DART+ Maynooth Line - MCA Stage 2

Ashtown Level Crossing Assessment

	Parameter		Criteria	Sub-Criteria (Quantitative/ Qualitative)	Option 2	Option 4 & 4a	Option 4 & 4b	Option 6
1	Economy	1.1	Construction and Land Cost	Assessment of cost of construction of option, land costs, acquisition costs and temporary works	**Some comparative disadvantage over other options** Construction costs are high due to direct impacts on canal and existing rail and more difficult construction requirements. Land costs lower than option to east into zoned lands. The overall cost of this option is significantly less than Options 4+4a and 4+4b and slightly less than Option 6	**Some comparative disadvantage over other options** Option 4+4a comprises an offline road bridge and a pedestrian cycle underbridge in Ashtown. The requirement to construct a bridge at two locations results in a cost premium for this option. Option 4+4a is slightly cheaper than option 4+4b but significantly more expensive than options 2 and 6	**Some comparative disadvantage over other options** Option 4+4b comprises an offline road bridge and a pedestrian cycle overbridge in Ashtown. The requirement to construct a bridge at two locations results in a cost premium for this option. Option 4+4b is slightly more expensive than Option 4+4a but significantly more expensive than Options 2 and 6	**Some comparative advantage over other options** Construction cost impacts are high due to the high elevation of the overbridge crossing the railway and canal and the need for walled embankment construction south of the railway. The overall cost of this option is significantly less than Options 4+4a and 4+4b and slightly more than Option 2
		1.2	Long Term Maintenance costs	Steel options vs concrete options for structures and maintaining level crossings versus removing them	**Some comparative advantage over other options** Reinforced concrete structures are anticipated. These have relatively modest ongoing maintenance costs.	**Some comparative disadvantage over other options** Reinforced concrete structures are anticipated. These have relatively modest ongoing maintenance costs. In the case of Options 4+4a and 4+4b maintenance costs will effectivel double in comparison to other schemes due to the provision of 2no bridges.	**Some comparative disadvantage over other options** Reinforced concrete structures are anticipated. These have relatively modest ongoing maintenance costs. In the case of Options 4+4a and 4+4b maintenance costs will effectivel double in comparison to other schemes due to the provision of 2no bridges.	**Some comparative advantage over other options** Reinforced concrete structures are anticipated. These have relatively modest ongoing maintenance costs.
		1.3	Traffic Functionality /economic benefit	Benefits to vehicular traffic through reduction in journey time lengths and delays through removal of level crossings. Consideration of potentially longer routes for traffic.	**Some comparative advantage over other options** Improvement in journey times; potential for induced trips; potential to increase congestion at Ashtown Roundabout as a result of induced traffic. Negligible impact on journey distance for up to 450 vehicles during peak hours.	**Some comparative disadvantage over other options** Some improvement in journey time; potential for induced trips. Minor improvement in distance for approx 5% of through traffic, negligible impact for approx 31% of through traffic and negative impact for approx 64% of through traffic	**Some comparative disadvantage over other options** Some improvement in journey time; potential for induced trips. Minor improvement in journey distance for approx 5% of through traffic, negligible impact for approx 31% of through traffic and negative impact for approx 64% of through traffic	**Some comparative advantage over other options** Improvement in journey times; potential for induced trips; potential to increase congestion at Ashtown Roundabout as a result of induced traffic. Negligible impact on journey distance for up to 450 vehicles during peak hours.
2	Integration	2.1	Transport Integration	Impact on scope for and ease of interchange between modes. Impact on the operation of other transport services both during construction and in operation. New interchange nodes and facilities; Reduced walking and wait times associated with interchanges. Modal shift figures during construction and operations. Changes to journey times to transport nodes.	**Some comparative disadvantage over other options** Improved interchange between modes, subject to satisfactory access to train station platforms. General reduction in journey times. Bus services may be impacted as a result of headroom restrictions on the proposed route.	**Some comparative advantage over other options** Improved interchange between modes, subject to satisfactory access to train station platforms. General reduction in journey times. Bus services may be impacted as a result of the proposed diversion along the narrow River Road.	**Some comparative advantage over other options** Improved interchange between modes, subject to satisfactory access to train station platforms. General reduction in journey times. Bus services may be impacted as a result of the proposed diversion along the narrow River Road.	**Some comparative disadvantage over other options** Improved interchange between modes, subject to satisfactory access to train station platforms. General reduction in journey times. There may be severance to existing connectivity on the northern side of the canal and railway as a result of the construction of the required approach ramps.
		2.2	Land Use Integration	Impact on land use strategies and regional and local plans. Assessment of support for land use factors local land use and planning. Inclusion of project in relevant local and regional planning documents. Note: All options are supported by the national and regional planning policy context, specifically with the NPF and the RSES. The RSES developed the Dublin MASP, where one of the Guiding Principles for the Growth of this area is Integrated Transport and Land Use "To focus growth along existing and proposed high quality public transport corridors and nodes on the expanding public transport network and to support the delivery and integration of 'BusConnects', DART expansion and LUAS extension programmes, and Metro Link, while maintaining the capacity and safety of strategic transport networks". At local level, the Fingal DP supports the development of the project under Objective MT30 "Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground".	**Some comparative advantage over other options** A small section of this option is located on DCC (DP) lands close to Ashtown Station, zoned Z11 and also contains the conservation area of the Royal Canal. The remainder of this option road is located in FDP area: relevant zoning includes 'High Technology' (to the south of the Canal) and travel north of the canal into the start of a large area of land zoned 'High Amenity' . This option is within close proximity to the future Navan Road Parkway LAP (map based objective: LAP 13.B) and is likely to support overall land use and transport planning integration.	**Some comparative disadvantage over other options** The majority Option 4 is located within lands zoned by Fingal DP as "High Amenity". The route travels close to the boundary of the existing Coolmine Rugby Club and could support Fingal DP local map-based Specific Objective 136 *"Facilitate pedestrian access from Coolmine Rugby Club grounds over the Canal adjacent to the Phoenix Park Railway Station"* . However, the introduction of a new road infrastructure in 'High Amenity' zoned land would go against Objective NH51 (FDP) *"Protect High Amenity areas from inappropriate development and reinforce their character, distinctiveness and sense of place"*. In terms of future land use factors. Option 4 could create a direct link into map based objective (LAP13.B - Navan Road Parkway Local Area Plan) and also linking into LAP13.C. Option 4a section would result in a direct pedestrian and cycle access from the station into residential zoned lands associated with Ashtown – Pelletstown LAP 2014.	**Some comparative disadvantage over other options** The majority Option 4 is located within lands zoned by Fingal DP as "High Amenity". The route travels close to the boundary of the existing Coolmine Rugby Club and could support Fingal DP local map-based Specific Objective 136 *"Facilitate pedestrian access from Coolmine Rugby Club grounds over the Canal adjacent to the Phoenix Park Railway Station"* . However, the introduction of a new road infrastructure in 'High Amenity' zoned land would go against Objective NH51 (FDP) *"Protect High Amenity areas from inappropriate development and reinforce their character, distinctiveness and sense of place"*. In terms of future land use factors. Option 4 could create a direct link into map based objective (LAP13.B - Navan Road Parkway Local Area Plan) and also linking into LAP13.C. Option 4a section would result in a direct pedestrian and cycle access from the station into residential zoned lands associated with Ashtown – Pelletstown LAP 2014.	**Some comparative disadvantage over other options** Option 6 is located entirely within the DCDP area. This option is located on lands zoned Z9 (Amenity/Open Space Lands/Green Network) associated with the royal canal and travels along the north edge of the (Z9 zoned) existing Martin Savage Park (GAA pitch). North of the Canal it travels through currently a greenfield site, zoned for residential use in the Pelletstown Action Area Plan 2014 . This option goes against the LAP residential zoning. Subject to traffic and design studies it may support the overall future land use and transport planning integration. Option 6 will have an impact on the functionality of the GAA/ amenity lands however it will also have an impact on the future zoned residential land as part of the Pelletstown Action Area Plan.
		2.3	Geographical Integration	Impact on improvement of external links. Desire to link various geographical – mostly neutral due to localised nature of the level crossings. Overall electrification scheme would be highly positive.	**Significant comparative advantage over other options** The existing road crossing is available to road traffic for less than 50% of time during peak hours. The provision of an unconstrined access will serve to enhance access to proposed residential development north of the railway. Diverted distance route 572m (1.1x diversion route)	**Some comparative disadvantage over other options** The existing road crossing is available to road traffic for less than 50% of time during peak hours. The provision of an unconstrined access will serve to enhance access to proposed residential development north of the railway. Diverted distance route 2.2km (4.5x diversion route)	**Some comparative disadvantage over other options** The existing road crossing is available to road traffic for less than 50% of time during peak hours. The provision of an unconstrined access will serve to enhance access to proposed residential development north of the railway. Diverted distance route 2.2km (4.5x diversion route)	**Some comparative advantage over other options** The existing road crossing is available to road traffic for less than 50% of time during peak hours. The provision of an unconstrined access will serve to enhance access to proposed residential development north of the railway. Diverted distance route 1.1km (2x diversion route)
		2.4	Other Government Policy	Integration with Government Policy, Smarter Travel, Investment Programmes, rail safety, electrification etc	**Comparable to other options** Meets FCC, DCC Strategies and GDA Transport Strategy principals including: - 5.8.2 Develop appropriate road links to service development areas; - 5.8.3 That there will be no significant increase in road capacity for private vehicles on radial roads inside the M50 motorway; - 5.8.3 That the road scheme..... will be designed to provide safe and appropriate arrangements to facilitate walking, cycling and public transport provision	**Comparable to other options** Meets FCC, DCC Strategies and GDA Transport Strategy principals including: - 5.8.2 Develop appropriate road links to service development areas; - 5.8.3 That there will be no significant increase in road capacity for private vehicles on radial roads inside the M50 motorway; - 5.8.3 That the road scheme..... will be designed to provide safe and appropriate arrangements to facilitate walking, cycling and public transport provision	**Comparable to other options** Meets FCC, DCC Strategies and GDA Transport Strategy principals including: - 5.8.2 Develop appropriate road links to service development areas; - 5.8.3 That there will be no significant increase in road capacity for private vehicles on radial roads inside the M50 motorway; - 5.8.3 That the road scheme..... will be designed to provide safe and appropriate arrangements to facilitate walking, cycling and public transport provision	**Comparable to other options** Meets FCC, DCC Strategies and GDA Transport Strategy principals including: - 5.8.2 Develop appropriate road links to service development areas; - 5.8.3 That there will be no significant increase in road capacity for private vehicles on radial roads inside the M50 motorway; - 5.8.3 That the road scheme..... will be designed to provide safe and appropriate arrangements to facilitate walking, cycling and public transport provision
3	Environment	3.1	Noise and Vibration	Estimated number of people likely to be affected by transport related noise with the scheme within 50m.	**Some comparative disadvantage over other options** 85 dwellings within 100m. Moves traffic to rear of apt block from current road layout	**Significant comparative advantage over other options** Operational traffic impacts only affects 1 dwelling. Pedestrian crossing will have impacts during construction. 47 dwellings within 100m of both vehicular route and pedestrian crossing. Only 1 property within 100m of the vehicular route.	**Some comparative advantage over other options** Operational traffic impacts only affects 1 dwelling. Pedestrian crossing will have impacts during construction. 123 dwellings within 100m of both vehicular route and pedestrian crossing. Only 1 property within 100m of the vehicular route.	**Significant comparative disadvantage over other options** 114 dwellings within 100m. Moves traffic to new route away from current route and therefore impacts on properties.
		3.2	Air Quality and Climate	Local air quality effects. No of number of receptors within 50m.	**Some comparative disadvantage over other options** Moves traffic to rear of apt block from current road layout. 39 dwellings within 50m plus apt blocks that traffic has been moved from front to back. Embodied carbon for new bridge.	**Significant comparative advantage over other options** Pedestrian crossing will have impacts during construction. 14 dwellings plus apt blocks within 50m of pedestrian crossing. Only 1 property within 50m of the vehicular route of operational traffic. Two seperate bridges will increase embodied carbon for this option.	**Some comparative advantage over other options** Pedestrian crossing will have impacts during construction. 3 dwellings plus apt blocks within 50m of pedestrian crossing. Only 1 property within 50m of the vehicular route of operational traffic. Underpass may decrease embodied carbon over overbridge option.	**Significant comparative disadvantage over other options** Moves traffic to new route away from current route and therefore impacts on properties. 22 dwellings within 50m plus some a number of apt blocks. This option also brings addtional traffic to proximity of a school (highly senstive receptor). Additional road infrastructure would increase embodied carbon for this option.
