

DART+ Depot - Kilcock Station MCA													
Parameter	Criteria	Sub-Criteria (Quantitative/ Qualitative)		Option 1. Station at the current location	Rating	Option 2. Station displaced West of OBG25 (Shaw's Bridge)	Rating	Option 3. Station displaced East OBG25 (Shaw's Bridge)	Rating				
1	Transport User Benefits and Other Economic Impacts	1.1 Alignment with Customer Requirements Specification	Train operation functionality	Benefits to train operation through operation flexibility	5 – Slightly Positive Impact	5	6 – Positive Impact	6	7 – Highly positive Impact	7			
					Option 1 eliminates the section of platform with vertical alignment that exceeds the standards values of the current platform configuration, and the upgrade of the platform width beneath the bridge, this option receives a score of '5' on the TAF impact scoring scale, as it will have a 'Slightly Positive Impact' on the customer requirement specifications.	Option 2 eliminates the section of platform with vertical alignment that exceeds the standards values, it eliminates the horizontal transition curve of the current platform configuration, and remove the substandard platform beneath the bridge, this option receives a score of '6' on the TAF impact scoring scale, as it will have a 'Positive Impact' on the customer requirement specifications.	Option 3 configuration is the ideal platform vertical and horizontal alignment, and also it removes the substandard platform beneath the bridge, this option receives a score of '7' on the TAF impact scoring scale, as it will have a 'Highly Positive Impact' on the customer requirement specifications.						
		1.2 Transport Costs and Operational Characteristics	Transport Costs: Capital Cost Estimate and OPEX	Capital Cost Estimates	5 – Slightly Positive Impact	5	6 – Positive Impact	6	7 – Highly positive Impact	7			
				OPEX Cost Estimates	Option 1 is 8 % more expensive than the lowest option (Option 3)		Option 2 is 25 % more expensive than the lowest option (Option 3)		Option 3 is the least expensive option				
1.3 Change of Land Value	Positive or Negative impacts on Land Value consequent the introduction of the DART+ service	Change in Land Value	7 – Highly positive Impact	7	7 – Highly positive Impact	7	7 – Highly positive Impact	7					
1.4 Site Security	Site Security	Site Security	4 – Neutral Impact	4	4 – Neutral Impact	4	4 – Neutral Impact	4					
2	Accessibility Impacts	2.1 Impacts on existing accessibility	Impacts on access to jobs, key services and recreational facilities, and freight access.	Impacts on existing accessibility (access to services, jobs, amenities and community facilities)	3 – Slightly Negative Impact	3	2 – Negative Impact	2	3 – Slightly Negative Impact	3			
					The existing access is maintained, located approximately 40 metres from the end of the southern platform, meaning passengers do not need to walk from the station entrance to the platform. Option 1 requires the demolition of Shaw's bridge, the only bridge that allow the connection between both town sides of the Royal Canal and railway.	The beginning of the platforms is located approximately 60 metres from the station entrance, and passengers must pass through an underpass to reach them. This results in a longer walking distance for passengers, which worsens the overall accessibility of the station	Access to the station is no longer directly onto the platform; instead, passengers must walk approximately 15 metres to reach it. While this slightly worsens the current level of accessibility, the design effectively manages passenger flows, as the entrance naturally separates those heading to the north platform via the pedestrian footbridge from those accessing the south platform directly						
2.1 Freight Access	Impacts on access for freight traffic and access to freight facilities	Impact on access for freight traffic and access to freight facilities	4 – Neutral Impact	4	4 – Neutral Impact	4	4 – Neutral Impact	4					
3	Social Impacts	3.1 Social Impacts	Impacts on socially disadvantaged geographical areas	Review of socially disadvantaged geographical areas (HP deprivation index) within 1km of site locations. Scores better if in deprived region.	5 – Slightly Positive Impact	5	6 – Positive Impact	6	6 – Positive Impact	6			
					This option is likely to have positive social impacts, particularly on socially disadvantaged households. As part of this option, electrification will be extended to Kilcock which will increase the frequency of train services to places of employment, education and community facilities. The existing Kilcock station will be upgraded to include a footbridge and lifts to access platforms, having positive effects on all transport users, including those with varying mobility needs. The demolition and reconstruction of the bridge will result in the closure of the R125 road for an extended period (4-6 months) which will result in significant diversions during this period restricting direct access to community facilities. The proposed works will also require excavation and retaining wall works which will affect the operation of the rail service at the existing station. Rail users will need to utilise nearby stations in Enfield and Maynooth. Taking into consideration the short-term construction phase impacts and the improvements to the train station, platforms and frequency in rail service during operation phase, this option was given a TAF impact score of '5-Slightly Positive'.	This option is likely to have positive social impacts, particularly on socially disadvantaged households. As part of this option, electrification will be extended to Kilcock which will increase the frequency of train services to places of employment, education and community facilities. The train station will be moved west of the existing by approximately 60 metres and as such, there will be no significant changes in the population cohort served by the new station. The new Kilcock station will provide footbridge and lifts to access platforms, having positive effects on all transport users, including those with varying mobility needs. During construction, the proposed works will require excavation and retaining wall works which will affect the operation of the rail service at the existing station. Rail users will need to utilise the nearby stations in Enfield and Maynooth. Taking into consideration the temporary social impacts during construction phase and the long-term improvements to the train station, platforms and the frequency in rail service during operation phase, this option was given a TAF impact score of '6-Positive'.	This option is likely to have positive social impacts, particularly on socially disadvantaged households. As part of this option, electrification will be extended to Kilcock which will increase the frequency of train services to places of employment, education and community facilities. The train station will be moved east of the existing by approximately 20 metres and as such, there will be no significant changes in the population cohort served by the new station. The new Kilcock station will provide footbridge and lifts to access platforms, having positive effects on all transport users, including those with varying mobility needs. During construction, the proposed works will require excavation and retaining wall works which will affect the operation of the rail service at the existing station. Rail users will need to utilise the nearby stations in Enfield and Maynooth. Taking into consideration the temporary social impacts during construction phase and the long-term improvements to the train station, platforms and the frequency in rail service during operation phase, this option was given a TAF impact score of '6-Positive'.						
