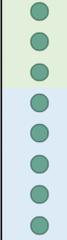
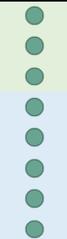
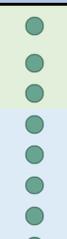


				Bridges with low clearance for electrification			
				McKee Barracks Bridge (OBO3)			
				Requirements		-Electrical clearance for electrification -Keep current functionality of roads -Track alignment and drainage requirements (standards)	
Baseline intervention (not subject to options)				Intervention		Assessment	
				-		-	
Options Level 1 (PC 2)	Option 0: Do Nothing	Engineering	Feasibility		Leave as is Standard clearance for electrification and free running solution	 Pass	The parapet needs to be raised potentially (Bridge not in use)
			Requirements				
		Economy	Investment guidelines and programme for DART+				
		Environment					
			Constructability				
			Geometrical fitness for intervention				
			Safety				
			Electrical clearance for electrification				
			Track alignment and drainage (standards)				
			Structural soundness of the Bridge (if track interventions)				
			Keep current functionality of roads				

					Bridges with low clearance for electrification				
					Blackhorse Avenue Bridge (OBO4)				
					Intervention		Assessment		
Baseline intervention (not subject to options)					-		-		
Options Level 1 (PC 2)	Option 0: Do Nothing	Engineering	Feasibility Constructability Geometrical fitness for intervention Safety	Requirements Electrical clearance for electrification Track alignment and drainage (standards) Structural soundness of the Bridge (if track interventions) Keep current functionality of roads Investment guidelines and programme for DART+	Leave as is	●	●	fail	Service bridge on the southern face makes the electrification not feasible
			●			●			
			●			●			
		Economy				●			No significant environmental issues
		Environment				●			
Options Level 1 (PC 2)	Option 1: Do Minimum	Engineering	Feasibility Constructability Geometrical fitness for intervention Safety	Requirements Electrical clearance for electrification Track alignment and drainage (standards) Structural soundness of the Bridge (if track interventions) Keep current functionality of roads Investment guidelines and programme for DART+	Divert service bridge on the southern face of the bridge Standard clearance for electrification and 4.4 m cw height and free running solution	●	●	Pass	Assuming Service bridge can be diverted Parapet needs to be raised
			●			●			
			●			●			
		Economy				●			No significant environmental issues
		Environment				●			
Options Level 1 (PC 2)	Option 2: Do Something	Engineering	Feasibility Constructability Geometrical fitness for intervention Safety	Requirements Electrical clearance for electrification Track alignment and drainage (standards) Structural soundness of the Bridge (if track interventions) Keep current functionality of roads Investment guidelines and programme for DART+	Combination of track lowering, civil intervention and OHLE derogation for cw heights and electrical clearances	●	●	Pass	Assuming service bridge cannot be diverted
			●			●			
			●			●			
		Economy				●			No significant environmental issues
		Environment				●			

				Bridges with low clearance for electrification			
				Old Cabra Road Bridge (OBO5)			
				Requirements		-Electrical clearance for electrification -Keep current functionality of roads -Track alignment and drainage requirements (standards)	
Baseline intervention (not subject to options)				Intervention		Assessment	
				-		-	
Options Level 1 (PC 2)	Option 0: Do Nothing	Engineering	Feasibility		Leave as is Standard clearance for electrification and free running solution		Pass
			Requirements				
		Economy	Investment guidelines and programme for DART+				Included within the National Inventory of Architectural Heritage (NIAH)
		Environment					

					Bridges with low clearance for electrification				
					Cabra Road Bridge (OBO6)				
					Intervention		Assessment		
Baseline intervention (not subject to options)					-	-	-		
Options Level 1 (PC 2)	Option 0: Do Nothing	Engineering	Feasibility Constructability Geometrical fitness for intervention Safety	Requirements Electrical clearance for electrification Track alignment and drainage (standards) Structural soundness of the Bridge (if track interventions) Keep current functionality of roads Investment guidelines and programme for DART+	Leave as is		fail	Bridge not clear for electrification	No significant environmental issues
			Economy						
			Environment						
Option 1 Do Minimum	Engineering	Feasibility Constructability Geometrical fitness for intervention Safety	Requirements Electrical clearance for electrification Track alignment and drainage (standards) Structural soundness of the Bridge (if track interventions) Keep current functionality of roads Investment guidelines and programme for DART+	Combination of track lowering and OHLE derogation from standards/fitted solution. Anticipated 301 mm additional vertical clearance for 4.2 m cw height.		Pass	Feasible in principle but pending structural assessment	No significant environmental issues	
		Economy							
		Environment							
Option 2	Engineering	Feasibility Constructability Geometrical fitness for intervention Safety	Requirements Electrical clearance for electrification Track alignment and drainage (standards) Structural soundness of the Bridge (if track interventions) Keep current functionality of roads Investment guidelines and programme for DART+	Partial bridge reconstruction. Combination of track lowering and OHLE derogation from standards/fitted solution if required (to minimize impact to road levels). Anticipated 501mm additional vertical clearance for 4.4m cw height.		Pass	Protected structure and Included within the National Inventory of Architectural Heritage (NIAH)		
		Economy							
		Environment							