		3.3	Landscape and Visual (including light)	Key landscape characteristics affected; Effects on listed/ key views; Impact on landscape character.	- **Some comparative disadvantage over other options** Online underbridge option is likely to have very significant impact on visual setting and public realm of Ashtown Village Centre. Significant visual impact for setting of 10th Lock on Royal Canal and hence for on Objective CH43 of Fingal Development Plan Significant impact due to removal of roadside tree-lined hedgerows leading to railway - significant visual impact for Ashtown Stables. Tunnel will have a significant impact on boundary trees/woodlands, entrance gates and setting of lodge at Ashton (Ashtown) House, a protected structure (No. 690). Lands of Ashton House and the corridor of the Royal Canal west of Longford Bridge are zoned High Amenity and identified as a Nature Development Area in the Fingal Development Plan. Side slopes (if proposed) would have significant impact due to removal of roadside tree-lined hedgerows leading to railway	**Significant comparative disadvantage over other options** Alignment will have a very significant impact on the landscape character and structure, trees and woodlands of lands between Ashtown Lodge (and its associated lodge) and Coolmine Rugby Club. Alignment will impact existing landscape character of River Road and lands north to the Tolka River. The majority of the lands are laid out in mature parkland with trees, walks, sculptures (?) and boundary woodland - all of which will be impacted by the alignment. The lands and the corridor of the Royal Canal are zoned High Amenity and identified as a Nature Development Area in the Fingal Development Plan. Tree and Woodland preservation objectives in Fingal Development Plan apply to the lands. Tunnel will have a significant impact on boundary trees/woodlands, entrance gates and setting of lodge at Ashton (Ashtown) House, a protected structure (No. 690). Lands of Ashton House and the corridor of the Royal Canal west of Longford Bridge are zoned High Amenity and identified as a Nature Development Area in the Fingal Development Plan. Side slopes (if proposed) would have significant impact due to removal of roadside tree-lined hedgerows leading to railway - significant impact for Ashtown Stables.	**Significant comparative disadvantage over other options** Alignment will a very significant impact on the landscape character and structure, trees and woodlands of lands between Ashtown Lodge (and its associated lodge) and Coolmine Rugby Club. Alignment will impact existing landscape character of River Road and lands north to the Tolka River. The majority of the lands are laid out in mature parkland with trees, walks, sculptures (?) and boundary woodland - all of which will be impacted by the alignment. The lands and the corridor of the Royal Canal are zoned High Amenity and identified as a Nature Development Area in the Fingal Development Plan. Tree and Woodland preservation objectives in Fingal Development Plan apply to the lands. Pedestrian/cycle bridge will have a significant impact on trees/hedgerows along the royal canal and on open space north of Martin Savage Park. The bridge overswings the canal in a visually incongruous manner. Royal canal corridor is a conservation area in the Dublin City Development Plan. Lands south of the canal are zoned open space (Z9) for the protection, provision and improvement of recreational amenity, open space and green networks.	**Significant comparative disadvantage over other options** Option will have a significant impact on boundary trees/hedgerows along the railway / canal corridor (a conservation area in the Dublin City Development Plan). Option will have a very significant impact on open space and Oliver Plunket's GAA club/pitches at Martin Savage Park. Options would have a very significant impact on mature tree-lined hedgerow and linear open space between the established residential developments of Kempton Green and Ashbrook. NOTE: Option cuts through a permitted residential development on north side of canal - with very significant implications for the permitted layout (DCC Ref. 3666/15, ABP ref. PL29N.246373 - Active planning application 2596/20) Option will have very significant visual impact for properties at Ashbrook, Kempton Green, and for users of Martin Savage Open Space and the Royal Canal.
		3.4	Biodiversity (flora and fauna)	Potential compliance/conflict with biodiversity objectives; Indirect impacts on protected species, designated sites; Overall effect on nature conservation resource.	- **Some comparative advantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Demolition of old Mill lane buildings may impact bats	**Some comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA and River Tolka. Loss of woodland, marsh, treeline and hedgrow habitat.	**Some comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE Potential impacts to Royal Canal pNHA.Loss of woodland, marsh, treeline and hedgrow habitat.	**Significant comparative disadvantage over other options** Permanent loss of habitat & disturbance to Light-bellied Brent Goose (QI of SPAs) which are known forage in significant numbers at Ashtown Playing Pitches. Project could screen in for AA. Potential impacts to Royal Canal pNHA. Habitat loss.
		3.5	Cultural, Archaeological and Architectural Heritage	Overall effect on cultural, archaeological and architecture heritage resource. Likely effects on RPS, National Monuments, SMRs, Conservation areas, etc. Number of designated sites/structures (by level of designation) directly impacted by scheme (landtake)	**Significant comparative disadvantage over other options** Direct impacts on gate lodge, entrance and demesne associated with Ashtown Ho (RPS 0690). Indirect impacts on mill and outbuildings (RPS) and Pelletstown Ho (structure of architectural merit). Potential direct impacts on archaeological deposits that may survive in greenfield areas and path of former road way	**Significant comparative disadvantage over other options** Direct impacts on River Tolka and former demesne landscapes associated with Ashbrook (RPS) & Ashtown Lodge. Potential direct impacts on archaeological deposits that may survive in greenfield areas.	**Significant comparative disadvantage over other options** Direct impacts on entrance and demesne associated with Ashtown Ho (RPS 0690). Indirect impacts on mill and outbuildings (RPS) and Pelletstown Ho (structure of architectural merit). Indirect impacts on canal and lock (RPS).	**Significant comparative advantage over other options** No direct impacts predicted upon sites/structures subject to statutory protection. Potential direct impacts on archaeological deposits that may survive within greenfield areas.
		3.6	Water Resources	Overall potential significant effects on water resource attributes likely to be affected during construction and operation.	- **Some comparative advantage over other options** Underpass excavations pose potential risk to Groundwater quality. Has some comparative disadvantage over other options.	**Significant comparative disadvantage over other options** Crossing of Tolka is within floodplain creating potential increase in flood risk to neighbouring lands. Creates potential pathway for pollutants to Tolka River resulting in negative impacts to Water Quality. Underpass excavations also pose potential risk to Groundwater quality. Options 4a is disadvantageous across all sub-criteria and has a significant comparative disadvantage over other options overall.	**Some comparative disadvantage over other options** Crossing of Tolka is within floodplain creating potential increase in flood risk to neighbouring lands. Creates potential pathway for pollutants to Tolka River resulting on negative impacts to Water Quality. Options 4b has some comparative disadvantage over other options.	- **Some comparative advantage over other options** Has some comparative advantage over other options.
		3.7	Agriculture and Non-Agricultural	Overall impact on land take & property. Number of properties to be impacted/acquired. Likely temporary or permanent severance effects, etc.	**Significant comparative disadvantage over other options** The non-agricultural impact will involve the acquisition three public properties, four commercial properties, and two residential properties. The agricultural impact will have a profound impact on an equine holding (Ashtown Riding Stables).	**Significant comparative disadvantage over other options** The non-agricultural impact will involve the acquisition of three residential properties, sports grounds, four public bodies and three commercial properties. The agricultural impact will have a profound impact on an equine holding (Ashtown Riding Stables).	**Some comparative advantage over other options** The non-agricultural impact will involve the acquisition of one residential property, two sports grounds, four public bodies and no commercial properties. Will have some advantages over other options given the reduced impact of the pedestrian / cycling overbridge of the rail line and canal	**Significant comparative disadvantage over other options** The non-agricultural impact will involve the acquisition of no residential properties, a sports ground, three public bodies and three commercial properties. Option 6 will have a significant impact on the sports club lands and on the development lands North East of the Railway.
		3.8	Geology and Soils (including Waste)	Soils and Geology and likely impact on geological resources based on preliminary/likely construction details. % of soil resources to be developed/removed. Existing information relating to potential to encounter contaminated land. High-level assessment based on the likely structures/ works required and the potential for ground contamination due to historic landfills, pits and quarries.	**Some comparative advantage over other options** Underbridge option means that some materials may arise, which could possiby be suitable for reuse elsewhere on the project. This is balanced by an associated impact of interfering in the canal and existing railway, which would require specific materials be implemented. Involves other geotechnical risks to design and construction. (Minor negative)	**Significant comparative disadvantage over other options** This option includes much of the works necessary and impacts consequent on Option 2 while including an additional overbridge, embankments roads and associated works west of Ashtown. This option is significantly worse than Options 2 and 6 but is comparable to Option 4+4a	**Some comparative advantage over other options** This option comprises pedestrian cycle bridge over the canal and railway and an additional overbridge, embankments roads and associated works west of Ashtown. The norther ramp of the footbridge will require significant geotechnical works along the southern bank of the canal. This option is significantly worse than Options 2 and 6 but is comparable to Option 4+4a	**Some comparative disadvantage over other options** Some made ground on-site. Overbridge options require increased fill import to the site (Minor negative). This option is significantly better than Options 4+4a and 4+4b due to the requirement to construct bridges at two locations for each. This option requires more importation of material than Option 1.
		3.9	Radiation and Stray Current	Overall likely impact on existing sources of electromagnetic radiation	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.
4	Accessibility & Social inclusion	4.1	Impact on Vulnerable Groups	Do options address the needs of vulnerable groups. How do they compare to one another in this regard	**Comparable to other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway.	**Comparable to other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway.	**Comparable to other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway.	**Comparable to other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway.
		4.2	Stations Accessibility	Quantification of increased service levels to the vulnerable groups.	**Comparable to other options** All options address the need for access to the station to an equivalent degree	**Comparable to other options** All options address the need for access to the station to an equivalent degree	**Comparable to other options** All options address the need for access to the station to an equivalent degree	**Comparable to other options** All options address the need for access to the station to an equivalent degree
		4.3	Social Inclusion	Comparative assessment of service levels impact including severance to all groups (Severance of local communities through removal of level crossings without connection would fair worst under this heading).	**Significant comparative advantage over other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently in this regard. Diverted distance route 572m (1.1x diversion route)	**Some comparative disadvantage over other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently in this regard. Diverted distance route 798m (1.6x diversion route) but exisiting vehicular route severed	**Some comparative disadvantage over other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently in this regard. Diverted distance route 798m (1.6x diversion route) but exisiting vehicular route severed	**Some comparative advantage over other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently in this regard. Diverted distance route 1.1km (2x diversion route)
5	Safety	5.1	Rail Safety	Safety for Rail users – removal of LC positive in this respect	**Comparable to other options** All Options remove rail - road interface	**Comparable to other options** All Options remove rail - road interface	**Comparable to other options** All Options remove rail - road interface	**Comparable to other options** All Options remove rail - road interface
		5.2	Vehicular Traffic Safety	Quality of Access for these road users, lengths of diversions, removal of interface with rail and other modes of transport	**Comparable to other options** All options make equivalent high quality provision for vulnerable road users. All options provide for high quality access to all road users. Options 2 and 6 keep traffic in the village. Options 4+4a and 4+4b provide free flow for through traffic but require diversion for local traffic	**Comparable to other options** All options make equivalent high quality provision for vulnerable road users. All options provide for high quality access to all road users. Options 2 and 6 keep traffic in the village. Options 4+4a and 4+4b provide free flow for through traffic but require diversion for local traffic	**Comparable to other options** All options make equivalent high quality provision for vulnerable road users. All options provide for high quality access to all road users. Options 2 and 6 keep traffic in the village. Options 4+4a and 4+4b provide free flow for through traffic but require diversion for local traffic	**Comparable to other options** All options make equivalent high quality provision for vulnerable road users. All options provide for high quality access to all road users. Options 2 and 6 keep traffic in the village. Options 4+4a and 4+4b provide free flow for through traffic but require diversion for local traffic
		5.3	Pedestrian, Cyclist and Vulnerable Road user Safety	Quality of Access for these road users. removal of interfaces	**Comparable to other options** Diverted distance route 572m (1.1x diversion route)	**Comparable to other options** Diverted distance route 798m (1.6x diversion route)	**Comparable to other options** Diverted distance route 798m (1.6x diversion route)	**Comparable to other options** Diverted distance route 1.1km (2x diversion route)
6	Physical Activity	6.1	Connectivity to adjoining cycling facilities	Analysis of the extent that the scheme connects with cycle tracks.	**Comparable to other options** The scheme should include cycle tracks on the approaches to realise the objective of the Cycle Network Plan	**Comparable to other options** The scheme should include cycle tracks on the approaches to realise the objective of the Cycle Network Plan	**Comparable to other options** The scheme should include cycle tracks on the approaches to realise the objective of the Cycle Network Plan	**Comparable to other options** The scheme should include cycle tracks on the approaches to realise the objective of the Cycle Network Plan
		6.2	Permeability and local connectivity opportunity	Journey Time and lengths of diversions for active modes and numbers affected. Analysis of the connectivity between level crossing and green areas/key attractions related to active mode	**Comparable to other options** Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing.	**Comparable to other options** Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing.	**Comparable to other options** Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing.	**Comparable to other options** Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing.