Land Use Impacts	4.1 Change in Quality of Public Realm	Impacts related to changes in public realm, such as streets, footpaths, and public buildings, as a result of a scheme.	Direct impacts on Public realm areas	Direct impacts on Public realm areas	2 – Negative Impact	2	3 – Slightly Negative Impact	3	3 – Slightly Negative Impact	3			
					The proposed option will have temporary impacts on public realm areas near the existing Kilcock Station due to the general presence of construction works and machinery. Most significantly, this option will require the demolition and reconstruction of a bridge resulting in the closure of the R125 road for an extended period (between 4-6 months) which is one of the main routes through Kilcock. This will have significant effects on access to the R125 and public realm areas on either side of the bridge during construction phase. Following completion of construction phase, access will be reinstated and there will be no permanent effects on the R125. Access to the existing Kilcock Station may be temporarily impacted during specific construction works for a duration of approximately 6 months. A TAF impact score of 2 'Negative' is assigned as the impacts will cease once construction works are completed.	The proposed option will have temporary impacts on public realm areas near the existing Kilcock Station due to the general presence of construction works and machinery. Access to the existing Kilcock Station may be temporarily impacted during specific construction works for a duration of approximately 6 months. No other areas of public realm will be affected. Access will be reinstated once works are complete.	The proposed option will have temporary impacts on public realm areas near the existing Kilcock Station due to the general presence of construction works and machinery. Access to the existing Kilcock Station may be temporarily impacted during specific construction works for a duration of approximately 3 months.						
					1 – Highly Negative Impact	1	1 – Highly Negative Impact	1	2 – Negative Impact	2			
4.2 Existing Transport Network and Service Impact:	Impact of Local Road Network	Impact on Local Road Network	Option 1 requires the reconstruction of the OBG25 to accommodate the new platform, causing a prolonged closure (4-6 months) of the R125 road in the centre of Kilcock. It also impacts on railway service (approximately 6 months of service disruption) because track lowering required and the construction of the retaining structures (piling). This option requires greater track lowering and longer and deeper retaining structures than Option 3.	Option 2 impacts on railway service (approximately 6 months of service disruption) because track lowering required and the construction of the retaining structures (piling). This option requires greater track lowering and longer and deeper retaining structures than the other options.	Option 3 impacts on railway service (approximately 3 months of service disruption) because track lowering required and the construction of the retaining structures (piling). This option requires less track lowering and short length of retaining structures (almost half) than the other options.								
4.3 Material Assets: Property	Impact on agricultural and non-agricultural property	Direct and indirect impacts on sensitive agricultural enterprise (e.g., beef or equine farms. Tillage is low sensitivity). Severance of landholding, direct acquisition of farm yards, sheds etc). Indirect impacts due to construction and operation near sensitive agri enterprises. No. of residential, community and businesses directly impacted by the option (acquisition). Indirect impacts on properties are assessed under noise, landscape and visual quality, and air quality assessments.	2 – Negative Impact	2	4 – Neutral Impact	4	2 – Negative Impact	2					
				This option will have a direct effect on non-agricultural property. Non-agricultural property is comprised of 1No. residential property and 2No. community properties (Irish Rail and local authority) along the Royal Canal. There are no Commercial properties identified within the option site boundary. There will be a temporary impact on access to the residential property during the construction period for the demolition and replacement of Shaw's Bridge. There will be a minor direct impact on the amenity lands along the canal. There will be an impact on existing pedestrian access path to the canal bank and Kilcock Canoe Polo Club.					This option will have a direct effect on non-agricultural property. Non-agricultural property is comprised of public lands on 1No. community property (Irish Rail). There are no Residential or Commercial properties identified within the option site boundary. This option will comprise of construction works within the railway boundary.				
				This option will have a direct effect on non-agricultural property. Non-agricultural property is comprised of public lands on 2No. community properties (Irish Rail and local authority) along the Royal Canal. There are no Residential or Commercial properties identified within the option site boundary. There will be direct impacts on amenity lands along the canal involving the existing pedestrian access to the canal bank and a direct impact on the Kilcock Canoe Polo Clubhouse.					This option will have a direct effect on non-agricultural property. Non-agricultural property is comprised of public lands on 2No. community properties (Irish Rail and local authority) along the Royal Canal. There are no Residential or Commercial properties identified within the option site boundary. There will be direct impacts on amenity lands along the canal involving the existing pedestrian access to the canal bank and a direct impact on the Kilcock Canoe Polo Clubhouse.				

