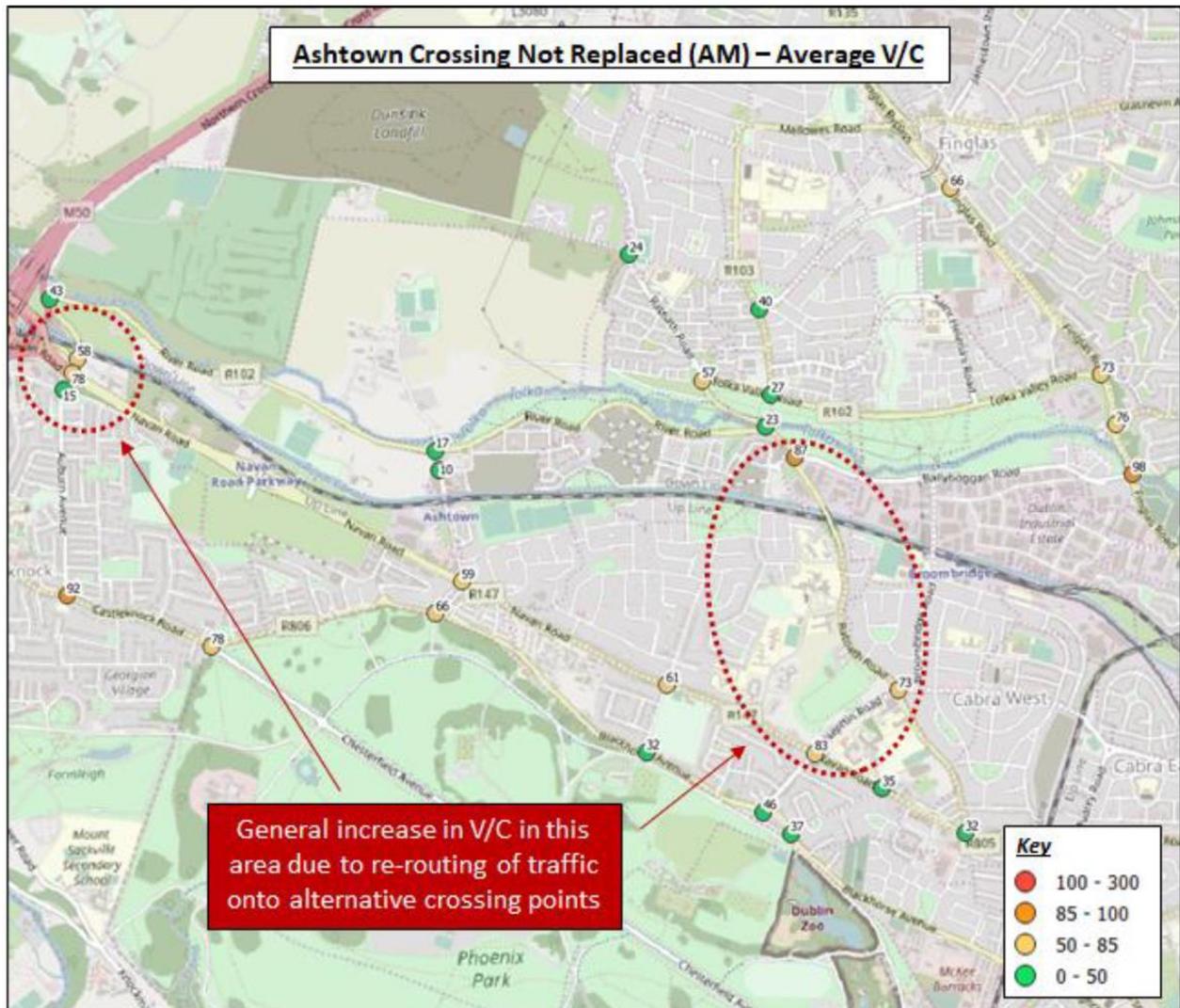


Figure 3-6 Local Junction Impacts due to Level Crossing Removal Without Replacement

The 2019 study identified the additional delay at these junctions for the morning peak as follows:

- Navan Road (R147) and Nephin Road – 2.5 minutes;
- Ballyboggan Road and Ratoath Road – 1.75 minutes;
- Ballyboggan Road and Finglas Road – 0.8 minutes;
- Navan Road and Ashtown Road – 1.5 minutes;
- Nephin Road and Ratoath Road – 1.4 minutes.

These additional traffic delays are quite minor in the overall context of the Dublin area where peak time traffic congestion is normal. The transport strategy for Dublin anticipates no real change in this context, as the policy focus is on encouraging modal shift away from private car travel, especially inside the M50 ring motorway. Sustainable transport modes will be unaffected by such increases in traffic delay as there already are bus lanes and some cycling facilities along the key bus corridors of the Navan Road and Finglas Road. The BusConnects project will provide further enhancements to these corridors.

Cyclists in the area will soon benefit from the completion of the Royal Canal Cycleway which will provide a direct and largely uninterrupted cycle route from Blanchardstown to the Docklands area and city centre through Ashtown, Phibsborough and Drumcondra. This area of Dublin is very well served by public transport with two

railway stations at Ashtown and Pelletstown on the Dublin-Sligo railway line which will have much higher frequency services under DART+ West. There is also the LUAS Green Line tram service from Broombridge which is only 0.7km to the east of the eastern end of the Pelletstown area and accessed directly by the Royal Canal Way walking and cycling route.

Local transport demand is therefore largely served by 4 major public transport corridors (Rail, tram and 2 bus corridors) and 3 primary cycle routes (Navan Road, Royal Canal and Finglas Road). The main impact for traffic delay will cause minor inconvenience for short-distance local trips, or other orbital cross-city through traffic. The principal junctions most affected by additional traffic diverted from Ashtown in the event of closure without replacement access are shown in Figure 3-7: Junctions with additional delay if there is no road link at Ashtown railway crossing below.



Figure 3-7: Junctions with additional delay if there is no road link at Ashtown railway crossing

It would not be appropriate to provide traffic capacity enhancements at these junctions which are physically constrained, when the focus will be on improvements for other road users including bus priority and cycling facilities at the junctions along the Navan Road bus corridor, and pedestrian crossings at the roundabout on Ratoath Road at Nephin Road / Faussagh Avenue. The junction of Ratoath Road and Ballyboggan Road was significantly upgraded recently as part of the Reilly's Bridge scheme over the railway and Royal Canal, with access into the eastern end of the Pelletstown development area.

3.5 Conclusions

This section examined the necessity for replacement of a road crossing in the vicinity of Ashtown Level Crossing if the crossing is closed.

- a) The strategic policy as set out in SFILT and GDATS is clearly focussed on sustainable transport modes ahead of road traffic capacity improvement. In this context it may not be essential to retain a road link at Ashtown level crossing if suitable alternative local access is available.
- b) The various regional and local planning policies provide some support for the replacement of the level crossing at Ashtown with a new road link. The need for a replacement road link at this location should be considered in the context of reasonable alternatives.
- c) Closure of the level crossing without a replacement road crossing would divert through traffic away from the Ashtown area, which accounts for approximately 45% of the existing traffic volume that crosses the railway at this location.
- d) A replacement bridge at the Ashtown level crossing would attract some external traffic through the Ashtown area, which would combine with local traffic growth resulting in an overall increase in traffic of 75% from 463 to 813 veh/hr in the AM peak. 55% of traffic through Ashtown is currently generated locally.
- e) If the level crossing at Ashtown were closed and not replaced, this would reduce the traffic flow along River Road East by about 290 veh/hr (37%) at peak due to the diversion of through traffic further south along Ratoath Road.
- f) Without a road crossing at Ashtown the traffic on River Road west would increase moderately from 728 to 899 veh/hr (+23%). A footpath should be provided along this section of road in any event, but more so if there is an increase in traffic due to removal of the road crossing at Ashtown.
- g) Without a crossing at Ashtown, traffic on Ratoath Road at Reilly's Bridge over the railway and canal would increase by 290 vehicles per hour.
- h) Traffic diverted to other roads would cause additional traffic delays of 1 or 2 minutes that are quite minor in the overall context of the Dublin area where peak time traffic congestion is normal. It would not be appropriate to provide traffic capacity enhancements at these junctions which are physically constrained, where the focus will be on improvements for other road users.
- i) Local transport demand is well served by 4 major public transport corridors (Rail, tram and 2 bus corridors) and 3 primary cycle routes (Navan Road, Royal Canal and Finglas Road). The main impact for traffic delay will cause some inconvenience for short-distance local trips, or other orbital cross-city through traffic.

This review has concluded that it is appropriate to consider the option of not replacing the road crossing at Ashtown as a potentially appropriate arrangement in the Option Selection process for DART+ West. Such an option should provide for pedestrian access along River Road and not provide for capacity enhancement at affected junctions and should be included in a multi-criteria analysis with alternative options for the location.

4. Options Description

4.1 Introduction

The main aim of the DART+ West Project, is to increase train frequency and passenger capacity along the Maynooth and M3 Parkway Lines. Level crossings are a major constraint to railway operation and surrounding road networks, causing congestion and increased journey times for all modes of transport including pedestrians and cyclists.

A number of options were developed and examined in respect of the treatment of each Ashtown level crossing. The options broadly include the following:

- Keep the level crossing in place with future Train Service Specification in operation. This would include the implementation of CCTV control on the level crossings currently manned. This is the Do-Nothing Option;
- Close the level crossing without providing alternative infrastructure irrespective of the consequent severance and road traffic impact. This is the Do-Minimum Option;
- Close the level crossing with provision of appropriate alternative bridge crossing infrastructure proximal to the level crossings to replace vehicular, pedestrian and cycle access;
- Close the level crossing and construct a pedestrian and cycle bridge local to the level crossing to replace access for non-motorised users and divert vehicular traffic onto the local road network with or without corresponding capacity enhancements dependent on the scale of traffic diversion;
- Lower the railway in the vicinity of the level crossing sufficient to provide clearance for the electrified railway to pass under proposed bridge infrastructure at the level crossing.

The design team has examined the feasibility of meeting the programme objectives while keeping the existing level crossings in place and it has concluded that the programme objectives cannot be delivered safely on this basis. Detailed consideration of the need to remove level crossings is provided in OSR Volume 4: Annex 8.1. Although it is considered that the level crossings need to be removed for operational and safety reasons, the option of retention of each level crossing has been included in the MCA process so it can be assessed across the full spectrum of criteria in a similar way to other options considered.

The options were developed in sufficient detail to permit a Stage 1 Multi-Criteria Analysis, MCA1. Shortlisted options from MCA1 were then assessed in more detail in Stage 2 Multi-Criteria Analysis, MCA2. The MCA base methodology is described in Section 2 of OSR Volume 2 Technical Report and specific detail of assessment sub-criteria particular to level crossings is provided in Section 8 of OSR Volume 2. The assessment of the options produced during MCA2 includes a complete re-assessment of the options undertaken during MCA1.

The design standards used to develop the level crossing options adopted the principles of the Design Manual for Urban Roads and Streets (DMURS) while also incorporating elements of the Design Manual for Roads and Bridges (DMRB). The standards adopted for each element of the design generally follow the requirements of the following:

Road Geometry

Design Manual for Urban Roads and Streets (DMURS) prepared by the Department of Transport, Tourism and Sport and the Department of Housing, Planning and Local Government;

Design Manual for Roads and Bridges (DMRB) prepared by the Transport Infrastructure Ireland (TII) (formerly the National Roads Authority (NRA));

| | |
|---|--|
| | Preliminary Design Guidance: for BusConnects Core Bus Corridors V2 Sept 2020, published by the National Transport Authority (NTA); |
| Bridge and Underpass Geometry | Design Manual for Roads and Bridges (DMRB) prepared by the Transport Infrastructure Ireland (TII) (formerly the National Roads Authority (NRA)); |
| Cycle Facilities Geometry | National Cycle Manual prepared The National Transport Authority (NTA); |
| Traffic signs, Traffic Road Markings and Traffic Signals Layout | Traffic Signs Manual 2019 prepared by the Department of Transport, Tourism and Sport; |
| Drainage | Greater Dublin Regional Code of Practice for Drainage; Design Manual for Roads and Bridges (DMRB) prepared by the Transport Infrastructure Ireland (TII) (formerly the National Roads Authority (NRA)). |

To facilitate the assessment a baseline characterisation of the existing setting at Ashtown level crossing was carried out. This baseline characterisation is presented in OSR Volume 4: Annex 8.3 Level Crossings Characterisation.

4.2 Options Description

4.2.1 Pedestrian Cycle Bridge at Reconfigured Train Station

At the outset of pc2, the preferred option proposed that the existing footbridge in the station would be replaced with one on the footprint of the existing level crossing. This proposed footbridge would provide for lift access available to the public on a 24 hour basis. As part of measures to address public feedback received during public consultations, a proposal was conceived to provide access across the railway for non-motorised users by means of a stepped and ramped bridge constructed on the footprint of the existing train station. This proposal requires the reconfiguration of the existing train station and has been developed on the basis of providing high quality accommodation for non-motorised users local to the level crossing. Figure 4-1 shows an aerial view of the existing station and pedestrian footbridge. Several of the proposed options now include for the replacement of both of the existing pedestrian bridges with a new bridge on reconfigured station footprint, Options 4+4b, 8, 10, 11, 12, and 13. Access for pedestrians, cyclists, impaired users and the disabled is proposed on a 24 hour basis. The proposal would incorporate segregated access for cyclists to enhance the feeling of security for all.



Figure 4-1 Ashtown Train Station Aerial View

Figure 4-2 shows the proposed station reconfiguration with integral alternative access over the railway. It incorporates stepped access and a bridge crossing of the railway in close proximity to the original pedestrian

footbridge. In addition, it includes for ramped access with segregation of cyclists from other users. The bridge design is proposed to incorporate structural steel to give it a light appearance and to keep the walking surfaces as low as is practicable. The use of steel also provides for enhanced architectural treatment for the proposed station.

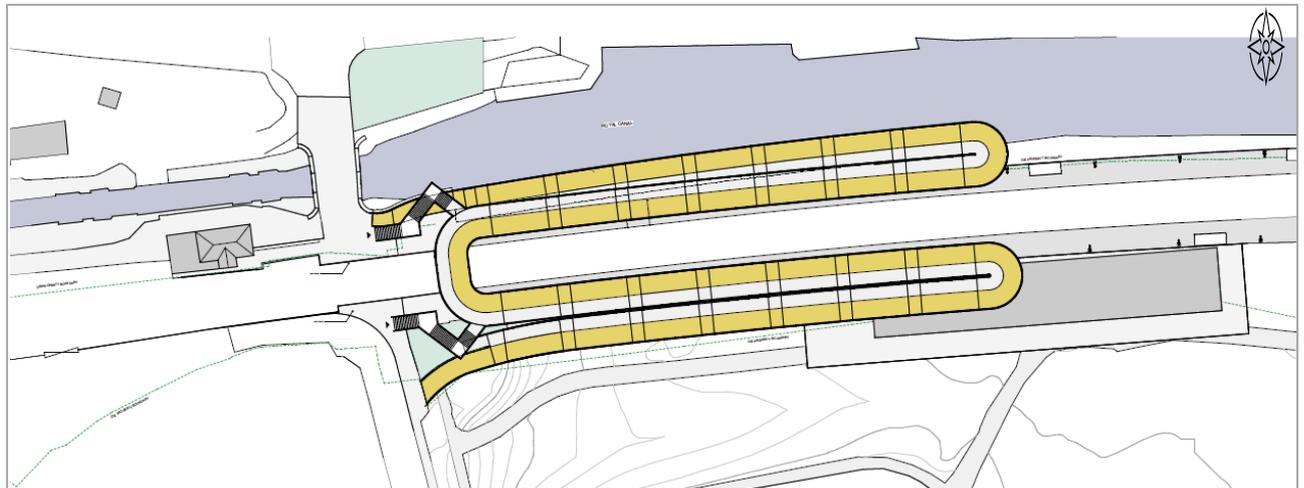


Figure 4-2 Ashtown Train Station Plan Layout

The proposed ramped access is typically 5.0 m wide and incorporates landings at 10m longitudinal spacing in accordance with the requirements of the building regulations. The northern ramp is proposed to be constructed over the northern platform and over the escarpment fronting the canal. The proposed ramps extend for a distance of approximately 80m east of the existing level crossing. The proposed landing north of the railway is located immediately adjacent to the listed canal bridge. The existing level at the location of the proposed bridge crossing is approximately 44.6 m ODMH. The proposed bridge deck rises to an approximate level of 50.2m ODMH.