	Criteria		Option 2	Option 4 & 4a	Option 4 & 4b	Option 6
1	Economy		Some comparative advantage over other options	Some comparative disadvantage over other options	Some comparative disadvantage over other options	Some comparative advantage over other options
2	Integration		Significant comparative advantage over other options	Some comparative disadvantage over other options	Some comparative disadvantage over other options	Some comparative advantage over other options
3	Environment		Some comparative disadvantage over other options	Significant comparative disadvantage over other options	Some comparative advantage over other options	Significant comparative disadvantage over other options
4	Accessibility and social inclusion		Comparable to other options	Comparable to other options	Comparable to other options	Comparable to other options
5	Safety		Comparable to other options	Comparable to other options	Comparable to other options	Comparable to other options
6	Physical Activity		Comparable to other options	Comparable to other options	Comparable to other options	Comparable to other options
	Preferred Option Ranking		1	4	3	2
	Comment					

DART+ Maynooth Line - MCA Stage 2

Barberstown Level Crossing Assessment

	Parameter		Criteria	Sub-Criteria (Quantitative/ Qualitative)	Option 2	Option 4
1	Economy	1.1	Construction and Land Cost	Assessment of cost of construction of option, land costs, acquisition costs and temporary works	Some comparative disadvantage over other options Option 2 incorporates a longer bridge than Option 4 but has a shorter road alignment. The bridge associated with Option 2 will be more difficult to build than that of Option 4	Some comparative advantage over other options Option 2 incorporates a longer bridge than Option 4 but has a shorter road alignment. The bridge associated with Option 2 will be more difficult to build than that of Option 4
		1.2	Long Term Maintenance costs	Steel options vs concrete options for structures and maintaining level crossings versus removing them	Comparable to other options Maintenance costs for roads and bridge will be largely equivalent for each option	Comparable to other options Maintenance costs for roads and bridge will be largely equivalent for each option
		1.3	Traffic Functionality /economic benefit	Benefits to vehicular traffic through reduction in journey time lengths and delays through removal of level crossings. Consideration of potentially longer routes for traffic.	Comparable to other options Some improvement in journey time; potential for induced trips; diversion required for local residents. Negligible impact to journey times for up to 100 vehicles during peak hours.	Comparable to other options Some improvement in journey time; potential for induced trips; diversion required for local residents. Negligible impact to journey times for up to 100 vehicles during peak hours.
2	Integration	2.1	Transport Integration	Impact on scope for and ease of interchange between modes. Impact on the operation of other transport services both during construction and in operation. New interchange nodes and facilities; Reduced walking and wait times associated with interchanges. Modal shift figures during construction and operations. Changes to journey times to transport nodes.	Comparable to other options Some improvement in journey time; potential for induced trips; diversion required for local residents.	Comparable to other options Some improvement in journey time; potential for induced trips; diversion required for local residents.
		2.2	Land Use Integration	Impact on land use strategies and regional and local plans. Assessment of support for land use factors local land use and planning. Inclusion of project in relevant local and regional planning documents.	Comparable to other options This option is supported by the national and regional planning policy context, specifically with the NPF and the RSES. The RSES developed the Dublin MASP, where one of the Guiding Principles for the Growth of this area is Integrated Transport and Land Use "*To focus growth along existing and proposed high quality public transport corridors and nodes on the expanding public transport network and to support the delivery and integration of 'BusConnects', DART expansion and LUAS extension programmes, and Metro Link, while maintaining the capacity and safety of strategic transport networks*". At local level, Option 2 is located within a section of land zoned for "High-Amenity" by the Fingal DP, the it travels across Open space zoned land and the GDA Cycle Network (along the Royal Canal). It then travels north-west into the map based zoning objective LAP 13 A Barnhill LAP 2019. The introduction of a new infrastructure into a High amenity area is considered to be a major negative impact and would be inconsistent with this landuse zoning. However, it travels on the edge of this zoning and in proximity to the existing road network and provide a direct connection into the LAP zoned lands. This Option will provide a direct connection into the Barnhill LAP zoned lands. This option has the potential to improve land use and transport planning integration.	Comparable to other options This option is supported by the national and regional planning policy context, specifically with the NPF and the RSES. The RSES developed the Dublin MASP, where one of the Guiding Principles for the Growth of this area is Integrated Transport and Land Use "*To focus growth along existing and proposed high quality public transport corridors and nodes on the expanding public transport network and to support the delivery and integration of 'BusConnects', DART expansion and LUAS extension programmes, and Metro Link, while maintaining the capacity and safety of strategic transport networks*". At local level, Option 4 is located within a section of land zoned for "High Amenity" by the Fingal DP. The introduction of a new infrastructure into a High amenity area is considered to be a major negative impact and would be inconsistent with this landuse zoning. Additionally, Option 4 severs a larger section of "High-Amenity" land than Option 3. This option travel into the LAP 13 A Barnhill LAP through zoned open space lands as part of the Barnhill LAP. This option could link to the Barnhill – Dogan road network and may support overall land use and transport planning integration over the long-term.
		2.3	Geographical Integration	Impact on improvement of external links. Desire to link various geographical – mostly neutral due to localised nature of the level crossings. Overall electrification scheme would be highly positive.	Comparable to other options Diverted distance route 587m (2.0x diversion route)	Comparable to other options Diverted distance route 948m (3.1x diversion route)
		2.4	Other Government Policy	Integration with Government Policy, Smarter Travel, Investment Programmes, rail safety, electrification etc	Comparable to other options the alternative options are largely equivalent in respect of Government Policy	Comparable to other options the alternative options are largely equivalent in respect of Government Policy
3	Environment	3.1	Noise and Vibration	Estimated number of people likely to be affected by transport related noise with the scheme within 50m.	Comparable to other options Only 1 dwelling within 100m	Comparable to other options Only 1 dwelling within 100m
		3.2	Air Quality and Climate	Local air quality effects. No of number of receptors within 50m.	Comparable to other options Only 1 dwelling within 50m	Comparable to other options Only 1 dwelling within 50m
		3.3	Landscape and Visual (including light)	Key landscape characteristics affected, Effects on listed/ key views; Impact on landscape character.	Comparable to other options Based on design detail provided potential significant landscape and visual impact for boundary to Luttrellstown Castle estate (the latter is an architectural conservation area, and a protected structure). Tree Preservation Objectives within Luttrellstown estate. Significant landscape and visual impact on Royal Canal corridor. Significant visual impact for residential properties, two to northnortheast of eastern roundabout, and one southwest of western roundabout.	Comparable to other options Potential significant landscape and visual impact for boundary to Luttrellstown Castle estate (the latter is an architectural conservation area, and a protected structure). Tree Preservation Objectives within Luttrellstown estate. Significant landscape and visual impact on Royal Canal corridor. Significant visual impact for residential properties, one to northwest of eastern roundabout, and one southwest of western roundabout.
		3.4	Biodiversity (flora and fauna)	Potential compliance/conflict with biodiversity objectives; Indirect impacts on protected species, designated sites; Overall effect on nature conservation resource.	Comparable to other options Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Loss of treeline, hedgerow and agricultural grassland habitats.	Comparable to other options Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Significantly greater loss of treeline, hedgerow and agricultural grassland habitats.
		3.5	Cultural, Archaeological and Architectural Heritage		Comparable to other options Indirect impacts on canal and canal bridge (RPS 0711) and Luttrellstown ACA. Potential direct impacts on archaeological deposits that may survive in greenfield areas.	Comparable to other options Indirect impacts on canal (RPS 0711) and Luttrellstown ACA. Potential direct impacts on archaeological deposits that may survive in greenfield areas.
		3.6	Water Resources	Overall potential significant effects on water resource attributes likely to be affected during construction and operation.	Some comparative disadvantage over other options Proposed route indicated to have increased flood risk compared to other options. Potential negative impact on surface water quality during operational phase. Potential negative impact on groundwater quality during construction phase. Has some comparative disadvantage over other options.	Some comparative disadvantage over other options Proposed route indicated to have increased flood risk compared to other options. Potential negative impact on surface water quality during operational phase. Potential negative impact on groundwater quality during construction phase. Has some comparative disadvantage over other options.
		3.7	Agriculture and Non-Agricultural	Overall impact on land take & property. Number of properties to be impacted/acquired. Likely temporary or permanent severance effects, etc.	Some comparative disadvantage over other options Under Options 2, there is an impact on an equine farm holding resulting in land severance of lands located west of the Barberstown local road from the farmyard and equine facilities	Some comparative advantage over other options Under Option 4, there is an impact on an equine farm holding resulting in land severance of lands located west of the Barberstown local road from the farmyard and equine facilities. Will have a significant advantage over other options due to the reduced impact on agricultural property
		3.8	Geology and Soils (including Waste)	Soils and Geology and likely impact on geological resources based on preliminary/likely construction details. % of soil resources to be developed/removed. Existing information relating to potential to encounter contaminated land. High-level assessment based on the likely structures/ works required and the potential for ground contamination due to historic landfills, pits and quarries.	Comparable to other options Lower fill import requirements compared to other options.	Comparable to other options Lower fill import requirements compared to other options.
		3.9	Radiation and Stray Current	Overall likely impact on existing sources of electromagnetic radiation	Comparable to other options All options are comparable from an EMI perspective.	Comparable to other options All options are comparable from an EMI perspective.
4	Accessibility & Social Inclusion	4.1	Impact on Vulnerable Groups	Impacts on low income groups, non-car owners, people with a disability. Quantification of increased service levels to these groups.	Comparable to other options	Comparable to other options
		4.2	Stations Accessibility	Quantification of increased service levels to the vulnerable groups.	Comparable to other options Diverted distance route 587m (2.0x diversion route)	Comparable to other options Diverted distance route 948m (3.1x diversion route)
		4.3	Social Inclusion	Quantification of service levels impacts including severance to all groups (Severance of local communities through removal of level crossings without connection would fair worst under this heading).	Comparable to other options Diverted distance route 587m (2.0x diversion route)	Comparable to other options Diverted distance route 948m (3.1x diversion route)
5	Safety	5.1	Rail Safety	Safety for Rail users – removal of LC positive in this respect	Comparable to other options All overbridges have a significant advantage as they are a great crossing alternative	Comparable to other options All overbridges have a significant advantage as they are a great crossing alternative
		5.2	Vehicular Traffic Safety	Quality of Access for these road users, lengths of diversions, removal of interface with rail and other modes of transport	Comparable to other options Providing a segregated crossing would have a significant advantage as vehicular traffic is not crossing the live rail	Comparable to other options Providing a segregated crossing would have a significant advantage as vehicular traffic is not crossing the live rail
		5.3	Pedestrian, Cyclist and Vulnerable Road user Safety	Quality of Access for these road users. removal of interfaces	Some comparative advantage over other options Diverted distance route 587m (2.0x diversion route)	Some comparative advantage over other options Diverted distance route 948m (3.1x diversion route)
6	Physical Activity	6.1	Connectivity to adjoining cycling facilities	Analysis of the extent that the scheme connects with cycle tracks.	Some comparative advantage over other options Local severance mitigated to a degree by alternative access proposal	Some comparative advantage over other options Local severance mitigated to a degree by alternative access proposal
		6.2	Permeability and local connectivity opportunity	Journey Time and lengths of diversions for active modes and numbers affected. Analysis of the connectivity between level crossing and green areas/key attractions related to active mode	Comparable to other options Local severance mitigated to a degree by alternative access proposal	Comparable to other options Local severance mitigated to a degree by alternative access proposal

	Criteria		Option 2	Option 4
1	Economy		Some comparative disadvantage over other options	Some comparative advantage over other options
2	Integration		Comparable to other options	Comparable to other options
3	Environment		Some comparative disadvantage over other options	Some comparative advantage over other options
4	Accessibility and social inclusion		Comparable to other options	Comparable to other options
5	Safety		Comparable to other options	Comparable to other options
6	Physical Activity		Comparable to other options	Comparable to other options
	Preferred Option Ranking		2	1
	Comment			