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4	4.3 Built Services (Utilities)	Impacts on existing utilities Direct impacts on existing utilities	3 – Slightly Negative Impact Option 1 impacts the OBG25, which must be rebuilt, affecting the services that pass through the bridge. At present, it is known that a 150 mm water main pipe passes through it.	3	4 – Neutral Impact There is no known impact on utilities.	4	4 – Neutral Impact There is no known impact on utilities.	4	
			3 – Slightly Negative Impact Option 1 involves demolition and reconstruction of the Shaw's Bridge along with realignment of tracks near existing station. The new tracks on west end of the platform are 0.73m below the existing track level. As part of realignment of tracks of western approach, retaining structures and slopes are proposed. On the Up track (north side), piled retaining walls up to 4.5 m in height are proposed over a length of about 780 m. On the Down track (south side), retaining walls up to 2.3 m high are considered near the parking area for about 100 m length, with another piled retaining walls up to 4.3 m high are proposed for a 260 m stretch. Piled retaining structures are suitable for constrained railway corridors. However, potential issues such as vibration impacts on nearby residential buildings, lateral deflection, seepage, pile toe levels and selection of suitable installation techniques must be carefully assessed. Access restrictions may arise due to the proximity of existing railway tracks and residential units, making pile installation more challenging. On the east side of the Shaw's bridge, the Royal Canal Way and railway track lie at similar elevations, between +66 mOD and +67 mOD. This raises a potential risk of lateral seepage requiring appropriate drainage measures to relieve pore pressure and water ingress, especially during fluctuating groundwater conditions and is expected to be consulted with the Waterways Ireland. The cutting slope of 1V:2H is assumed at preliminary stage for all three options and is subjected to confirmation at later stage. Considering the steepness of the proposed slope, it is suggested to provide retaining structures at the toe to maintain the slope footprint within the railway boundary and provide additional stability. Further, retaining structure close to the station carpark and residential buildings, and any construction activities will need to manage vibration and settlements. This option is anticipated to be mainly in cut sections with estimated earthworks of approximately 37,573 m3. Option 1 impacts the Shaw's bridge as intrusive changes will occur to the structure. High retaining walls may require soil strengthening measures, and steep cutting slopes could be difficult to accommodate within the railway boundary and may pose sensitivity risks to adjacent structures. A relatively thin layer of superficial soils (Urban) and/or glacial till (TL) is expected beneath the new track, station platforms and retaining structures are proposed. In other words, the proposed development may contain Made Ground and potentially soft soils. Therefore, the development is likely to involve replacing problematic soils (e.g. contaminated Made Ground or soft ground). Potential contamination may arise due to nearby existing infrastructure and presence of asbestos in older infrastructure (constructed before 2000s). In addition, there might be risk of hydrocarbon contamination (diesel and lubricating oils) on or near the tracks due to diesel operated trains. However, site-specific contamination data are not available at this stage. Overall, Option 1 is assigned a TAF Impact Score of 3 – Slightly Negative Impact.	3	3 – Slightly Negative Impact Option 2 proposes relocating the station to the west of Shaw's Bridge. This option includes realignment of tracks and construction of retaining structure on both sides of the alignment. The new tracks at the end of the platform are 2.24m below the existing track level. The elevation of the railway track is around +69 mOD, while the adjacent ground is approximately +71 mOD. As part of realignment of tracks for proposed station platform, retaining structures and slopes are required. On the Up track (north side), piled retaining structure of up to 5.0 m in depth are proposed over a 780 m stretch. On the Down track (south side), a 2.5 m high retaining wall near the parking area (100 m length) and a piled retaining wall up to 5.6 m high for 260 m length are proposed. Piled retaining structure may encounter challenges due to vibration impacts, seepage, and installation difficulties in confined areas. Appropriate design measures such as provision of subsoil drainage and filters/membranes may be considered to mitigate seepage and ensure long term stability. Cutting slopes are proposed near the station platforms and residential areas on the south side. Given the steepness and local sensitivity, retaining walls at the slope toe might be required for containment within railway boundaries. The proposed option is anticipated to be in mainly cut sections and estimated earthworks in terms of cut volume is around 60,901 m3. In this option, there is no impact on the Shaw's bridge and nearby structures but high retaining walls and its strengthening, and large slopes may impact the adjacent lands. Furthermore, a relatively thin layer of superficial soils (Urban), glacial till (TL) and/or Alluvium (A) is expected where the new track, station platforms and retaining structure are proposed. In other words, the proposed development may contain Made Ground and potentially soft soils. Therefore, the development is likely to involve replacing problematic soils (e.g. contaminated Made Ground or soft ground). Given the scale of the proposed retaining structure, settlement and/or stability (e.g., bearing capacity) are not expected to be an issue but these may need to be investigated at a later stage. Potential contamination for this option may arise due to the presence of diesel residues along the existing tracks. However, site-specific contamination data are not available at this stage. Based on this, Option 2 is assigned a TAF Impact Score of 3 – Slightly Negative Impact. 5	3	3 – Slightly Negative Impact Option 3 involves relocating the station platforms to the east of Shaw's Bridge requiring minimal earthworks around the proposed station area. The railway track, Royal Canal Way and nearby buildings lie at similar elevations (+66 mOD and +67 mOD). As part of the realignment of the western approach to the proposed station platform, retaining structures and slopes are proposed. On the Up track (north side), piled retaining walls up to 4.0 m and 3.6 m high are proposed over lengths of approximately 260 m and 200 m, respectively. On the Down track (south side), a retaining wall up to 2.5 m high near the parking area (100 m length), and further west a 3.4 m high piled retaining wall over 220 m stretch are proposed. Pile installation near residential buildings and tracks may be difficult due to restricted access for rigs, and vibration impacts on nearby structures and land. The major concern with this option is that the section near Chainage 95+600 (north side) is in close proximity to the quay wall structure of the existing Royal Canal Way. This proximity introduces potential risks of seepage and soft or saturated soil conditions, which might lead to stability and settlement issues during and after construction. Excavation, drilling or vibrations during construction may affect the integrity of the canal quay wall structure and will require careful monitoring. The proposed steep cutting slopes may not be suitable where soft soils and/or canal embankment materials are encountered. Near Chainage 96+000 (Up track), slopes close to the canal may require flatter gradients or toe retaining walls for stability. The total volume of excavation required due to lowering of tracks is 35,100 m3. Reducing cutting depths through installation of low height retaining structures could further minimize earthworks. This option might affect the small building near Royal Canal Way for storing recreational boats and nearby boardwalk. There is large number of cutting slopes which can be problematic to fit within the boundary and might require the retaining structure at the toe of slope. Potential contamination risks may arise due to proximity to existing buildings, older infrastructure (constructed before 2000s) and diesel residues on or nearby existing tracks. Therefore, Option 3 is assigned a TAF Impact Score of '3 – Slightly Negative Impact'.	3	
