	ADAMSTOWN substation MCA Matrix							
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment				
1. Economy	Capital Expenditure (CAPEX): construction, land acquisition, servicing requirements, temporary works required to implement the option.	This sub-criterion considered comparative cost of construction, land cost (if any) and temporary works cost, servicing requirements of each site option. A high-level cost comparison was undertaken for each option (including potential land acquisitions (permanent and temporary, zoned or un-zoned land). The lowest comparative cost option was preferable to higher cost options.	Significant Comparative Disadvantage over Other Options Located on private property, and would require a new access to	Comparable to other options / Neutral Construction costs for all options will be comparable Significant Comparative Advantage over Other Options Located on IE property Comparable to other options / Neutral No temp land take anticipated				
operational co entities), ⁻ advanceme proofing / ob	OPEX: maintenance costs, operational costs (IE or other entities), Technology advancement and future proofing / obsolescence to maintain the option	This sub-criterion considered long term maintenance costs. The option with less risk for long term maintenance issues (and hence cost) was preferable to options with greater risk of long-term maintenance issues.	Comparable to other options / Neutral OPEX costs for all options will be comparable	Comparable to other options / Neutral OPEX costs for all options will be comparable				
	Summary Evaluation		Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options				

		ADA	AMSTOWN substation MCA Matrix	
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment
2. Integration	Equipment Integration		Some Comparative Advantage over Other Options The site is located immediately adjacent to the proposed DART tracks Comparable to Other Options / Neutral All options are not within the vicinity of the existing ESB 38kV network. The existing ESB 38kV and MV services will require works to bring these services to the proposed location.	Some Comparative Disadvantage over Other Options The site is located across the tracks and away from the proposed DART tracks, requiring additional works such as UTX crossings etc. Comparable to Other Options / Neutral All options are not within the vicinity of the existing ESB 38kV network. The existing ESB 38kV and MV services will require works to bring these services to the proposed location.
		The option which best integrates with existing IÉ-owned property and facilities was preferable to other options.	given its location, access requirements from the road network. The design would necessitate a more complex construction phase mainly due to reduced access routes. Comparable to Other Options / Neutral	Some Comparative Advantage over Other Options Ease of access, favourable terrain / topography and the generous separation from other non IÉ-owned buildings means this site offers ease of construction. Comparable to Other Options / Neutral
			This site was not identified by IÉ as having development potential when compared to other options. Comparable to Other Options / Neutral All options can be constructed without impacting on operation of the railway	This site was not identified by IÉ as having development potential when compared to other options. Comparable to Other Options / Neutral All options can be constructed without impacting on operation of the railway
2. Integration	Road Access Integration	The option which best accesses the road network was preferable to other options.	Significant Comparative Disadvantage compared to Other Options No direct access to the site, an access road will need to be constructed	Significant Comparative Advantage over Other Options Direct access to public road network via an existing IE-owned access point.

	ADAMSTOWN substation MCA Matrix						
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment			
	Other Land Use integration	The option with greater consistency and compliance with planning policy was preferable to others.	Comparable to Other Options / Neutral Site 1 to the north of the railway is on lands zoned "To protect and improve rural amenity and to provide for the development of agriculture" and adjacent to the western boundary of the Adamstown SDZ - immediately adjacent to the railway. Comparable to Other Options / Neutral	Comparable to Other Options / Neutral Site 2 to the south of the railway is on lands zoned "To protect and improve rural amenity and to provide for the development of agriculture" - immediately adjacent to the railway. Comparable to Other Options / Neutral			
			All options are considered equal insofar as impacts on opportunities for regeneration / urban renewal are concerned.	All options are considered equal insofar as impacts on opportunities for regeneration / urban renewal are concerned.			
	Geographical integration accessibility during	The option which minimise disruption and	Comparable to Other Options / Neutral All options expected to have similar impacts on local external links in terms of road traffic etc.	Comparable to Other Options / Neutral All options expected to have similar impacts on local external links in terms of road traffic etc.			
		accessibility during construction was preferable.	Comparable to Other Options / Neutral No community severance impact is anticipated for any option.	Comparable to Other Options / Neutral No community severance impact is anticipated for any option.			
	Adaptability in the future (robustness in the solution)	The option with greater adaptability for the future was preferable to others.	Comparable to Other Options / Neutral All options considered are expected to be equally adaptable	Comparable to Other Options / Neutral All options considered are expected to be equally adaptable			
	Summary Evaluation		Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options			

