

Table of Contents - Volume 2

Section	Title	Page Number
Glossary		
N/A	Glossary of Terminology, Abbreviations and Acronyms	1
Chapter 1: Introduction		
1.1	Introduction	1
1.2	Aim and Objectives	3
1.3	Delivery of Project	4
1.4	Role of the National Transport Authority	4
1.5	EIAR Process, Screening, Content and Methodology	6
1.5.1	Introduction	6
1.5.2	Relevant Policy, Plans and Guidelines	6
1.5.3	EIA Process	7
1.5.4	Screening and the Legislative Requirement for EIA	8
1.5.5	Consideration of the EIAR's Scope	8
1.5.6	Contents of the EIAR	9
1.5.7	EIAR Structure	10
1.5.8	Assessment Scenarios	12
1.5.9	Assessment Criteria	13
1.5.10	Details of Competent Experts	14
1.6	Consultation	22
1.6.1	Consultation Objectives	22
1.6.2	Emerging Preferred Route Option Consultation	22
1.6.3	Preferred Route Option Consultations	24
1.7	Consultation with Prescribed Bodies and Other Consultees	28
1.7.1	Consultation on the EIA Process	28
1.7.1	Prescribed Bodies and Interested Parties	28
1.7.2	Landowners	29
1.8	Difficulties Encountered During the Preparation of the EIAR	30
1.9	References	31
Chapter 2: Need for the Proposed Scheme		
2.1	Introduction	1
2.2	The Transport Need for the Proposed Scheme	3
2.2.1	The Regional Transport Need	3
2.2.2	The Local Transport Need	16
2.3	Policy Context	22
2.3.1	International Policy	22
2.3.2	European Union Law & Policy	23
2.3.3	National Policy	24
2.3.4	Regional Policy	43
2.3.5	Local Policy	55
2.4	The Benefits of the Proposed Scheme	76
2.5	References	79
Chapter 3: Consideration of Reasonable Alternatives		
3.1	Environmental Impact Assessment Requirements	1
3.2	Strategic Alternatives	1
3.2.1	Overview of the Transport Strategy for the Greater Dublin Area (GDA) 2016-2035 and the new GDA Transport Strategy 2022-2042	1
3.2.2	GDA Transport Strategy 2016-2035	2
3.2.3	'Do Nothing' Alternative	4
3.2.3	Bus Rapid Transit (BRT) Alternative	6

Section	Title	Page Number
3.2.4	Light Rail Alternative	6
3.2.5	Metro Alternative	7
3.2.6	Heavy Rail Alternative	7
3.2.7	Demand Management Alternative	8
3.2.8	Technological Alternatives	9
3.3	Route Alternatives	10
3.3.1	Initial High Level Route Alternatives	11
3.3.2	Stage 2 – Route Options Assessment	14
3.3.3	Cycling Options	18
3.3.4	Emerging Preferred Route	18
3.4	Design Alternatives	19
3.4.1	Development of the Draft Preferred Route Option	19
3.4.2	Consideration Following Preferred Route Option Consultation (March 2020)	29
3.4.3	Further Consideration Following Updated Draft Preferred Route Option Consultation (November 2020)	32
3.5	Conclusion	34
3.6	References	35
Chapter 4: Proposed Scheme Description		
4.1	Introduction	1
4.2	Proposed Scheme Overview	1
4.3	Design Iteration	3
4.4	Design Principles	4
4.5	Description of the Proposed Scheme by Section	5
4.5.1	Section 1 – Pinnock Hill to Airside Junction	5
4.5.2	Section 2 – Airside Junction to Northwood Avenue	8
4.5.3	Section 3 – Northwood Avenue to Shantalla Road	17
4.5.4	Section 4 – Shantalla Road to Botanic Avenue	25
4.5.5	Section 5 – Botanic Avenue to Granby Row	34
4.6	Key Infrastructure Elements	41
4.6.1	Mainline Cross-section	41
4.6.2	Pedestrian Provision	42
4.6.3	Cycling Provision	43
4.6.4	Bus Priority Provision	45
4.6.5	Accessibility for Mobility Impaired Users	49
4.6.6	Integration	50
4.6.7	Junctions	52
4.6.8	Structures	53
4.6.9	Other Street Infrastructure	54
4.6.10	Pavement	55
4.6.11	Parking and Loading	57
4.6.12	Landscape and Urban Realm	58
4.6.13	Lighting	61
4.6.14	Utilities	62
4.6.15	Drainage	62
4.6.16	Maintenance	66
4.6.17	Safety and Security	66
4.6.18	Land Use and Accommodation Works	66
4.7	References	68