	4.3 Soils and Geology (incl. Waste)	land, soils, waste and geological heritage sites Soils: Desktop Study, GSI	4 – Neutral Impact The planning history search has not identified any applications within the boundary of this option, and no significant permissions within the study area which would have a significant effect on the proposed development.	4	3 – Slightly Negative Impact The planning history search has not identified any applications within the boundary of this option. Option 2, west of Shaw's Bridge, scored lower due to the potential impacts on the adjacent school in terms of noise and visual. Air quality would also need to be considered.	3	4 – Neutral Impact The planning history search has not identified any applications within the boundary of this option, and no significant permissions within the study area which would have a significant effect on the proposed development.	4	
			7 – Highly positive Impact None of the scheme options identified will have any significant effects on zoned land, land use or spatial planning locally, as outlined in the policy and objectives of the Kilcock LAP and Kildare CDP. The extension of the Dart + west line to Kilcock including a new station will however have a highly positive impact (TAF rating 7) on achieving strategic land use planning proposals at all levels including the promotion of more compact, sustainable communities, supporting housing delivery along existing and planned transport corridors, reducing sprawl and lowering dependence on cars.	7	7 – Highly positive Impact None of the scheme options identified will have any significant effects on zoned land, land use or spatial planning locally, as outlined in the policy and objectives of the Kilcock LAP and Kildare CDP. The extension of the Dart + west line to Kilcock including a new station will however have a highly positive impact (TAF rating 7) on achieving strategic land use planning proposals at all levels including the promotion of more compact, sustainable communities, supporting housing delivery along existing and planned transport corridors, reducing sprawl and lowering dependence on cars.	7	7 – Highly positive Impact None of the scheme options identified will have any significant effects on zoned land, land use or spatial planning locally, as outlined in the policy and objectives of the Kilcock LAP and Kildare CDP. The extension of the Dart + west line to Kilcock including a new station will however have a highly positive impact (TAF rating 7) on achieving strategic land use planning proposals at all levels including the promotion of more compact, sustainable communities, supporting housing delivery along existing and planned transport corridors, reducing sprawl and lowering dependence on cars.	7	
	4.3 Planning Applications	Planning search: LAs, ABP, EIA Portal	Large Scale residential and non-residential planning applications (granted and pending) potentially within the site boundaries.	4 – Neutral Impact The planning history search has not identified any applications within the boundary of this option, and no significant permissions within the study area which would have a significant effect on the proposed development.	4	3 – Slightly Negative Impact The planning history search has not identified any applications within the boundary of this option. Option 2, west of Shaw's Bridge, scored lower due to the potential impacts on the adjacent school in terms of noise and visual. Air quality would also need to be considered.	3	4 – Neutral Impact The planning history search has not identified any applications within the boundary of this option, and no significant permissions within the study area which would have a significant effect on the proposed development.	4
				7 – Highly positive Impact None of the scheme options identified will have any significant effects on zoned land, land use or spatial planning locally, as outlined in the policy and objectives of the Kilcock LAP and Kildare CDP. The extension of the Dart + west line to Kilcock including a new station will however have a highly positive impact (TAF rating 7) on achieving strategic land use planning proposals at all levels including the promotion of more compact, sustainable communities, supporting housing delivery along existing and planned transport corridors, reducing sprawl and lowering dependence on cars.	7	7 – Highly positive Impact None of the scheme options identified will have any significant effects on zoned land, land use or spatial planning locally, as outlined in the policy and objectives of the Kilcock LAP and Kildare CDP. The extension of the Dart + west line to Kilcock including a new station will however have a highly positive impact (TAF rating 7) on achieving strategic land use planning proposals at all levels including the promotion of more compact, sustainable communities, supporting housing delivery along existing and planned transport corridors, reducing sprawl and lowering dependence on cars.	7	7 – Highly positive Impact None of the scheme options identified will have any significant effects on zoned land, land use or spatial planning locally, as outlined in the policy and objectives of the Kilcock LAP and Kildare CDP. The extension of the Dart + west line to Kilcock including a new station will however have a highly positive impact (TAF rating 7) on achieving strategic land use planning proposals at all levels including the promotion of more compact, sustainable communities, supporting housing delivery along existing and planned transport corridors, reducing sprawl and lowering dependence on cars.	7