					Bridges with low clearance for electrification				
					Faussagh Avenue Bridge (OBO7)				
					Intervention		Assessment		
Baseline intervention (not subject to options)					-	-	-		
Options Level 1 (PC 2)	Option 0: Do Nothing	Engineering	Feasibility	Constructability	Requirements	Leave as is	●	fail	Bridge not clear for electrification
				Geometrical fitness for intervention			●		
				Safety			●		
			Electrical clearance for electrification	●					
			Track alignment and drainage (standards)	●					
			Structural soundness of the Bridge (if track interventions)	●					
			Keep current functionality of roads	●					
		Economy	Investment guidelines and programme for DART+	●					
		Environment						No significant environmental issues	
Options Level 1 (PC 2)	Option 1: Do minimum	Engineering	Feasibility	Constructability	Requirements	Combination of track lowering and OHLE derogation from standards/fitted solution. Anticipated 178 mm additional vertical clearance for 4.2 m cw height.	●	Pass	Feasible in principle but pending structural assessment
				Geometrical fitness for intervention			●		
				Safety			●		
			Electrical clearance for electrification	●					
			Track alignment and drainage (standards)	●					
			Structural soundness of the Bridge (if track interventions)	●					
			Keep current functionality of roads	●					
		Economy	Investment guidelines and programme for DART+	●					
		Environment						No significant environmental issues	
Options Level 1 (PC 2)	Option 2	Engineering	Feasibility	Constructability	Requirements	Partial bridge reconstruction. Combination of track lowering and OHLE derogation from standards/fitted solution if required (to minimize impact to road levels). Anticipated 501mm additional vertical clearance for 4.4m cw height.	●	Pass	
				Geometrical fitness for intervention			●		
				Safety			●		
			Electrical clearance for electrification	●					
			Track alignment and drainage (standards)	●					
			Structural soundness of the Bridge (if track interventions)	●					
			Keep current functionality of roads	●					
		Economy	Investment guidelines and programme for DART+	●					
		Environment						No significant environmental issues	

					Bridges with low clearance for electrification		
					Royal Canal and LUAS Twin Arches (OBO8)		
					Requirements		
					-Electrical clearance for electrification -Keep current functionality of roads -Track alignment and drainage requirements (standards)		
					Intervention		Assessment
Baseline intervention (not subject to options)					-		-
Options Level 1 (PC 2)	Option 0: Do Nothing	Engineering	Feasibility Constructability Geometrical fitness for intervention Safety Requirements Electrical clearance for electrification Track alignment and drainage (standards) Structural soundness of the Bridge (if track interventions) Keep current functionality of roads Investment guidelines and programme for DART+	Leave as is		fail	Bridge not clear for electrification No significant environmental issues
	Option 1 Do Minimum	Engineering	Feasibility Constructability Geometrical fitness for intervention Safety Requirements Electrical clearance for electrification Track alignment and drainage (standards) Structural soundness of the Bridge (if track interventions) Keep current functionality of roads Investment guidelines and programme for DART+	Track lowering (100 mm) or slab track and slewing. 4.2 m cw height and electrical clearance derogation (special reduced). OHLE Multiple fitted Tunnel arms		Pass	Assumes 100 m track lowering is possible No significant environmental issues
	Option 2	Engineering	Feasibility Constructability Geometrical fitness for intervention Safety Requirements Electrical clearance for electrification Track alignment and drainage (standards) Structural soundness of the Bridge (if track interventions) Keep current functionality of roads Investment guidelines and programme for DART+	Combination of track lowering and bridge reconstruction. Standard cw height and electrical clearance. OHLE multiple fitted bridge arms		Pass	Potential impact to the Royal Canal