To accommodate the bridge, the existing station buildings, the northern platform and the existing cable stayed bridge over the canal will need to be demolished. It is proposed to construct replacement buildings, signalling equipment and an electrical substation as part of the proposed change.



Figure 4-3 Ashtown Train Station Aerial View

This proposal facilitates the provision of replacement access for non-motorised users across the canal and railway at the location of the level crossing. The provision has been included as an enhancement to several of the options considered as part of the review of the options selection process at Ashtown.

4.2.2 Ashtown PC2 Options Option 1 – Online Overbridge

This option would close the level crossing with replacement road access. As an online scheme it would require a new bridge to be constructed over the canal and railway. This would lift the existing carriageway by at least 7.0 m above the railway line, accommodating a cross section of a 6.5 m roadway with 1.0 m rubbing strips on both sides. Pedestrian and cycle access cannot be readily accommodated on the main line alignment due to the constrained width available between buildings along the multistorey streetscape north of the level crossing.

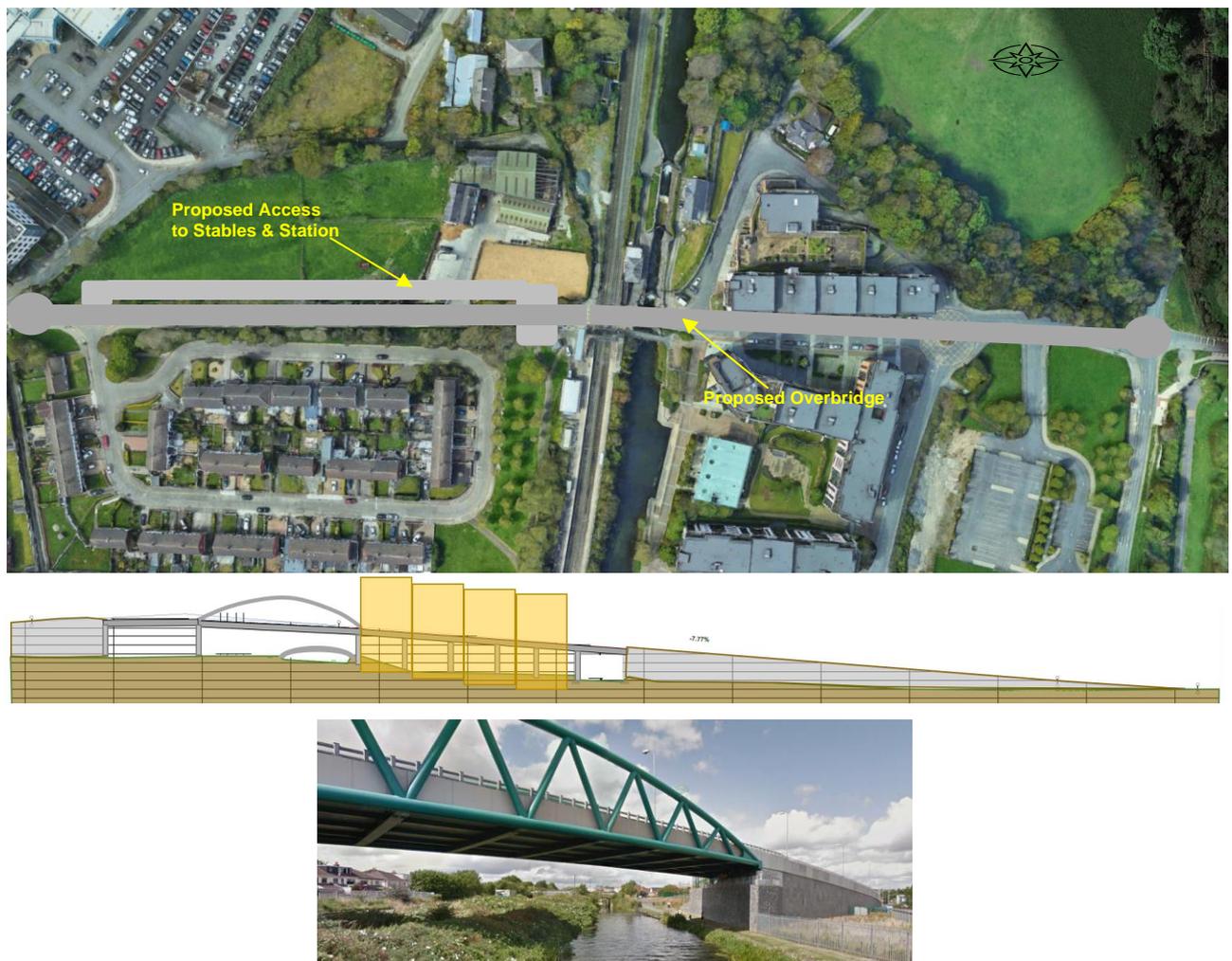


Figure 4-4 Ashtown Option 1 – Online Overbridge (Copyright Ordnance Survey Ireland – 0039720)

The topography is such that the northern approach (where the ground falls away towards the Tolka River) would be steep with gradients of up to 8% and would require significant modifications to the recent development of the area, both above and below ground.

The length of the approach on the northern side would be approximately 180 m and 140 m on the southern side at a gradient of 5%. The bridge over the rail line would be at a level of 51.9 m ODMH with a deck level 7.0 m above the rail level. This option would pass over and along the streetscape immediately north of the level crossing and would front a range of business and residential properties. To facilitate access to Ashtown Stables and the train station will be necessary to construct a road, at grade, adjacent to the proposed walled embankment approach to the bridge crossing.

4.2.3 Option 2 (Revised) – Underbridge on Mill Lane

Option 2 was presented as the preferred option as part of public consultation no.2. A plan layout of the option presented is shown in Figure 2-2.

This option involved re-routing Ashtown Road along its old alignment (pre-Royal Canal) on Mill Lane and passing under both the railway and the Royal Canal. It accommodated a cross section of a 6.5 m carriageway with 1.8 m footpaths on both sides and 2.5 m two-way cycle track on the eastern side of the road. It proposed to curtail the footpath along the west of the alignment fronting the listed Ashton House curtilage to a 0.5 m rubbing strip and provided a pedestrian crossing at this location to minimise the impact on the heritage property. An at-grade turning head and drop-off were proposed to be provided each side of the railway.

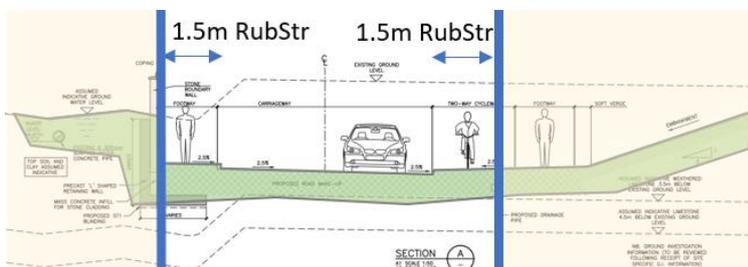
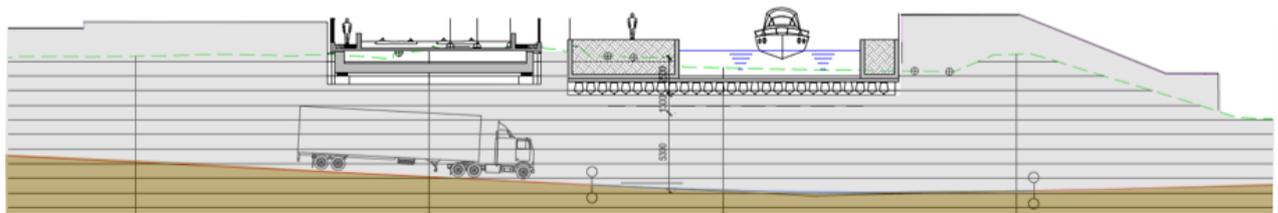
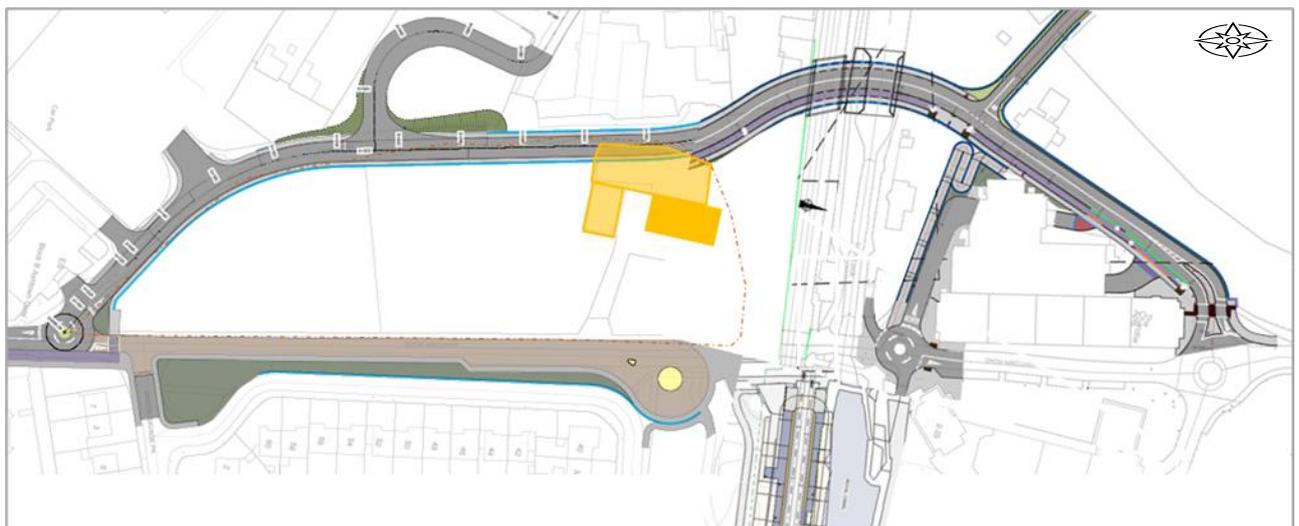


Illustration of original corridor vs proposed

Figure 4-5 Ashtown Option 2 Under Rail and Canal (Copyright Ordnance Survey Ireland – 0039720)

The length of the option was approximately 150 m on the northern side and 300 m south of the rail line. The option dropped to an approximate level of 37.5 m ODMH under the railway which is at a level of 45.6 m ODMH at the bridging point. On both sides of the railway a separate pedestrian and cycle link was proposed to provide enhanced access for non-motorised users. These shared spaces would have a width of 3.0 m.

The option was further examined in seeking to address concerns raised as part of public consultation no.2 and the following refinements are proposed as part of the revised Option 2 as follows:

- The design standard of the road will be reduced incorporating departures from standard to better skirt the Stables lands, while retaining a 6.5m wide carriageway;
- The pedestrian and cycle access through the underpass will be removed. Instead, only emergency escape provisions will be made in the form of a 1.5m wide rubbing strip on each side of the road;
- The proposed ramped access through the lands of Ashtown Stables will be removed;
- Rather than provide battered slopes on the approach to the railway and canal, it is proposed to incorporate walls on the approaches to the canal and railway which are below existing ground level;
- Pedestrian, cycle, mobility impaired and disabled access across the canal and railway will be provided for over a proposed steel bridge on the footprint of the reconfigured train station as described in Figure 4-2;
- Urban landscaping and set down provisions south of the railway will be reconfigured to curtail the impact on Ashtown Stables.

This revised Option No.2 leaves much of the site of the Ashtown Stables intact, resulting in the principal stable building and Pelletstown House being retained. The third building on the site would however need to be demolished and portions of land acquisition along the western and southern boundaries cannot be avoided as part of this option.

The revised option is illustrated in **Figure 4-5** below. It also includes a long section characterising the proposed canal and railway underbridges. A section has been provided to illustrate the original proposed cross section in comparison to the proposed narrower cross section.

4.2.4 Option 3 – Overbridge on Mill Lane

This option entails re-routing Ashtown Road along its old alignment (pre-Royal Canal) on Mill Lane and passing over both the railway and the Royal Canal. The option at the outset of pc2 accommodated a cross section of a 6.5 m carriageway with 1.8 m footpaths and 2.5 m cycleway on both sides of the road.

The bridge was highly skewed to the canal and railway and was approximately 70 m long. It incorporated walls along the western boundary of the road to preserve the listed Mill buildings adjacent and to curtail the impact on Ashton House estate to the north of the canal. An at-grade turning head and drop-off was proposed each side of the railway.

The length of the option was approximately 180 m on the northern side and 300 m south of the rail line. The option would rise to an approximate deck level of 52.9 m ODMH, 7.3 m above the rail the rail which is a at a level of 45.6 m ODMH at the bridging point.

On both sides of the railway a separate pedestrian and cycle link was envisaged to provide enhanced access for non-motorised users. These shared spaces would have a width of 3.0 m. Due to the alignment of Mill Lane North of the canal, falling away from the train station, it would be necessary to provide elevated ramps from the train station to the overbridge for these accesses.



Figure 4-6 Ashtown Option 3 – Overbridge on Mill Lane (Copyright Ordnance Survey Ireland – 0039720)

It is feasible to cross at this location, as it is upstream of the double lock on the canal and the canal is at the same approximate level as the adjacent railway. This option would require some property acquisition and modifications to existing accesses. It extends further north than Option 2 to the junction at the end of Mill Lane and extends into the lands of Ashton House rather than skirting the curtilage.

The option was further examined in seeking to address concerns raised as part of public consultation no.2 and the following refinements are proposed as part of the revised Option 3 as follows:

- The pedestrian and cycle access across the proposed overbridge will be removed. Instead, only emergency escape provisions will be made in the form of a 1.5m wide rubbing strip on each side of the road;
- The proposed ramped access along the northern boundary of Ashtown Stables will be removed;
- Rather than provide battered slopes on the approach to the railway and canal, it is proposed to incorporate walls on the approaches to the canal and railway which are below existing ground level;
- It is proposed to introduce a bridge over the access drive to Ashton House;
- Pedestrian, cycle, mobility impaired and disabled access across the canal and railway will be provided for over a proposed steel bridge on the footprint of the reconfigured train station as described in **Figure 4-2**;

- Urban landscaping and set down provisions south of the railway will be reconfigured to curtail the impact on Ashtown Stables.

Figure 4-6 provides an updated plan layout for the proposed option. It also shows a partial longitudinal section illustrating the construction height and the steep gradient (8.0%) of the proposed alignment north of the railway to tie into the existing roundabout at the northern end of Mill Lane. A photograph of the nearby Reilly’s Overbridge is included to illustrate the character of the proposed infrastructure.

4.2.5 Option 4 (4+4a, 4+4b)– Link from River Road to Navan Parkway Station Grade Separate Junction with Pedestrian / Cycle Crossing in Ashtown

This option is a combined route including Option 4 with either 4a or 4b. The Option 4 route is located approximately 1 km to the west of the existing level crossing at Ashtown at the grade separated junction on the Navan Road serving Phoenix Park Railway Station. At this location there is scope to construct a new road link over the canal and railway to link to River Road. This could either descend to tie into River Road or be designed to pass over it to cross the Tolka River and connect onwards to the Dunsink lands. In the latter case, a short spur would be provided to link to River Road, in both cases this would involve significant diversions and land acquisition. The option can accommodate a cross section of a 6.5 m carriageway with 2 m footpaths and 1.75 m cycle tracks on both sides.

The road would be at a similar level to the existing Phoenix Park junction crossing the rail at a level of approximately 55.4 m ODMH before descending to tie to the level of the River Road at a level of 34.7 m ODMH. The road on the northern side would be at a gradient of approximately 6% over a length of approximately 300 m. This option also includes the construction of a new pedestrian and cycle bridge (route 4a) under the railway and canal in Ashtown or a bridge over the railway (route 4b) on the footprint of the reconfigured station as described in Section 4.2.1. The proposed underbridge (route 4a) would drop to a level of approximately 40.1 m ODMH to tie in with the existing road to the north of the rail line providing a pedestrian and cycling link north and south of the rail line with a 6 m wide cross section in order to match the existing cross sections of the surrounding road network with a 3 m footway. The proposed overbridge (route 4b) rises to a level of approximately 51.3 m ODMH over the railway.