4.3 Zoned Land, Land Use Planning and Spatial Planning	Impacts on strategic land-use planning at a national, regional, or local level.	Impact on land use strategies and regional and local plans. Assessment of support for land use factors local land use and planning.	7 – Highly positive Impact None of the scheme options identified will have any significant effects on zoned land, land use or spatial planning locally, as outlined in the policy and objectives of the Kilcock LAP and Kildare CDP. The extension of the Dart + west line to Kilcock including a new station will however have a highly positive impact (TAF rating 7) on achieving strategic land use planning proposals at all levels including the promotion of more compact, sustainable communities, supporting housing delivery along existing and planned transport corridors, reducing sprawl and lowering dependence on cars.	7	7 – Highly positive Impact None of the scheme options identified will have any significant effects on zoned land, land use or spatial planning locally, as outlined in the policy and objectives of the Kilcock LAP and Kildare CDP. The extension of the Dart + west line to Kilcock including a new station will however have a highly positive impact (TAF rating 7) on achieving strategic land use planning proposals at all levels including the promotion of more compact, sustainable communities, supporting housing delivery along existing and planned transport corridors, reducing sprawl and lowering dependence on cars.	7	7 – Highly positive Impact None of the scheme options identified will have any significant effects on zoned land, land use or spatial planning locally, as outlined in the policy and objectives of the Kilcock LAP and Kildare CDP. The extension of the Dart + west line to Kilcock including a new station will however have a highly positive impact (TAF rating 7) on achieving strategic land use planning proposals at all levels including the promotion of more compact, sustainable communities, supporting housing delivery along existing and planned transport corridors, reducing sprawl and lowering dependence on cars.	7	
			4 – Neutral Impact Due to the same platforms horizontal alignment configuration is maintained, this option receives a score of '4' on the TAF impact scoring scale, as it will have a 'Neutral Impact' on the railway transport network.	4	3 – Slightly Negative Impact Due to it eliminates the straight section of the current platform configuration, this option receives a score of '3' on the TAF impact scoring scale, as it will have a 'Slightly Negative Impact' on the railway transport network.	3	6 – Positive Impact Due to it eliminates the curved alignment section of the current platform configuration, this option receives a score of '6' on the TAF impact scoring scale, as it will have a 'Positive Impact' on the railway transport network.	6	
5	Safety Impacts	Safety Considerations associated with site layout	4 – Neutral Impact Due to the same platforms horizontal alignment configuration is maintained, this option receives a score of '4' on the TAF impact scoring scale, as it will have a 'Neutral Impact' on the railway transport network.	4	5 – Slightly Positive Impact Due to it eliminates the transition curve section of the current platform configuration, this option receives a score of '5' on the TAF impact scoring scale, as it will have a 'Slightly Positive Impact' on the railway transport network.	5	7 – Highly positive Impact Due to it eliminates the curved alignment section of the current platform configuration, this option receives a score of '7' on the TAF impact scoring scale, as it will have a 'Highly Positive Impact' on the railway transport network.	7	
			4 – Neutral Impact Due to the same platforms horizontal alignment configuration is maintained, this option receives a score of '4' on the TAF impact scoring scale, as it will have a 'Neutral Impact' on the railway transport network.	4	3 – Slightly Negative Impact Due to it eliminates the straight section of the current platform configuration, this option receives a score of '3' on the TAF impact scoring scale, as it will have a 'Slightly Negative Impact' on the railway transport network.	3	6 – Positive Impact Due to it eliminates the curved alignment section of the current platform configuration, this option receives a score of '6' on the TAF impact scoring scale, as it will have a 'Positive Impact' on the railway transport network.	6	
5.1	Collisions & Related Impacts	Safety Considerations at Level Crossings. Collision Statistics, Fire Safety of Trains, Train Stability	4 – Neutral Impact Due to the same platforms horizontal alignment configuration is maintained, this option receives a score of '4' on the TAF impact scoring scale, as it will have a 'Neutral Impact' on the railway transport network.	4	5 – Slightly Positive Impact Due to it eliminates the transition curve section of the current platform configuration, this option receives a score of '5' on the TAF impact scoring scale, as it will have a 'Slightly Positive Impact' on the railway transport network.	5	7 – Highly positive Impact Due to it eliminates the curved alignment section of the current platform configuration, this option receives a score of '7' on the TAF impact scoring scale, as it will have a 'Highly Positive Impact' on the railway transport network.	7	
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5.2	Other Safety Impacts	Impacts on anti-social behaviour, trips, falls, etc	4 – Neutral Impact Due to the same platforms horizontal alignment configuration is maintained, this option receives a score of '4' on the TAF impact scoring scale, as it will have a 'Neutral Impact' on the railway transport network.	4	3 – Slightly Negative Impact Due to it eliminates the straight section of the current platform configuration, this option receives a score of '3' on the TAF impact scoring scale, as it will have a 'Slightly Negative Impact' on the railway transport network.	3	6 – Positive Impact Due to it eliminates the curved alignment section of the current platform configuration, this option receives a score of '6' on the TAF impact scoring scale, as it will have a 'Positive Impact' on the railway transport network.	6	
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6	Climate Change Impacts	Qualitative assessment of carbon emissions	4 – Neutral Impact This option is neither the least nor most preferred, as Option 2 will likely result in higher greenhouse gas (GHG) emissions, while Option 3 will likely result in higher GHG emissions. However, when the station is considered in isolation of the wider DART+ Programme, there is no significant change with respect to operational phase GHG emissions, modal shift or car km travelled.	4	4 – Neutral Impact This option is the least preferred as it will likely result in the highest greenhouse gas (GHG) emissions of the three options. However, when the station is considered in isolation of the wider DART+ Programme, there is no significant change with respect to operational phase GHG emissions, modal shift or car km travelled.	4	4 – Neutral Impact This option is the most preferred as it will likely result in the lowest greenhouse gas (GHG) emissions of the three options. However, when the station is considered in isolation of the wider DART+ Programme, there is no significant change with respect to operational phase GHG emissions, modal shift or car km travelled.	4	
			3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	
6.1	Climate Action Impact	*Greenhouse gases - assumption will be that the depot building will be the same on all sites. Sites that will require longer journeys for rail i.e. more operational energy have also been considered.	4 – Neutral Impact This option is neither the least nor most preferred, as Option 2 will likely result in higher greenhouse gas (GHG) emissions, while Option 3 will likely result in higher GHG emissions. However, when the station is considered in isolation of the wider DART+ Programme, there is no significant change with respect to operational phase GHG emissions, modal shift or car km travelled.	4	4 – Neutral Impact This option is the least preferred as it will likely result in the highest greenhouse gas (GHG) emissions of the three options. However, when the station is considered in isolation of the wider DART+ Programme, there is no significant change with respect to operational phase GHG emissions, modal shift or car km travelled.	4	4 – Neutral Impact This option is the most preferred as it will likely result in the lowest greenhouse gas (GHG) emissions of the three options. However, when the station is considered in isolation of the wider DART+ Programme, there is no significant change with respect to operational phase GHG emissions, modal shift or car km travelled.	4	