Section	Title	Page Number
Chapter 5: Construction		
5.1	Introduction	1
5.2	Construction Phasing	2
5.3	Overview of Construction Works	3
5.3.1	Section 1 – Pinnock Hill to Airside Junction	3
5.3.2	Section 2 – Airside Junction to Northwood Avenue	4
5.3.3	Section 3 – Northwood Avenue to Shantalla Road	4
5.3.4	Section 4 – Shantalla Road to Botanic Avenue	5
5.3.5	Section 5 – Botanic Avenue to Granby Row	5
5.4	Construction Programme	7
5.5	Construction Methodology	8
5.5.1	Pre-Construction	8
5.5.2	Preparatory and Site Clearance Works	8
5.5.3	Road and Street Upgrades	11
5.5.4	Structural Works	13
5.5.5	Construction Site Decommissioning	17
5.6	Construction Plant and Equipment	18
5.7	Construction Compounds	19
5.7.1	Construction Compound Locations	19
5.7.2	Construction Compound Activities	23
5.7.3	Construction Compound Services	24
5.8	Construction Traffic Management	25
5.8.1	Pedestrian and Cyclist Provisions	25
5.8.2	Public Transport Provisions	25
5.8.3	General Traffic Provisions	25
5.9	Interface with Other Projects	29
5.10	Construction Environmental Management	30
5.10.1	Construction Environmental Management Plan	30
5.10.2	Mitigation Measures	31
5.10.3	Construction Working Hours	31
5.10.4	Personnel Numbers	31
5.10.5	Construction Health and Safety	31
5.11	References	32
Chapter 6: Traffic & Transport		
6.1	Introduction	1
6.1.1	Aim and Objectives of the Proposed Scheme	2
6.1.2	Iterative Design Process and Mitigation by Design	4
6.2	Methodology	6
6.2.1	Study Area	6
6.2.2	Relevant Guidelines, Policy and Legislation	8
6.2.3	Proposed Scheme Impact Assessment Modelling Tools	9
6.2.4	Appraisal Method for the Assessment of Impacts	11
6.2.5	Data Collection and Collation	15
6.3	Baseline Environment	19
6.3.1	Overview	19
6.3.2	Section 1 – Pinnock Hill to Airside Junction	19
6.3.3	Section 2 – Airside Junction to Northwood Avenue	25
6.3.4	Section 3 – Northwood Avenue to Shantalla Road	37
6.3.5	Section 4 – Shantalla Road to Botanic Avenue	49
6.3.6	Section 5 – Botanic Avenue to Granby Row	59

Section	Title	Page Number
6.4	Potential Impacts	82
6.4.1	Characteristics of the Proposed Scheme	82
6.4.2	'Do Nothing' Scenario	82
6.4.3	'Do Minimum' Scenario	82
6.4.4	'Do Something' Scenario	84
6.4.5	Construction Phase	84
6.4.6	Operational Phase	90
6.5	Mitigation and Monitoring Measures	168
6.5.1	Construction Phase	168
6.5.2	Operational Phase	168
6.6	Residual Impacts	169
6.7	References	170
Chapter 7: Air Quality		
7.1	Introduction	1
7.2	Methodology	1
7.2.1	Study Area	2
7.2.2	Relevant Guidelines, Policy and Legislation	3
7.2.3	Data Collection and Collation	6
7.2.4	Appraisal Method for the Assessment of Impacts	6
7.3	Baseline Environment	19
7.3.1	Meteorological Conditions	19
7.3.2	Baseline Ambient Air Quality	20
7.3.3	Existing Modelled Baseline Scenario	26
7.4	Potential Impacts	31
7.4.1	Characteristics of the Proposed Scheme	31
7.4.2	Construction Phase	31
7.4.3	Operational Phase	52
7.5	Mitigation and Monitoring Measures	69
7.5.1	Construction Phase	69
7.5.2	Operational Phase	69
7.6	Residual Impacts	70
7.6.1	Construction Phase	70
7.6.2	Operational Phase	70
7.7	References	70
Chapter 8: Climate		
8.1	Introduction	1
8.2	Climate Assessment Considerations	2
8.3	Methodology	3
8.3.1	Study Area	3
8.3.2	Relevant Guidelines, Policy and Legislation	4
8.3.3	Data Collection and Collation	9
8.3.4	Appraisal Method for the Assessment of Impacts	9
8.4	Baseline Environment	15
8.4.1	Climate Pollutants	15
8.4.2	Vulnerability of the Proposed Scheme to Climate Change	15
8.4.3	Existing GHG Emissions Baseline	18
8.5	Potential Impacts	20
8.5.1	Construction Phase	20
8.5.2	Operational Phase	23
8.6	Sensitivity Analysis	34