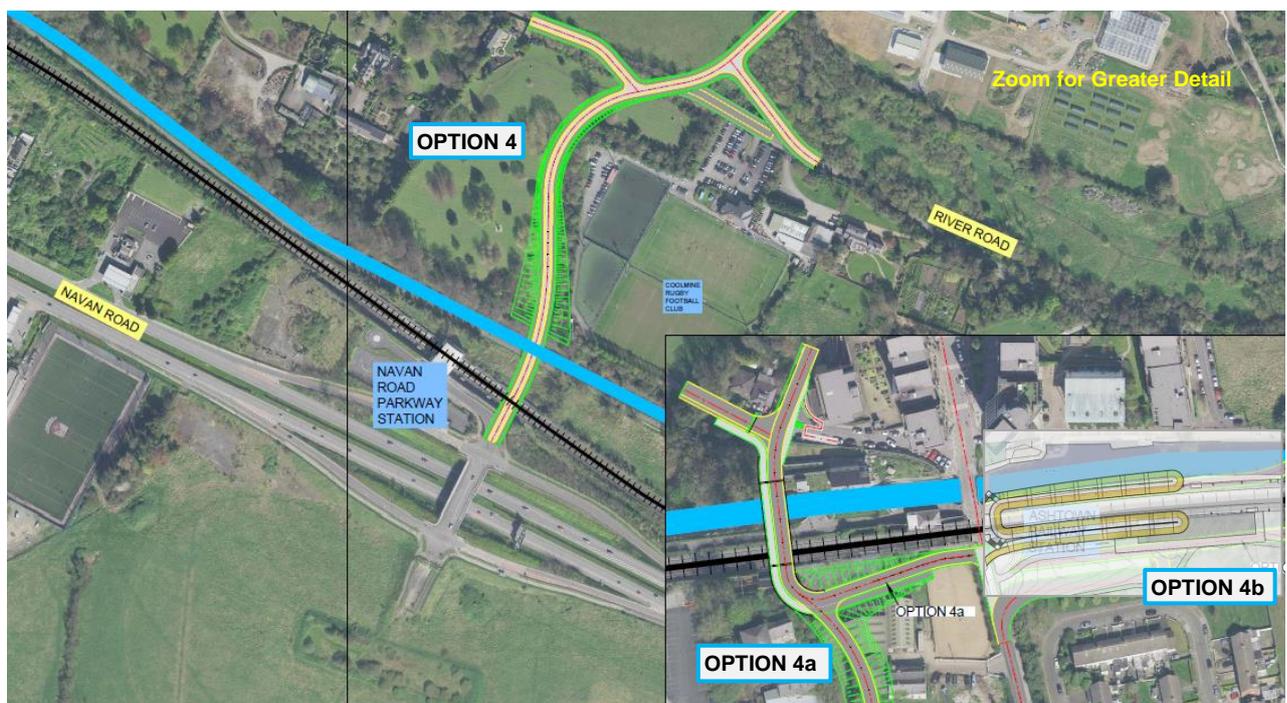


Figure 4-7 Ashtown Option 4 over Rail and Canal at Navan Parkway Station

4.2.6 Option 5 – Underbridge East of Existing Crossing

This option would involve construction of a new road link parallel to the south of canal before turning northwards and under the rail and canal to connect with Rathborne Avenue to the north of the Canal. This route would descend from the Ashtown Road and run between Ashtown Railway Station and Martin Savage Park residential estate. The route would cross under the railway and canal at right angles before rising in a cutting to join into the existing circulatory roads to the north of the Pelletstown Development, impacting on the development lands. The option can accommodate a cross section of a 6 m carriageway with 1.8 m footpaths and 1.7 m cycle track on the western side of the carriageway and a 1.5 m footpath and 1.5 m cycle track on the eastern side of the carriageway.

The railway is at a level of 42.5 m ODMH and the canal at a level of 39.5 m with this option at a level of 32.0 m ODMH below providing 3.7 m clearance. Due to the required levels for tying into the existing road network the normal clearance envelope under the railway would have to be reduced.

This option would have the disadvantage that it would not have the necessary design clearance for double decker buses, other higher delivery vehicles and service vehicles that use this route at present. As the option would be in a cutting for most of its length this would be a disadvantage to cyclists, pedestrians and vulnerable road users. The underpass would also require a pumped drainage system. It is not proposed to alter this option as part of the Ashtown review.

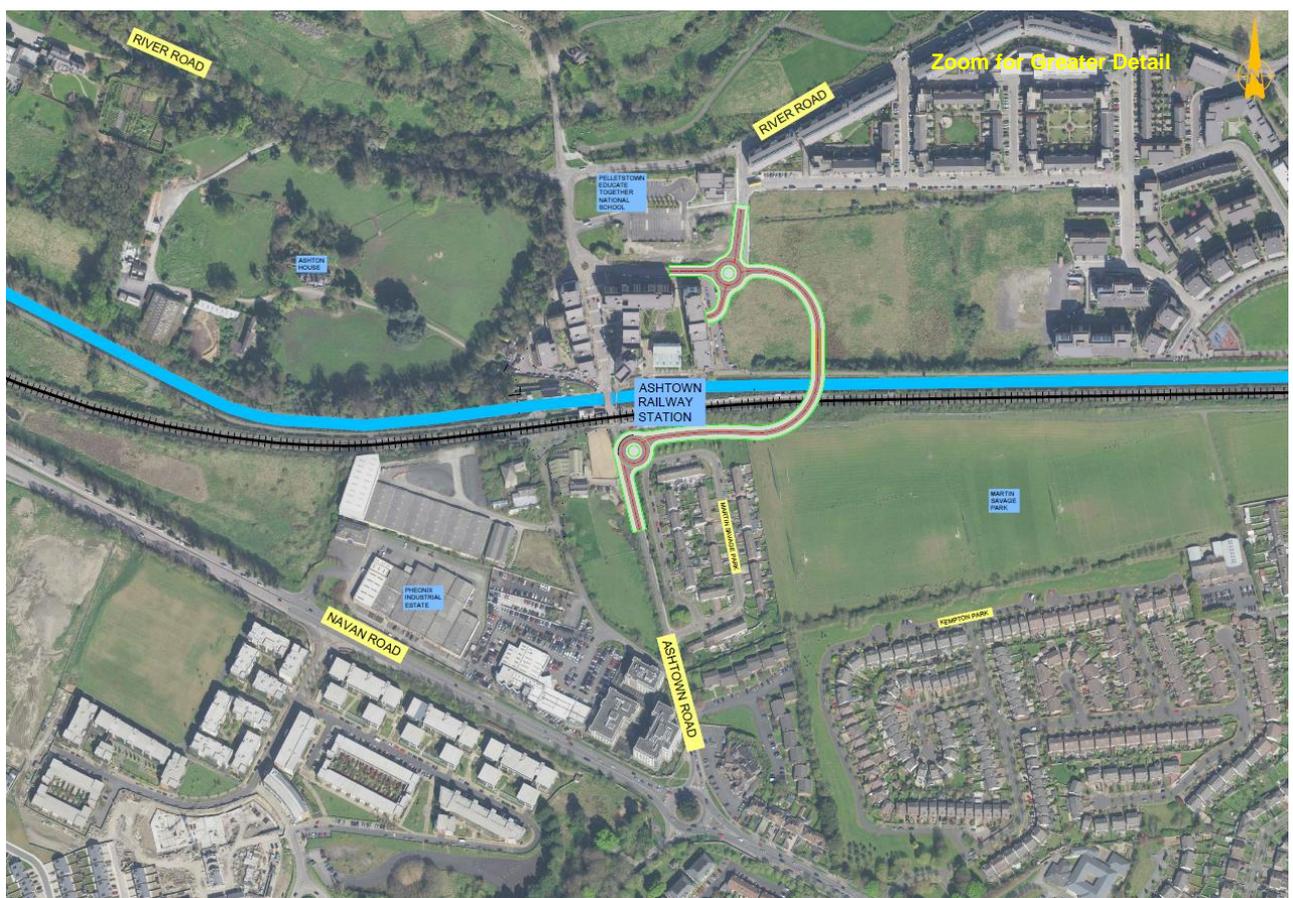


Figure 4-8 Ashtown Option 5 – Underbridge East of Existing Crossing (Copyright Ordnance Survey Ireland – 0039720)

4.2.7 Option 6 – Overbridge 250 m East of Existing Crossing with Connection to Ashtown

This option would cross the railway and canal approximately 250 m east of the existing level crossing. It incorporates a tightly curved plan layout which facilitates a link to the existing Ashtown road at the train station. The link would traverse the green area between Ashtown Station and Martin Savage Park and would climb to cross over the railway and canal to tie into the new circulation roads through the Ashtown / Pelletstown Development, impacting on active planning permission for residential development (DCC Planning Ref. 3666/15, ABP ref. PL29N.246373). The option can accommodate a cross section of an 8 m carriageway with 1.8 m footpaths on both sides and 2.5 m two-way cycle track on both sides.

The option would bridge over the railway and canal with approach gradients of 6% either side. The rail level at the crossing is approximately 42.1 m ODMH and the canal at 39.3 m ODMH with the bridge level over the railway at 50.00 m ODMH. The road level crests to a height of 52.0 m ODMH, 60 m south of the rail line before descending over the rail and canal. The option can be walled or can be constructed with open embankments to provide a softer texture to the scheme. The provision of landscaped embankments would result in a need for more land acquisition.

There would also be impacts on Martin Savage Park home to St Oliver Plunket’s GAA club to the south and would be located within zoned housing development land within the Ashtown - Pelletstown SDZ to the north of the rail line and canal. It is not proposed to alter this option as part of the Ashtown review.

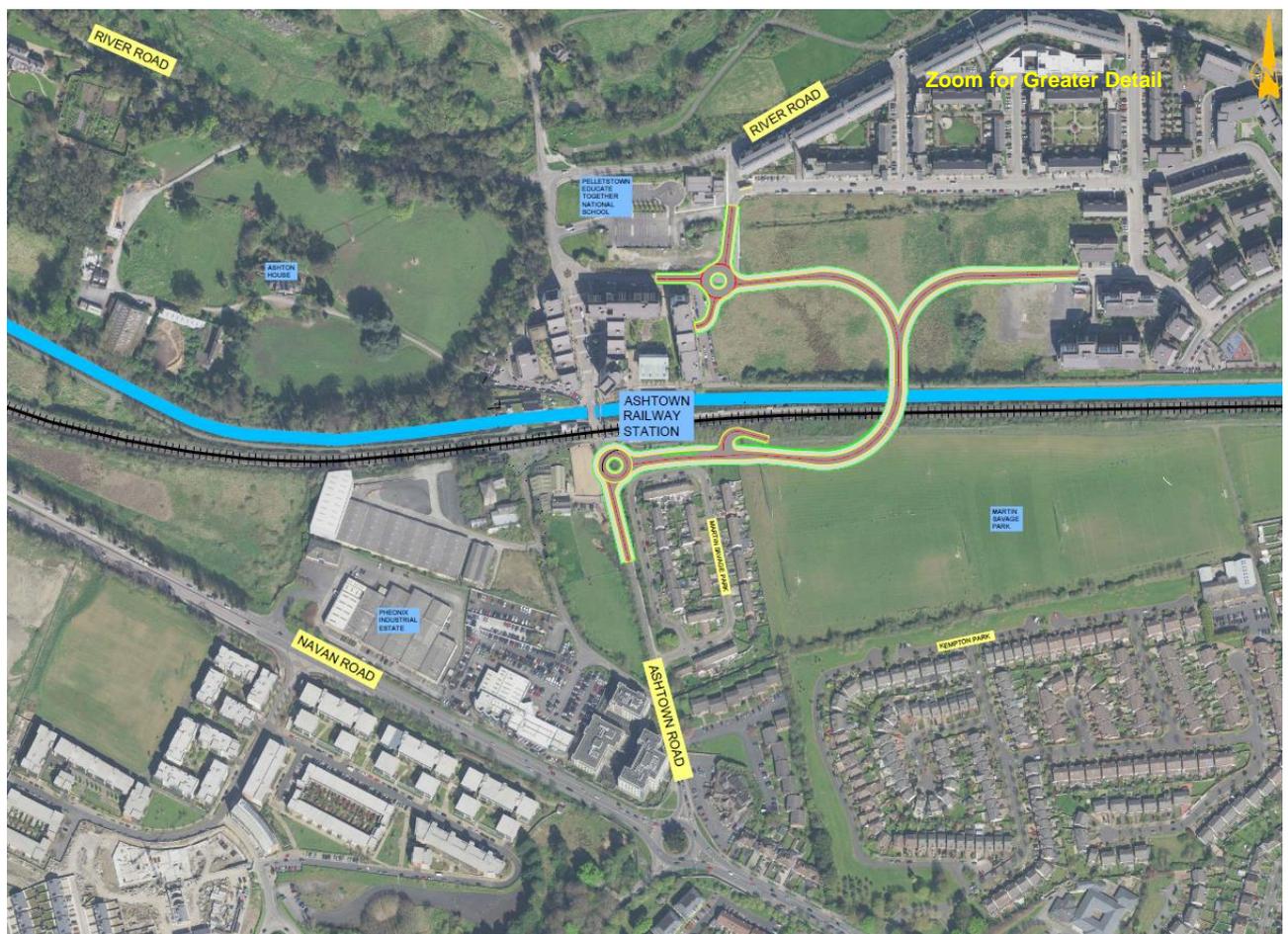


Figure 4-9 Ashtown Option 6 – Overbridge 250 m East of Existing Crossing (Copyright Ordnance Survey Ireland – 0039720)

4.2.8 Option 7 - Road Overbridge 250 m East of Existing Crossing with New Road Link to Navan Road

This option would involve the construction of a new road in front of Kempton Gardens from the Navan Road and a new bridge over the canal and railway accommodating a cross section of a 6.5 m carriageway with 1.8 m footpaths and 2.5 m cycle tracks on both sides.

The option would bridge over the railway and canal with approach gradients of 6% either side. The rail level at the crossing is approximately 42.1 m OD and the canal at 39.3 m OD with the bridge level over the railway at 50.00 m OD. The road level crests to a height of 52.0 m OD, 60 m south of the rail line before descending over the rail and canal.

The route would then tie into the new circulation roads through the Pelletstown Development to the north of the canal. Separate 4 m wide shared space cycle and pedestrian facilities to be provided both north of south of the canal linking from Ashtown Road to the proposed option.

This option will have impacts on the residents of Kempton Gardens. Furthermore, it would require the construction of a significant new junction on the Navan Road. There would also be impacts on Martin Savage Park home to St Oliver Plunket’s GAA club to the south and would be located within zoned housing development land within the Ashtown - Pelletstown SDZ to the north of the rail line and canal. The option can be walled or can be constructed with open embankments to provide a softer texture to the scheme. The provision of landscaped embankments would result in a need for more land acquisition. It is not proposed to alter this option as part of the Ashtown review.

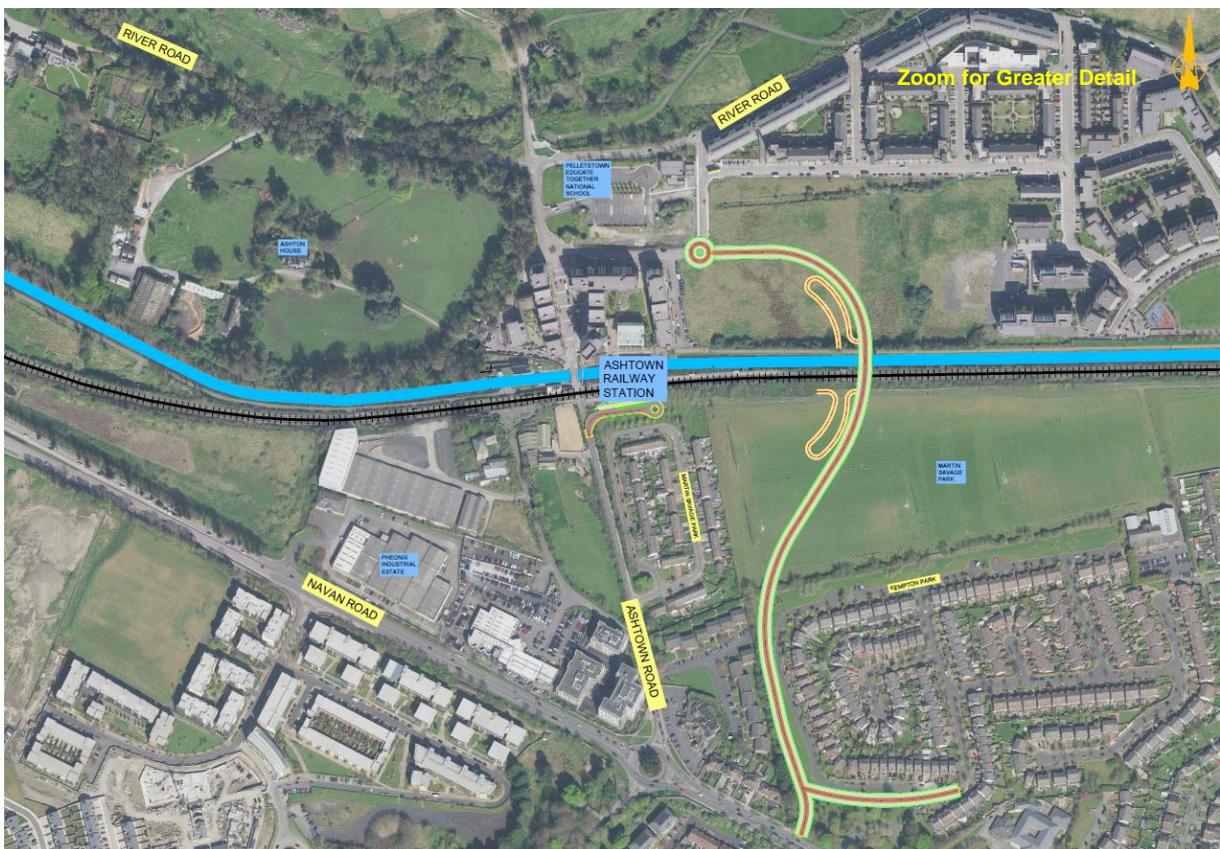


Figure 4-10 Ashtown Option 7 – Overbridge with Connection to the N3 Navan Road (Copyright Ordnance Survey Ireland – 0039720)

4.2.9 Option 8 – Provision of a Pedestrian/Cycle Overbridge Only with Station Reconfiguration

This option includes the provision of a new pedestrian and cycle footbridge with a 5 m wide cross section over the canal and railway. It includes the demolition of the existing cable stayed footbridge at the level crossing and the station footbridge to provide space for the proposed bridge.