			3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	
6.2	Climate Adaption Impact	Impact on Resilience and Robustness of Transport Infrastructure	3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	
			3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	3 – Slightly Negative Impact There is no significant difference in vulnerability to fluvial and pluvial flooding or level of mitigation required between the three options. All three options require some level of flood risk mitigation. All three options have similar low vulnerability all other climate change hazards.	3	

Parameter	Criteria	Sub-Criteria (Quantitative/ Qualitative)	Option 1. Station at the current location	Rating	Option 2. Station displaced West of OBG25 (Shaw's Bridge)	Rating	Option 3. Station displaced East OBG25 (Shaw's Bridge)	Rating		
7	Local Environment Impacts	7.1 Biodiversity	(SAC / SPAs/RAMSAR), nationally designated sites and protected species, ASSIs, AONBs Nature Reserves, Wildlife Reserves, Invasive Species.	Identification of European sites (SAC / SPAs/RAMSAR), nationally designated sites and protected species, ASSIs, AONBs Nature Reserves, Wildlife Reserves, Invasive Species.		Option 2 will involve the construction of new platforms to the west of Shaw's Bridge. The closest platform to the canal is c. 20m. This option will require the removal of a narrow strip of vegetation on each side of the tracks to accommodate the platforms, which are approximately 180m in length. Significant vegetation will remain in place between the new platforms and the canal which would provide visual and acoustic screening. There is potential for water quality impacts, however this can be mitigated through pollution prevention measures during the construction phase.		Option 3 will involve the construction of two new platforms east of Shaw's Bridge. This will be required works outside Irish Rail land and <5m from the canal. The canal in this area is urban in character it is unlikely that the presence of a new platform would affect species including waterbirds and other already present in the area. Artificial lighting from the station could increase the lux levels on the canal, however this area is already under pressure from light spill from the urban area to the north, and with the use of appropriate lighting designs, the level of spill from the new platform could be minimised. There is potential for water quality impacts, however this can be mitigated through pollution prevention measures during the construction phase.		
					3 – Slightly Negative Impact	3	3 – Slightly Negative Impact	3	4 – Neutral Impact	4
				Flood Risk: using Eastern CFRAMS Hydrological Studies and Hydraulic Models, NFM, Local Area Plans, County SFRAs, Ground Profile, Lidar and ground survey, Historic Mapping, Current Aerial Photography	Option 1 involves demolition and reconstruction of the Shaw's Bridge along with realignment of tracks near existing station. The new tracks on west end of the platform are 0.73m below the existing track level. As part of realignment of tracks of western approach, retaining structures and slopes are proposed. On the Up track (north side), piled retaining walls up to 4.5 m in height are proposed over a length of about 780 m. A relatively thin layer of superficial soils (Urban) and/or glacial till (TL) is expected beneath the new track, station platforms and retaining structures are proposed. The reduction in line level is minor and may intercept ground water flow patterns. As the location is adjacent to the lower pound on the Royal Canal in Killock canal breach and pluvial flooding risks are minimised.	3	Option 2 proposes relocating the station to the west of Shaw's Bridge. This option includes realignment of tracks and construction of retaining structure on both sides of the alignment. The new tracks at the end of the platform are 2.24m below the existing track level. The elevation of the railway track is around +69 mOD, while the adjacent ground is approximately +71 mOD. A relatively thin layer of superficial soils (Urban), glacial till (TL) and/or Alluvium (A) is expected where the new track, station platforms and retaining structure are proposed. Therefore, the development is likely to involve replacing problematic soils (e.g. contaminated Made Ground or soft ground). The site of the station is alongside the higher pound upstream of the lock. The potential for local groundwater flooding is higher than the other options and the risk of significant depths of flood water in a pluvial event is also greater than the other options. Drainage will be harder to manage at this site option.	2	Option 3 involves relocating the station platforms to the east of Shaw's Bridge requiring minimal earthworks around the proposed station area. The railway track, Royal Canal Way and nearby buildings lie at similar elevations (+66 mOD and +67 mOD). As part of the realignment of the western approach to the proposed station platform, retaining structures and slopes are proposed. The major concern with this option is that the section near Chainage 95+600 (north side) is in close proximity to the quay wall structure of the existing Royal Canal Way. This proximity introduces potential risks of seepage and soft or saturated soil conditions, which might lead to stability and settlement issues during and after construction. This will also be an area where pluvial and groundwater could pond causing minor flooding. However, the location and levels of the track are easier to secure a positive drainage outfall, without pumps.	4
	7.2 Water Resources	Impact on surface water, ground waterbodies, and flood risk								
			Vulnerable Aquifers; Desktop Study - GSI	Option 1 is underlain by a Locally Important Aquifer- Bedrock which is Moderately Productive only in Local Zones and there are no gravel aquifers or karst features nearby. Approximately 75% of the station option is underlain by Urban quaternary sediment (Made Ground), with the remaining 25% being underlain by Till derived from limestones. The subsol permeability is low. This option is underlain by the Dublin groundwater body, the WFD risk status of which is under review. This station option is underlain by groundwater of Moderate vulnerability and the average groundwater recharge rate is in the range of 51-100mm/yr. Option 1 is located directly on borehole 2623SEW244, which has a location accuracy of 50m and is noted as being for domestic use only. The option comes within the accuracy ranges of three further boreholes: 2623SEW111 accurate to 500m with a yield class of 'good', 2623SEW119 accurate to 2km with a yield class of 'moderate' and 2623SEW120 accurate to 2km with a yield class of 'poor'. There are no Public Water Supply Source Protection Areas or Group Water Scheme Zones of Contribution in the vicinity. The station option is located directly parallel to the Royal Canal which is designed as a proposed Natural Heritage Area (pNHA) due to the diversity of species it supports; no groundwater-dependent species have been identified. There are no Special Areas of Conservation (SAC) or Special Protection Areas (SPA) within 6km of the station option. The underlying bedrock aquifer (of medium importance) already has a fairly low groundwater recharge rate and the groundwater is classed as moderately vulnerable, meaning the option will likely have an imperceptible magnitude of effect on groundwater flow and quality. This results in a Neutral TAF rating.	