Section	Title	Page Number
8.6.1	Introduction	34
8.6.2	Sensitivity Test	34
8.7	Mitigation and Monitoring Measures	37
8.7.1	Construction Phase	37
8.7.2	Operational Phase	37
8.8	Residual Impacts	39
8.8.1	Construction Phase	39
8.8.2	Operational Phase	39
8.9	References	40
Chapter 9: Noise & Vibration		
9.1	Introduction	1
9.2	Methodology	2
9.2.1	Study Area	2
9.2.2	Relevant Guidelines, Policy and Legislation	3
9.2.3	Data Collection and Collation	4
9.2.4	Appraisal Method for the Assessment of Impacts	8
9.3	Baseline Environment	18
9.3.1	Desk Study of Published Noise Data	18
9.3.2	Baseline Noise Surveys	20
9.3.3	Baseline Vibration Surveys	25
9.4	Potential Impacts	26
9.4.1	Characteristics of the Proposed Scheme	26
9.4.2	'Do Minimum' Scenario	27
9.4.3	Construction Phase	28
9.4.4	Operational Phase	45
9.5	Mitigation and Monitoring Measures	55
9.5.1	Construction Phase	55
9.5.2	Operational Phase	60
9.6	Residual Impacts	62
9.6.1	Construction Phase	62
9.6.2	Operational Phase	62
9.7	References	64
Chapter 10: Population		
10.1	Introduction	1
10.2	Methodology	2
10.2.1	Study Area	2
10.2.2	Relevant Guidelines, Policy and Legislation	3
10.2.3	Data Collection and Collation	3
10.2.4	Appraisal Method for the Assessment of Impacts	4
10.3	Baseline Environment	10
10.3.1	Overview	11
10.3.2	Community Baseline	11
10.3.3	Economic Baseline	14
10.4	Potential Impacts	16
10.4.1	Characteristics of the Proposed Scheme	16
10.4.2	'Do Nothing' Scenario	17
10.4.3	Construction Phase	17
10.4.4	Operational Phase	23
10.5	Mitigation and Monitoring Measures	29
10.6	Residual Impacts	30

Section	Title	Page Number
10.6.1	Construction Phase	30
10.6.2	Operational Phase	31
10.7	References	33
Chapter 11: Human Health		
11.1	Introduction	1
11.2	Methodology	2
11.2.1	Study Area	2
11.2.2	Relevant Guidelines, Policy and Legislation	3
11.2.3	Data Collection and Collation	6
11.2.4	Appraisal Method for the Assessment of Impacts	6
11.3	Baseline Environment	12
11.3.1	General Health	12
11.3.2	Deprivation, Disability and Health Inequalities	14
11.3.3	Air Quality, Noise and Other Pollutants	18
11.3.4	Traffic, Travel Behaviour and Health	21
11.3.5	Access to Healthcare, Employment and Education	22
11.3.6	Communicable Diseases	23
11.3.7	Summary of Key Baseline Health Issues	23
11.4	Potential Impacts	25
11.4.1	Characteristics of the Proposed Scheme	25
11.4.2	Do Nothing Scenario	26
11.4.3	Construction Phase	26
11.4.4	Operational Phase	31
11.5	Mitigation and Monitoring Measures	37
11.5.1	Construction Phase	37
11.5.2	Operational Phase	37
11.6	Residual Impacts	39
11.6.1	Construction Phase	39
11.6.2	Operational Phase	39
11.7	References	40
Chapter 12: Biodiversity		
12.1	Introduction	1
12.2	Methodology	1
12.2.1	Ecological Survey Study Area	2
12.2.2	Relevant Guidelines, Policy and Legislation	2
12.2.3	Data Collection and Collation	4
12.2.4	Appraisal Method for the Assessment of Impacts	11
12.3	Baseline Environment	15
12.3.1	Zone of Influence	15
12.3.2	Desk Study	17
12.3.3	Biodiversity Areas	17
12.3.4	Designated Areas for Nature Conservation	18
12.3.5	Habitats	29
12.3.6	Rare and Protected Plant Species	38
12.3.7	Non-Native Invasive Plant Species	38
12.3.8	Mammals	39
12.3.9	Birds	45
12.3.10	Reptiles	50
12.3.11	Amphibians	50
12.3.12	Fish	50