The proposed bridge at commencement of pc2 crossed the railway and canal at a level of approximately 50.0 m ODMH where the rail is at a level of 43.0 m ODMH and the canal is at a level of 39.7 m ODMH.

Separate pedestrian stairs were proposed with this option as well to ease pedestrian access and rails for pushing bicycles on, if required.

Constraints on bridge crossing here included the train station, the Royal Canal, the protected railway structures, and the canal bridge. Vehicular traffic would need to divert around the crossing, the diversion being an estimated 4.8 km to the west or 5.7 km to the east. This option is shown in **Figure 4-11**

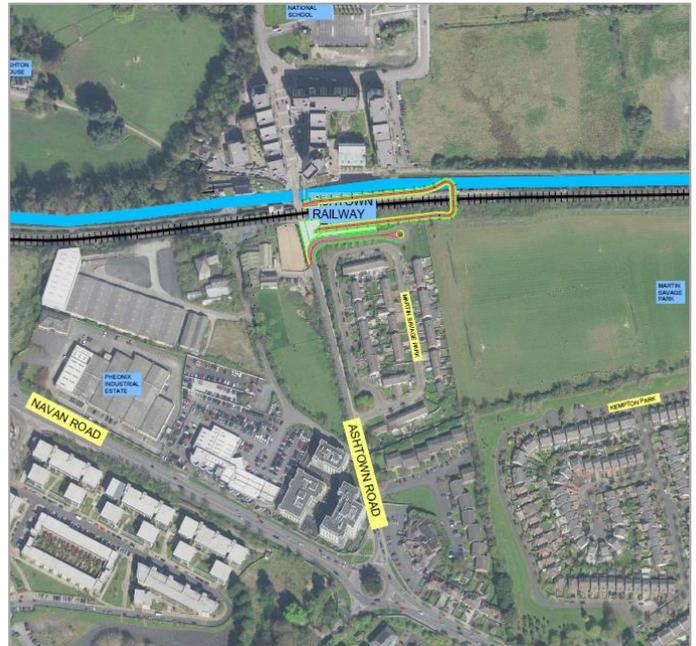


Figure 4-11 Ashtown Option 8 – Original Option

As part of the review it is proposed to alter this option by inclusion of the proposed pedestrian cycle bridge and reconfigured train station as described in **Section 4.2.1** and illustrated in **Figure 4-12**. No measures are proposed as part of this option to accommodate diverted traffic on the local road network.

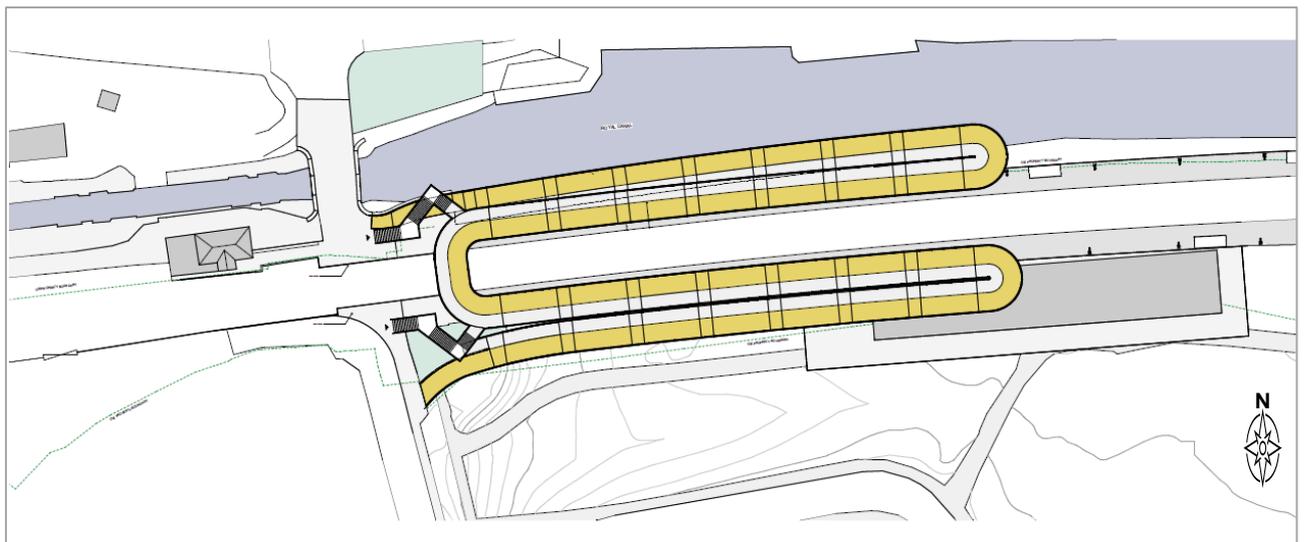


Figure 4-12 Ashtown Option 8 – Provision of a Pedestrian/Cycle Overbridge (Copyright Ordnance Survey Ireland – 0039720)

4.2.10 Option 9 – Lowering of the Railway Vertical Alignment

This Option would entail lowering the track alignment for approximately 1 km east and west of Ashtown Station with a track gradient of maximum 1%. This would result in a 7 m clearance for overhead cables at the location of the existing level crossing. A road bridge would be required at the location of the existing level crossing to facilitate traffic movements. The proposed road bridge would tie in with the existing protected canal bridge. The existing station, footbridge and building on the south western side of the crossing would need to be demolished to facilitate the works. The track lowering would extend to the Navan Road Parkway to the west. The station is in a deep retained cut. Option 9 would require reconstruction of the station platforms.

Ashtown Station would be reconstructed at ground level with pedestrian access to the platform at track level. The platform would be approximately 200 m in length on both sides of the railway line. A new footbridge would be required for passengers to access the northern platform. On the eastern approach the rail line is bounded by playing fields and residential properties to the south and the Royal Canal and Ashtown town centre to the north. To facilitate the lowering of the rail line, retaining walls would be required on the north and southern side of the rail line. The height of the retaining walls would range from 2 m to 7 m. On the western approach the rail line is bounded by an industrial area with warehouses, stables and fields to the south and the Royal Canal, fields and Ashtown town centre on the northern side. The track vertical realignment will extend to the Navan Road Parkway Station. Alterations to the Parkway Station could be avoided by reducing the depth of the cut for lowering the railway and increasing the soffit level of the new road bridge at the level crossing.

This option would have significant impact on the Royal Canal channel and all of the associated heritage structures along the realigned section of railway. This includes the masonry arched bridge, the locks and the lock keeper’s cottage.

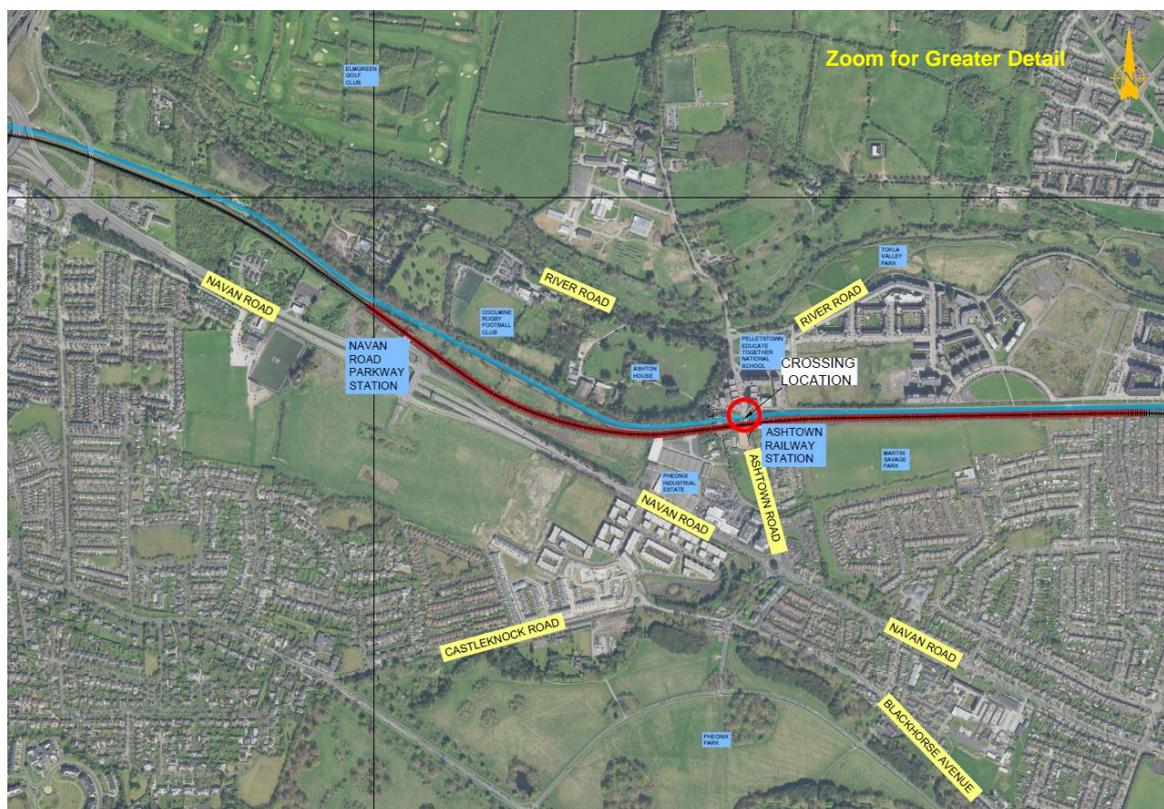


Figure 4-13 Ashtown Option 9 - Lowering of the Railway Vertical Alignment (Copyright Ordnance Survey Ireland – 0039720)

4.2.11 Option 10 – Underbridge on Mill Lane

This is an additional option developed as part of the review of Ashtown options consequent on feedback received as part of public consultation pc2. It would entail re-routing Ashtown Road along its old alignment (pre-Royal Canal) on Mill Lane and passing under both the railway and the Royal Canal. The option can accommodate a cross section of a 6.5 m carriageway with 1.5 m rubbing strip on the western side of the road and a 3.65m wide pedestrian / cycle way along the eastern side of the road. It is proposed to curtail the footpath along the west of the alignment fronting the listed Ashton House curtilage to a 0.5 m rubbing strip and provide a pedestrian crossing at this location to minimise the impact on the heritage property. An at-grade turning head and drop-off are proposed to be provided each side of the railway.

The length of the option is approximately 170 m on the northern side and 300 m south of the rail line. The option would drop to an approximate level of 37.5 m ODMH under the railway which is at a level of 45.6 m ODMH at the bridging point. On both sides of the railway a separate pedestrian and cycle link is proposed to provide enhanced access for non-motorised users. These shared spaces would have a width of 3.0 m.

It is feasible to cross at this location, as it is upstream of the double lock on the canal and the canal is at the same approximate level as the adjacent railway. This option would require some property acquisition and modifications to existing accesses. This option also proposes the inclusion of the enhanced non-motorised access at the reconfigured train station as described in **Section 4.2.1**.

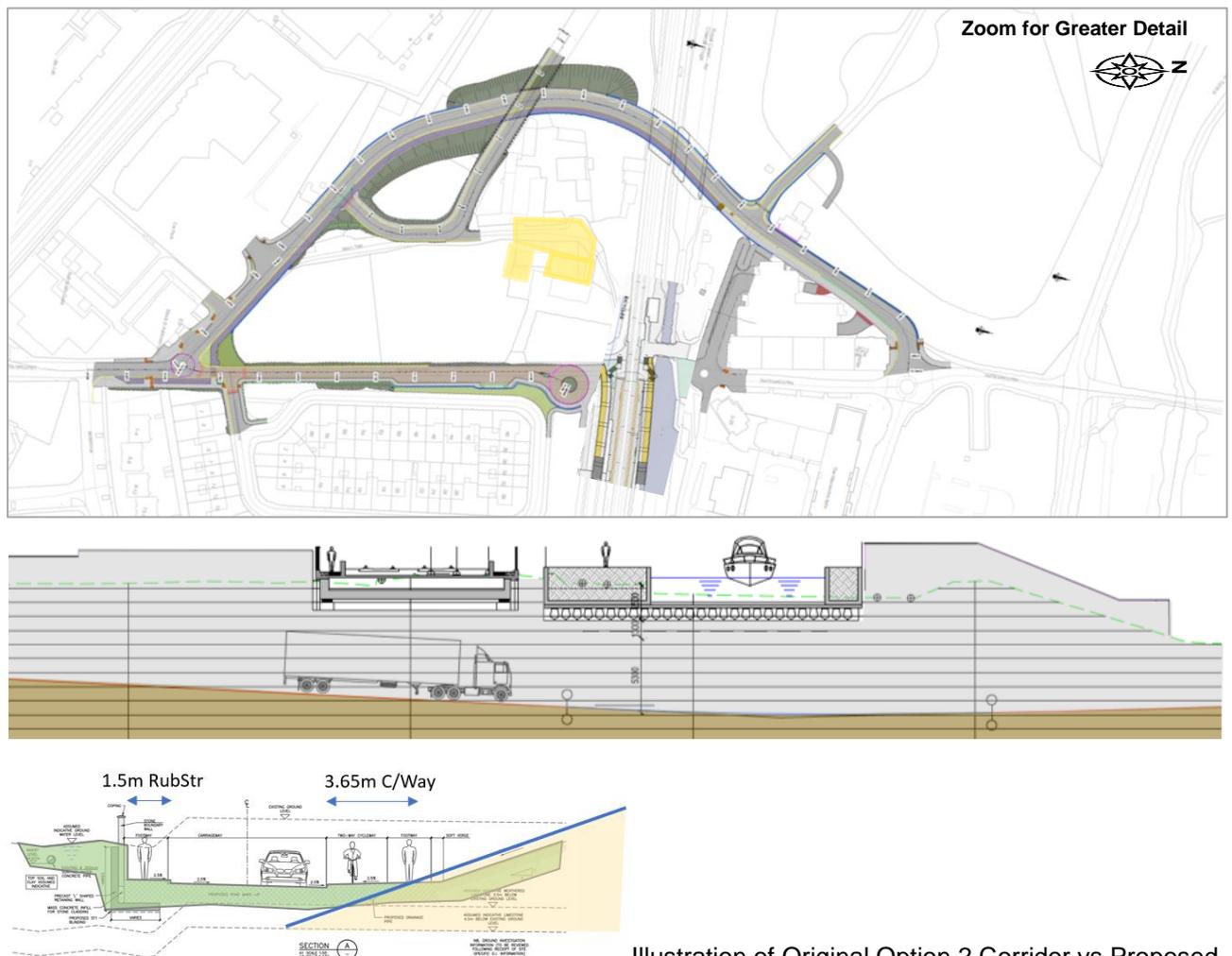


Illustration of Original Option 2 Corridor vs Proposed

Figure 4-14 Ashtown Option 10 Under Rail and Canal

4.2.12 Option 11 – Pedestrian / Cycle Bridge at Reconfigured Station and Upgrade of Local Road Network.

This additional option would entail closing the level crossing at Ashtown without the provision of a replacement vehicular crossing. It is proposed that the local road network would be upgraded to carry any traffic diverted consequent on closure of the level crossing. It also proposes the inclusion of the enhanced non-motorised access at the reconfigured train station as described in **Section 4.2.1** The existing River Road is currently in poor condition with no pedestrian or cycle facilities along much of its length. Proposed improvements to River Road include the construction of a 2.0m wide footpath at locations where none currently exist. This will require land acquisition and the removal of existing vegetation along sections of the road.