4	Option 2 is underlain by a Locally Important Aquifer- Bedrock which is Moderately Productive only in Local Zones and there are no gravel aquifers or karst features nearby. Approximately 20% of the station option is underlain by Urban quaternary sediment (Made Ground), with the remaining 80% being underlain by Till derived from limestones. The subsol permeability is low. This option is underlain by the Dublin groundwater body, the WFD risk status of which is under review. This station option is underlain by groundwater of Moderate vulnerability and the average groundwater recharge rate is in the range of 51-100mm/yr. Option 2 comes within the accuracy ranges of three boreholes: 2623SEW111 accurate to 500m with a yield class of 'good', 2623SEW119 accurate to 2km with a yield class of 'moderate' and 2623SEW120 accurate to 2km with a yield class of 'poor'. There are no Public Water Supply Source Protection Areas or Group Water Scheme Zones of Contribution in the vicinity. The station option is located directly parallel to the Royal Canal which is designed as a proposed Natural Heritage Area (pNHA) due to the diversity of species it supports; no groundwater-dependent species have been identified. There are no Special Areas of Conservation (SAC) or Special Protection Areas (SPA) within 6km of the station option. The underlying bedrock aquifer (of medium importance) already has a fairly low groundwater recharge rate and the groundwater is classed as moderately vulnerable, meaning the option will likely have an imperceptible magnitude of effect on groundwater flow and quality. This results in a Neutral TAF rating.	4	Option 3 is underlain by a Locally Important Aquifer- Bedrock which is Moderately Productive only in Local Zones and there are no gravel aquifers or karst features nearby. This station option is entirely underlain by Urban quaternary sediment (Made Ground). The subsol permeability is low. This option is underlain by the Dublin groundwater body, the WFD risk status of which is under review. This station option is underlain by groundwater of Moderate vulnerability and the average groundwater recharge rate is in the range of 51-100mm/yr. Option 3 comes within the accuracy ranges of three boreholes: 2623SEW111 accurate to 500m with a yield class of 'good', 2623SEW119 accurate to 2km with a yield class of 'moderate' and 2623SEW120 accurate to 2km with a yield class of 'poor'. There are no Public Water Supply Source Protection Areas or Group Water Scheme Zones of Contribution in the vicinity. The station option is located directly parallel to the Royal Canal which is designed as a proposed Natural Heritage Area (pNHA) due to the diversity of species it supports; no groundwater-dependent species have been identified. There are no Special Areas of Conservation (SAC) or Special Protection Areas (SPA) within 6km of the station option. The underlying bedrock aquifer (of medium importance) already has a fairly low groundwater recharge rate and the groundwater is classed as moderately vulnerable, meaning the option will likely have an imperceptible magnitude of effect on groundwater flow and quality. This results in a Neutral TAF rating.	4	
				2 – Negative Impact	2	3 – Slightly Negative Impact	3	1 – Highly Negative Impact	1	
	7.3 Landscape & Visual Quality	Potential landscape and visual impacts from new depot.	Effects on key landscape characteristics; Effects on listed/ key views; Effects on views from properties or amenities.	The removal and reconstruction of Shaw's Bridge and the widening of railway corridor will have potential significant adverse impact on the Royal Canal amenity area and the residential property at the 16th Lock during construction; moderate / significant adverse in the short-term thereafter; and moderate adverse long-term. Track widening and lowering west of Shaw's Bridge will have moderate adverse impact in the short-term during construction and a slight / moderate adverse impact in the short-term post construction. The proposed development has the potential for significant adverse impact on the protected view of the canal from Shaw's Bridge and for slight adverse impact on the protected view from Allen's Bridge.		The potential impact on the residential property at the 16th Lock is significant adverse during construction; moderate / significant adverse in the short-term thereafter; and moderate adverse long-term. The location of the proposed pedestrian crossing has the potential to allow for overlooking of the residential property at the 16th Lock. Track widening and lowering west of Shaw's Bridge will have moderate adverse impact in the short-term during construction and a slight / moderate adverse impact in the short-term post construction. The proposed development has the potential for slight adverse impact on the protected views of the canal from Shaw's Bridge and from Allen's Bridge.		The potential impact on the Royal Canal amenity area and the residential property at the 16th Lock is very significant adverse during construction; significant adverse in the short-term thereafter; and moderate significant adverse in the longer-term. Track widening and lowering west of Shaw's Bridge will have moderate adverse impact in the short-term during construction and a slight / moderate adverse impact in the short-term post construction. The proposed development has the potential for significant adverse impact on the protected view of the canal from Shaw's Bridge and for slight adverse impact on the protected view from Allen's Bridge.		
				4 – Neutral Impact	4	4 – Neutral Impact	4	4 – Neutral Impact	4	
	7.4 Cultural Heritage	Impact on archaeology, cultural and built heritage.	No. of RPS, National Monuments, SMRs, Conservation areas within 250m and / or directly effected by options etc. Number of designated sites/structures (by level of designation) directly impacted by scheme (landtake).	This option will not result in any direct or indirect impacts on any recorded archaeological or architectural sites. It will necessitate the removal of a short section of masonry wall that is located along the northern side of the existing railway. The wall is associated with the original railway but is not subject to statutory protection and the impact would not be significant. The option will not impact any previously unrecorded archaeological remains, as any such remains will have been removed by previous ground works associated with the construction of the railway.		This option will not result in any direct or indirect impacts on any recorded archaeological or architectural sites. The new station will be entirely located within the existing railway cutting and as such will not impact any previously unrecorded archaeological remains, as any such remains will have been removed by previous ground works.		This option will not result in any direct or indirect impacts on any recorded archaeological or architectural sites. It will necessitate the removal of a section of masonry wall that is located along the northern side of the existing railway. The wall is associated with the original railway but is not subject to statutory protection and the impact would not be significant. The option will not impact any previously unrecorded archaeological remains, as any such remains will have been removed by previous ground works associated with the construction of the railway.		