	ADAMSTOWN substation MCA Matrix						
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment			
	Noise and vibration		· · · · · · · · · · · · · · · · · · ·	Some Comparative Advantage over Other Options This site is located in a greenfield site within IE lands and there are no neighbouring residential properties in close proximity to Option 2.			
3. Environment - considers impacts, such as emissions to air, noise, and ecological and architectural impacts.	Air quality and Climate		The construction phase has potentially greater impact than Option 2 due to a more complex construction phase for the construction of a new access route. This has potential for air emissions from construction traffic compared to Option 2.	Some Comparative Advantage over Other Options The construction phase for Option 2 allows for ease of construction due to existing access routes. This has reduced potential for air emissions from construction traffic compared to Option 1. General operation phase impacts in terms of air quality are largely similar for all options.			
	Landscape and Visual		Character Area. There are no specific issues. During the operational phase there is potential for changes to the landscape character and/or visual amenity due to the presence of a	Comparable to Other Options / Neutral Option 2 is situated within SDCC Urban Landscape Character Area. There are no specific issues. During the operational phase there is potential for changes to the landscape character and/or visual amenity due to the presence of a permanent substation building. It is likely to have landscape and visual impact to the neighbouring residential receptors. Depending on the size and scale of the proposed substation building, landscape and visual impacts will vary.			

		ADA	AMSTOWN substation MCA Matrix			
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment		
			Comparable to Other Options / Neutral	Comparable to Other Options / Neutral		
	Biodiversity (flora and fauna)		Areas of rough grasslands, scrub and trees will be directly impacted as with all options. Also potential to effect habitat suitable for bird nesting and / or bat roosting.	Areas of rough grasslands, scrub and trees will be directly impacted as with all options. Also potential to effect habitat suitable for bird nesting and / or bat roosting.		
3. Environment - considers impacts, such as emissions to air, noise, and ecological and architectural impacts.	Cultural, archaeological and architectural heritage		on the environmental factor under consideration was preferable to other options.	on the environmental factor under consideration was preferable to other options.	Industrial Heritage) located within or in the immediate vicinity of	Comparable to Other Options / Neutral Based on available mapping and information, there are no architectural heritage features with designations (NIAH, RPS and Industrial Heritage) located within or in the immediate vicinity of the site. There are no known monuments or stray finds adjacent to this section of railway line.
	Water resources		may enter the receiving waterbodies, site runoff management	Comparable to Other Options / Neutral No record of historical or predicted flooding within the site. Option will create additional increase in hardstanding areas, which will alter the existing drainage regime and may increase risk of pluvial flooding to the site itself. Water quality risk during construction phase as runoff pollutants may enter the receiving waterbodies, site runoff management will be required. Likely have a neutral/negligible impact on flood risk during operation.		
	Agricultural and non-agricultural		access route would require construction. Land acquis ion is	Some Comparative Advantage over Other Options Site is located on IE land with an access track. Land acquis ion is not required. Temp land take is not required. No community severance impact is anticipated.		

	ADAMSTOWN substation MCA Matrix						
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment			
3. Environment - considers impacts, such as emissions to air, noise, and ecological and architectural impacts.	Geology and soils (include waste)		Comparable to Other Options / Neutral Greenfield site located on private property. Soil excavation required for construction. According to the GSI, the underlying quaternary sediment is "TLs", that is Till derived from limestones with areas of "Rock", that is Bedrock outcrop or sub crop. Located in area of Extreme groundwater vulnerability.	Comparable to Other Options / Neutral Greenfield site located on IE property. Soil excavation required for construction. According to the GSI, the underlying quaternary sediment is "TLs", that is Till derived from limestones. Located in area of Extreme groundwater vulnerability.			
	Summary Evaluation		Some Comparative Disadvantage over Other Options	Some Comparative Advantage over Other Options			
4. Accessibility and Social Inclusion - considers social deprivation, geographic isolation and mobility and sensory deprivation	Neighbours	The option which can provide a higher level of amenity to neighbours is preferable.	Significant Comparative Disadvantage over Other Options This site is located away from residential properties. However is located on privately owned land with high future residential development potential.	Significant Comparative Advantage over Other Options This site is located away from residential and/or other non IÉ-owned facilities / properties.			
	Summary Evaluation		Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options			
5. Safety - Safety is concerned with the impact of the investment on the number of transport related accidents.	Rail Safety	The option which provides the best rail safety solution was preferable.	Comparable to Other Options / Neutral All options satisfy rail safety aspects / requirements	Comparable to Other Options / Neutral All options satisfy rail safety aspects / requirements			
	Reliability, Availability and Maintainability	The option which provides the best performance in terms of Reliability, Availability and Maintainability of the option	Comparable to Other Options / Neutral All options satisfy RAM requirements.	Comparable to Other Options / Neutral All options satisfy RAM requirements.			