Section	Title	Page Number
12.3.13	Invertebrates	53
12.3.14	Summary Ecological Valuation and Identification of KERs	55
12.4	Potential Impacts	58
12.4.1	Characteristics of the Proposed Scheme	58
12.4.2	'Do Nothing' Scenario	69
12.4.3	Construction Phase	70
12.4.4	Operational Phase	100
12.5	Mitigation and Monitoring Measures	116
12.5.1	Construction Phase	116
12.5.2	Operational Phase	131
12.6	Residual Impacts	136
12.6.1	Construction Phase	136
12.6.2	Operational Phase	139
12.7	References	142
Chapter 13: Water		
13.1	Introduction	1
13.2	Methodology	2
13.2.1	Study Area	2
13.2.2	Relevant Guidelines, Policy and Legislation	2
13.2.3	Data Collection and Collation	4
13.2.4	Appraisal Method for the Assessment of Impacts	5
13.3	Baseline Environment	10
13.3.1	WFD Catchment Overview	10
13.3.2	EPA Surface Water Monitoring	10
13.3.3	Surface Water WFD Status	10
13.3.4	Field Survey	11
13.3.5	Designated Sites	13
13.3.6	Drinking Water Supply (Surface Water)	14
13.3.7	Known Pressures	14
13.3.8	Existing Drainage	15
13.3.9	Surface Water Features	15
13.3.10	Flood Risk	19
13.4	Potential Impacts	21
13.4.1	Characteristics of the Proposed Scheme	21
13.4.2	'Do Nothing' Scenario	23
13.4.3	Do Minimum	24
13.4.4	Construction Phase	24
13.4.5	Operational Phase	29
13.5	Mitigation and Monitoring Measures	34
13.5.1	Introduction	34
13.5.2	Construction Phase	34
13.5.3	Operational Phase	37
13.6	Residual Impacts	39
13.6.1	Construction Phase	39
13.6.2	Operational Phase	39
13.6.3	Summary of WFD Assessment	39
13.7	References	41
Chapter 14: Land, Soils, Geology & Hydrogeology		
14.1	Introduction	1
14.2	Methodology	2