				3 – Slightly Negative Impact	3	2 – Negative Impact	2	2 – Negative Impact	2	
	7.5 Noise & Vibration	Impact on sensitive properties	Estimated number of sensitive receptors (residential properties, community facilities etc) likely to be affected by transport related noise with the project within 50m, 100m, 200m and 300m bands.	This option requires intrusive works during the construction phase to shaws bridge and a road closure of the R125 with resultant traffic diversions and potential associated noise impacts. The construction phase will necessitate night works and weekend rail possessions with potential for significant noise impacts to NSLs north and south of the works. These will be temporary to short-term in terms of overall impacts. Once operational, the closest NSLs to trains pulling in and leaving the platform will be comparable to the existing scenario with the addition of DART trains. On balance, the construction phase of this option will have the most significant noise impacts but will affect the least number of NSLs. This option will also have the least significant operational noise impact compared to the other 2 options.		This option requires intrusive works during the construction phase to construct a new platform, lowering the existing track level and installation of retaining walls. The construction phase will necessitate night works and weekend rail possessions with potential for significant noise impacts to NSLs north and south of the works. These will be temporary to short-term in terms of overall impacts. Once operational, the closest NSLs to trains pulling in and leaving the platform will be NSL to the north, and residential and school NSLs to the south. On balance, the construction phase of this option will have a most significant noise impact to adjacent NSLs and the second lowest operational noise impact compared to the other 2 options.		This option requires the least intrusive works during the construction phase compared to the other two options. These will be temporary to short-term in terms of overall impacts. Once operational, the closest NSLs to trains pulling in and leaving the platform will be NSL to the south. On balance, the potential construction noise impacts will be least disruptive for this option, but will affect a higher number of NSLs during the operational phase compared to the other 2 options. On balance, the construction phase of this option will have the least significant noise impact to adjacent NSLs but the highest potential operational noise impact compared to the other 2 options.		
				4 – Neutral Impact	4	4 – Neutral Impact	4	4 – Neutral Impact	4	
7.6 Air Quality	Impact on sensitive properties	Estimated number of potential receptors (residential properties, sensitive commercial properties etc) 100m either side of the outermost depot rail line.	No potential for significant impact on local air quality due to vehicle emissions of NOx, PM10 and PM2.5 as traffic volumes are below TII screening criteria (PE-ENV-01106). There are sensitive receptors within 250 m of the potential construction works, however with dust mitigation there is no potential for significant effect on air quality.		No potential for significant impact on local air quality due to vehicle emissions of NOx, PM10 and PM2.5 as traffic volumes are below TII screening criteria (PE-ENV-01106). There are sensitive receptors within 250 m of the potential construction works, however with dust mitigation there is no potential for significant effect on air quality.		No potential for significant impact on local air quality due to vehicle emissions of NOx, PM10 and PM2.5 as traffic volumes are below TII screening criteria (PE-ENV-01106). There are sensitive receptors within 250 m of the potential construction works, however with dust mitigation there is no potential for significant effect on air quality.			
			4 – Neutral Impact	4	4 – Neutral Impact	4	4 – Neutral Impact	4		
7.7 Electromagnetic Compatibility	Electromagnetic Compatibility Impact on sensitive local receptors	Estimated number of potential receptors (residential properties, sensitive commercial properties etc) 100m either side of the outermost depot rail line.	No likely significant impacts on equipment susceptible to electromagnetic interference. Guideline limits for exposure to electromagnetic fields will not be exceeded for at any of the receptors in the current baseline environment.		No likely significant impacts on equipment susceptible to electromagnetic interference. Guideline limits for exposure to electromagnetic fields will not be exceeded for at any of the receptors in the current baseline environment.		No likely significant impacts on equipment susceptible to electromagnetic interference. Guideline limits for exposure to electromagnetic fields will not be exceeded for at any of the receptors in the current baseline environment.			

Parameter	Criteria	Sub-Criteria (Quantitative/ Qualitative)	Option 1. Station at the current location	Rating	Option 2. Station displaced West of OBG25 (Shaw's Bridge)	Rating	Option 3. Station displaced East OBG25 (Shaw's Bridge)	Rating
Assessment Summary								
1	Transport User Benefits and Other Economic Impacts		5 – Slightly Positive Impact	5.3	6 – Positive Impact	5.8	6 – Positive Impact	6.3
2	Accessibility Impacts		4 – Neutral Impact	3.5	3 – Slightly Negative Impact	3.0	3 – Slightly Negative Impact	3.5
3	Social Impacts		5 – Slightly Positive Impact	5.0	6 – Positive Impact	6.0	6 – Positive Impact	6.0
4	Land Use Impacts		3 – Slightly Negative Impact	3.1	3 – Slightly Negative Impact	3.6	3 – Slightly Negative Impact	3.6
5	Safety Impacts		4 – Neutral Impact	4.0	4 – Neutral Impact	4.0	6 – Positive Impact	6.5
6	Climate Change Impacts		3 – Slightly Negative Impact	3.5	3 – Slightly Negative Impact	3.5	3 – Slightly Negative Impact	3.5
7	Local Environment Impacts		3 – Slightly Negative Impact	3.3	3 – Slightly Negative Impact	3.3	3 – Slightly Negative Impact	3.1
	Overall Ranking		4 – Neutral Impact	3.96	4 – Neutral Impact	4.17	5 – Slightly Positive Impact	4.64
	Total Ranking / Preferred site		Option 1. Station at the current location	27.7	Option 2. Station displaced West of OBG25 (Shaw's Bridge)	29.2	Option 3. Station displaced East OBG25 (Shaw's Bridge)	32.5