DART+ Maynooth Line - MCA Stage 2

Blakestown Level Crossing Assessment

	Parameter		Criteria	Sub-Criteria (Quantitative/ Qualitative)	Do-Minimum (Management) Option - Close level crossing and provide no alternative	Option 1 Closure of the level crossing and provision of a pedestrian overbridge that is approx. 7m in elevation.
1	Economy	1.1	Construction and Land Cost	Assessment of cost of construction of option, land costs, acquisition costs and temporary works	Some comparative advantage over other options There is minimal capital cost associated with this option. There may be costs associated with severence in respect of the closure	Significant comparative disadvantage over other options There is significant capital cost and construction difficulty associated with this option in comparison to Option 1. There may be costs associated with severance in respect of the closure.
		1.2	Long Term Maintenance costs	Steel options vs concrete options for structures and maintaining level crossings versus removing them	Significant comparative advantage over other options The closure of the level crossing would remove the maintenance requirement of the level crossing	Some comparative advantage over other options An overbridge would increase decrease maintenance requirements and overspeeting costs over a level crossing.
		1.3	Traffic Functionality /economic benefit	Benefits to vehicular traffic through reduction in journey time lengths and delays through removal of level crossings. Consideration of potentially longer routes for traffic.	Comparable to other options Displacement of very low traffic volumes (up to 13 vehicles during peak hours) onto alternative routes; increase in journey times for local residents.	Comparable to other options Displacement of very low traffic volumes (up to 13 vehicles during peak hours) onto alternative routes; increase in journey times for local residents
2	Integration	2.1	Transport Integration	Impact on scope for and ease of interchange between modes. Impact on the operation of other transport services both during construction and in operation. New interchange nodes and facilities; Reduced walking and wait times associated with interchanges. Modal shift figures during construction and operations. Changes to journey times to transport nodes.	Some comparative disadvantage over other options Reduction in local permeability. Reduced access to Royal Canal Cycle Route.	Some comparative advantage over other options Reduction in local permeability.
		2.2	Land Use Integration	Impact on land use strategies and regional and local plans. Assessment of support for land use factors local land use and planning. Inclusion of project in relevant local and regional planning documents. All options are supported by the national and regional planning policy context, specifically with the NPF and the RSES. The RSES developed the Dublin MASP, where one of the Guiding Principles for the Growth of this area is Integrated Transport and Land Use "To focus growth along existing and proposed high quality public transport corridors and nodes on the expanding public transport network and to support the delivery an integration of 'BusConnects', DART expansion and LUAS extension programmes, and Metro Link, while maintaining the capacity and safety of strategic transport networks".	Comparable to other options At local level, this Option is consistent with the Laytip LAP 2020-2023 where it recognises the level crossings will be required to be removed). Both options will also meet the project objectives and are therefore deemed to be comparable from a policy perspective. However, it is important to acknowledge that the closure of this option may have an impact on the future traffic integration and the functionality of land uses in the area which is assessed as part of Transport Integration. The consideration of land use factors is undertaken at a strategic level, as the Collinstown Masterplan is not yet developed. The future Masterplan is required to include the associated transportation studies. Therefore, based on existing land use patterns and the existing policy context (in support of DART Exp), neither the closure of the level crossing or the provision of pedestrian access at the level crossing is likely to significantly influence this comparative assessment in terms of planning/ integration factors at this stage in the assessment. Further analysis of traffic factors will be required. Therefore, both options are considered to be comparable NOTE: The transport integration criteria and the safety is not considered as part of the land use integration assessment.	Comparable to other options At local level, this Option is consistent with the Laytip LAP 2020-2023 where it recognises the level crossings will be required to be removed). Both options will also meet the project objectives and are therefore deemed to be comparable from a policy perspective. However, it is important to acknowledge that the closure of this option may have an impact on the future traffic integration and the functionality of land uses in the area which is assessed as part of Transport Integration. The consideration of land use factors is undertaken at a strategic level, as the Collinstown Masterplan is not yet developed. The future Masterplan is required to include the associated transportation studies. Therefore, based on existing land use patterns and the existing policy context (in support of DART Exp), neither the closure of the level crossing or the provision of pedestrian access at the level crossing is likely to significantly influence this comparative assessment in terms of planning/ integration factors at this stage in the assessment. Further analysis of traffic factors will be required. Therefore, both options are considered to be comparable NOTE: The transport integration criteria and the safety is not considered as part of the land use integration assessment.
		2.3	Geographical Integration	Impact on improvement of external links. Desire to link various geographical – mostly neutral due to localised nature of the level crossings. Overall electrification scheme would be highly positive.	Comparable to other options Shortest diversion route 3.2km (11x diversion route)	Comparable to other options Shortest diversion route 3.2km (11x diversion route)
		2.4	Other Government Policy	Integration with Government Policy, Smarter Travel, Investment Programmes, rail safety, electrification etc	Some comparative disadvantage over other options Closing the crossing with no other alternative meets government policy but not ideal	Significant comparative advantage over other options Providing vehicular and pedestrian is ideal
3	Environment	3.1	Noise and Vibration	Estimated number of people likely to be affected by transport related noise with the scheme within 50m.	Significant comparative advantage over other options No impacts	Some comparative disadvantage over other options Removes vehicle traffic but will have some short term construction impacts
		3.2	Air Quality and Climate	Local air quality effects. No of number of receptors within 50m.	Comparable to other options Removes vehicular traffic and minimual construction phase	Comparable to other options Removes vehicle traffic therefore requiring longer trips on alternative routes for some traffic, however removes localised traffic impacts. Some short-term construction impacts.
		3.3	Landscape and Visual (including light)	Key landscape characteristics affected; Effects on listed/ key views; Impact on landscape character.	Significant comparative advantage over other options No impact on existing landscape or visual characteristics	Some comparative disadvantage over other options Assumes minimal physical intervention in environment. No impact on existing landscape or visual characteristics
		3.4	Biodiversity (flora and fauna)	Potential compliance/conflict with biodiversity objectives; Indirect impacts on protected species, designated sites; Overall effect on nature conservation resource.	Significant comparative advantage over other options No impact on existing Biodiversity (flora and fauna)	Significant comparative disadvantage over other options Hydrologically connected to South Dublin Bay and River Tolka Estuar SPA. No risk of LSE. Potential impacts to Royal Canal pNHA arising from the contruction of new pedestrian bridge.
		3.5	Cultural, Archaeological and Architectural Heritage	Overall effect on cultural, archaeological and architecture heritage resource. Likely effects on RPS, National Monuments, SMRs, Conservation areas, etc. Number of designated sites/structures (by level of designation) directly impacted by scheme (landtake)	Significant comparative advantage over other options No impact on existing Cultural, Archaeological and Architectural Heritage	Some comparative disadvantage over other options Indirect impacts on canal bridge (RPS). Potential direct impacts on archaeological deposits that may survive in greenfield areas.
		3.6	Water Resources	Overall potential significant effects on water resource attributes likely to be affected during construction and operation.	Some comparative advantage over other options Removes vehicular traffic bourn pollutants and minimal construction phase. The Do Minimum Option has some comparative advantages over other options.	Some comparative disadvantage over other options Potential negative impact on groundwater quality during construction phase. Has some comparative disadvantage over other options.
		3.7	Agriculture and Non-Agricultural	Overall impact on land take & property. Number of properties to be impacted/acquired. Likely temporary or permanent severance effects, etc.	Significant comparative advantage over other options No impact on Agriculture and Non-Agricultural assets	Significant comparative disadvantage over other options Will impact on agricultural and non-agricultural property. There is no impact on access to lands though there will be increased travel for vehicular journeys to / from R148.
		3.8	Geology and Soils (including Waste)	Soils and Geology and likely impact on geological resources based on preliminary/likely construction details. % of soil resources to be developed/removed. Existing information relating to potential to encounter contaminated land. High-level assessment based on the likely structures/ works required and the potential for ground contamination due to historic landfills, pits and quarries.	Significant comparative advantage over other options No impact on Geology and Soils (including Waste)	Significant comparative disadvantage over other options There is materials import associated with the bridge construction. It is anticipated that foundations will be shallow. With the incorporation of significant number of discrete foundation locations associated with pedestrian / cycle bridge construction it is considered the impact of this option is significantly greater than for the doo Minimum Option particularly due to the proximity of the royal canal.
		3.9	Radiation and Stray Current	Overall likely impact on existing sources of electromagnetic radiation.	Comparable to other options All options are comparable from an EMI perspective.	Comparable to other options All options are comparable from an EMI perspective.
4	Accessibility & Social inclusion	4.1	Impact on Vulnerable Groups		Some comparative disadvantage over other options There is currently a very low level of usage of the crossing. The impact of removing the crossing is considered to be modest.	Some comparative advantage over other options There is currently a very low level of usage of the crossing. The benefit in providing pedestrian / cycle access is considered to be modest.
		4.2	Stations Accessibility	Quantification of increased service levels to the vulnerable groups.	Comparable to other options All options are comparable from this perspective.	Comparable to other options All options are comparable from this perspective.
		4.3	Social Inclusion	Quantification of service levels impacts including severance to all groups (Severance of local communities through removal of level crossings without connection would fair worst under this heading).	Some comparative disadvantage over other options Shortest diversion route 3.2km (11x diversion route)	Some comparative advantage over other options Shortest diversion route 3.2km (11x diversion route), pedestrian, and cyclist and non motorised road users catered for.
5	Safety	5.1	Rail Safety	Safety for Rail users – removal of LC positive in this respect	Some comparative advantage over other options Closing the crossing will remove the interface between rail and other traffic	Some comparative disadvantage over other options Closing the crossing would have a slight disadvantage to rail users as they would have to use alternative routes. Construction stage safety impacts associated with this option are considered to be significantly greater than for Option 1.
		5.2	Vehicular Traffic Safety	Quality of Access for these road users, lengths of diversions, removal of interface with rail and other modes of transport	Comparable to other options Closing the crossing with no alternative would have a slight disadvantage as it would divert traffic onto longer routes	Comparable to other options Closing the crossing would have a slight disadvantage to rail users as they would have to use alternative routes
		5.3	Pedestrian, Cyclist and Vulnerable Road user Safety	Quality of Access for these road users. removal of interfaces	Some comparative disadvantage over other options There is currently a very low level of usage of the crossing. The impact of removing the crossing is considered to be modest.	Significant comparative advantage over other options Original Distance from access to farm to R148 junction 270m retained
6	Physical Activity	6.1	Connectivity to adjoining cycling facilities	Analysis of the extent that the scheme connects with cycle tracks.	Significant comparative disadvantage over other options No cycle tracks on the immediately surrounding road network, but the closure of the level crossing would reduce access to the Royal Canal Greenway. See also Transport Integration above.	Significant comparative advantage over other options Severance overcome by provision of direct replacement.
		6.2	Permeability and local connectivity opportunity	Journey Time and lengths of diversions for active modes and numbers affected. Analysis of the connectivity between level crossing and green areas/key attractions related to active mode	Significant comparative disadvantage over other options Severance of existing connectivity	Significant comparative advantage over other options Severance overcome by provision of direct replacement.

	Criteria		Do-Minimum (Management) Option - Close level crossing and provide no alternative	Option 1 Closure of the level crossing and provision of a pedestrian overbridge that is approx. 7m in elevation.
1	Economy		Significant comparative advantage over other options	Significant comparative disadvantage over other options
2	Integration		Some comparative disadvantage over other options	Some comparative advantage over other options
3	Environment		Significant comparative advantage over other options	Significant comparative disadvantage over other options
4	Accessibility and social inclusion		Some comparative disadvantage over other options	Some comparative advantage over other options
5	Safety		Some comparative advantage over other options	Significant comparative advantage over other options
6	Physical Activity		Significant comparative disadvantage over other options	Significant comparative advantage over other options
	Preferred Option Ranking		1	2
	Comment			