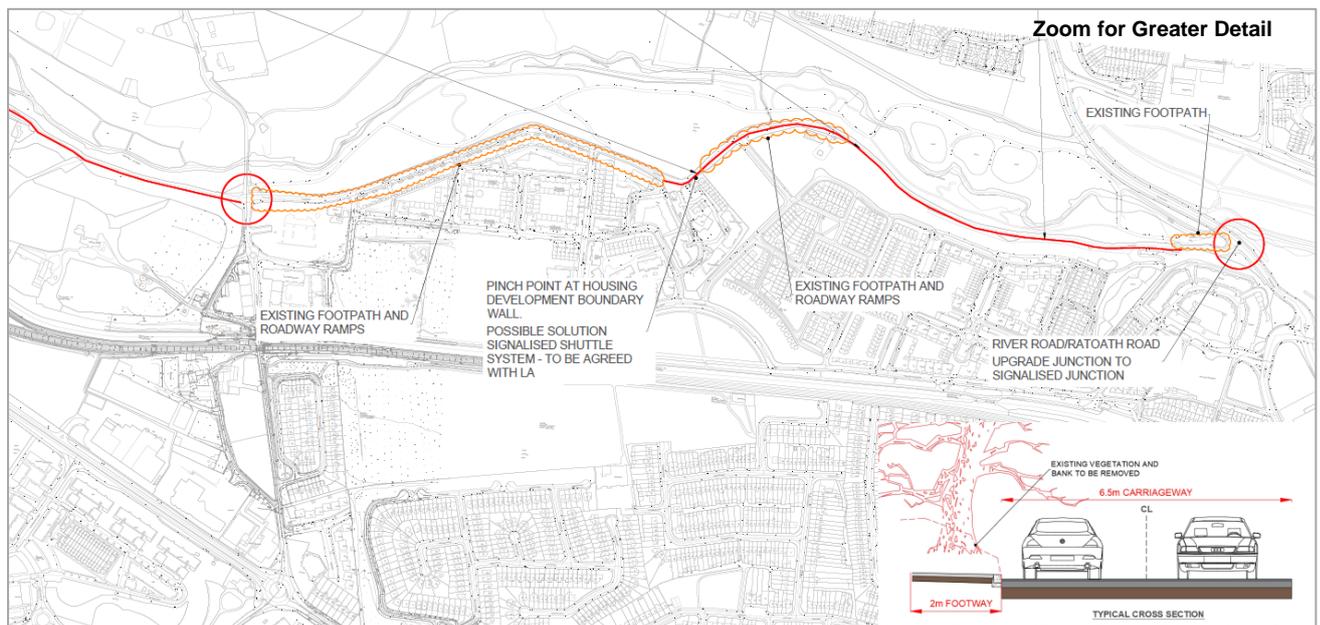


Figure 4-15 Ashtown Option 11 Level Crossing Closure with Road Upgrade - East

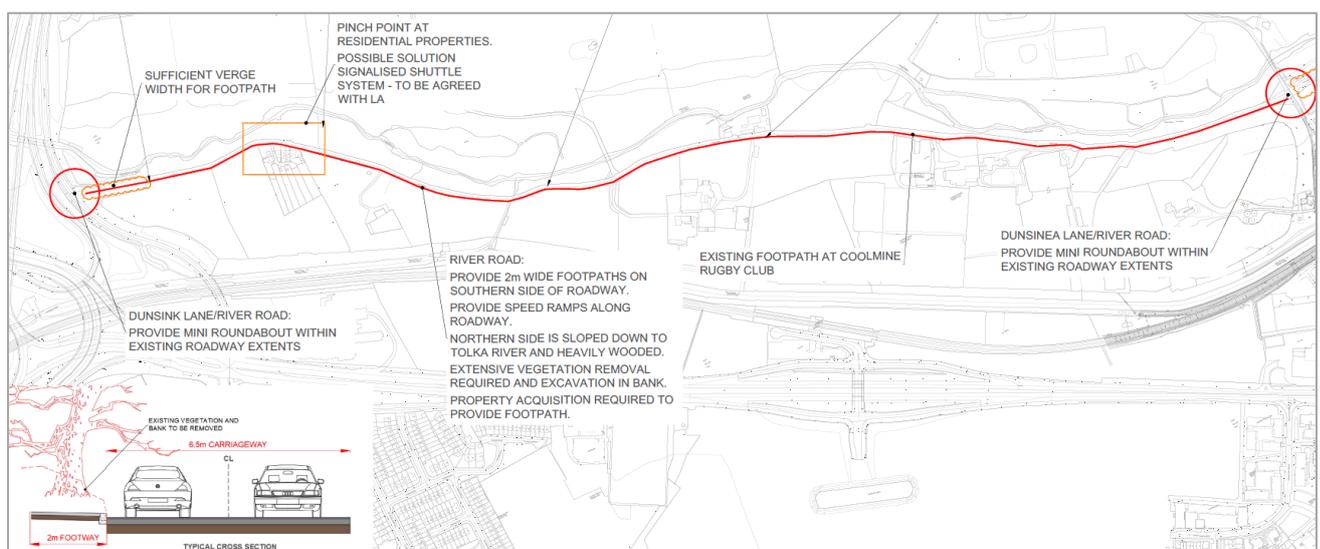


Figure 4-16 Ashtown Option 11 Level Crossing Closure with Road Upgrade - West

At some locations it is impracticable to widen the road. At these locations it is proposed to reduce the width of the existing road carriageway to allow the construction of a footpath and to implement signal-controlled shuttle system on these sections of roadway.

Where residential properties are located along these narrowed sections of roadway they will be provided with demand activated signals which will stop traffic in both directions to allow the residents exit their properties safely.

The length of River Road affected by the proposed works is approximately 3.6km. It is proposed as part of road improvements to provide a signal-controlled junction with the Ratoath Road.

Some traffic is expected to be diverted along the R147 Navan Road, Nephin Road and the Ratoath Road consequent on closure of the level crossing at Ashtown. This is likely to result in up to 2 mins additional cycle time on junctions in the peak hour. It is not proposed to enhance the capacity of the junctions to accommodate this extra traffic.

4.2.13 Option 12 – New Link Road to Navan Parkway Train Station with Overbridge crossing of the Railway and Canal

This additional option would entail closing the level crossing at Ashtown and diverting vehicular access away from Ashtown Gate. Traffic would cross the canal and railway along a new road constructed between Navan Parkway Station and the roundabout at the northern end of Mill Lane along a new roadway which runs parallel to the R147 Navan Road before crossing over the canal and railway and passing through the grounds of Ashton House. A plan layout of the proposed roadway is shown in Figure 4-17 below, along with a long section illustrating the steepened gradient along the walled section of roadway through Ashton House. The proposed roadway would accommodate pedestrian and cycle facilities.



Figure 4-17 Ashtown Option 12: Navan Parkway Station to Mill Lane over the Canal and Railway

The length of the option is approximately 1km. The option would rise to an approximate deck level of 52.9 m ODMH, 7.3 m above the rail the rail which is a at a level of 45.6 m ODMH at the bridging point.

It is feasible to cross at this location, as it is upstream of the double lock on the canal and the canal is at the same approximate level as the adjacent railway. This option would require some property acquisition and modifications to existing accesses.

This option also proposes the inclusion of the enhanced non-motorised access bridge at the reconfigured train station as described in **Section 4.2.1**. It also includes for set down and turning facilities to north and south of the train station in Ashtown.

4.2.14 Option 13 – Overbridge on Mill Lane West of the Mill

This is an additional option developed as part of the Ashtown review consequent on feedback received as part of public consultation pc2. It would entail re-routing Ashtown Road along its old alignment (pre-Royal Canal) on Mill Lane and passing over both the railway and the Royal Canal. The option can accommodate a cross section of a 6.5 m carriageway with 1.5 m rubbing strip on the western side of the road and a 3.65m wide pedestrian / cycle way along the eastern side of the road. The option is shown on plan in **Figure 4-18** which also includes a long section illustrating the steep gradient on the approach to the northern end of Mill Lane and a photograph of the existing Reilly's Overbridge to illustrate the nature of the bridge crossing and walled embankment construction proposed as part of this option.



Figure 4-18 Ashtown Option 13 Canal & Railway Overbridge West of Mill with Access Enhancements at Station

The length of the option is approximately 170 m on the northern side and 300 m south of the rail line. The option would rise to an approximate deck level of 52.9 m ODMH, 7.3 m above the rail which is at a level of 45.6 m ODMH at the bridging point.

This option also proposes the inclusion of the enhanced non-motorised access bridge at the reconfigured train station as described in **Section 4.2.1**. It also includes for set down and turning facilities to north and south of the train station in Ashtown.

This option would require some property acquisition and modifications to existing accesses. An at-grade turning head and drop-off are proposed to be provided each side of the railway.

5. Options Assessment

5.1 Introduction

During consultation significant public feedback was received in relation to the preferred option being presented for Ashtown Level Crossing. As committed to by the project team, all feedback was analysed and a re-assessment of the option selection process was undertaken. This re-assessment exercise has introduced additional and modified options for Ashtown and has identified a revised preferred option for Ashtown.

The options were re-examined and refined in the light of responses from pc2 and 4 no. additional options were developed for consideration in the options selection process. This Chapter presents the outcome of the two stage process leading to the choice of a revised preferred option for Ashtown.

A Multi-Criteria Analysis (MCA) technique was used to inform the option selection process that has been applied to determine the preferred option. The technique is informed by the Common Appraisal Framework (CAF) for Transport Projects and Programmes (Department of Transport Tourism and Sport, March 2016 & updated October 2020). A summary of the CAF guidelines in respect of option selection is presented in Chapter 4 of Volume 2 of the Options Selection Report, as is the application of the comparative assessment methodology. The generic principles of the MCA process which have been applied throughout the project are presented in that chapter, and the detailed application of the option selection process / MCA for Ashtown Level Crossing is addressed in Chapter 8 of Volume 2.

The multi-criteria analysis was carried out in two stages MCA1 and MCA2. The analysis compares the options against one another, leading to five options advancing to MCA2 and ultimately the choice of a revised preferred option. Summary tables of each stage of the assessment are presented below with a summary statement of how options performed relative to one another under each principal criterion.

5.2 Options Assessment Stage 1 - Ashtown

Table 5-1 provides a summary matrix of the comparative assessment undertaken as part of Stage 1 MCA. Options deemed to be feasible and comparably more advantageous than other options are identified to progress to Stage 2 MCA for further assessment. Refer to Section 2.2.4.1 for details of the Do-Nothing and Do-Minimum options. A complete detailed Stage 1 MCA matrix is provided in **Appendix 3.0**. The colour coding in the table is as follows:

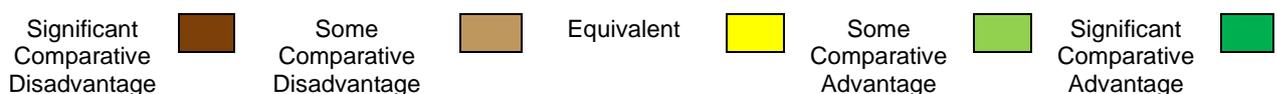


Table 5-1 Stage 1 MCA Matrix

| Criteria | Do-Nothing | Do Min | Options | | | | | | | | | | | | | |
|-----------------------------|-----------------------------------|-----------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| | | | 1 | 2 | 3 | 4+4a | 4+4b | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| Economy | Some Comparative Disadvantage | Significant Comparative Advantage | Some Comparative Disadvantage |
| Integration | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage |
| Environment | Significant Comparative Advantage | Significant Comparative Advantage | Some Comparative Disadvantage |
| Social Inclusion | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage |
| Safety | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage |
| Physical Activity | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage | Some Comparative Disadvantage |
| Shortlisted for Stage 2 MCA | No | No | No | No | No | No | Yes | No | No | No | No | No | Yes | Yes | Yes | Yes |

5.2.1 Economy

| Do-Nothing | Do Min | Options | | | | | | | | | | | | | |
|------------|--------|---------|---|---|------|------|---|---|---|---|---|----|----|----|----|
| | | 1 | 2 | 3 | 4+4a | 4+4b | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | | | | | | | | | | | | | | | |

The Do-Nothing option is rated as having Some Comparative Disadvantage over other options as it results in the level crossing being unavailable to all transport users for substantial periods in the hour and requires significant ongoing operation and maintenance costs. This option results in an estimated 2750 additional vehicle kilometres daily.

The Do-Minimum option is rated as having Significant Comparative Advantage over other options as it delivers on the train service specification for the project with significantly less expense than other options. It does however result in severing access over the railway at Ashtown. This option results in an estimated 2750 additional vehicle kilometres daily.

Options 4+4a, 4+4b are rated Some Comparative Advantage over other options because, although there is significant cost associated with construction of these options, they are effective in delivering traffic functionality. They result in a detour for traffic but a marginal reduction of traffic on the R147 and on Ashtown Roundabout. This option results in an estimated 810 additional vehicle kilometres daily.

Option 5 is rated Some Comparative Disadvantage because it passes under the existing train station and curtails the traffic which can use the underpass. This option results in an estimated 270 additional vehicle kilometres daily.

Option 9 is rated Significant Comparative Disadvantage due significant costs associated with lowering the railway over a long distance and the associated long term maintenance needs. This option results in additional estimated daily traffic of 2690 vehicles through Ashtown village.

Options 2, 3, 10, 12 and 13 are rated Some Comparative Disadvantage over other options as they include the additional cost associated with the construction of a pedestrian and cyclist bridge and the reconfiguration of Ashtown train station while they have base capital costs equivalent to, or higher than other options. These options results in an estimated 270 additional vehicle kilometres daily.

Options 6 and 7, situated in Ashtown are less expensive than Options 2, 3 10, 12 and 13 as they do not include the pedestrian cycle bridge at the reconfigured station. Despite costing less, they are rated Some Comparative Advantage over other options due to the extremes associated with the Do Nothing, Do Minimum and Option 9. These options results in an estimated 270 additional vehicle kilometres daily.

Option 8 is rated Some Comparative Advantage over other options due to its comparatively low cost relative to other options which maintain vehicular access locally. It does not perform as well as the Do-Minimum option as it includes the cost of a reconfigured station and the enhanced non-motorised access associated with it. This option results in an estimated 2750 additional vehicle kilometres daily.

Option 11 is rated Some Comparative Advantage over other options due to its lower cost relative to other options and due to the fact that it goes some way to addressing the vehicular traffic impacts associated with removing access at the level crossing. This option results in an estimated 2750 additional vehicle kilometres daily.

5.2.2 Integration

| Do-Nothing | Do Min | Options | | | | | | | | | | | | | | |
|------------|--------|---------|---|---|------|------|---|---|---|---|---|----|----|----|----|--|
| | | 1 | 2 | 3 | 4+4a | 4+4b | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| | | | | | | | | | | | | | | | | |

The Do-Nothing and Do-Minimum options are rated as having Significant Comparative Disadvantage over other options as they both reduce connectivity across the railway and to the train station for all transport modes due to the reduced availability of access over the railway on implementation of the proposed working timetable on the railway.

Option 1 is rated Significant Comparative Disadvantage over other options due to the negative impact this option has on the urban realm north of the canal and railway and on access for all transport modes across the railway associated with the option.

Option 10 is rated Significant Comparative Advantage over other options as it meets sustainable transport goals through the provision of full access local to the level crossing and due to its constrained plan footprint which mitigates its impact on lands zoned for development and amenity lands.

Options 2, and 3 are rated Some Comparative Advantage over other options as they have similar characteristics to Option 10 but do not provide for sustainable transport modes along the proposed roadways.

Options 4+4a and 4+4b are rated Some Comparative Advantage over other options as, although they impact on the rugby grounds west of Ashtown and the high amenity grounds there, they address local access issues in Ashtown for cyclists, pedestrians and vulnerable users.

Option 5 is rated Some Comparative Disadvantage over other options as it does not facilitate non-motorised access as effectively as other options local to the level crossing, it does not provide effective vehicular access across the railway and canal and it impacts on planned development north of the railway.

Option 6 and 7 are rated Some Comparative Disadvantage over other options as they do not facilitate non-motorised access as effectively as other options local to the level crossing. They also impact on the GAA pitches south of the railway and on planned development north of the railway.