					Bridges with low clearance for electrification			
					Maynooth Line Twin Arch (OBO9)			
					Requirements			
					-Electrical clearance for electrification -Keep current functionality of roads -Track alignment and drainage requirements (standards)			
					Intervention		Assessment	
Baseline intervention (not subject to options)					-		-	
Options Level 1 (PC 2)	Option 0: Do Nothing	Engineering	Feasibility	Constructability	Leave as is	●	fail	Bridge not clear for electrification
			Requirements	Geometrical fitness for intervention		●		
			Requirements	Safety		●		
			Requirements	Electrical clearance for electrification	●			
			Requirements	Track alignment and drainage (standards)	●			
			Requirements	Structural soundness of the Bridge (if track interventions)	●			
			Requirements	Keep current functionality of roads	●			
		Economy		Investment guidelines and programme for DART+	●		No significant environmental issues	
		Environment						
Options Level 1 (PC 2)	Option 1 Do minimum	Engineering	Feasibility	Constructability	Track lowering (100 mm) and slewing. 4.2 m cw height and electrical clearance derogation (special reduced). OHLE Multiple fitted Tunnel/bridge arms	●	Pass	
			Requirements	Geometrical fitness for intervention		●		
			Requirements	Safety		●		
			Requirements	Electrical clearance for electrification	●			
			Requirements	Track alignment and drainage (standards)	●			
			Requirements	Structural soundness of the Bridge (if track interventions)	●			
			Requirements	Keep current functionality of roads	●			
		Economy		Investment guidelines and programme for DART+	●		No significant environmental issues	
		Environment						
Options Level 1 (PC 2)	Option 2	Engineering	Feasibility	Constructability	Combination of track lowering and bridge reconstruction. Standard cw height, electrical clearance. OHLE multiple bridge arms	●	Pass	
			Requirements	Geometrical fitness for intervention		●		
			Requirements	Safety		●		
			Requirements	Electrical clearance for electrification	●			
			Requirements	Track alignment and drainage (standards)	●			
			Requirements	Structural soundness of the Bridge (if track interventions)	●			
			Requirements	Keep current functionality of roads	●			
		Economy		Investment guidelines and programme for DART+	●		No significant environmental issues	
		Environment						

				Bridges with low clearance for electrification				
				Glasnevin Cemetery Road Bridge (OBO10)				
				Requirements				
				-Electrical clearance for electrification -Keep current functionality of roads -Track alignment and drainage requirements (standards)				
Baseline intervention (not subject to options)				Intervention	Assessment			
				-	-	-		
Options Level 1 (PC 2)	Option 0: Do Nothing	Engineering	Feasibility	Constructability	Leave as is	●	fail	Bridge not clear for electrification
				Geometrical fitness for intervention		●		
				Safety		●		
			Requirements	Electrical clearance for electrification		●		
				Track alignment and drainage (standards)		●		
				Structural soundness of the Bridge (if track interventions)		●		
	Economy	Environment	Investment guidelines and programme for DART+		●			
			Keep current functionality of roads		●			
			No significant environmental issues					
Option 1 Do Minimum	Engineering	Feasibility	Constructability	Track lowering (100 mm). 4.2 m cw height and electrical clearance derogation. OHLE fitted solution	●	fail	Current bridge deck in poor condition	
			Geometrical fitness for intervention		●			
			Safety		●			
		Requirements	Electrical clearance for electrification		●			
			Track alignment and drainage (standards)		●			
			Structural soundness of the Bridge (if track interventions)		●			
Economy	Environment	Investment guidelines and programme for DART+		●				
		Keep current functionality of roads		●				
		No significant environmental issues						
Option 2	Engineering	Feasibility	Constructability	Partial bridge reconstruction (Bridge deck replacement). Standard cw height and electrical clearance. OHLE multiple bridge arms	●	Pass		
			Geometrical fitness for intervention		●			
			Safety		●			
		Requirements	Electrical clearance for electrification		●			
			Track alignment and drainage (standards)		●			
			Structural soundness of the Bridge (if track interventions)		●			
Economy	Environment	Investment guidelines and programme for DART+		●				
		Keep current functionality of roads		●				
		No significant environmental issues						