DART+ Maynooth Line - MCA Stage 2

Clonsilla Level Crossing Assessment

	Parameter		Criteria	Sub-Criteria (Quantitative/ Qualitative)	Option 1	Option 2	Option 4
1	Economy	1.1	Construction and Land Cost	Assessment of cost of construction of option, land costs, acquisition costs and temporary works. The temporary works costs associated with each of the schemes are largely equivalent.	**Significant comparative advantage over other options** Due to the reduced scale of this option the capital cost is significantly lower than that of the other options. The land acquisition costs are also less than those of other options.	**Significant comparative disadvantage over other options** This scheme has an estimated capital cost significantly higher than Option 1 and equivalent Option 4. This option affects a significant number of residential properties resulting in higher land acquisition costs than either Option 1 or Option 4. In addition this option will require the provision of a pedestrian / cycle bridge at the level crossing equivalent to Option 1.	**Significant comparative disadvantage over other options** The plan configuration of this option resulting in three raised approac embankments on approach to the railway bridge. The embankments are widened to accommodate parking and turning manouvres. As a consequence this option has a capital cost higher than that of option 2 and significantly higher than option 1. As the footprint of the scheme is large the land acquisition costs are also higher than for Option 1. There will be significant construction stage impacts with implementation of the online ramps north of the cana
		1.2	Long Term Maintenance costs	Steel options vs concrete options for structures and maintaining level crossings versus removing them. All options result in closure of the level crossing	**Comparable to other options** All options proposed are in structural concrete and would have equivalent long term maintenance needs.	**Comparable to other options** All options proposed are in structural concrete and would have equivalent long term maintenance needs.	**Comparable to other options** All options proposed are in structural concrete and would have equivalent long term maintenance needs.
		1.3	Traffic Functionality /economic benefit	Benefits to vehicular traffic through reduction in journey time lengths and delays through removal of level crossings. Consideration of potentially longer routes for traffic.	**Some comparative disadvantage over other options** Displacement of traffic onto alternative routes; increase in journey times for local residents. Significant impact on journey distance for up 345 vehicles during peak hours.	**Some comparative advantage over other options** Some improvement in journey time; potential for induced trips; diversion required for local residents. Negligible impact on journey times for up to 345 vehicles during peak hours	**Some comparative advantage over other options** Some improvement in journey time; potential for induced trips; diversion required for local residents. Negligible impact on journey times for up to 345 vehicles during peak hours.
2	Integration	2.1	Transport Integration	Impact on scope for and ease of interchange between modes. Impact on the operation of other transport services both during construction and in operation. New interchange nodes and facilities; Reduced walking and wait times associated with interchanges. Modal shift figures during construction and operations. Changes to journey times to transport nodes.	**Some comparative disadvantage over other options** Severance of existing vehicular access to train station car parking from south of the railway. Diverted access will be available.	**Some comparative advantage over other options** Some improvement in journey time; potential for induced trips; diversion required for local residents.	**Some comparative advantage over other options** Some improvement in journey time; potential for induced trips; diversion required for local residents.
		2.2	Land Use Integration	Impact on land use strategies and regional and local plans. Assessment of support for land use factors local land use and planning. Inclusion of project in relevant local and regional planning documents. All options are supported by the national and regional planning policy context, specifically with the NPF and the RSES. The RSES developed the Dublin MASP, where one of the Guiding Principles for the Growth of this area is Integrated Transport and Land Use "To focus growth along existing and proposed high quality public transport corridors and nodes on the expanding public transport network and to support the delivery and integration of 'BusConnects', DART expansion and LUAS extension programmes, and Metro Link, while maintaining the capacity and safety of strategic transport networks".	**Some comparative advantage over other options** At local level, the Fingal DP supports the development of the project under Objective MT30 "Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground". This option is located in Fingal DP for "High Amenity" and "Open Space" Zoned areas. Which would impact negatively on this land use objective. However, as it is a pedestrian bridge only the impacts would not be as significant as road bridge options. From a land use planning perspective if sensitively designed it could contribute to the sustainable mobility, planning and transport integration. Option 1 would support development of lands zoned for "Residential Area" as part of the future Kellystown LAP by maintaining pedestrian and cycle access at this location as well as support links to public transport services.	**Significant comparative disadvantage over other options** At local level, the Fingal DP supports the development of the project under Objective MT30 "Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground". Option 2 travels through LAP13.C future Kellystown LAP which is also zoned as a Strategic Development Zone (SDZ). Other relevant zonings that apply include "Open Space" and "Residential" which contains an established residential, town centre and district. It is also within a wider 'urban Framework Plan' area as per the Fingal DP map-based Zoning Objectives. There is a FDP map based specific objective to develop a 'School' on Clonsilla Road which may be impacted by this option. Without the development of the Kellystown LAP it is not known how new road infrastructure at this location would impact on the future development of the area. It is likely it could support sustainable modes of travel. However, Option 2 will have an impact on established residential area and will, thus have an impact on the residential amenity. Note also impacts for Option 1.	**Some comparative disadvantage over other options** At local level, the Fingal DP supports the development of the project under Objective MT30 *"Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground"*. Option 4 travels through zoned 'High Amenity' which is currently used as Beech Park allotments and 'Open Space' with vehicular traffic as opposed to options with only pedestrian and cyclist traffic therefore would have greater impact on the environment and HA and OS land use zoning objectives. Without the development of the Kellystown LAP it is not known how new road infrastructure at this location would impact on the future development of the area. It is likely it could support full access.
		2.3	Geographical Integration	Impact on improvement of external links. Desire to link various geographical – mostly neutral due to localised nature of the level crossings. Overall electrification scheme would be highly positive.	**Some comparative disadvantage over other options** Shortest diversion route 3.8km (8.4x diversion route)	**Some comparative advantage over other options** Diverted distance route 758m (1.6x diversion route)	**Some comparative advantage over other options** Diverted distance route 894m (2.0x diversion route)
		2.4	Other Government Policy	Integration with Government Policy, Smarter Travel, Investment Programmes, rail safety, electrification etc	**Comparable to other options** Closing the crossing with no other alternative meets government policy but not ideal	**Comparable to other options** Providing vehicular and pedestrian is ideal	**Comparable to other options** Providing vehicular and pedestrian is ideal
3	Environment	3.1	Noise and Vibration	Estimated number of people likely to be affected by transport related noise with the scheme within 50m.	**Significant comparative advantage over other options** Pedestrian crossing only- will have no operational noise impact.	**Significant comparative disadvantage over other options** 53 dwellings within 100m.	**Some comparative disadvantage over other options** 29 dwellings within 100m. Slightly preferred over Option 2 due to lower number properties wthin 100m
		3.2	Air Quality and Climate	Local air quality effects. No of number of receptors within 50m.	**Significant comparative advantage over other options** Pedestrian crossing only will have no operational impact locally. This option will result in some additional operational phase vechile km increase due to rerouting, extent of impact on traffic would determine if this was preferred or not.	**Significant comparative disadvantage over other options** 24 dwellings within 50m. Due to longer length and overbridge, there would be a higher volume of embodied carbon in this option.	**Some comparative disadvantage over other options** 12 dwellings within 50m. Slightly preferred over Option 2 due to lower number of properties within 50m and lower construction materials (embodied carbon).
		3.3	Landscape and Visual (including light)	Key landscape characteristics affected; Effects on listed/ key views; Impact on landscape character.	**Some comparative advantage over other options** Proposed structure will impact some trees at entrance to Beech Park. Very significant impact on residential properties on Clonsilla Road/ Larch Grove and Weaver's Walk north of the canal, and along the east side of Clonsilla Road south of canal (including Greenmount House). Impact on tree-lined corridor on northern side canal where structure wi oversail the canal.	**Significant comparative disadvantage over other options** Overbridge option will remove a number of residential properties at Larch Grove. Very significant impact on residential properties on Clonsilla Road/ Larch Grove and Weaver's Walk north of the canal, and along the east side of Clonsilla Road south of canal (including Greenmount House). Significant impact on tree-lined corridor of canal/railway. Junction with Porterstown Road may impact boundary of Luttrellstown Castle estate (an architectural conservation area, and a protected structure). Tree Preservation Objectives within Luttrellstown estate. Note also impacts for Option 1.	**Significant comparative disadvantage over other options** Impact on trees north of the canal - which are subject to Tree Preservation Objectives - and through Beech Park. Lands south of the railway are zoned High Amenity. Very significant impact on tree-lined corridor of canal and entrance to Porter's Gate. Visual impact on canal side properties at end of western ramp.
		3.4	Biodiversity (flora and fauna)	Potential compliance/conflict with biodiversity objectives; Indirect impacts on protected species, designated sites; Overall effect on nature conservation resource.	**Some comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Minor habitat loss in comparison to other options.	**Some comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Loss of woodland, treeline, hedgerow ammmenity grassland and wet grassland habitats.	**Some comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Loss of treeline and wet grassland habitat. Direct impacts to veteran beech tree in the field where option runs through.
		3.5	Cultural, Archaeological and Architectural Heritage	Overall effect on cultural, archaeological and architecture heritage resource. Likely effects on RPS, National Monuments, SMRs, Conservation areas, etc. Number of designated sites/structures (by level of designation) directly impacted by scheme (landtake)	**Some comparative advantage over other options** Indirect impacts on canal bridge, canal and signal box (RPS)	**Some comparative disadvantage over other options** Direct impacts on demesne landscapes associated with Greenmount and Kellystown. Indirect impact on canal (RPS). Potential direct impacts on archaeological deposits that may survive within greenfield areas. Note also impacts for Option 1.	**Some comparative advantage over other options** Direct impact on demesne landscape associated with Beech Park Ho. Indirect impact on canal (RPS). Potential direct impacts on archaeological deposits that may survive within greenfield areas.
		3.6	Water Resources	Overall potential significant effects on water resource attributes likely to be affected during construction and operation.	**Some comparative advantage over other options** Potential Positive impact on surface water quality during operation. Potential negative impact on groundwater quality during construction phase. Option has some comparative advantages over other options.	**Some comparative disadvantage over other options** Potential negative impact on surface water quality during operational phase. Potential negative impact on groundwater quality during construction phase. Has some comparative disadvantage over other options.	**Some comparative disadvantage over other options** Proposed route indicated to have increased flood risk compared to other options. Potential negative impact on surface water quality during operational phase. Has some comparative disadvantage over other options.
		3.7	Agriculture and Non-Agricultural	Overall impact on land take & property. Number of properties to be impacted/acquired. Likely temporary or permanent severance effects, etc.	**Significant comparative advantage over other options** Options 1 and 4 were identified as having significant advantages over options due to the limited landtake and impact associated with Option 1 and the reduced direct impact associated with Option 4.	**Significant comparative disadvantage over other options** Under Option 2, the non-agricultural impact will involve the acquisition of five residential properties. The agricultural impact will result in land severance on a livestock farm holding	**Significant comparative advantage over other options** Options 1 and 4 were identified as having significant advantages over option 2 due to the limited landtake and impact associated with Option 1 and the reduced direct impact associated with Option 4.
		3.8	Geology and Soils (including Waste)	Soils and Geology and likely impact on geological resources based on preliminary/likely construction details. % of soil resources to be developed/removed. Existing information relating to potential to encounter contaminated land. High-level assessment based on the likely structures/ works required and the potential for ground contamination due to historic landfills, pits and quarries.	**Some comparative advantage over other options** Lower fill import requirements compared to other options. All options are likely to require piling. The risk of encountering contaminated land is considered low for all options.	**Some comparative disadvantage over other options** Appproach ramps require significant earthworks import, Options 2 and 4 significantly more that Option 1, Option 4 more than Option 2. All options are likely to require piling. The risk of encountering contaminated land is considered low for all options. Note also impacts for Option 1.	**Some comparative disadvantage over other options** Appproach ramps require significant earthworks import, Options 2 and 4 significantly more that Option 1, Option 4 more than Option 2. All options are likely to require piling. The risk of encountering contaminated land is considered low for all options.
		3.9	Radiation and Stray Current	Overall likely impact on existing sources of electromagnetic radiation.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.
4	Accessibility & Social inclusion	4.1	Impact on Vulnerable Groups	Impacts on low income groups, non-car owners, people with a disability. Quantification of increased service levels to these groups ; Quantification of infrastructure and rolling stock improvements aimed at these groups; distribution of consumers surplus	**Some comparative disadvantage over other options** All options make an equivalent level of provision for vulnerable groups. Vehicular diverted distance route 3.8km (8.4x diversion route).	**Some comparative disadvantage over other options** All options make an equivalent level of provision for vulnerable groups. Vehicular access catered for locally. Note also impacts for Option 1.	**Some comparative advantage over other options** All options make an equivalent level of provision for vulnerable groups. Vehicular diverted distance route 974m (1.9x diversion route).
		4.2	Stations Accessibility	Quantification of increased service levels to the vulnerable groups. All options address provision for mobility impaired persons, pedestrians and cyclists locally.	**Some comparative disadvantage over other options** Original Distance from Consilla Road junction to Porterstown road 450m retained	**Some comparative advantage over other options** Diverted vehicular route distance 758m (1.6x diversion route)	**Some comparative advantage over other options** Diverted vehicular route distance 894m (2.0x diversion route)
		4.3	Social Inclusion	Quantification of service levels impacts including severance to all groups (Severance of local communities through removal of level crossings without connection would fair worst under this heading).	**Some comparative disadvantage over other options** Shortest diversion route 3.8km (8.4x diversion route) All options address provision for mobility impaired persons, pedestrians and cyclists locally.	**Some comparative advantage over other options** Diverted distance route 758m (1.6x diversion route) All options address provision for mobility impaired persons, pedestrians and cyclists locally.	**Some comparative advantage over other options** Diverted distance route 894m (2.0x diversion route) All options address provision for mobility impaired persons, pedestrians and cyclists locally.
5	Safety	5.1	Rail Safety	Safety for Rail users – removal of LC positive in this respect	**Comparable to other options** Closing the crossing would have a slight disadvantage to rail users as they would have to use alternative routes	**Comparable to other options** All underbridges will have a slight advantage as they are good but notoriously unpleasant for rail users	**Comparable to other options** All underbridges will have a slight advantage as they are good but notoriously unpleasant for rail users
		5.2	Vehicular Traffic Safety	Quality of Access for these road users, lengths of diversions, removal of interface with rail and other modes of transport	**Some comparative disadvantage over other options** Closing the crossing with remote alternative vehicular access has a slight disadvantage as it would divert traffic onto longer routes	**Some comparative advantage over other options** Providing a segregated crossing would have a significant advantage as vehicular traffic is not crossing the live rail	**Some comparative advantage over other options** Providing a segregated crossing would have a significant advantage as vehicular traffic is not crossing the live rail
		5.3	Pedestrian, Cyclist and Vulnerable Road user Safety	Quality of Access for these road users. removal of interfaces	**Significant comparative advantage over other options** Original Distance from Consilla Road junction to Porterstown road 450m retained. This option removes through traffic from this residential area.	**Some comparative disadvantage over other options** Original Distance from Consilla Road junction to Porterstown road 450m retained. This option introduces a four way traffic light junction into a residential area increasing the level of risk to vulnerable road users.	**Some comparative disadvantage over other options** Diverted distance route 894m (2.0x diversion route)
6	Physical Activity	6.1	Connectivity to adjoining cycling facilities	Analysis of the extent that the scheme connects with cycle tracks.	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.	**Some comparative advantage over other options** Local severance at Clonsilla Station mitigated to a degree by alternative access proposal
		6.2	Permeability and local connectivity opportunity	Journey Time and lengths of diversions for active modes and numbers affected. Analysis of the connectivity between level crossing and green areas/key attractions related to active mode	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.	**Some comparative advantage over other options** Local severance at Clonsilla Station mitigated to a degree by alternative access proposal

	Criteria		Option 1	Option 2	Option 4
1	Economy		Some comparative advantage over other options	Significant comparative disadvantage over other options	Significant comparative disadvantage over other options
2	Integration		Some comparative disadvantage over other options	Some comparative advantage over other options	Some comparative advantage over other options
3	Environment		Significant comparative advantage over other options	Significant comparative disadvantage over other options	Some comparative disadvantage over other options
4	Accessibility and social inclusion		Some comparative disadvantage over other options	Some comparative advantage over other options	Some comparative advantage over other options
5	Safety		Significant comparative advantage over other options	Some comparative disadvantage over other options	Some comparative disadvantage over other options
6	Physical Activity		Significant comparative advantage over other options	Significant comparative advantage over other options	Some comparative advantage over other options
	Preferrred Option		1	3	2
	Comment				