Option 8 is rated Significant Comparative Disadvantage over other options on Integration as it severs the road linkage over the railway without providing replacement infrastructure for road vehicles.

Option 9 is rated Some Comparative Advantage over other options as, although it facilitates electrification of the railway and the train service specification, it will impact negatively on the services for a period of up to 3 years during construction and the existing listed bridge and locks at the level crossing will constrain the implementation of upgrades to surface access over the canal and railway. A new train station would be depressed below existing ground level and result in more circuitous access to the station platforms. The option will impact directly on protected structures including the Royal Canal, canal locks and Longford Bridge.

Option 11 is rated Some Comparative Disadvantage over other options as, although it maintains pedestrian and cycle access at Ashtown Station, vehicular connectivity to existing and future developments will be impacted. The option is largely consistent with high level objectives to promote sustainable transport modes over other modes, it is contrary to the GDATS objective to enhance linkages to planned developments. It is also contrary to objectives in the Ashtown and Pelletstown LAP and the FCC Development Plan which appear to support the maintenance of access at Ashtown.

Option 12 is rated Some Comparative Advantage over other options rather than Significant Comparative Advantage due to the degree of impact it has on the high technology zoned lands south of the railway.

Option 13 is rated Some Comparative Advantage over other options as it exhibits many of the characteristics off Option 10 but severs the high amenity zoned lands in two rather than skirting the curtilage of them.

5.2.3 Environment

| Do-Nothing | Do Min | Options | | | | | | | | | | | | | | |
|------------|--------|---------|---|---|------|------|---|---|---|---|---|----|----|----|----|--|
| | | 1 | 2 | 3 | 4+4a | 4+4b | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | |
| | | | | | | | | | | | | | | | | |

The Do–Minimum and the Do-Nothing options have Significant Comparative Advantage over other options under the Environment criteria as it is likely to have minimal impacts on the receiving environment.

Options 1, and 4 & 4b have Some Comparative Disadvantage over other options due to the direct impacts on protected cultural heritage sites such as the demesne landscapes associated with Ashbrook and Ashtown Lodge (element 4b) and Longford Bridge (Option 1). However, these options have the potential to result in reduced impacts on sensitive noise and air receptors. Option 1 results in significant visual impact on Ashtown Village while Option 4+4b has visual impact on former demesne lands caused by the raised bridge and extensive high embankments.

Options 2, 3, 10 and 13 have Significant Comparative Disadvantages over other options as they will move traffic to a new location on the western edge of Ashtown which will result on impact on different of sensitive air, noise, and visual receptors. These options also have potential for impacts to Royal Canal pNHA arising from noise, artificial lighting and impacts to water quality during construction. Options 3 and 13 are above ground and exhibit significant visual impact on sensitive receptors. Options 2, and 3 also have significant direct impact on Ashtown Stables. Option 2 also has potential for disturbance to Light-bellied Brent Goose (Qualifying Interest for SPAs). Options 10 and 13 have significant direct impact on Burke Brothers and Son Ltd. wholesale business.

Options 4+4a and 7 have Significant Comparative Disadvantages over other options as they will move traffic to new locations and will have an impact on the greatest number of sensitive airs, noise, and visual receptors. These options also have potential for impacts to Royal Canal pNHA arising from noise, artificial lighting and impacts to water quality during construction. Option 4+4a requires the upgrade of a section of River Road which will require the removal of the existing boundary treatment, hedge line and trees to facilitate the construction of a new footpath. This option also affects the floodplain of the Tolka River. Option 7 also has potential for disturbance to Light-bellied Brent Goose (Qualifying Interest for SPAs).

Option 5 also has Some Comparative Disadvantage over other options as it has greater potential for resulting in impacts on sensitive visual, air and noise receptors. Additionally, Option 5 has potential for disturbance to Light-bellied Brent Goose (Qualifying Interest for SPAs).

Option 6, is rated Some Comparative Disadvantage over other options as it will move traffic to a new location and will have an impact on a greater number of sensitive air, noise, and visual receptors. These options also have potential for impacts to Royal Canal pNHA arising from noise, artificial lighting and impacts to water quality during construction. It has potential for disturbance to Light-bellied Brent Goose (Qualifying Interest for SPAs).

Option 8 has Some Comparative Advantage over other options as it supports sustainable mode of travel only at this location, thereby reducing vehicular traffic in the area. This option also has a reduced impact on visual receptors, requires minimal non-agricultural land take and earthworks when compared to other options.

Option 9 is rated Significant Comparative Disadvantage over other options due to its construction related impacts on sensitive noise and air receptors, and the potential impact to water quality of the Royal Canal pNHA. Works within the Royal Canal have the potential to impact fish and crayfish which will have to be taken from the canal prior to works. Demolition works could also disturb and displace fauna.

Option 11 is rated Some Comparative Advantage over other options as it takes traffic away from the local Ashtown area distributing it onto other trafficked routes. It avoids the construction of substantial bridgeworks associated with a road crossing of the canal and railway. It is not rated as advantageous as Option 10 as its impacts are along a 3.6 km stretch of road. It also results in impacts on the flood plain of the Tolka river and the riparian way along the river. It impacts on the boundary of the listed Ashton House and on heritage properties further to the west.

Option 12 is rated Some Comparative Disadvantage over other options due to its impacts on the listed Ashton House estate which is split in two by the proposed option. It also impacts indirectly on the Royal Canal, Pelletstown House, the Canal Locks and the Mill. This option has significant visual impact as it crosses the railway and canal at height and is on embankment through Ashton House.

5.2.4 Accessibility and Social Inclusion

| Do-Nothing | Do Min | Options | | | | | | | | | | | | | |
|------------|--------|---------|---|---|------|------|---|---|---|---|---|----|----|----|----|
| | | 1 | 2 | 3 | 4+4a | 4+4b | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | | | | | | | | | | | | | | | |

The Do-Nothing and Do-Minimum options are rated Significant Comparative Disadvantage over other options due to the curtailment of access over the railway and canal associated with them. Community facilities affected by constrained or severed access over the canal and railway include Shopping facilities, Giraffe Childcare, Pelletstown Educate Together National School - North of the railway and Halfway House, Ashtown Post Office, St Dominic’s College, Meaghers Pharmacy, Daughters of Charity - south of the railway. A similar rating applies to Option 1 as it also does not adequately address the need for effective pedestrian and cycle access across the railway. It is not practicable to facilitate pedestrian and cycle access online as part of this scheme due to the narrow corridor available between the multistorey buildings on each side of Ashtown Road.

Options 2, 3 and 4+4a are all rated Some Comparative Disadvantage over other options due to the degree of impact they have on Ashtown Stables which serves as a significant community resource.

Option 9 is rated Significant Comparative Advantage over other options as it leaves access provisions at Ashtown largely as they are except for the removal of the level crossing. The existing listed canal bridge constrains access over the canal for vulnerable users but it is considered this does not alter the rating of the option. Option 5 also provides for local access for non-motorised users with modest detour.

All other options rate Some Comparative Advantage over other options as they accommodate non-motorised access but with longer diversion than options 5 and 9. Options 10, 11, 12 and 13 also provide pedestrian, cycle access and access for vulnerable users at the location of the existing level crossing.

5.2.5 Safety

| Do-Nothing | Do Min | Options | | | | | | | | | | | | | |
|------------|--------|---------|---|---|------|------|---|---|---|---|---|----|----|----|----|
| | | 1 | 2 | 3 | 4+4a | 4+4b | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | | | | | | | | | | | | | | | |

The Do-Nothing and Option 5 are rated Significant Comparative Disadvantage over other options in respect of safety as the former does not remove the level crossing from the railway and the latter introduces a low clearance bridge to the railway network which represents a hazard to road and rail traffic. In addition, due to the curtailment of access over the railway associated with these options and the absence of proposed

infrastructure to replace road access, traffic is diverted onto the local road network without enhancements to accommodate it.

Option 1 is rated Some Comparative Advantage over other options as it facilitates removal of the level crossing

Options 2, 4+4a, 4+4b, 10, 12 and 13 are each rated Significant Comparative Advantage over other options as they provide high quality replacement local while securing removal of the level crossing from the railway network. Options 6 and 7 rate Some Comparative Advantage as they secure comprehensive, safe access similar to Options 2,3 and 4 but along longer diverted routes.

Option 8 is rated Some Comparative Disadvantage over other options as the provision of local non-motorised access over the railway at the level crossing by bridge without replacement infrastructure for road traffic results in vehicular traffic being diverted onto the local road network without associated enhancements to accommodate the additional traffic.

Option 9 is rated Some Comparative Disadvantage over other options as it includes significant and prolonged impact on the live railway during construction.

Option 11 is rated Some Comparative Disadvantage over other options in respect of safety as it does not provide for segregated access for vulnerable road users. This is because there is insufficient space to widen River Road to accommodate cycle facilities.

5.2.6 Physical Activity

| Do-Nothing | Do Min | Options | | | | | | | | | | | | | |
|------------|--------|---------|---|---|------|------|---|---|---|---|---|----|----|----|----|
| | | 1 | 2 | 3 | 4+4a | 4+4b | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| | | | | | | | | | | | | | | | |

The Do-Nothing is rated Significant Comparative Disadvantage over other options due to the curtailed availability of high-quality access over the railway associated with it to local social amenities. The principal high amenity greenspaces in the vicinity of the existing train station include the Royal Canal, Oliver Plunkett Gaelic football grounds south of the railway; Phoenix Park, south of the railway and the amenity zoned lands northwest of the level crossing. Increased closures of the level crossing would reduce access to each of them.

The Do-Minimum and Option 1 are rated Significant Comparative Disadvantage over other options due to the severely curtailed availability of high-quality access over the railway associated with them local social facilities and amenities.

Options 2,3,4+4b, 5, 8, 9, 10, 11, 12 and 13 are rated Significant Comparative Advantage over other options as they provide for equivalent or enhanced access to local social facilities and amenities.

Options 6 and 7 are rated Some Comparative Advantage over other options as they provide access to local social facilities and amenities by slightly longer routes than other bridge options but are disadvantaged as ramped access from the station is narrower than for other options. Furthermore, the options impact on the GAA grounds south of the railway.

5.3 Stage 2 Options Assessment / Multi-Criteria Analysis

5.3.1 Options Progressed from MCA1

Following on from the Stage 1 Option Assessment / Multi-Criteria Analysis section above, the options that progressed to MCA Stage 2 are highlighted in Table 5-2. The Stage 2 option selection provides further comparison between the highlighted options to establish the preferred option.

Table 5-2 Ashtown Level Crossing MCA2 Progressed Options

| Option | Description |
|---------------|---|
| Option 4 & 4b | Closure of the level crossing and link from River Road to Navan Parkway Station grade separated junction and the construction of a separate ped-cycle and disabled access bridge added at a reconfigured station; |
| Option 10 | Underbridge, west of mill, cycleway on roadway, and a separate ped-cycle and disabled access bridge added at a reconfigured station; |
| Option 11 | Pedestrian / cycle and disabled access bridge at reconfigured station, upgrades to local road network; |
| Option 12 | Road link from Navan Parkway Interchange with bridge over the railway crossing through Ashton House lands, separate ped-cycle and disabled access bridge added at a reconfigured station; |
| Option 13 | Overbridge west of mill, cycleway on roadway, separate ped-cycle and disabled access bridge added at a reconfigured station. |

Figure 5-1 presents the options considered in Stage 2 MCA on aerial photography.

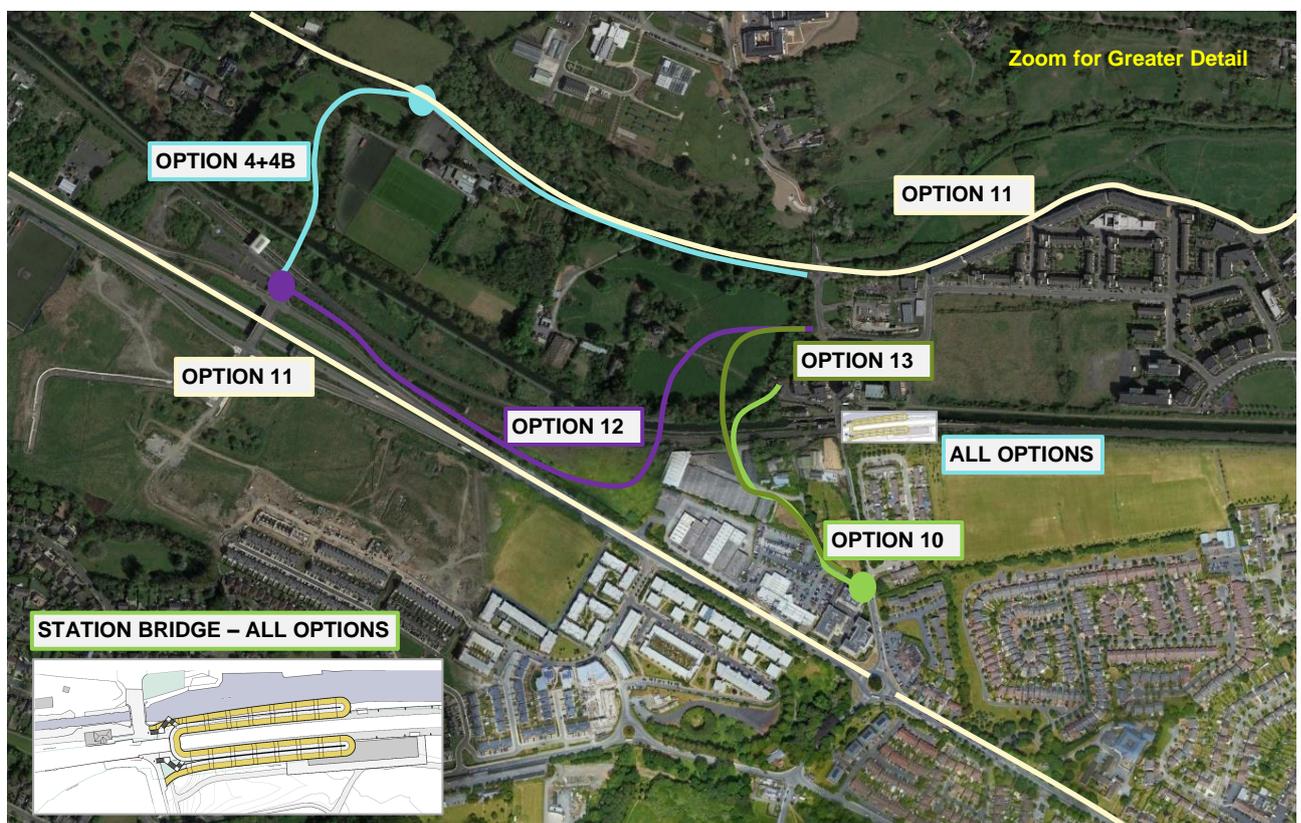


Figure 5-1 Ashtown Level Crossing Do Something Options

5.3.2 Options Assessment Stage 2 - Ashtown

Table 5-3 provides a summary matrix of the comparative assessment undertaken at Stage 2 to identify the preferred option. Excerpts of the matrix are provided under each of the criteria below with an assessment of why the preferred option has been selected. The full matrix is provided in **Appendix 4.0** to this document.

Table 5-3 Stage 2 MCA Matrix - Ashtown

| Criteria | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|------------------------------------|-------------|-----------|-----------|-----------|-----------|
| Economy | | | | | |
| Integration | | | | | |
| Environment | | | | | |
| Accessibility and Social Inclusion | | | | | |
| Safety | | | | | |
| Physical Activity | | | | | |
| Preferred Option | No | Yes | No | No | No |

As can be seen from the above Option 10 – The underpass offline to the west of the listed mill building has been identified as the preferred option over Options 4+4b, 11, 12 and 13.

The sections below provide summaries of the MCA Stage 2 assessment under each criterion that resulted in Option 2 being selected as the preferred option.