ADAMSTOWN substation MCA Matrix						
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment		
5. Safety - Safety is concerned with the impact of the investment on the number of transport related accidents.	User / Operator and Public Safety	The option which provides the best safety solution for maintenance staff and passer bys. The focus is on operational phase not construction.	Comparable to Other Options / Neutral All options satisfy requirements. Comparable to Other Options / Neutral All options satisfy requirements.	Comparable to Other Options / Neutral All options satisfy requirements. Comparable to Other Options / Neutral All options satisfy requirements.		
	Summary Evaluation		Comparable to Other Options / Neutral	Comparable to Other Options / Neutral		
6. Physical Activity - (where applicable) This relates to the health benefits derived from using different transport modes	Health Benefits	The option that provided better connectivity between trip generators (green areas / key attractions) and that promoted physical activity was preferable.	Comparable to Other Options / Neutral This criterion is not applicable to proposed sub stations	Comparable to Other Options / Neutral This criterion is not applicable to proposed sub stations		
	Summary Evaluation		Comparable to Other Options / Neutral	Comparable to Other Options / Neutral		

ADAMSTOWN Substation MCA CAF - Summary Table

CAF Parameters	Option 1 Assessment	Option 2 Assessment	
1. Economy	Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options	
2. Integration	Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options	
3. Environment	Some Comparative Disadvantage over Other Options	Some Comparative Advantage over Other Options	
4. Accessibility and Social Inclusion	Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options	
5. Safety	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	
6. Physical Activity	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	

Preferred Option

Adamstown - Substation Location MCA

Conclusion

	KISHOGE substation MCA Matrix						
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment	Option 3 Assessment		
	Capital Expenditure (CAPEX): construction, land acquisition,	This sub-criterion considered comparative cost of construction, land cost (if any) and temporary works cost, servicing requirements of each site option. A high-level cost comparison	,	Comparable to other options / Neutral Construction costs for all options will be comparable Some Comparative Advantage over Other Options	Comparable to other options / Neutral Construction costs for all options will be comparable Some Comparative Disadvantage over Other		
	servicing requirements, temporary works required to implement the option.	(including potential land acquisitions (permanent and temporary, zoned or	Located on private property, and would require a	Located on IE property	Located on private property, and would require a		
1. Economy		un-zoned land). The lowest comparative cost option was preferable to higher cost options.	Comparable to other options / Neutral No temp land take anticipated	Comparable to other options / Neutral No temp land take anticipated	Comparable to other options / Neutral No temp land take anticipated		
	OPEX: maintenance costs, operational costs (IE or other entities), Technology advancement and future proofing / obsolescence to maintain the option	This sub-criterion considered long term maintenance costs. The option with less risk for long term maintenance issues (and hence cost) was preferable to options with greater risk of long-term maintenance issues.	Comparable to other options / Neutral OPEX costs for all options will be comparable	Comparable to other options / Neutral OPEX costs for all options will be comparable	Comparable to other options / Neutral OPEX costs for all options will be comparable		
	Summary Evaluation		Some Comparative Disadvantage over Other Options	Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options		
	Equipment Integration	The option which best integrates with existing equipment and other infrastructure and services was preferable to other options.	Some Comparative Disadvantage over Other Options The site is located across the tracks and away from the proposed DART tracks, requiring additional	The site is located across the tracks and away from	Some Comparative Advantage over Other Options		
			Comparable to Other Options / Neutral All options are within the vicinity of the existing ESB 38kV network. The existing ESB 38kV and MV services are located centrally along the R138 and will require works to bring these services to the proposed location.	Comparable to Other Options / Neutral All options are within the vicinity of the existing ESB 38kV network. The existing ESB 38kV and MV services are located centrally along the R138 and will require works to bring these services to the proposed location.	Comparable to Other Options / Neutral All options are within the vicinity of the existing ESB 38kV network. The existing ESB 38kV and MV services are located centrally along the R138 and will require works to bring these services to the proposed location.		

Kishoge - Substation Location MCA
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	KISHOGE substation MCA Matrix							
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment	Option 3 Assessment			
2. Integration	IE Land use integration	The option which best integrates with existing IÉ-owned property and facilities was preferable to other options.	Some Comparative Disadvantage over Other Options Buildability is considered Solely more complex for this site given its location and access requirements from the road network. Some Comparative Disadvantage over Other Options This site was identified by IÉ as having greater development potential when compared to other options. Comparable to Other Options / Neutral All options can be constructed without impacting on operation of the railway		Some Comparative Advantage over Other Options Ease of access, favourable terrain / topography and the generous separation from other non IÉ-owned buildings means this site offers ease of construction. Some Comparative Disadvantage over Other Options This site was identified by IÉ as having greater development potential when compared to other options. Comparable to Other Options / Neutral All options can be constructed without impacting on operation of the railway			
	Road Access Integration	The option which best accesses the road network was preferable to other options.	Significant Disadvantage compared to Other Options Access to the road network would be via a newly constructed access road. Occasional access during the Operation phase would be rare/occasional and may not justify the construction.	· · · · · · · · · · · · · · · · · · ·	Some Comparative Advantage to Other Options Access to the road network would be via access road and could be problematic throughout construction phase. Occasional access during the Operation phase would be rare/occasional, but would require Right of Way or other similar legal easement / agreement.			