DART+ Maynooth Line - MCA Stage 2

Coolmine Level Crossing Assessment

	Parameter		Criteria	Sub-Criteria (Quantitative/ Qualitative)	Option 1	Option 3 with Pedestrian Cycle Bridge	Option 4 with Pedestrian Cycle Bridge	Option 6
1	Economy	1.1	Construction and Land Cost	Assessment of cost of construction of option, land costs, acquisition costs and temporary works	**Some comparative disadvantage over other options** This option is online and consequently serves the need for pedestrian / cycle access. Tl option causes greater construction disturbance and will be more difficult to build than offline options such as Opt3, Opt 4 and Opt 6. The overall cost of this option is less than Options 3 and 4 and comparable to Option 6	**Significant comparative disadvantage over other options** Less property demolition than 6, less frontage than other options. This option is less expensive than Option 4 but more expensive than all other options due to the need to build an additional bridge at the level crossing.	**Significant comparative disadvantage over other options** This option would require construction of a pedestrian cycle bridge at the level crossing as for Option 3, meaning 3no. Bridges are required to deliver this option including an opening bridge over the canal	**Some comparative advantage over other options** The extent of this option is more curtailed than other options and much of the scheme can be build offline. It has significant impact on the existing parking facilities at the train station. The overall cost of this option is comparable to Option 1 but less than other options.
		1.2	Long Term Maintenance costs	Steel options vs concrete options for structures and maintaining level crossings versus removing them	**Some comparative disadvantage over other options** Overbridges would reduce maintenance requirements over a level crossing. Bridge options would determine overall maintainance costs - single bridge here with walled embankment	**Some comparative disadvantage over other options** Overbridges would reduce maintenance requirements over a level crossing. Bridge options would determine overall maintainance costs. Two bridges here and walled embankments	**Significant comparative disadvantage over other options** An opening overbridge would significantly increase the maintenance requirements. Three bridges here and walled embankment	**Some comparative advantage over other options** Overbridges would reduce maintenance requirements over a level crossing. Bridge options would determine overall maintainance costs. Viaduct here and walled embankments
		1.3	Traffic Functionality /economic benefit	Benefits to vehicular traffic through reduction in journey time lengths and delays through removal of level crossings. Consideration of potentially longer routes for traffic.	**Some comparative disadvantage over other options** All options are equivalent in terms of traffic functionality as the alternative access is provided along a narrow corridor close to the exising level crossing. Diversions are shorter for Options 1 and 6 than Options 3 and 4. Options 3 and 4 remove through traffic from Coolmine Road providing relief for local traffic	**Some comparative advantage over other options** All options are equivalent in terms of traffic functionality as the alternative access is provided along a narrow corridor close to the exising level crossing. Diversions are shorter for Options 1 and 6 than Options 3 and 4. Options 3 and 4 remove through traffic from Coolmine Road providing relief for local traffic	**Some comparative advantage over other options** All options are equivalent in terms of traffic functionality as the alternative access is provided along a narrow corridor close to the exising level crossing. Diversions are shorter for Options 1 and 6 than Options 3 and 4. Options 3 and 4 remove through traffic from Coolmine Road providing relief for local traffic	**Some comparative disadvantage over other options** All options are equivalent in terms of traffic functionality as the alternative access provided along a narrow corridor close to the exising level crossing. Diversions are shorter for Options 1 and 6 than Options 3 and 4. Options 3 and 4 remove through traffic from Coolmine Road providing relief for local traffic. This option impacts on the parking facilities at the train station
2	Integration	2.1	Transport Integration	Impact on scope for and ease of interchange between modes. Impact on the operation of other transport services both during construction and in operation. New interchange nodes and facilities; Reduced walking and wait times associated with interchanges. Modal shift figures during construction and operations. Changes to journey times to transport nodes.	**Some comparative disadvantage over other options** Improved interchange between modes, subject to satisfactory access to train station platforms. General reduction in journey times. There may be severance to existing connectivity on the approaches to the bridge over the canal and railway as a result of the construction of the required approach ramps. Access to the station carpark will be less straight forward and the scheme will result in a reduction in the number of spaces available	**Significant comparative advantage over other options** Rerouted access to train station car park. General improvement in connectivity and journey times. The provision of a pedestrian and cycle bridge at the existing level crossing provides the best access for NMU. The segregtion of through traffic from 'kiss & ride' and 'park & ride' traffic also provides an optimum solution.	**Significant comparative advantage over other options** Rerouted access to train station car park. General improvement in connectivity and journey times. The provision of a pedestrian and cycle bridge at the existing level crossing provides the best access for NMU. The segregtion of through traffic from 'kiss & ride' and 'park & ride' traffic also provides an optimum solution.	**Significant comparative disadvantage over other options** Improved interchange between modes, subject to satisfactory access to train station platforms. General reduction in journey times. There may be severance to existing connectivity on the approaches to the bridge over the canal and railway as a result of the construction of the required approach ramps. Access to the train station car park will be difficult and it is likely that the capacity of the existing car park will be signifiantly reduced. Although curtailed in length, the steep gradient (6%) on the approaches to the bridge will make access more difficult for pedestrian, cycle and mobility impaired users. This may need the incorporation of nested ramps to address this need.
		2.2	Land Use Integration	Impact on land use strategies and regional and local plans. Assessment of support for land use factors local land use and planning. Inclusion of project in relevant local and regional planning documents. Note: All options are supported by the national and regional planning policy context, specifically with the NPF and the RSES. The RSES developed the Dublin MASP, where one of the Guiding Principles for the Growth of this area is Integrated Transport and Land Use "To focus growth along existing and proposed high quality public transport corridors and nodes on the expanding public transport network and to support the delivery and integration of 'BusConnects', DART expansion and LUAS extension programmes, and Metro Link, while maintaining the capacity and safety of strategic transport networks".	**Some comparative advantage over other options** At local level, the Fingal DP supports the development of the project under Objective MT30 "*Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground*". All of the options (1,3,4,6) do not support Objective 142*Preserve the existing pedestrian and vehicular right of way at the Coolmine Level Crossing*" and therefore this factor does not become a significant differentiator in the comparative assessment. However, it is recognised as a moderative negative in terms of the local policy context. An alternative pedestrian and cycle way is included which would create a new right of way. In terms of land use factors, the area is a well established residential area with no significant future development planned for the area. The construction of Option 1 will enhance access to sustainable modes of travel to and from the station for some users. It would curtail community severance (considered under social inclusion not considered as part of planning policy).	**Some comparative disadvantage over other options** At local level, the Fingal DP supports the development of the project under Objective MT30 "*Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground*". All of the Options (1,3,4, 6) do not support Fingal DP Objective 142*Preserve the existing pedestrian and vehicular right of way at the Coolmine Level Crossing*" and therefore this factor does not become a significant differentiator in the comparative assessment. However, it is recognised as a moderative negative in terms of the local policy context. This option includes an alternative pedestrian and cycle access, which would create a new right of way as well as linking to the GDA cycle network. This option would result in the construction of a new road bridge over the Canal at the location defined by the FDP map based"*Specific Objective 141 Prohibit any road bridge at this location*". It would bring traffic through an established residential area connecting to existing road network associated with Riverwood Court, Station Court way and St. Mochta's Grove which would impact negatively on the residential amenity of these zoned areas. Future land use factors development is not likely as it is a well established area.	**Some comparative disadvantage over other options** At local level, the Fingal DP supports the development of the project under Objective MT30 "*Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground*". All of the Options (1,3,4, 6) do not support Fingal DP Objective 142*Preserve the existing pedestrian and vehicular right of way at the Coolmine Level Crossing*" and therefore this factor does not become a significant differentiator in the comparative assessment. However, it is recognised as a moderative negative in terms of the local policy context. This option includes an alternative pedestrian and also includes dedicated cycle lanes, which would create a new right of way as well as linking to the GDA cycle network. This option would result in the construction of a new road bridge over the Canal at the location defined by the FDP map based"*Specific Objective 141 Prohibit any road bridge at this location*". It would bring traffic through an established residential area connecting to existing road network associated with Riverwood Court, Station Court way and St. Mochta's Grove which would impact negatively on the residential amenity of these zoned areas. Future land use factors development is not likely as it is a well established area.	**Some comparative advantage over other options** At local level, the Fingal DP supports the development of the project under Objective MT30 "*Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground*". All of the Options (1, 3,4,6) do not support Objective 142*Preserve the existing pedestrian and vehicular right of way at the Coolmine Level Crossing*" and therefore this factor does not become a significant differentiator in the comparative assessment. However, it is recognised as a moderate negative in terms of the local policy context. An alternative pedestrian footpath is included which would create a new right of way and also cycle infrastructure is provided, which would meet the 'indicative/cycle/ walking' network at this approximate location (FDP). Option 6 travels through the existing Coolmine Train Station Carpark that has a '*Specific Objective 143 Car parking provision associated with the train station shall be two storeys or less*'. This option directly impacts this objective while also reducing the current viability of the carpark that would be required for the likely increase of train passengers. When considering future land use factors, this option would have a major negative effect from a land use planning and transportation integration perspective due to impacts to the train station carpark.
		2.3	Geographical Integration	Impact on improvement of external links. Desire to link various geographical – mostly neutral due to localised nature of the level crossings. Overall electrification scheme would be highly positive.	**Some comparative advantage over other options** Original Distance traffic light junction to roundabout 500m retained. Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing for pedestrians and cyclists, albeit that the route will be more circuitous.	**Some comparative disadvantage over other options** Diverted distance route 1.5km (3.3x diversion route) for cars. Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing for pedestrians and cyclists, albeit that the route will be more circuitous.The removal of through traffic from the Coolmine Road will make it a much safer and more cyclist/pedestrian friendy environment.	**Some comparative disadvantage over other options** Diverted distance route 1.5km (3.3x diversion route) for cars. Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing for pedestrians and cyclists, albeit that the route will be more circuitous.The removal of through traffic from the Coolmine Road will make it a much safer and more cyclist/pedestrian friendy environment.	**Some comparative advantage over other options** Original Distance traffic light junction to roundabout 500m retained. Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing for pedestrians and cyclists, albeit that the route will be more circuitous.
		2.4	Other Government Policy	Integration with Government Policy, Smarter Travel, Investment Programmes, rail safety, electrification etc	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate
3	Environment	3.1	Noise and Vibration	Estimated number of people likely to be affected by transport related noise with the scheme within 50m.	**Some comparative advantage over other options** On line option will have some additional impacts to the current situation. 246 dwellings within 100m. On the approaches to the railway the road will be elevated. This may require the introduction of noise barriers above road level. This option directly effects more properties than Options 3, 4 and 6	**Some comparative disadvantage over other options** Moves traffic to new location and will impact different properties to the current level crossing. 203 dwellings within 50m. Many do not front on to the scheme option. There will be impact during the construction stage of the pedestrian cycle bridge on properties in the vicinity of the existing level crossing. No impact during the operational phase. On the approaches to the railway the road will be elevated. This may require the introduction of noise barriers above road level. This option affects less properties than Option 1 but is comparable to other options	**Some comparative disadvantage over other options** Moves traffic to new location and will impact different properties to the current level crossing. 203 dwellings within 50m. Many do not front on to the scheme option. There will be impact during the construction stage of the pedestrian cycle bridge on properties in the vicinity of the existing level crossing. No impact during the operational phase. On the approaches to the railway the road will be elevated. This may require the introduction of noise barriers above road level. This option affects less properties than Option 1 but is comparable to other options	**Some comparative advantage over other options** Moves traffic to new location and will impact additional properties to the current crossing. 101 dwellings within 100m. On the approaches to the railway the road will be elevated. This may require the introduction of noise barriers above road level.