5.3.2.1 Economy

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|--|-------------|-----------|-----------|-----------|-----------|
| Construction and Land Acquisition | | | | | |

Option 11 is rated Some Comparative Advantage over other options as it is less expensive than them.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|------------------------------------|-------------|-----------|-----------|-----------|-----------|
| Long Term Maintenance Costs | | | | | |

The options were compared in respect of long term maintenance costs over the 120 year period, the design life of a bridge. Options 4+4b, 11 require fewer bridges and less extensive retaining wall structures to be maintained than do other options and are consequently rated Some Comparative Advantage over other options.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|------------------------------|-------------|-----------|-----------|-----------|-----------|
| Traffic Functionality | | | | | |

All options, except Option 11 will provide some improvement in journey time by removing delays associated with the existing level crossing. Options 4+4b and 12 have less impact on the R147, Navan Road by tying in at Navan Road Parkway Station, thereby removing the potential impact of induced traffic on Ashtown Roundabout or at a new junction. They also benefit from enhanced interchange between transport modes due to the Park and Ride Facility at Navan Parkway Station. Options 10 & 13 have the potential in increase traffic on Navan Road junctions through induced trips. They are configured largely along the desire lines of transport customers and result in the shortest diversions for local traffic. All four of the options have Some Comparative Advantage over Option 11. This option provides no alternative vehicular crossing and would displace vehicular traffic onto alternative routes on the existing road network. The comparative daily additional travel distance associated with Option 11 is approximately 2750km, over three times that of options 4+4b and 12, and

approximately 10 times that of options 10 and 13. The cycles times of junctions along the diversion routes associated with Option 11 can be expected to increase by up to 2.0 minutes.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|------------------------|-------------|-----------|-----------|-----------|-----------|
| Economy Outcome | | | | | |

In summary, Option 4+4b rates Some Comparative Advantage over other options as it incorporates fewer structures to be maintained on an ongoing basis, and although it diverts local northbound journeys by up to 1.5km, it serves to draw traffic away from the R147, and reduces pressure on the Ashtown Road Roundabout. Option 11 rates Some Comparative Advantage over other options as its capital cost and ongoing maintenance costs are lower than for other options. The greater traffic impact associated with Option 11 over other options is not sufficient to warrant a more onerous comparative rating in the context of traffic management within the M50 boundaries. Options 10, 11 and 12 are rated Some Comparative Disadvantage over other options as they include a greater number of structures than the other options, which are of significant complexity, and they result in some increase in traffic on the diverted Ashtown Road.

5.3.2.2 Integration

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|------------------------------|-------------|-----------|-----------|-----------|-----------|
| Transport Integration | | | | | |

All options facilitate enhanced access to sustainable transport mechanisms for non-motorised users. Option 4+4a is rated Some Comparative Disadvantage over other options as it diverts increased vehicular traffic onto River Road where it is not practicable to provide dedicated space for cyclists, the negative impact is curtailed by the enhanced access provided by the option to park and ride facilities at Navan Parkway train station.

Options 10 and 13, having similar footprints, are rated Some Advantage over other options as they provide for enhanced interchange for sustainable transports in Ashtown, without diversion. They do not, however, provide enhanced access to park and ride facilities.

Option 11 is rated Significant Comparative Disadvantage over other options as, in severing access over the railway, it diverts vehicular traffic onto River Road where it is not practicable to provide dedicated space for cyclists. It does not provide for enhanced access to park and ride facilities.

Option 12 is rated Significant Comparative Advantage over other options as, it provides for enhanced access to park and ride facilities, provides for pedestrian and cycle facilities along it's length, and provides direct linkage into the station north of the railway in Ashtown.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-----------------------------|-------------|-----------|-----------|-----------|-----------|
| Land Use Integration | | | | | |

Options 10 and 13 are rated Significant Comparative Advantage over other options primarily due to the smaller footprint of these options having fewer direct impacts on transport and land use zoning. They are consistent with the objectives of the GDATS, Ashtown / Pelletstown LAP objectives to protect access at Ashtown. They are better configured for maintenance of access local to the station than other options.

Option 4+4b, 11 and 12 are rated Significant Comparative Disadvantage over other options as each severs vehicular access local to the level crossing contrary to GDATS and Ashtown / Pelletstown LAP planning objectives.

Options 4+4b and 12 each has greater impact on high amenity zoned lands primarily due to the more extensive footprints associated with them. Options 11 and 12 each divert additional traffic onto River Road where it is not practicable to provide dedicated cycle facilities.

Geographical Integration

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

The options are considered comparable in respect of geographical integration.

Other Government Policy Integration

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

The options are considered comparable in respect of integration of government policy.

Integration Outcome

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

From the above it is clear that Options 10 and 13 exhibit comparative advantage over other options, particularly in respect of land use integration. To preserve balance across the matrix, it is considered that Options 10 and 13 should be rated Significant Comparative Advantage over other options, and all other options should be rated Significant Comparative Disadvantage over other options.

5.3.2.3 Environment

Noise and Vibration

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

Option 4+4b is rated Some Comparative Advantage over other options as very few dwellings are in proximity to the vehicular route associated with this option. Options 10 and 13 are rated Some Comparative Disadvantage over other options as, despite reducing noise in centre of Ashtown, they move traffic to the rear of an apartment block, along Mill Lane North of the canal, where some increase in noise levels is expected to be experienced. Option 11 is rated Some Comparative Advantage over other options as it expected to reduce noise impacts in Ashtown and to result in small scale change in noise levels elsewhere due to traffic redistribution during the operational phase. This is because traffic is diverted along routes which are already trafficked. Option 12 is rated Some Comparative Advantage over other options as it is expected to reduce noise impacts in Ashtown and is more remote from occupied dwellings than options 10 and 13.

Air Quality and Climate

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

Option 4+4b and 11 are rated Some Comparative Advantage over other options primarily due to the lower levels of embodied carbon associated with the options. While all of the options include roadworks and earthworks activities, Options 4+4b and 11 include fewer structures than other options. Such structures require the production of structural steel and reinforced concrete, and transportation of them to site, all of which are carbon intensive activity. Options 10, 12 and 13 are rated Some Comparative Disadvantage over other options primarily due to the larger number and more extensive structures associated with them.

Landscape and Visual

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

All options have equivalent landscape and visual impact associated with the proposed pedestrian and cycle bridge at the reconfigured station. This is common to all options.

Option 4 & 4b is rated Some Comparative Disadvantage over other options as the negative impacts on landscape, visual amenity and impact on architectural heritage settings in the vicinity due to the bridge and extensive high embankments is not as severe as that associated with Options 12 and 13.

Option 10 is rated Significant Comparative Advantage over other options due to the reduced scale of visual intrusion and impact on amenity areas and heritage setting. This is because it has a smaller footprint than other options and is constructed substantially below existing ground level.

Option 11 is rated Some Comparative Advantage over other options due to the at grade nature of much of the associated works. The clearance of trees and removal of heritage boundaries along river road to accommodate widening will, however, result in significant visual impact along substantial sections of the road.

Options 12 and 13 are rated Significant Comparative Disadvantage over other options as they would have a very significant negative impacts on landscape, visual amenity and impact on architectural heritage settings in the vicinity due to the extensive high bridge and walled structures associated with them.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|---------------------------------------|-------------|-----------|-----------|-----------|-----------|
| Biodiversity (flora and fauna) | | | | | |

There are biodiversity impacts associated with the proposed pedestrian and cycle bridge at the reconfigured station. This is common to all options. All options have moderately negative impacts on biodiversity. This includes white-clawed cray fish, bats and badgers.

Options 4 & 4b and 11 are rated Some Comparative Disadvantage over other options as they include potential impact on the riparian way associated with the River Tolka due to the need to construction widening works along River Road.

Options 10, 12 and 13 are rated Significant Comparative Advantage over other options as do not impact on the River Tolka.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|--|-------------|-----------|-----------|-----------|-----------|
| Cultural, Archaeological and Architectural Heritage | | | | | |

Option 4&4b is rated Some Comparative Advantage over other options as, although it has direct and indirect impacts to properties with statutory protection, such properties are former demesne properties whereas other options affect intact demesne properties.

Option 10 is rated Some Comparative Disadvantage over other options as it would have a greater impact on RPS, Ashton House, its lodge and demesne, than Option 4+4b and 11, and direct impact on the Royal Canal.

Option 11 was rated Significant Comparative Advantage over other options as the only potential impacts, on Longford Bridge and the canal, can be readily mitigated and impacts on the Curtilage of Ashton House are indirect.

Options 12 and 13 were rated Significant Comparative Disadvantage over other options as they would have a greater impact on RPS, Ashton House, its lodge and demesne and Pelletstown House as well as potential impact on the Royal Canal.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|------------------------|-------------|-----------|-----------|-----------|-----------|
| Water Resources | | | | | |

There are water resources impacts associated with the proposed pedestrian and cycle bridge at the reconfigured station. This is common to all options.

Options 4 & 4b and 11 are rated Some Comparative Disadvantage over other options as they include potential impact on the riparian way associated with the River Tolka due to the need to construction widening works along River Road.

Options 10, 12 and 13 are rated Significant Comparative Advantage over other options as do not impact on the River Tolka.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|---|-------------|-----------|-----------|-----------|-----------|
| Agriculture and Non-Agricultural | | | | | |

Both Options 4+4b and 12 have more moderate impacts than other options. Option 4+4b is rated Some Comparative Disadvantage over other options as follows: The agricultural impact will have a slight impact on Ashtown Stables. The non-agricultural impact will have a significant impact on one residential property. The remaining residential and commercial property impacts will be slight. The removal of vehicular access over the railway at Ashtown will have a slight to moderate indirect impact on businesses on either side of the railway.

Options 10 and 13 are rated Significant Comparative Disadvantage over other options as they have significant impacts on non-agricultural commercial and development properties as follows: The agricultural impact will have a slight impact on Ashtown Stables. The non-agricultural impact will include a profound impact on one commercial (Burke Bros Ltd.) property and significant impacts on one commercial property (Gowans) and development land. The remaining residential, commercial and amenity property impacts will be slight.

The most significantly affected property is Burke Brothers Ltd., wholesale, hardware and electrical business. Options 10 and 13 would require this business to operate at a reduced scale on the existing site or to move to a new location to ensure the continuity of the business.

Option 11 is rated Significant Comparative Advantage over other options due to the lower scale of impact associated with it as follows: The agricultural and non-agricultural property impacts will have slight property impacts associated with upgrade of local road network including River Road from Dunsink Lane to Rathoath Road. The removal of vehicular access over the railway at Ashtown will have a slight to moderate indirect impact on businesses on either side of the railway.

Option 12 is rated Some Comparative Advantage over other options with lower scale impacts as follows: The non-agricultural impact will have a moderate impact on Ashton House lands and one development property. The indirect impacts on amenity property will be slight. The removal of vehicular access over the railway at Ashtown will have a slight to moderate indirect impact on businesses on either side of the railway.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|---|-------------|-----------|-----------|-----------|-----------|
| Geology and Soils, including Waste | | | | | |

Geology and Soils Impacts associated with options are generally minor across all options. Option 11 is rated Some Comparative Advantage over other options as the roadworks are generally online with widening whereas, other options involve the construction of embankments or involve excavation below ground level. All other options are rated Some Comparative Disadvantage over Option 11.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|------------------------------------|-------------|-----------|-----------|-----------|-----------|
| Radiation and Stray Current | | | | | |

All options are considered equivalent in respect of radiation and stray current.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|----------------------------|-------------|-----------|-----------|-----------|-----------|
| Environment Outcome | | | | | |

Option 4+4b is rated Significant Comparative Disadvantage over other options due the higher visual impact of this option in comparison to other options and the need to construct earthworks for extensive embankments north of the canal. It also has direct impacts on former demesne landscape and both direct and indirect impacts the on Royal Canal at 2 No. locations. It has greater impact on biodiversity associated with high level works

through amenity lands, floodplain and riparian way along River Road. This option has lesser impact on commercial enterprises than other options but does have minor to moderate indirect impact on businesses on each side of the railway due to removal of vehicular access over the railway at Ashtown.

Options 10 is rated Some Comparative Advantage over other options due the lower visual impact associated with the below ground character of the proposed infrastructure in comparison to other options and the curtailed footprint limiting the impact on high amenity and high technology zoned lands. This option does not impact on the floodplain of the Tolka River as do other options. The smaller footprint also results in a smaller biodiversity impact associated with this option. Option 10 has a direct impact on the entrance and gate lodge to Ashton House (RPS 690) and an indirect impact on the mill and outbuildings (RPS 691) but the impact is considered less than for Options 12 and 13. This option impacts most heavily on the Burke Brothers and Son Ltd., wholesale business located along the southwestern boundary of the site. The impacts on this property are profound in that it would need to operate on a significantly smaller site or relocate to remain in business should Option 10 be adopted as preferred option for DART+ West at Ashtown.

Option 11 is rated Significant Comparative Advantage over other options due the lower visual impact associated with the at-grade nature of much the proposed infrastructure in comparison to other options. There are also less earthworks associated with this option in comparison to other options as it does not include the construction of overbridges, walled embankments and underbridges evident in other options. This option has indirect impact on Ashton House (RPS 690) as it includes proposed roadworks fronting the curtilage of the property. This compares to a direct impact along the boundary and through the grounds of Ashton House (RPS 690) associated with other options. This option impacts on the floodplain of the Tolka River as does Option 4+4b. The need to construct a footpath, boundary and drainage works as part of this option results in a biodiversity impact along the riparian way associated with the Tolka River and impact on the floodplain of the river.

Options 12 is rated Some Comparative Disadvantage over other options due the higher visual impact of this option in comparison to other options and the need to construct earthworks for extensive embankments north and south of the canal. It also has indirect impact on the Royal Canal at the bridge crossing and splits the grounds of the protected Ashton House (RPS 690). It has greater impact on biodiversity associated with high level works through amenity lands.

Option 13 is rated Significant Comparative Disadvantage over other options as it will be more visually intrusive on the landscape due the overbridge and walled embankment nature of the option. This option includes for the construction of earthworks for extensive embankments north and south of the canal. It will extend across lands zoned High Amenity and High Technology. It will have direct impacts on the demesne associated with Ashton House (RPS 690) and indirect impacts on the gate lodge and entrance. It has indirect impacts on the mill and outbuildings (RPS 691) and Pelletstown House (structure of architectural merit) and potential indirect impacts on Royal Canal (RPS No. 944a) and the Royal Canal 10th Lock (RPS No. 944b). This option has greater impact than other options on biodiversity associated with high level works through amenity lands. This Option is comparable to Option 10 in respect of it's impact on Burke Brothers and Son Ltd., Gowan Motors, and Ashtown Stables.

5.3.2.4 Accessibility and Social Inclusion

Impact on Vulnerable Groups

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

Facilities for non-motorised vulnerable road users are provided for all options at the train station. All options are equivalent in this regard.

Options 4+4b, 11 and 12 are rated Some Comparative Disadvantage over other options due to longer diversion distances for motorised vulnerable users.

Options 10 and 13 are rated Some Comparative Advantage over other options as they result in minimal diversion in respect for motorised vulnerable users.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------------------------|-------------|-----------|-----------|-----------|-----------|
| Stations Accessibility | | | | | |

All options provide an equivalent level of stations accessibility with the inclusion of the pedestrian, cycle and disabled bridge on the footprint of the reconfigured station.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------------------|-------------|-----------|-----------|-----------|-----------|
| Social Inclusion | | | | | |

Access for non-motorised community facilities for community groups are provided for all options at the train station. Such facilities include Shopping, Giraffe Childcare, Pelletstown Educate Together National School - North of the railway and the Halfway House, Ashtown Post Office, St Dominics College, Meaghers Pharmacy, Ashtown Stables and Daughters of Charity - south of the railway. All options are equivalent in this regard.

Options 4+4b, 11 and 12 are rated Some Comparative Disadvantage over other options due to longer diversion distances to community facilities for motorised vulnerable users.

Options 10 and 13 are rated Some Comparative Advantage over other options as they result in minimal diversion in respect of access to community facilities for motorised vulnerable users.

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|---|-------------|-----------|-----------|-----------|-----------|
| Accessibility & Social Inclusion Outcome | | | | | |

Options 4+4b and 12 are rated Some Comparative Disadvantage due to the road diversion associated with relocating access for vehicular traffic west of Ashtown. Community facilities affected by constrained access over the canal and railway include Shopping facilities, Giraffe Childcare, Pelletstown Educate Together National School - North of the railway and Halfway House, Ashtown Post Office, St Dominic's College, Meaghers Pharmacy, Ashtown Stables, Daughters of Charity - south of the railway.

Option 11 is rated Some Comparative Disadvantage over other options as the route for non-motorised road users incorporates a longer diversion than for other options and there is limited scope accommodating non-motorists along River Road.

Options 10 and 13 are rated Some Comparative Advantage as they are located closer to Ashtown Road than other options and better secure access to community facilities for existing residents.

5.3.2.5 Safety

| | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|--------------------|-------------|-----------|-----------|-----------|-----------|
| Rail Safety | | | | | |

All options remove the road rail interface in Ashtown. They are considered equivalent in respect of railway safety.

Vehicular Safety

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

All options remove the road rail interface in Ashtown. They require vehicular diversions of varying amounts but the diversions are not considered sufficient to warrant the options being considered anything other than equivalent in regard to vehicular safety.