Section	Title	Page Number
14.2.1	Study Area	2
14.2.2	Relevant Guidelines, Policy and Legislation	2
14.2.3	Data Collection and Collation	2
14.2.4	Appraisal Method for the Assessment of Impacts	5
14.3	Baseline Environment	10
14.3.1	Introduction	10
14.3.2	Regional Overview	10
14.3.3	Site Specific Environment	16
14.3.4	Summary of Features of Importance	30
14.3.5	Conceptual Site Model	34
14.4	Potential Impacts	41
14.4.1	Characteristics of the Proposed Scheme	41
14.4.2	'Do Nothing' Scenario	42
14.4.3	Construction Phase	42
14.4.4	Operational Phase	49
14.5	Mitigation and Monitoring Measures	50
14.5.1	Construction Phase	50
14.5.2	Operational Phase	51
14.6	Residual Impacts	52
14.6.1	Construction Phase	52
14.6.2	Operational Phase	52
14.7	References	56
Chapter 15: Archaeology & Cultural Heritage		
15.1	Introduction	1
15.2	Methodology	1
15.2.1	Introduction	1
15.2.2	Study Area	3
15.2.3	Relevant Guidelines, Policy and Legislation	3
15.2.4	Data Collection and Collation	4
15.2.5	Appraisal Method for the Assessment of Impacts	5
15.3	Baseline Environment	7
15.3.1	Archaeological and Historical Background	7
15.3.2	Archaeological Heritage: Pinnock Hill to Airside Junction	23
15.3.3	Archaeological Heritage: Airside Junction to Northwood Avenue	25
15.3.4	Archaeological Heritage: Northwood Avenue to Shantalla Road	27
15.3.5	Archaeological Heritage: Shantalla Road to Botanic Avenue	29
15.3.6	Archaeological Heritage: Botanic Avenue to Granby Row	31
15.3.7	Proposed Construction Compounds	35
15.4	Potential Impacts	37
15.4.1	Characteristics of the Proposed Scheme	37
15.4.2	Do Nothing Scenario	37
15.4.3	Construction Phase	37
15.4.4	Operational Phase	46
15.5	Mitigation and Monitoring Measures	47
15.5.1	Construction Phase	47
15.5.2	Operational Phase	53
15.6	Residual Impacts	54
15.6.1	Construction Phase	54
15.6.2	Operational Phase	54

Section	Title	Page Number
Chapter 16: Architectural Heritage		
16.1	Introduction	1
16.2	Methodology	2
16.2.1	Definitions	2
16.2.2	Approach	4
16.2.3	Study Area	5
16.2.4	Relevant Guidelines, Policy and Legislation	5
16.2.5	Data Collection and Collation	7
16.2.6	Assessment Methodology	7
16.2.7	Appraisal Method for the Assessment of Sensitivity	8
16.3	Baseline Environment	14
16.3.1	Results and Analysis	16
16.4	Potential Impacts	43
16.4.1	Characteristics of the Proposed Scheme	43
16.4.2	'Do Nothing' Scenario	43
16.4.3	Construction Phase	43
16.4.4	Operational Phase	50
16.5	Mitigation and Monitoring Measures	53
16.5.1	Construction Phase	53
16.5.2	Operational Phase	59
16.6	Residual Impacts	60
16.6.1	Construction Phase	60
16.6.2	Operational Phase	60
16.7	References	61
Chapter 17: Landscape (Townscape) & Visual		
17.1	Introduction	1
17.2	Methodology	2
17.2.1	Study Area	2
17.2.2	Relevant Legislation, Policy and Guidelines	2
17.2.3	Data Collection and Collation	4
17.2.4	Appraisal Method for the Assessment of Impacts	5
17.3	Baseline Environment	15
17.3.1	City Context	15
17.3.2	Overview of Route of the Proposed Scheme	15
17.3.3	Landscape, Townscape and Visual Planning Policy	15
17.3.4	Townscape / Streetscape Character	15
17.4	Potential Impacts	22
17.4.1	Characteristics of the Proposed Scheme	22
17.4.2	Do Nothing Scenario	29
17.4.3	Construction Phase	29
17.4.4	Operational Phase	38
17.5	Mitigation and Monitoring Measures	48
17.5.1	Construction Phase	48
17.5.2	Operational Phase	51
17.6	Residual Impacts	63
17.6.1	Construction Phase	63
17.6.2	Operational Phase	65
17.7	Conclusion	67
17.8	References	68