		3.2	Air Quality and Climate	Local air quality effects. No of number of receptors within 50m.	**Some comparative disadvantage over other options** On line option. 160 dwellings within 50m.	**Significant comparative disadvantage over other options** Moves traffic to new location and will impact different properties to the current crossing. 203 dwellings within 50m.	**Some comparative disadvantage over other options** Moves traffic to new location and will impact different properties to the current crossing. 174 dwellings within 50m. Potentially less embodied carbon than option 3 due to underbridge rather than over bridge in construction phase.	**Significant comparative advantage over other options** Moves traffic to new location and will impact different properties to the current crossing. 67 dwellings within 50m.
		3.3	Landscape and Visual (including light)	Key landscape characteristics affected; Effects on listed/ key views; Impact on landscape character.	**Some comparative advantage over other options** Online overbridge option is likely to have significant impact on visual setting of adjoining residential properties at Kirkpatrick Drive, Sheepmoor Lane, Delwood Grove and Riverwood Hall. Significant visual impact for setting of Kirkpatrick Bridge - a protected structure and hence for Objective CH43 of Fingal Development Plan. Likely significant impact due to removal of roadside tree-lined hedgerows leading to railway / canal. Further information required regarding junction proposal/arrangement for Sheepmoor Lane and Kirkpatrick Drive.	**Significant comparative disadvantage over other options** Offline overbridge option will have very significant landscape and visual impact on open space zoned lands between St. Mochta's/Rockfield, Stationcourt Way/Kirkpatrick and through Riverwood. Very significant visual impact for residential properties at St. Mochta's, Rockfield, Stationcourt Way/Hall, Kirkpatrick and Riverwood. Demolition of residential properties at Sheepmoor Lane. Tree and vegetation loss and significant visual impact in crossing the Royal Canal and hence for Objective CH43 of Fingal Development Plan. Online pedestrian cycle overbridge option will have very significant landscape and visual impact on adjacent housing estates and apartment blocks. Tree and vegetation loss and significant visual impact in crossing the Royal Canal and hence for Objective CH43 of Fingal Development Plan.	**Significant comparative disadvantage over other options** Online underbridge option will have very significant landscape and significant visual impact on open space zoned lands between St. Mochta's/Rockfield, Stationcourt Way/Kirkpatrick and through Riverwood. Significant visual impact for residential properties at St. Mochta's, Rockfield, Stationcourt Way/Hall, Kirkpatrick and Riverwood. Demolition of residential property at Sheepmoor Lane. Tree and vegetation loss and significant visual impact in crossing the Royal Canal and hence for Objective CH43 of Fingal Development Plan. Online pedestrian cycle overbridge option will have very significant landscape and visual impact on adjacent housing estates and apartment blocks. Tree and vegetation loss and significant visual impact in crossing the Royal Canal and hence for Objective CH43 of Fingal Development Plan.	**Some comparative advantage over other options** Overbridge option will have very significant visual impact on residential properties at Delwood, Cherry Drive and Rosehaven. Very significant landscape and visual impact on corridor of Royal Canal, setting of Kirkpatrick Bridge and hence for Objective CH43 of Fingal Development Plan. Demolition of residential properties at Delwood Grove.
		3.4	Biodiversity (flora and fauna)	Potential compliance/conflict with biodiversity objectives; Indirect impacts on protected species, designated sites; Overall effect on nature conservation resource.	**Some comparative advantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Minor habitat loss. Widening of Coolmine Road on north side could result in loss of mature ash trees on the west side of road next to canal. This could be avoided if road is widened at eastern side. Demolition of Kirkpatrick Bridge could cause disturbance to fauna impact water quality in the canal.	**Some comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Loss of woodland, scrub, ammenity grassland, scattered trees and parkland.	**Some comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Loss of woodland, scrub, ammenity grassland, scattered trees and parkland.	**Some comparative advantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Loss of woodland and scrub habitat. Less impact on habitats than some other options.
		3.5	Cultural, Archaeological and Architectural Heritage	Overall effect on cultural, archaeological and architecture heritage resource. Likely effects on RPS, National Monuments, SMRs, Conservation areas, etc. Number of designated sites/structures (by level of designation) directly impacted by scheme (landtake)	**Comparable to other options** Potential direct impact on RPS 0697 bridge over canal	**Comparable to other options** Potential indirect impact canal (RPS) Potential direct impact on RPS 0697 bridge over canal	**Comparable to other options** Potential indirect impact canal (RPS) Potential direct impact on RPS 0697 bridge over canal	**Comparable to other options** Potential indirect impact canal (RPS) Potential direct impact on RPS 0697 bridge over canal
		3.6	Water Resources	Overall potential significant effects on water resource attributes likely to be affected during construction and operation.	**Significant comparative advantage over other options** Potential minor negative impact on flood risk during construction as works may alter the existing drainage regime and increase risk of spot pluvial flooding. Will likely have a neutral negligible impact on flood risk during operation. May have a negative impact on water quality during construction phase as runoff borne pollutants may enter the receiving waterbodies. During operational phase there will likely be a minor positive impact to the water quality of the royal canal as the surface water drainage network is formalised reducing the current levels of vehicular derived pollutants. GSI Groundwater vulnerability mapping indicates that all proposed options are within zones described as " Extreme" or "Rock at or Near Surface". Construction within these zones could create a pathway for contaminants to enter groundwater.	**Significant comparative advantage over other options** Potential minor negative impact on flood risk during construction as works may alter the existing drainage regime and increase risk of spot pluvial flooding. Will likely have a neutral/ negligible impact on flood risk during operation. May have a negative impact on water quality during construction phase as runoff borne pollutants may enter the receiving waterbodies. During operational phase there will likely be a minor positive impact to the water quality of the royal canal as the surface water drainage network is formalised reducing the current levels of vehicular derived pollutants. GSI Groundwater vulnerability mapping indicates that all proposed options are within zones described as " Extreme" or "Rock at or Near Surface". Construction within these zones could create a pathway for contaminants to enter groundwater.	**Some comparative disadvantage over other options** Potential minor negative impact on flood risk during construction as works may alter the existing drainage regime and increase risk of spot pluvial flooding. Will likely have a neutral negligible impact on flood risk during operation. May have a negative impact on water quality during construction phase as runoff borne pollutants may enter the receiving waterbodies. During operational phase there will likely be a minor positive impact to the water quality of the royal canal as the surface water drainage network is formalised reducing the current levels of vehicular derived pollutants. GSI Groundwater vulnerability mapping indicates that all proposed options are within zones described as " Extreme" or "Rock at or Near Surface". Construction within these zones could create a pathway for contaminants to enter groundwater. Underpass excavations pose potential risk to Groundwater quality. Has the greatest risk of contamination of ground water.	**Significant comparative advantage over other options** Potential minor negative impact on flood risk during construction as works may alter the existing drainage regime and increase risk of spot pluvial flooding. Will likely have a neutral negligible impact on flood risk during operation. May have a negative impact on water quality during construction phase as runoff borne pollutants may enter the receiving waterbodies. During operational phase there will likely be a minor positive impact to the water quality of the royal canal as the surface water drainage network is formalised reducing the current levels of vehicular derived pollutants. GSI Groundwater vulnerability mapping indicates that all proposed options are within zones described as " Extreme" or "Rock at or Near Surface". Construction within these zones could create a pathway for contaminants to enter groundwater.
		3.7	Agriculture and Non-Agricultural	Overall impact on land take & property. Number of properties to be impacted/acquired. Likely temporary or permanent severance effects, etc.	**Some comparative advantage over other options** This option impacts the access to residential properties and directly fronts a large number of same. 160 dwellings within 50m.	**Some comparative disadvantage over other options** The non-agricultural impact will involve the acquisition of two residential properties under Opt 3 - 203 dwellings within 50m.	**Some comparative disadvantage over other options** The non-agricultural impact will involve the acquisition of two residential properties under Option 3 - 174 dwellings within 50m.	**Significant comparative disadvantage over other options** Four residential properties may need to be acquired for Option 6. Option 6 will have a significant impact on the Coolmine Station car park. - 67 dwellings within 50m
		3.8	Geology and Soils (including Waste)	Soils and Geology and likely impact on geological resources based on preliminary/likely construction details. % of soil resources to be developed/removed. Existing information relating to potential to encounter contaminated land. High-level assessment based on the likely structures/ works required and the potential for ground contamination due to historic landfills, pits and quarries.	**Some comparative disadvantage over other options** Overbridge options require increased fill import to the site (Minor negative).	**Some comparative disadvantage over other options** Overbridge options require increased fill import to the site (Minor negative).	**Some comparative advantage over other options** Comparatively lower fill import requirements due to the lower alignment (Minor negative/negligible)	**Some comparative disadvantage over other options** Some made ground on-site. Overbridge options require increased fill import to the site (Minor negative).
		3.9	Radiation and Stray Current	Overall likely impact on existing sources of electromagnetic radiation.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.
4	Accessibility & Social inclusion	4.1	Impact on Vulnerable Groups	Do options address the needs of vulnerable groups. How do they compare to one another in this regard	**Comparable to other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway.	**Comparable to other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway.	**Comparable to other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway.	**Comparable to other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway.
		4.2	Stations Accessibility	Quantification of increased service levels to the vulnerable groups.	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently
		4.3	Social Inclusion	Quantification of service levels impacts including severance to all groups (Severance of local communities through removal of level crossings without connection would fair worst under this heading).	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently	**Comparable to other options** Providing for vehicular, pedestrian and cycle access is appropriate. All options provide for equivalently
5	Safety	5.1	Rail Safety	Safety for Rail users – removal of LC positive in this respect	**Comparable to other options** All Options remove rail - road interface	**Comparable to other options** All Options remove rail - road interface	**Comparable to other options** All Options remove rail - road interface	**Comparable to other options** All Options remove rail - road interface
		5.2	Vehicular Traffic Safety	Quality of Access for these road users, lengths of diversions, removal of interface with rail and other modes of transport	**Comparable to other options** All options provide a segregated crossing and introduce significant safety enhancement as vehicular traffic is not crossing the live railway	**Comparable to other options** All options provide a segregated crossing and introduce significant safety enhancement as vehicular traffic is not crossing the live railway	**Comparable to other options** All options provide a segregated crossing and introduce significant safety enhancement as vehicular traffic is not crossing the live railway	**Comparable to other options** All options provide a segregated crossing and introduce significant safety enhancement as vehicular traffic is not crossing the live railway
		5.3	Pedestrian, Cyclist and Vulnerable Road user Safety	Quality of Access for these road users. removal of interfaces	**Significant comparative advantage over other options** All options make equivalent high quality provision for vulnerable road users. Options 3 and 4 however provided for vulnerable road users at the level crossing segregated from through traffic. This segregation is not available for Options 1 and 6	**Some comparative advantage over other options** All options make equivalent high quality provision for vulnerable road users. Options 3 and 4 however provided for vulnerable road users at the level crossing segregated from through traffic. This segregation is not available for Options 1 and 6	**Some comparative advantage over other options** All options make equivalent high quality provision for vulnerable road users. Options 3 and 4 however provided for vulnerable road users at the level crossing segregated from through traffic. This segregation is not available for Options 1 and 6	**Significant comparative advantage over other options** All options make equivalent high quality provision for vulnerable road users. Options 3 and 4 however provided for vulnerable road users at the level crossing segregated from through traffic. This segregation is not available for Options 1 and 6
6	Physical Activity	6.1	Connectivity to adjoining cycling facilities	Analysis of the extent that the scheme connects with cycle tracks.	**Comparable to other options** All options provide for integration with adjoining and proposed cycle facilities	**Comparable to other options** All options provide for integration with adjoining and proposed cycle facilities	**Comparable to other options** All options provide for integration with adjoining and proposed cycle facilities	**Comparable to other options** All options provide for integration with adjoining and proposed cycle facilities
		6.2	Permeability and local connectivity opportunity	Journey Time and lengths of diversions for active modes and numbers affected. Analysis of the connectivity between level crossing and green areas/key attractions related to active mode	**Significant comparative advantage over other options** Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing. Offline options provide the additional benefit of providing pedestrian and cycle connectivity at two locations rather than just one.	**Significant comparative advantage over other options** Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing. Offline options provide the additional benefit of providing pedestrian and cycle connectivity at two locations rather than just one.	**Significant comparative advantage over other options** Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing. Offline options provide the additional benefit of providing pedestrian and cycle connectivity at two locations rather than just one.	**Significant comparative advantage over other options** Existing connectivity will be enhanced by the removal of the obstacle posed by the existing level crossing. Offline options provide the additional benefit of providing pedestrian and cycle connectivity at two locations rather than just one.