Kishoge - Substation Location MCA
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	KISHOGE substation MCA Matrix					
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment	Option 3 Assessment	
	Other Land Use integration	The option with greater consistency and compliance with planning policy was preferable to others.	substation will not be in compliance with the SDZ especially in high profile locations within Kishoge Urban Centre. Innovative design solutions will be required integrated into wider development proposals.	bridge over the railway line. A stand-alone utilitarian / service building such as a substation will not be in compliance with the SDZ especially in high profile locations within Kishoge Urban Centre. Innovative design solutions will be required integrated into wider development proposals. While the site is currently part of a Park and Ride at Kishoge Railway Station as part of Kildare Route Project Railway Order, the Planning Scheme sets out "in the interest of promoting the vitality and viability of both urban centres an place making both Park and Ride facilities may be incorporated tino mixed use building forms". Site 3 is also identified for a landmark building.	around Kishoge Train Station and the Outer Orbital Road bridge over the railway line. A stand-alone utilitarian / service building such as a substation will not be in compliance with the SDZ especially in high profile locations within Kishoge Urban Centre. Innovative design solutions will be required integrated into wider development proposals.	
2. Integration			Comparable to Other Options / Neutral All options are considered equal insofar as impacts on regeneration of the area.	Comparable to Other Options / Neutral All options are considered equal insofar as impacts on regeneration of the area.	Comparable to Other Options / Neutral All options are considered equal insofar as impacts on regeneration of the area.	
	Geographical integration	The option which minimise disruption and accessibility during construction was preferable.	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	
			All options expected to have similar impacts on local external links in terms of road traffic etc.	All options expected to have similar impacts on local external links in terms of road traffic etc.	All options expected to have similar impacts on local external links in terms of road traffic etc.	
			Some Comparative Disadvantage over Other Options Community severance impact is anticipated this option	Some Comparative advantage over Other Options No community severance impact is anticipated for any option.	Some Comparative Disadvantage over Other Options Community severance impact is anticipated this option	
	Adaptability in the future (robustness in the solution)	The option with greater adaptability for the future was preferable to others.	Comparable to Other Options / Neutral All options considered are expected to be equally adaptable	Comparable to Other Options / Neutral All options considered are expected to be equally adaptable	Comparable to Other Options / Neutral All options considered are expected to be equally adaptable	
	Summary Evaluation		Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options	Some Comparative Advantage over Other Options	

Kishoge - Substation Location MCA
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	KISHOGE substation MCA Matrix						
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment	Option 3 Assessment		
3. Environment - considers impacts, such as emissions to air, noise, and ecological and architectural impacts.	Noise and vibration		Some Comparative Disadvantage over Other Options Option 1 is located adjacent to an existing traveller accommodation site at Kishoge Park. Due to the nature of the construction works for the substation, the duration of construction works and proximity to properties, it is likely some noise impacts will occur. The operational phase of the substation is likely to have some noise emissions associated with the operation of the electrical switching and feeding equipment. For the operational phase any noise emissions from the substation building will need to be mitigated to ensure that the noise impact at the nearest sensitive location avoids adverse impacts.	Option 3 is located away from residential properties. The operational phase of the substation is likely to have some noise emissions associated with the operation of the electrical switching and feeding equipment. For the operational phase any noise emissions from the substation building will need to be mitigated to ensure that the noise impact at the nearest sensitive location avoids adverse impacts. Option 3 is not located immediately adjacent to residential development and so the potential for noise and vibration impacts associated with the operation of substation is less than the other options.	Some Comparative Disadvantage over Other Options Option 2 is located away from residential properties but is in the vicinity of the existing traveller accommodation site at Kishoge Park which is to the south of the site. The operational phase of the substation is likely to have some noise emissions associated with the operation of the electrical switching and feeding equipment. For the operational phase any noise emissions from the substation building will need to be mitigated to ensure that the noise impact at the nearest sensitive location avoids adverse impacts. Option 2 is not located immediately adjacent to residential development and so the potential for noise and vibration impacts associated with the operation of substation is less than the Option 1.		
	Air quality and Climate		Comparable to Other Options / Neutral General construction and operation phase impacts in terms of air quality are largely similar for all options.	Comparable to Other Options / Neutral General construction and operation phase impacts in terms of air quality are largely similar for all options.	Comparable to Other Options / Neutral General construction and operation phase impacts in terms of air quality are largely similar for all options.		
	Landscape and Visual		Comparable to Other Options / Neutral Option 1 is situated within SDCC Newcastle Lowlands Landscape Character Area. There are no specific issues. During the operational phase there is potential for changes to the landscape character and/or visual amenity due to the presence of a permanent substation building. It is likely to have landscape and visual impact to the neighbouring residential receptors. Depending on the size and scale of the proposed substation building, landscape and visual impacts will vary.	Comparable to Other Options / Neutral Option 2 is situated within SDCC Urban Landscape Character Area. There are no specific issues. During the operational phase there is potential for changes to the landscape character and/or visual amenity due to the presence of a permanent substation building. It is likely to have landscape and visual impact to the neighbouring residential receptors. Depending on the size and scale of the proposed substation building, landscape and visual impacts will vary.	Option 3 is situated within SDCC Urban Landscape Character Area. There are no specific issues. During the operational phase there is potential for changes to the landscape character and/or visual amenity due to the presence of a permanent substation building. It is likely to have landscape and visual impact to the neighbouring residential receptors. Depending on the size and scale of the proposed substation building, landscape and visual impacts will vary.		