Section	Title	Page Number
Chapter 18: Waste & Resources		
18.1	Introduction	1
18.2	Sustainable Resource and Waste Management Principles	2
18.2.1	Circular Economy	2
18.2.2	The Waste Hierarchy	3
18.3	Methodology	4
18.3.1	Study Area	4
18.3.2	Relevant Guidelines, Policy and Legislation	4
18.3.3	Appraisal Method for the Assessment of Impacts	5
18.3.4	Data Collection and Collation	6
18.3.5	Waste Management Principles	8
18.4	Baseline Environment	9
18.4.1	Construction Waste	10
18.4.2	Municipal Waste	12
18.5	Potential Impacts	13
18.5.1	Characteristics of the Scheme	13
18.5.2	'Do Nothing' Scenario	13
18.5.3	Construction Phase	13
18.5.4	Operational Phase	17
18.6	Mitigation and Monitoring Measures	18
18.6.1	Construction Phase	18
18.6.2	Operational Phase	20
18.7	Residual Impacts	20
18.7.1	Construction Phase	20
18.7.2	Operational Phase	20
18.8	References	21
Chapter 19: Material Assets		
19.1	Introduction	1
19.2	Methodology	2
19.2.1	Study Area	2
19.2.2	Relevant Guidelines, Policy and Legislation	2
19.2.3	Data Collection and Collation	3
19.2.4	Appraisal Method for the Assessment of Impacts	3
19.3	Baseline Environment	5
19.3.1	Major Infrastructure and Existing Utilities	5
19.3.2	Imported Material	7
19.4	Potential Impacts	8
19.4.1	Characteristics of the Proposed Scheme	8
19.4.2	'Do Nothing' Scenario	8
19.4.3	Construction Phase	9
19.4.4	Operational Phase	14
19.5	Mitigation and Monitoring Measures	16
19.5.1	Construction Phase	16
19.5.2	Operational Phase	18
19.6	Residual Impacts	18
19.6.1	Construction Phase	18
19.6.2	Operational Phase	18
19.7	References	19

Section	Title	Page Number
Chapter 20: Risk of Major Accidents and / or Disasters		
20.1	Introduction	1
20.2	Risk of Major Accidents and / or Disasters	2
20.2.1	Definitions	3
20.3	Methodology	4
20.3.1	Scope and Context	4
20.3.2	Legislation, Guidelines and Reference Material	4
20.3.3	Risk Assessment Methodology	5
20.4	Potential Impacts	9
20.4.1	'Do Nothing' Scenario	9
20.4.2	Risk Evaluation	9
20.4.3	Seveso Sites	15
20.5	Mitigation and Monitoring Measures	17
20.5.1	Inherent Design	17
20.5.2	Plans and Procedures	17
20.6	Residual Impacts	21
20.7	References	22
Chapter 21: Cumulative Impacts & Environmental Interactions		
21.1	Introduction	1
21.1.1	Cumulative Impacts	1
21.1.2	Environmental Interactions	1
21.1.3	Guidance	2
21.2	Methodology for Cumulative Impacts Assessment	2
21.2.1	Introduction	2
21.2.2	Stage 1: Establishing the Long List of 'Other Projects'	2
21.2.3	Stage 2: Establishing the Shortlist of 'Other Projects'	6
21.2.4	Stage 3: Information Gathering for the Shortlist of 'Other Projects'	7
21.2.5	Stage 4: Assessment	7
21.2.6	Traffic Related Cumulative Impacts: Construction Scenarios for Assessment	8
21.2.7	Operational Scenario for Assessment	9
21.2.8	Summary of Assessment Methodology for CEA	10
21.3	Assessment of Cumulative Impacts and Environmental Interactions	10
21.3.1	Construction Impacts	10
21.3.2	Operational Impacts	33
21.4	Environmental Interactions	53
21.5	Mitigation	60
21.5.1	Construction Phase	60
21.5.2	Operational Phase	60
21.6	Summary of Residual Cumulative Impacts and Environmental Interactions	60
21.6.1	Construction Phase	60
21.6.2	Operational Phase	61
21.6.3	Environmental Interactions	62
21.7	References	63
Chapter 22: Summary of Mitigation & Monitoring Measures		
22.1	Introduction	1
22.2	Mitigation and Monitoring Schedules	1
22.3	General Mitigation Requirements	2
22.4	Traffic and Transport	2
22.5	Air Quality	3
22.6	Climate	3

Section	Title	Page Number
22.7	Noise and Vibration	4
22.8	Population	6
22.9	Human Health	6
22.1	Biodiversity	6
22.11	Water	17
22.12	Land, Soils, Geology and Hydrogeology	19
22.13	Archaeological and Cultural Heritage	21
22.14	Architectural Heritage	24
22.15	Landscape (Townscape) and Visual	29
22.16	Waste and Resources	30
22.17	Material Assets	31
22.18	Risk of Major Accidents and/or Disasters	32
22.19	Cumulative Impacts	32
22.20	References	33
Chapter 23: Summary of Significant Residual Impacts		
23	Summary of Significant Residual Impacts	1