	Criteria		Option 1	Option 3 with Pedestrian Cycle Bridge	Option 4 with Pedestrian Cycle Bridge	Option 6
1	Economy		Some comparative advantage over other options	Some comparative advantage over other options	Significant comparative disadvantage over other options	Some comparative disadvantage over other options
2	Integration		Some comparative disadvantage over other options	Some comparative advantage over other options	Some comparative advantage over other options	Some comparative disadvantage over other options
3	Environment		Some comparative disadvantage over other options	Significant comparative disadvantage over other options	Significant comparative disadvantage over other options	Some comparative disadvantage over other options
4	Accessibility and social inclusion		Comparable to other options	Comparable to other options	Comparable to other options	Comparable to other options
5	Safety		Some comparative advantage over other options	Significant comparative advantage over other options	Significant comparative advantage over other options	Some comparative advantage over other options
6	Physical Activity		Some comparative disadvantage over other options	Significant comparative advantage over other options	Significant comparative advantage over other options	Some comparative disadvantage over other options
	Preferred Option Ranking		2	1	4	3
	Comment			Best of western options	No Advantage over Option 3	

IDOM RÓD C3 Projects

Iarnród Éireann Irish Rail

DART+ Maynooth Line - MCA Stage 2

Porterstown Level Crossing Assessment

	Parameter		Criteria	Sub-Criteria (Quantitative/ Qualitative)	Option 1	Option 2	Option 3	Option 4
1	Economy	1.1	Construction and Land Cost	Assessment of cost of construction of option, land costs, acquisition costs and temporary works	**Some comparative advantage over other options** Construction costs are higher for thie option than for other options due to the height of the viaduct and the length of ramp needed to reach deck level. In addition there is the additional cost of the at grade access tracks to the viaduct.	**Some comparative disadvantage over other options** The construction cost of this option is less equivalent to the cost of Option 4. It is cheaper than Options 3 and 1	**Significant comparative disadvantage over other options** The construction cost of this option is higher than Options 2 and 4 due to the provision for crossing over the existing buildings of the sports ground. This option also includes for realignment of a section of Porterstown Road south of the railway. The land acquisition costs of this option are higher than for other options	**Some comparative disadvantage over other options** The construction cost of this option is less equivalent to the cost of Option 2. It is cheaper than Options 3 and 1
		1.2	Long Term Maintenance costs	Steel options vs concrete options for structures and maintaining level crossings versus removing them	**Some comparative advantage over other options** Reinforced concrete structures are anticipated. These have relatively modest ongoing maintenance costs. The costs are equivalent for all options.	**Some comparative disadvantage over other options** Reinforced concrete structures are anticipated. These have relatively modest ongoing maintenance costs. The costs are equivalent for all options.	**Some comparative disadvantage over other options** Reinforced concrete structures are anticipated. These have relatively modest ongoing maintenance costs. The costs are equivalent for all options.	**Some comparative disadvantage over other options** Reinforced concrete structures are anticipated. These have relatively modest ongoing maintenance costs. The costs are equivalent for all options.
		1.3	Traffic Functionality /economic benefit	Benefits to vehicular traffic through reduction in journey time lengths and delays through removal of level crossings. Consideration of potentially longer routes for traffic.	**Comparable to other options** Displacement of low traffic volumes (between 55 and 110 vehicles) during peak hours onto alternative routes; increase in journey times for local residents, New Link road already serves for commuter traffic.	**Comparable to other options** Displacement of low traffic volumes (between 55 and 110 vehicles) during peak hours onto alternative routes; increase in journey times for local residents, New Link road already serves for commuter traffic.	**Comparable to other options** Displacement of low traffic volumes (between 55 and 110 vehicles) during peak hours onto alternative routes; increase in journey times for local residents, New Link road already serves for commuter traffic.	**Comparable to other options** Displacement of low traffic volumes (between 55 and 110 vehicles) during peak hours onto alternative routes; increase in journey times for local residents, New Link road already serves for commuter traffic.
2	Integration	2.1	Transport Integration	Impact on scope for and ease of interchange between modes. Impact on the operation of other transport services both during construction and in operation. New interchange nodes and facilities; Reduced walking and wait times associated with interchanges. Modal shift figures during construction and operations. Changes to journey times to transport nodes.	**Some comparative disadvantage over other options** Some indirect access provided for pedestrians and cyclists, but less prefereable than other options. No access provided for other transport modes.	**Some comparative advantage over other options** Reasonable access provided for pedestrians and cyclissts. No access provided for other transport modes.	**Some comparative advantage over other options** Reasonable access provided for pedestrians and cyclissts. No access provided for other transport modes.	**Some comparative advantage over other options** Reasonable access provided for pedestrians and cyclissts. No access provided for other transport modes.
		2.2	Land Use Integration	Impact on land use strategies and regional and local plans. Assessment of support for land use factors local land use and planning. Inclusion of project in relevant local and regional planning documents. All options are supported by the national and regional planning policy context, specifically with the NPF and the RSES. The RSES developed the Dublin MASP, where one of the Guiding Principles for the Growth of this area is Integrated Transport and Land Use "To focus growth along existing and proposed high quality public transport corridors and nodes on the expanding public transport network and to support the delivery and integration of 'BusConnects', DART expansion and LUAS extension programmes, and Metro Link, while maintaining the capacity and safety of strategic transport networks".	**Comparable to other options** At local level, the Fingal DP supports the development of the project under Objective MT30 *"Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground"*. Option 1 does not support Fingal DP map-based Specific Objective 137; *"Preserve the existing pedestrian and vehicular right of way at the level crossing at Porterstown"*. nor does it provide an alternative pedestrian access at this location. Option 1 instead provides pedestrian access (only) to Dr Tory Bridge (Porterstown Viaduct) which would provide a pedestrian and cycle link to a proposed 'light rail corrid and a light rail stop at Porterstown (travelling north south along the R121). The surrounding area is zoned 'Residential Area" and will be subject to Kellystown LAP (a Issues paper stage June 2019). This option does not include cycle access or vehicula access. This option would support pedestrian access at this location and also provide direct connect to other future public transport services via Porterstown viaduct.	**Comparable to other options** At local level, the Fingal DP supports the development of the project under Objective MT30 *"Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground"*. Option 2 goes against Fingal DP map-based Specific Objective 137; *"Preserve the existing pedestrian and vehicular right of way at the level crossing at Porterstown"* by closing the existing level crossing. Resulting in a moderately negative impact form a policy perspective. However, an alternative right of way for pedestrians is being provided as part of this option in proximity to the existing level crossing location. Option 2 would also support the future development of lands zoned "Residential Area" as part of the future Kellystown LAP by maintaining pedestrian and cycle access at this location. However it would also impact on open space provision along the Canal.	**Comparable to other options** At local level, the Fingal DP supports the development of the project under Objective MT30 *"Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground"*. At local level, Option 3 goes against Fingal DP map-based Specific Objective 137;*"Preserve the existing pedestrian and vehicular right of way at the level crossing at Porterstown"* by closing the existing level crossing. However, an alternative right of way for pedestrians and also the development of cycling infrastructure provided therefore the option supports the 'indicative-Cycle/Pedestrian access' at the existing level crossing location (gradients & length not taken into consideration) and would therefore serve to support future land use factors. Option 3 would continue to support the future development of lands zoned for "Residential Area" as part of the future Kellystown LAP by maintaining pedestrian and cycle access at this location.	**Comparable to other options** At local level, the Fingal DP supports the development of the project under Objective MT30 *"Support Iarnród Éireann and the NTA in implementing the DART Expansion Programme, including the extension of the DART line to Balbriggan, the design and planning for the expansion of DART services to Maynooth, and the redesign of the DART Underground"*. Option 4 goes against Fingal DP map-based Specific Objective 137; *"Preserve the existing pedestrian and vehicular right of way at the level crossing at Porterstown"* by closing the existing level crossing. Resulting in a moderately negative impact form a policy perspective. However, an alternative right of way for pedestrians is being provided as part of this option in proximity to the existing level crossing location. Option 4 would also support the future development of lands zoned "Residential Area" as part of the future Kellystown LAP by maintaining pedestrian and cycle access at this location. However it would also impact on open space provision along the Canal.
		2.3	Geographical Integration	Impact on improvement of external links. Desire to link various geographical – mostly neutral due to localised nature of the level crossings. Overall electrification scheme would be highly positive.	**Comparable to other options** The existing road access at porterstown level crossing provides for single lane vehicula access. The adjacent viaduct was constructed to provide alternative vehicular access. Shortest diversion route 1.2km (2x diversion route)	**Comparable to other options** The existing road access at porterstown level crossing provides for single lane vehicula access. The adjacent viaduct was constructed to provide alternative vehicular access. Shortest diversion route 1.2km (2x diversion route)	**Comparable to other options** The existing road access at porterstown level crossing provides for single lane vehicular access. The adjacent viaduct was constructed to provide alternative vehicular access. Shortest diversion route 1.2km (2x diversion route)	**Comparable to other options** The existing road access at porterstown level crossing provides for single lane vehicular access. The adjacent viaduct was constructed to provide alternative vehicular access. Shortest diversion route 1.2km (2x diversion route)
		2.4	Other Government Policy	Integration with Government Policy, Smarter Travel, Investment Programmes, rail safety, electrification etc	**Comparable to other options** Providing for pedestrian and cycle access is appropriate with prexisting adjacent vehicular access	**Comparable to other options** Providing for pedestrian and cycle access is appropriate with prexisting adjacent vehicular access	**Comparable to other options** Providing for pedestrian and cycle access is appropriate with prexisting adjacent vehicular access	**Comparable to other options** Providing for pedestrian and cycle access is appropriate with prexisting adjacent vehicular access
3	Environment	3.1	Noise and Vibration	Estimated number of people likely to be affected by transport related noise with the scheme within 50m. All options remove through vehicular traffic from the location	**Some comparative advantage over other options** 2 dwelling within 100m. Note that only construction stage impacts expected as this is a pedestrian, cycle crossing.	**Some comparative advantage over other options** 3 dwelling within 100m. Note that only construction stage impacts expected as this is a pedestrian, cycle crossing.	**Some comparative disadvantage over other options** 22 dwelling within 100m. Note that only construction stage impacts expected as this is a pedestrian, cycle crossing.	**Some comparative advantage over other options** 3 dwelling within 100m. Note that only construction stage impacts expected as this is a pedestrian, cycle crossing.
		3.2	Air Quality and Climate	Local air quality effects. No of number of receptors within 50m. All options remove through vehicular traffic from the location	**Some comparative advantage over other options** 2 dwelling within 50m. Note that only construction stage impacts expected as this is a pedestrian, cycle crossing. All options will result in the same additional operational phase vehicle changes to emissions due to rerouting traffic. No bridge so lower construction impacts.	**Some comparative advantage over other options** 3 dwelling within 50m. Note that only construction stage impacts expected as this is a pedestrian crossing. All options will result in the same additional operational phase vehicle changes to emissions e due to rerouting traffic.	**Some comparative disadvantage over other options** 10 dwellings within 50m. Note that only construction stage impacts expected as this is a pedestrian, cycle crossing. Potentially more embodied carbon due to additional construction material requried. All options will result in the same additional operational phase vehicle changes to emissions e due to rerouting traffic.	**Some comparative advantage over other options** 3 dwelling within 50m. Note that only construction stage impacts expected as this is a pedestrian crossing. All options will result in the same additional operational phase vehicle changes to emissions e due to rerouting traffic.
		3.3	Landscape and Visual (including light)	Key landscape characteristics affected; Effects on listed/ key views; Impact on landscape character.	**Some comparative advantage over other options** Significant impact on trees to north of canal - which provide screening for residential property.	**Some comparative disadvantage over other options** Significant impact on trees to north of canal - which provide screening for residential property. Significant visual impact for old cottages at level crossing. Visual impact on setting of Keenan bridge, with proposed bridge elevated directly over.	**Significant comparative disadvantage over other options** Significant impact on roadside trees and hedgerows. Significant visual impact for old cottages at level crossing and for properties on Porterstown Road, north of the canal. Visual impact on setting of Keenan bridge, with proposed bridge elevated directly over.	**Some comparative disadvantage over other options** Significant impact on trees to north of canal - which provide screening for residential property. Significant visual impact for old cottages at level crossing. Visual impact on setting of Keenan bridge, with proposed bridge elevated directly over.
		3.4	Biodiversity (flora and fauna)	Potential compliance/conflict with biodiversity objectives; Indirect impacts on protected species, designated sites; Overall effect on nature conservation resource.	**Some comparative advantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Potential impact to woodland habitat adjacent to canal. Potential impacts to bats foraging and roosting in existing bridge, buildings and trees nearby. Given that that this option will follow existing pedestrian bridge there is less impact to canal corridor than option 2 and 3.	**Some comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Potential impacts to bats foraging and roosting in existing bridge, buildings and trees nearby. Loss of trees and vegetation at new bridge crossing and adjacent to canal and railway. Given that this option involves work over and adjacent to canal there is potential for greater impact to canal than Options 1 and 3.	**Some comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Potential impacts to bats foraging and roosting in existing bridge, buildings and trees nearby. Loss of trees at new bridge crossing. Greater potential to impact canal from than Optio 1.	**Significant comparative disadvantage over other options** Hydrologically connected to South Dublin Bay and River Tolka Estuary SPA. No risk of LSE. Potential impacts to Royal Canal pNHA. Potential impacts to bats foraging and roosting in existing bridge, buildings and trees nearby. Loss of trees and vegetation at new bridge crossing and at a greater extent to the north of the canal and railway wherea section of linear woodland will be cleared to acccomoda the northern ramps and abutment. Given that this option involves work over and adjacent to canal as well as loss of woodland habitat there is potential for greater impact on the canal and adjacent habitats than all other options
		3.5	Cultural, Archaeological and Architectural Heritage	Overall effect on cultural, archaeological and architecture heritage resource. Likely effects on RPS, National Monuments, SMRs, Conservation areas, etc. Number of designated sites/structures (by level of designation) directly impacted by scheme (landtake)	**Some comparative disadvantage over other options** Indirect impacts on Crossing cottage and school house (RPS). Potential direct impacts on archaeological deposits that may survive in greenfield areas.	**Some comparative advantage over other options** Indirect impacts on Crossing cottage, school house, canal bridge and canal.	**Some comparative advantage over other options** Indirect impacts on Crossing cottage, school house, canal bridge and canal.	**Some comparative advantage over other options** Indirect impacts on Crossing cottage, school house, canal bridge and canal.
		3.6	Water Resources	Overall potential significant effects on water resource attributes likely to be affected during construction and operation.	**Some comparative disadvantage over other options** Potential negative impact on groundwater quality during construction phase. Has some comparative disadvantage over other options.	**Some comparative disadvantage over other options** Potential negative impact on groundwater quality during construction phase. Has some comparative disadvantage over other options.	**Some comparative disadvantage over other options** Potential negative impact on groundwater quality during construction phase. Has some comparative disadvantage over other options.	**Some comparative advantage over other options** Potential negative impact on groundwater quality during construction phase. Has some comparative disadvantage over other options.
		3.7	Agriculture and Non-Agricultural	Overall impact on land take & property. Number of properties to be impacted/acquired. Likely temporary or permanent severance effects, etc.	**Some comparative advantage over other options** The non-agricultural impacts associated with Options 1 will have significant impacts on lands (car park) used by St. Mochta's GAA club	**Some comparative advantage over other options** The non-agricultural impacts associated with Option 2 will have significant impacts on lands (car park) used by St. Mochta's GAA club	**Some comparative disadvantage over other options** Option 3 will impact on lands used by St. Mochta's GAA club, St. Mochta's FC and St. Mochta's National School	**Some comparative advantage over other options** The non-agricultural impacts associated with Options 1 will have significant impacts on lands (car park) used by St. Mochta's GAA club
		3.8	Geology and Soils (including Waste)	Soils and Geology and likely impact on geological resources based on preliminary/likely construction details. % of soil resources to be	**Comparable to other options** All options are equivalent in respect of geological and soils impact	**Comparable to other options** All options are equivalent in respect of geological and soils impact	**Comparable to other options** All options are equivalent in respect of geological and soils impact	**Comparable to other options** All options are equivalent in respect of geological and soils impact
		3.9	Radiation and Stray Current	Overall likely impact on existing sources of electromagnetic radiation.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.	**Comparable to other options** All options are comparable from an EMI perspective.
4	Accessibility & Social inclusion	4.1	Impact on Vulnerable Groups	Do options address the needs of vulnerable groups. How do they compare to one another in this regard	**Some comparative disadvantage over other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway. The diversion for Option 1 is significantly longer than for other options	**Some comparative advantage over other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway. The diversion for Option 1 is significantly longer than for other options	**Some comparative advantage over other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway. The diversion for Option 1 is significantly longer than for other options	**Some comparative advantage over other options** All options introduce ramped and stepped access to replace at grade access over the level crossing. The ramped access incorporates maximum gradients of 5% and are inherently longer than the original access routes. The options provide for segregation from the live railway. The diversion for Option 1 is significantly longer than for other options
		4.2	Stations Accessibility	Quantification of increased service levels to the vulnerable groups.	**Comparable to other options** Shortest diversion route 1.2km (2x diversion route)	**Comparable to other options** Shortest diversion route 1.2km (2x diversion route)	**Comparable to other options** Shortest diversion route 1.2km (2x diversion route)	**Comparable to other options** Shortest diversion route 1.2km (2x diversion route)
		4.3	Social Inclusion	Quantification of service levels impacts including severance to all groups (Severance of local communities through removal of level crossings without connection would fair worst under this heading).	**Significant comparative disadvantage over other options** Diverted distance route 1.1km (1.8x diversion route)	**Significant comparative advantage over other options** Original Distance from The village junction to Porterstown Road junction 600m retained	**Significant comparative advantage over other options** Original Distance from The village junction to Porterstoen Road junction 600m retained	**Significant comparative advantage over other options** Original Distance from The village junction to Porterstown Road junction 600m retained
5	Safety	5.1	Rail Safety	Safety for Rail users – removal of LC positive in this respect	**Some comparative advantage over other options** All Options remove rail - road interface. All other options require construction work over the railway. This option does not.	**Some comparative disadvantage over other options** All Options remove rail - road interface. Option 1 is the only one which does not require construction works over the railway All others are equivalen in this regard	**Some comparative disadvantage over other options** All Options remove rail - road interface. Option 1 is the only one which does not require construction works over the railway All others are equivalen in this regard	**Some comparative disadvantage over other options** All Options remove rail - road interface. Option 1 is the only one which does not require construction works over the railway All others are equivalen in this regard
		5.2	Vehicular Traffic Safety	Quality of Access for these road users, lengths of diversions, removal of interface with rail and other modes of transport	**Comparable to other options** The Porterstown viaduct is located close to the level crossing. This is a pre-existing facility which provides safer access for vehicles currently using the level crossing than is currently the case. All options perform equally in this regard.	**Comparable to other options** The Porterstown viaduct is located close to the level crossing. This is a pre-existing facility which provides safer access for vehicles currently using the level crossing than is currently the case. All options perform equally in this regard.	**Comparable to other options** The Porterstown viaduct is located close to the level crossing. This is a pre-existing facility which provides safer access for vehicles currently using the level crossing than is currently the case. All options perform equally in this regard.	**Comparable to other options** The Porterstown viaduct is located close to the level crossing. This is a pre-existing facility which provides safer access for vehicles currently using the level crossing than is currently the case. All options perform equally in this regard.
		5.3	Pedestrian, Cyclist and Vulnerable Road user Safety	Quality of Access for these road users. removal of interfaces	**Some comparative advantage over other options** Diverted distance route 1.1km (1.8x diversion route)	**Significant comparative advantage over other options** Original Distance from The village junction to Porterstown Road junction 600m retained	**Significant comparative advantage over other options** Original Distance from The village junction to Porterstoen Road junction 600m retained	**Significant comparative advantage over other options** Original Distance from The village junction to Porterstown Road junction 600m retained
6	Physical Activity	6.1	Connectivity to adjoining cycling facilities	Analysis of the extent that the scheme connects with cycle tracks.	**Some comparative advantage over other options** Local severance on Porterstown Road mitigated to a degree by access to Porterstown Viaduct	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.
		6.2	Permeability and local connectivity opportunity	Journey Time and lengths of diversions for active modes and numbers affected. Analysis of the connectivity between level crossing and green areas/key attractions related to active mode	**Some comparative advantage over other options** Local severance on Porterstown Road mitigated to a degree by access to Porterstown Viaduct	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.	**Significant comparative advantage over other options** Severance overcome by provision of direct replacement.

	Criteria		Option 1	Option 2	Option 3	Option 4
1	Economy		Some comparative advantage over other options	Some comparative disadvantage over other options	Significant comparative disadvantage over other options	Some comparative disadvantage over other options
2	Integration		Some comparative disadvantage over other options	Some comparative advantage over other options	Some comparative advantage over other options	Some comparative advantage over other options
3	Environment		Some comparative advantage over other options	Some comparative advantage over other options	Some comparative disadvantage over other options	Some comparative disadvantage over other options
4	Accessibility and social inclusion		Significant comparative disadvantage over other options	Some comparative advantage over other options	Some comparative advantage over other options	Some comparative advantage over other options
5	Safety		Some comparative advantage over other options	Significant comparative advantage over other options	Significant comparative advantage over other options	Significant comparative advantage over other options
6	Physical Activity		Some comparative advantage over other options	Significant comparative advantage over other options	Significant comparative advantage over other options	Significant comparative advantage over other options
	Preferred Option Ranking		4	1	3	2
	Comment					