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	KISHOGE substation MCA Matrix							
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment	Option 3 Assessment			
	Cultural, archaeological and architectural heritage	other options.	Comparable to Other Options / Neutral Based on available mapping and information, there are no architectural heritage features with designations (NIAH, RPS and Industrial Heritage) located within the site. There are no known monuments or stray finds adjacent to this section of railway line.	Comparable to Other Options / Neutral Based on available mapping and information, there are no architectural heritage features with designations (NIAH, RPS and Industrial Heritage) located within the site. Topsoil stripping under archaeological supervision at the site of a proposed car park at Kishogue train station did not cover and archaeological deposits of features (Licence No. 19E0318, Excavations. Ref. 2019:511).	there are no architectural heritage features with designations (NIAH, RPS and Industrial Heritage) located within the site. There are no known monuments or stray finds adjacent to this section of railway line.			
3. Environment - considers impacts, such as emissions to air, noise, and ecological and architectural impacts.	Water resources		Comparable to Other Options / Neutral No record of historical or predicted flooding within the site. Option will create additional increase in hardstanding areas, which will alter the existing drainage regime and may increase risk of pluvial flooding to the site itself. Water quality risk during construction phase as runoff pollutants may enter the receiving waterbodies, site runoff management will be required. Likely have a neutral/negligible impact on flood risk during operation.	Comparable to Other Options / Neutral No record of historical or predicted flooding within the site. Option will create additional increase in hardstanding areas, which will alter the existing drainage regime and may increase risk of pluvial flooding to the site itself. Water quality risk during construction phase as runoff pollutants may enter the receiving waterbodies, site runoff management will be required. Likely have a neutral/negligible impact on flood risk during operation.	Comparable to Other Options / Neutral No record of historical or predicted flooding within the site. Option will create additional increase in hardstanding areas, which will alter the existing drainage regime and may increase risk of pluvial flooding to the site itself. Water quality risk during construction phase as runoff pollutants may enter the receiving waterbodies, site runoff management will be required. Likely have a neutral/negligible impact on flood risk during operation.			
	Agricultural and non- agricultural		Some Comparative Disadvantage over Other Options Option 1 is located on private property, and would require a new access to be constructed. No temporary land take is required, however community severance impact is anticipated.	Some Comparative to Other Options / Neutral Option 2 is located in existing car park under IE ownership. Community severance impact is anticipated.	Some Comparative Disadvantage over Other Options Option 3 is located on private property, and would require a new access to be constructed. No temporary land take is required, however community severance impact is anticipated.			
	Geology and soils (include waste)		Comparable to Other Options / Neutral Greenfield site located on private property. Soil excavation required for construction. According to the GSI, the underlying quaternary sediment is "TLs", that is Till derived from limestones. Located in area of High groundwater vulnerability.	Comparable to Other Options / Neutral Brownfield site located on private property. Soil excavation required for construction. According to the GSI, the underlying quaternary sediment is "TLs", that is Till derived from limestones. Located in area of High groundwater vulnerability.	Comparable to Other Options / Neutral Site located in existing carpark. Soil excavation required for construction. According to the GSI, the underlying quaternary sediment is "TLs", that is Till derived from limestones. Located in area of High groundwater vulnerability.			
	Summary Evaluation		Some Comparative Disadvantage over Other Options	Some Comparative advantage over Other Options	Some Comparative Disadvantage over Other Options			

Kishoge - Substation Location MCA

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	KISHOGE substation MCA Matrix						
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment	Option 3 Assessment		
4. Accessibility and Social Inclusion - considers social deprivation, geographic isolation and mobility and sensory deprivation	Neighbours	The option which can provide a higher level of amenity to neighbours is preferable.	Significant Disadvantage over Other Options This site is located immediately adjacent to an existing existential development.	This site is located away from residential and/or other non IÉ-owned facilities / properties.	Some Comparative Advantage over Other Options This site is located away from residential properties. However is located on privately owned land		
	Summary Evaluation		Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options	Some Comparative Advantage over Other Options		
5. Safety - Safety is concerned with the	Rail Safety	The option which provides the best rail safety solution was preferable.	All options satisfy rail safety aspects / requirements Comparable to Other Options / Neutral All options satisfy rail safety aspects / requirements	Comparable to Other Options / Neutral All options satisfy rail safety aspects / requirements Comparable to Other Options / Neutral All options satisfy rail safety aspects / requirements	requirements Comparable to Other Options / Neutral		
impact of the investment on the number of transport related accidents.	Reliability, Availability and Maintainability	The option which provides the best performance in terms of Reliability, Availability and Maintainability of the option	Comparable to Other Options / Neutral All options satisfy RAM requirements.	Comparable to Other Options / Neutral All options satisfy RAM requirements.	Comparable to Other Options / Neutral All options satisfy RAM requirements.		
	User / Operator and Public Safety	The option which provides the best safety solution for maintenance staff and passer bys. The focus is on operational phase not construction.	Comparable to Other Options / Neutral All options satisfy requirements. Comparable to Other Options / Neutral All options satisfy requirements.	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral All options satisfy requirements. Comparable to Other Options / Neutral All options satisfy requirements.		
	Summary Evaluation		Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral		
6. Physical Activity - (where applicable) This relates to the health benefits derived from using different transport modes	Health Benefits	The option that provided better connectivity between trip generators (green areas / key attractions) and that promoted physical activity was preferable.	Comparable to Other Options / Neutral This criterion is not applicable to proposed sub stations		Comparable to Other Options / Neutral This criterion is not applicable to proposed sub stations		
	Summary Evaluation		Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral		