Pedestrian, Cyclist and Vulnerable Road user Safety

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

All options provide effectively for pedestrian, cyclist and vulnerable road users local to Ashtown Road through the provision of high quality urban architectural design and the introduction of effective access over the railway along the desire line of road users on Ashtown Road and on the footprint of the existing station.

The principal difference between the options relates to Option 11 which is rated Some Comparative Disadvantage over other options due to it's diverting additional vehicular traffic onto River Road where it is not practicable to make dedicated provision for cyclists.

Safety Outcome

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

All options secure closure of the level crossing. Option 11 is rated Some Comparative Disadvantage over other options as it is not practicable to provide off road cycle facilities on River Road due to the constraints of adjacent development, heritage properties and the proximity of the floodplain of the Tolka River which extends to the northern boundary wall fronting River Road.

5.3.2.6 Physical Activity

| Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|-------------|-----------|-----------|-----------|-----------|
| | | | | |

All options are considered to perform equally in respect of Physical Activity.

5.3.2.7 Summary Data

Table 5-4 below provides a synopsis of the influencing comparators associated with the options selection. From examination of Table 5-1 It is clear that Option 10 performs better than other options in the multi-criteria analysis and that it emerges as preferred option for replacement of Ashtown Level Crossing.

Table 5-4 Comparative Summary of Options: MCA2

| Criteria | Option 4+4b | Option 10 | Option 11 | Option 12 | Option 13 |
|--------------------|--|---|---|---|--|
| Economy | <ul style="list-style-type: none"> • More Expensive than other options; • Traffic impacts local • Direct Access Maintained | <ul style="list-style-type: none"> • More Expensive than other options; • Traffic impacts local • Direct access maintained | <ul style="list-style-type: none"> • Less Expensive than other options; • Traffic impacts distributed along local road network; • Direct vehicular access severed • Longer diversions for cars | <ul style="list-style-type: none"> • More Expensive than other options; • Traffic impacts local • Longer diversions | <ul style="list-style-type: none"> • More Expensive than other options; • Traffic impacts local • Direct access maintained |
| Integration | <ul style="list-style-type: none"> • Inconsistent with GDATS, FCC, Ashtown / Pelletstown LAP objectives to protect access; • Vehicular Access along a diverted route; • Greater Impact on High Amenity Zoned Lands; • Meets FCC Dev Plan objective for access over the railway. | <ul style="list-style-type: none"> • Maintains Vehicular access local to Level Crossing; • Impacts on Lands zoned High Technology but will facilitate access to these lands; • Less Impact on High Amenity Zoned Lands. | <ul style="list-style-type: none"> • Inconsistent with GDATS, FCC, Ashtown / Pelletstown LAP objectives to protect access; • Vehicular Access along a diverted route; • Greater Impact on High Amenity Zoned Lands. | <ul style="list-style-type: none"> • Inconsistent with GDATS, FCC, Ashtown / Pelletstown LAP objectives to protect access; • Vehicular Access along a diverted route; • Greater Impact on High Amenity Zoned Lands. | <ul style="list-style-type: none"> • Maintains Vehicular access local to Crossing; • Impacts on Lands zoned High Technology but can facilitate access to these lands; • Greater Impact on High Amenity Zoned Lands. |
| Environment | <ul style="list-style-type: none"> • Some reduction in noise due to traffic locally; • Higher Visual Impact; • Lesser Impact on Commercial Enterprises; • More Earthworks than Option 11; • Greater Impact on biodiversity associated with high level works through amenity lands, floodplain and along River Road. • Direct impacts on former demesne landscape. Indirect impact on Royal Canal at 2No. Locations; • Significant Impact on Floodplain of Tolka River along River Road; | <ul style="list-style-type: none"> • Some increase in noise due to traffic locally; • Lower visual Impact; • Less Impact on Commercial Enterprises; • More Earthworks than Option 11; • Lower Impact on biodiversity associated with works; • Direct impact on gate lodge, entrance and demesne associated with Ashton House; • Indirect impact on mill & outbuildings, Royal Canal at 2No. Locations; • No impact on floodplain. | <ul style="list-style-type: none"> • Some reduction in noise due to traffic locally; • Lower Visual Impact; • Greater impact on Commercial Enterprises; • Less Earthworks than Other Options; • Greater Impact on biodiversity associated with works through amenity lands, floodplain and along River Road; • Indirect Impact to Road along Listed Ashton House Curtilage; • Indirect Impact on Royal Canal; • Significant Impact on Floodplain of Tolka River along River Road; | <ul style="list-style-type: none"> • Some reduction in noise due to traffic locally; • Higher Visual Impact; • Lesser Impact on Commercial Enterprises; • More Earthworks than Option 11; • Greater Impact on biodiversity associated with high level works through amenity lands; • Impact on ecological resources due to noise, artificial lighting and impacts to water quality during construction phase; • Indirect impact on the Royal Canal | <ul style="list-style-type: none"> • Some increase in noise due to traffic locally; • Higher Visual Impact; • Less Impact on Commercial Enterprises; • More Earthworks than Option 11; • Greater Impact on biodiversity associated with high level works through amenity lands; • Direct impact on gate lodge, entrance and demesne associated with Ashton House; • Indirect impact on mill & outbuildings, Royal Canal at 2No. Locations |

Table 5.4 (Contd) Comparative Summary of Options to Proceed to MCA2

| Criteria | •Option 4+4b | •Option 10 | •Option 11 | •Option 12 | •Option 13 |
|---|---|--|--|---|---|
| Accessibility & Social Inclusion | •Longer route for motorised users; | •Direct Access for motorised users; | •Longer route for motorised users; | •Longer route for motorised users; | •Direct Access for motorised users; |
| Safety | •Pedestrian and Cycle Lanes provided on Roadway | •Shared provision for pedestrians and cyclists provided on Roadway | •Not practicable to provide cycle facilities on River Road due to constraints of adjacent development, heritage properties and floodplain. | •Pedestrian and Cycle Lanes provided on Roadway | •Pedestrian and Cycle Lanes provided on Roadway |
| Physical Activity | •Options Equivalent | •Options Equivalent | •Options Equivalent | •Options Equivalent | •Options Equivalent |
| Preferred Option | | •YES | | | |

6. Summary and Recommendations - Ashtown

Consequent on feedback received as part of the public consultation process the selection of the preferred option at Ashtown has been reviewed. The review process included feedback from the public to ensure all factors of importance to the public were processed in the option selection process. The principal concerns raised include the following:

- Community severance;
- Loss of green space in Martin Savage Park;
- Concerns about flooding in Martin Savage Park;
- Impact on Ashtown Stables;
- Safety of underpass and anti-social behaviour;
- Human health and wellbeing, and impacts on women;
- Impacts on Rathborne: access to the shops and facilities;
- Need to feel safe;
- Further Consideration of Option 9 for Track Lowering at Ashtown;
- Concerns regarding adherence to universal design principles to ensure equal access for all;
- Need for well-lit and preserved pedestrian ways to ensure that residents feel safe;
- Concerns regarding the noise impacts;
- Concerns regarding the provision of adequate parking facilities at the stations;
- Impact on the Royal Canal navigation for boating activities along the canal;
- Concerns regarding the impact on residents in proximity to the rail line.

The original Options were reviewed and altered to take account of the above where practicable and new options were developed. The multi-criteria analysis was revisited and has resulted in revised preferred option being proposed for replacement of access at the Ashtown level crossing.

Option 10 has been identified as the revised preferred option for Ashtown. It provides for a new train station to be constructed on the footprint of the existing station incorporating a new bridging facilities to accommodate all users except those in vehicles. The design is proposed to embrace high architectural and aesthetic value and will use steel construction so as to minimise the visual impact of the proposed works. Direct stepped access will be provided across the railway at the Ashtown Road for mobility enabled users. Shallow ramps with segregated cycle access are proposed in addition to the stepped access. The proposed new substation will be provided for within the footprint of the station. Access at the level crossing will be available on a 24hr basis. A high quality urban landscape will be provided on the approaches to the station and throughout.

In addition to replacement access at the location of the level crossing, it is proposed to construct a roadway and cycleway passing along Mill Lane, west of the existing mill and associated outbuildings to pass under the canal and railway. This proposed roadway will link into Mill Lane North of the Canal and will accommodate vehicular access across the railway. A plan layout of the proposed scheme is provided in **Figure 6-1**. The design has been configured to be as open as practicable incorporating shallow landscaped batters where practicable.

Furthermore, the heritage setting of Ashtown will be reflected in the finishes to structural elements with the use of masonry to match existing. It is proposed that the temporary construction site compounds will be located in the demesne of Ashton House, on Mill Lane north of the railway and on the lands West of Mill Lane and the Mill south of the railway.

Drawings **MAY-ROD-HRW-LC01-DR-C-0008, 0100, 0101, 0102, 0103, 0104, 0105, 0106, 0107** provided in **Appendix 2.0** provide enhanced level of detail on the proposed works.

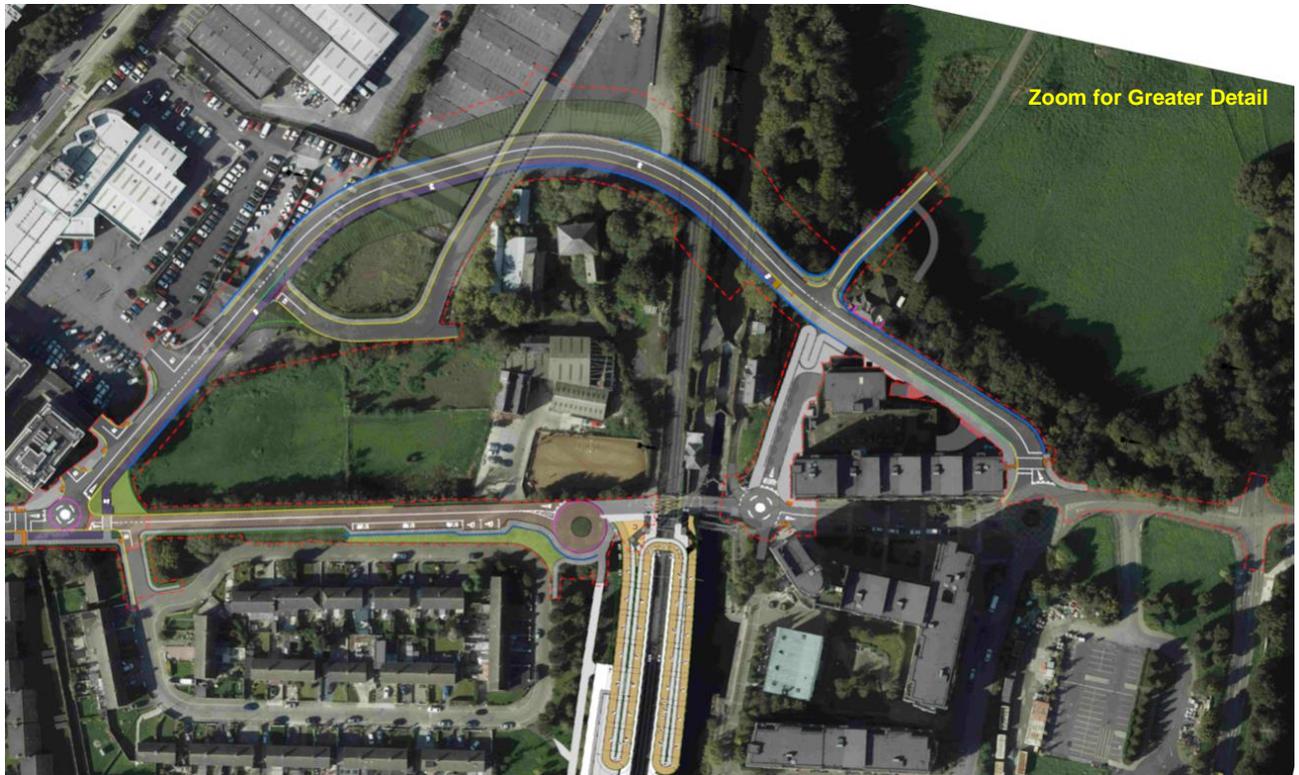


Figure 6-1 Revised Preferred Option

In respect of the principal concerns raised in public consultations the following observations are made;

- Community severance; The preferred option secures access for all in close proximity to the level crossing and the village.
- Loss of green space in Martin Savage Park; The proposed option curtails the loss of greenspace at the train station. The proposal to reconstruct the train station incorporating the bridge within its footprint mitigates any impact on the adjacent green space.
- Concerns about flooding in Martin Savage Park; The proposed option will be designed to ensure flooding does not occur at Martin Savage Park.
- Impact on Ashtown Stables; The revised preferred option facilitates Ashtown Stables remaining in Ashtown to support the local community. By relocating the roadway to the west of the mill much of the impact on the stables is removed. There will be some impact at the southern extremity of the site at Mill Lane to accommodate road widening and there are likely to be some impacts due to construction activity.
- Safety of underpass and anti-social behaviour; the preferred option provides for the primary social activity to be located above ground at Longford Bridge rather than along Mill Lane. A high amenity design is provided for, and the location is not isolated. The proposed underbridge is intended for vehicle and through cyclist use, and will be open, 5.3m high, and well lit. It is also proposed that, CCTV supervision will be provided for in the design in support of public safety.
- Human health and wellbeing, and impacts on women; The preferred option seeks to maintain the integrity of the Ashtown and Rathborne communities with the provision of safe, direct access for all while maintaining facilities and the links to them. The proposal to include a new train station incorporating integral high amenity access at street level and above means the users have the security of accessing local facilities in a supervised, well-lit urban landscape.

- Impacts on Rathborne: access to the shops and facilities; As set out above access to shops and facilities will remain available to all on implementation of the proposed scheme.
- Need to feel safe; Public safety has been an essential component of the review. The proposed option is considered to best meet the need through the provision of supervised, well lit, high amenity, direct access at the railway;
- Further Consideration of Option 9 for Track Lowering at Ashtown; This option was further examined as part of the review but was set aside at MCA1 stage due primarily to the environmental and construction stage impacts associated with this option;
- Concerns regarding adherence to universal design principles to ensure equal access for all; the universal design principals in respect of access will be aggressively pursued in the design development of the scheme. This will be further pursued during design development with disability user groups, the planning authorities and the gardai;
- Need for well-lit and preserved pedestrian ways to ensure that residents feel safe; This has been provided for in the options selection process and will be an important part of design development of the scheme;
- Concerns the impact on residents in proximity to the rail line; Noise impacts and the like have been considered in the option selection process and the preferred option will be subject to design development and environmental assessment which will any characterise such impacts in accordance with accepted standards and, where significant, will propose measures to mitigate those effects;
- Concerns regarding the provision of adequate parking facilities at the stations; Parking at the station in Ashtown will be discouraged. Provision will be made for set down and disabled only. The adjacent Navan Parkway station provides parking facilities and, one can presume, those needing to park up are likely to use that station, rather than risk not being able to park in Ashtown.
- Impact on the Royal Canal navigation for boating activities along the canal; Once construction is complete, there will be no impact on Royal Canal navigation.

Having selected the amended preferred option, photomontages were prepared to illustrate the impact of the proposed scheme on the existing Ashtown Area. These are included in Appendix 1 to this report.

7. Next Steps

The preferred option described in the report is being presented as part of the public consultation process. The feedback received from this consultation will be captured and amendments to options that may be required as a result of this feedback will be considered.

Once the public consultation process is complete all feedback and submissions received will be reviewed and assessed as part of the finalisation of the design development. Following a full appraisal of the feedback, a public consultation no.2 consultation findings report will be prepared and published to document this process.

All information gathered by the project team will be used to inform the design development of the project which will be the subject of the Environmental Impact Assessment (EIA) and Appropriate Assessment (AA), as part of the Railway Order application that will be submitted to An Bord Pleanála.

The Railway Order application process is set out in the Transport (Railway Infrastructure) Act 2001 (as amended) and the application will be made to An Bord Pleanála. The Environmental Impact Assessment Report (EIAR) will detail the nature and extent of the proposed Project and identify and describe the impacts on the environment. It will also detail measures which will be taken to avoid, reduce and/or monitor these impacts. Following the submission of the Railway Order Application to An Bord Pleanála, the public are invited through public notices to make submissions which will be duly considered by An Bord Pleanála as part of the decision-making process.

An Bord Pleanála will conduct an oral hearing, to allow the public to provide further participation in the decision-making process for this Project. At an oral hearing the Iarnród Éireann project team will provide responses to submissions and will be available for questioning. Any person or body may make a submission or observation in writing to the Board in relation to the Railway Order application including the EIAR and the Compulsory Purchase land requirements.