Kishoge - Substation Location MCA
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KISHOGE substation MCA Matrix						
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 2 Assessment	Option 3 Assessment	

KISHOGUE Substation MCA CAF - Summary Table

CAF Parameters	Option 1 Assessment	Option 2 Assessment	Option 3 Assessment
1. Economy	Some Comparative Disadvantage over Other Options	Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options
2. Integration	Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options	Some Comparative Advantage over Other Options
3. Environment	Some Comparative Disadvantage over Other Options	Some Comparative advantage over Other Options	Some Comparative Disadvantage over Other Options
4. Accessibility and Social Inclusion	Significant Comparative Disadvantage over Other Options	Significant Comparative Advantage over Other Options	Some Comparative Advantage over Other Options
5. Safety	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral
6. Physical Activity	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral
Conclusion		Preferred Option	

Kishoge - Substation Location MCA
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	PARKWEST substation MCA Matrix					
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 3 Assessment	Option 4 Assessment	
1. Economy	Capital Expenditure (CAPEX): construction, land acquisition, servicing requirements, temporary works required to implement the option.	This sub-criterion considered comparative cost of construction, land cost (if any) and temporary works cost, servicing requirements of each site option. A high-level cost comparison was undertaken for each option (including	Comparable to other options / Neutral Located on private property, and would require access via adjacent private industrial development	Some Comparative Disadvantage over Other Options. Access route to public road via adjacent private development will add to construction costs. Comparable to other options / Neutral Located on private property, and would require access via adjacent private industrial development Comparable to other options / Neutral Temp landtake anticipated	Some Comparative Disadvantage over Other Options. Access route to public road via adjacent private development will add to construction costs. Comparable to other options / Neutral Located on pricate property, and would require access via adjacent private industrial development Comparable to other options / Neutral No temp landtake anticipated	
costs, operational costs (IE or other entities), Technology advancement and future proofing / obsolescence term main option with cost) was p	This sub-criterion considered long term maintenance costs. The option with less risk for long term maintenance issues (and hence cost) was preferable to options with greater risk of long-term maintenance issues.	Comparable to other options / Neutral OPEX costs for all options will be comparable	Comparable to other options / Neutral OPEX costs for all options will be comparable	Comparable to other options / Neutral OPEX costs for all options will be comparable		
	Summary Evaluation		Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options	Some Comparative Disadvantage over Other Options	

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	PARKWEST substation MCA Matrix					
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 3 Assessment	Option 4 Assessment	
		illiastructure and services was	The site is Icoated immediately adjacent to the proposed DART tracks	Some Comparative Disadvantage over Other Options The site is Icoated across the tracks and away from the propsoed DART tracks, requiring additional works such as UTX crossings etc. Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options The site is Icoated across the tracks and away from the propsoed DART tracks, requiring additional works such as UTX crossings etc. Some Comparative Disadvantage over other Options	
			Existing ESB 38kV and MV services are located to the south however these lines are overhead and will require works to bring these services to the proposed location.	Existing ESB 38kV are not located in the vacinity of the proposed site		
	IE Land use integration	The option which best integrates with existing IÉ-owned property and facilities was preferable to other options.	Some Comparative Advantage over Other Options Ease of access, favourable terrain / topography and the generous separation from other non IÉ-owned buildings means this site offers ease of construction.	Some Comparative Disadvantage over Other Options Buildability is considered significantly more complex for this site given its location, access requriements from the road network and potetial for impact to existing operability of adjacent established businesses	Some Comparative Disadvantage over Other Options Buildability is considered significantly more complex for this site given its location, access requriements from the road network and potetial for impact to existing operability of adjacent established businesses	
			Comparable to Other Options / Neutral This site was not identified by IÉ as having greater development potential when compared to other options.	Comparable to Other Options / Neutral This site was not identified by IÉ as having greater development potential when compared to other options.	Comparable to Other Options / Neutral This site was not identified by IÉ as having greater development potential when compared to other options.	
2. Integration			Comparable to Other Options / Neutral All options can be constructed without impacting on operation of the railway	Comparable to Other Options / Neutral All options can be constructed without impacting on operation of the railway	Comparable to Other Options / Neutral All options can be constructed without impacting on operation of the railway	
	Road Access Integration	The option which best accesses the road network was preferable to other options.	Direct access to an arterial route via an existing DCC-owned access point.	Some Comprative Disadvantage compared to Other Options Access to the road network would be via private industrial estate roads and could be problematic throughout construction phase. Occasional access during the Operation phase would be rare/occasional, but would require Right of Way or other similar legal easement / agreement.	Some Comparative Disadvantage compared to Other Options Access to the road network would be via private industrial estate roads and could be problematic throughout construction phase. Occasional access during the Operation phase would be rare/occasional, but would require Right of Way or other similar legal easement / agreement.	

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			PARKWEST substation MCA Matrix		
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 3 Assessment	Option 4 Assessment
		Site 1 is located with DCC's administerative area and is zoned Z14: Strategic Devlopment and Regeneration Area. It is also	Options Site 3 is located within SDCC's administerative area and is zoned EE "to provide for enterprise and employment	Some Comparative Advantage compared to Other Options Site 3 is located within SDCC's administerative area and is zoned EE "to provide for enterprise and employment related uses".	
		others.	There is potential to regenerate a disused brown field site and provide an improved urban enviorment. The utilitarian nature	Options	Some Comparative advantage compared to Other Options There is little potential for regeneration with the site located within an industrial estate
	Geographical integration		Low potential impact on local external links in terms of road traffic etc.	Some Comparative Disadvantage compared to Other Options Potential disruption to buisness owners/ deliveries oin and out of buisnesses	Some Comparative Disadvantage compared to Other Options All options expected to have similar impacts on local external links in terms of road traffic etc.
2. Integration	Geographical integration		Some Comparative advantage over Other Options No community severance impact is anticipated for any option.	Some Comparative Disadvantage compared to Other Options Potential community severance impact is anticipated this option	Some Comparative Disadvantage compared to Other Options Potential community severance impact is anticipated this option
	Adaptability in the future (robustness in the solution)	The option with greater adaptability for the future was preferable to others.		Comparable to Other Options / Neutral All options considered are expected to be equally adaptable	Comparable to Other Options / Neutral All options considered are expected to be equally adaptable
	Summary Evaluation		Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options	Some Comparative Disadvantage over Other Options

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	PARKWEST substation MCA Matrix						
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 3 Assessment	Option 4 Assessment		
	Noise and vibration		This site is located away from residential properties. The operational phase of the substation is likely to have some noise emissions associated with the operation of the electrical switching and feeding equipment. For the operational phase any noise emissions from the substation building will need to	however is located within an industrial estate. The operational phase of the substation is likely to have some noise emissions associated with the operation of the electrical switching and feeding equipment. For the	Some Comparative Disadvantage compared to Other Options This site is located away from residential properties, however is located within an industrial estate. The operational phase of the substation is likely to have some noise emissions associated with the operation of the electrical switching and feeding equipment. For the operational phase any noise emissions from the substation building will need to be mitigated to ensure that the noise impact at the nearest sensitive location avoids adverse impacts.		
3. Environment - considers	Air quality and Climate		Comparable to Other Options / Neutral General construction and operation phase impacts in terms of air quality are largely similar for all options.	Comparable to Other Options / Neutral General construction and operation phase impacts in terms of air quality are largely similar for all options.	Comparable to Other Options / Neutral General construction and operation phase impacts in terms of air quality are largely similar for all options.		
impacts, such as emissions to air, noise, and ecological and architectural impacts.	Landscape and Visual		During the operational phase there is potential for changes to the landscape character and/or visual amenity due to the presence of a permanent substation building. It is likely to have landscape and visual impact to the neighbouring residential receptors. Depending on the size and scale of the	landscape character and/or visual amenity due to the presence of a permanent substation building. It is likely to have landscape and visual impact to the neighbouring residential receptors. Depending on the size and scale of			
	Biodiversity (flora and fauna)		Areas of rough grasslands, scrub and trees will be directly		Some Comparative Advantage over Other Options Option 4 is located within an industrial estate. There are no specific biodiversity issues.		

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	PARKWEST substation MCA Matrix					
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 3 Assessment	Option 4 Assessment	
	Cultural, archaeological and architectural heritage	environmental factor under consideration was preferable to other options.	Comparable to Other Options / Neutral Based on available mapping and information, there are no architectural heritage features with designations (NIAH, RPS and Industrial Heritage) located within the site. To the south of Option 1, an Early Christian cemetery site was revealed during the construction of the Park West Business Park (DU017-083) in Gallanstown, this was previously unknown, and demonstrates the general archaeological potential of greenfield sites.	Comparable to Other Options / Neutral Based on available mapping and information, there are no architectural heritage features with designations (NIAH, RPS and Industrial Heritage) located within the site.	Comparable to Other Options / Neutral Based on available mapping and information, there are no architectural heritage features with designations (NIAH, RPS and Industrial Heritage) located within the site.	
3. Environment - considers impacts, such as emissions to air, noise, and ecological and architectural impacts.	Water resources		Comparable to Other Options / Neutral No record of historical or predicted flooding within the site. Option will create additional increase in hardstanding areas, which will alter the existing drainage regime and may increase risk of pluvial flooding to the site itself. Water quality risk during construction phase as runoff pollutants may enter the receiving waterbodies, site runoff management will be required. Likely have a neutral/negligible impact on flood risk during operation.	regime and may increase risk of pluvial flooding to the site itself. Water quality risk during construction phase as runoff	Comparable to Other Options / Neutral No record of historical or predicted flooding within the site. Option will create additional increase in hardstanding areas, which will alter the existing drainage regime and may increase risk of pluvial flooding to the site itself. Water quality risk during construction phase as runoff pollutants may enter the receiving waterbodies, site runoff management will be required. Likely have a neutral/negligible impact on flood risk during operation.	
	Agricultural and non-		Some Comparative Advantage over Other Options Option 1 is located on a DCC owned brownfield site that is disused. Land acquisition is required. Temp land take is anticipated, however no community severance impact is anticipated with this option.	Option 3 is located on private property, and would require access via adjacent private industrial development. Temp land take is anticipated and community severance impact is anticipated.	Some Comparative Disadvantage over Other Options Option 4 is located on private property, and would require access via adjacent private industrial development. No temp land take anticipated, however community severance impact is anticipated with this option.	

ParkWest - Substation Site Location MCA

	PARKWEST substation MCA Matrix					
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 3 Assessment	Option 4 Assessment	
3. Environment - considers impacts, such as emissions to air, noise, and ecological and architectural impacts.	Geology and soils (include waste)		Brownfield site located on DCC property. Soil excavation required for construction. According to the GSI, the underlying quaternary sediment is "TLs", that is Till derived from limestones. Located in area of High groundwater vulnerability. Potential to encounter contaminated soils due to the	construction. According to the GSI, the underlying	Some Comparative advantage over Other Options Option 4 is located on private property within an industrial development. Soil excavation required for construction. According to the GSI, the underlying quaternary sediment is "TLs", that is Till derived from limestones. Located in area of High groundwater vulnerability.	
	Summary Evaluation		Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	
4. Accessibility and Social Inclusion - considers social deprivation, geographic isolation and mobility and sensory deprivation	Neighbours	The option which can provide a		Some Comparative Disadvantage over Other Options This site is located away from residential properties, however is located within an industrial estate	Some Comparative Disadvantage over Other Options This site is located away from residential properties, however is located within an industrial estate	
	Summary Evaluation		Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options	Some Comparative Disadvantage over Other Options	
	Rail Safety	The option which provides the best rail safety solution was preferable.	Comparable to Other Options / Neutral All options satisfy rail safety aspects / requirements	Comparable to Other Options / Neutral All options satisfy rail safety aspects / requirements	Comparable to Other Options / Neutral All options satisfy rail safety aspects / requirements	
5. Safety - Safety is concerned with the impact of the	Reliability, Availability and Maintainability	The option which provides the best performance in terms of Reliability, Availability and Maintainability of the option	Comparable to Other Options / Neutral All options satisfy RAM requirements.	Comparable to Other Options / Neutral All options satisfy RAM requirements.	Comparable to Other Options / Neutral All options satisfy RAM requirements.	
investment on the number of transport related accidents.	User / Operator and Public Safety	best safety solution for	Low risk of public/ passer-by safety issues.	Comparable to Other Options / Neutral Some Comparative Disadvantage over Other Options Located within an industrial estate, increasing the risk of public/passer-by conflicts	Comparable to Other Options / Neutral Some Comparative Disadvantage over Other Options Located within an industrial estate, increasing the risk of public/passer-by conflicts	
	Summary Evaluation		Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options	Some Comparative Disadvantage over Other Options	

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	PARKWEST substation MCA Matrix				
CAF Parameters	Sub-Criteria	Basis for Comparative Analysis	Option 1 Assessment	Option 3 Assessment	Option 4 Assessment
6. Physical Activity - (where applicable) This relates to the health benefits derived from using different transport modes	Health Benefits			Comparable to Other Options / Neutral This criterion is not applicable to proposed sub stations	Comparable to Other Options / Neutral This criterion is not applicable to proposed sub stations
	Summary Evaluation		Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral

PARKWEST Substation MCA CAF - Summary Table

CAF Parameters	Option 1 Assessment	Option 3 Assessment	Option 4 Assessment	
1. Economy	Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options	Some Comparative Disadvantage over Other Options	
2. Integration	Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options	Some Comparative Disadvantage over Other Options	
3. Environment	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	
4. Accessibility and Social Inclusion	Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options	Some Comparative Disadvantage over Other Options	
5. Safety	Some Comparative Advantage over Other Options	Some Comparative Disadvantage over Other Options	Some Comparative Disadvantage over Other Options	
6. Physical Activity	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	Comparable to Other Options / Neutral	
Conclusion	Preferred Option			

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