

1	INTRODUCTION	1-1
1.1	Background.....	1-1
1.2	Site Location	1-1
1.3	Project Promoters	1-3
1.4	Study Area.....	1-3
1.5	Definitions.....	1-3
1.6	Location and Description of Works.....	1-3
1.7	Environmental Impact Assessment.....	1-4
1.8	Presentation of the EIAR.....	1-7
2	PLANNING POLICY CONTEXT	2-1
2.1	Introduction	2-1
2.2	European Legislation	2-1
2.3	EU Habitats Directive.....	2-2
2.4	National Legislation, Policy and Guidance.....	2-3
2.5	Regional Planning Context.....	2-8
2.6	Local Planning Context.....	2-9
2.7	Trees policies	2-13
2.8	Local Area Plans.....	2-13
2.9	Site and Surrounds Planning History.....	2-13
3	SCOPING AND CONSULTATIONS	3-1
3.1	Introduction	3-1
3.2	EIA Scoping.....	3-1
3.3	Additional Stakeholder Consultations	3-5
3.4	Community Engagement.....	3-6
3.5	Engagement with Elected Members	3-9
3.6	Engagement with Council Officials.....	3-9
3.7	Future Public Consultations	3-9

3.8	Summary	3-10
4	THE NEED FOR THE PROJECT AND ALTERNATIVES CONSIDERED	4-1
4.1	Introduction	4-1
4.2	Historic Flood Events	4-1
4.3	Consideration of Alternatives	4-3
4.4	Examination of Alternatives - Updated hydraulic modelling	4-5
4.5	The Preferred Option	4-6
4.6	Design of the Preferred Option	4-7
4.7	Examination of Alternatives	4-8
5	THE PROPOSED DEVELOPMENT	5-1
5.1	Introduction	5-1
5.2	Proposed Scheme	5-1
5.3	Construction of the Proposed Scheme	5-2
5.4	Landscape Mitigation, Tree Planting and Biodiversity Enhancements	5-8
5.5	Land Take	5-9
5.6	Geotechnical Investigations	5-9
5.7	Duration and Sequencing of Construction	5-9
5.8	Construction Management	5-11
5.9	Construction Materials	5-12
5.10	Waste Management	5-12
5.11	Pest Control	5-13
5.12	Best Practice Construction Measures	5-13
5.13	Climate Change Considerations	5-15
5.14	Risk of Major Accidents and/or Disasters	5-15
5.15	Operation of the Proposed Scheme	5-16
5.16	Maintenance of the Scheme	5-17
5.17	Benefits of the Proposed Flood Alleviation Scheme	5-18

6	POPULATION AND HUMAN HEALTH.....	6-1
6.1	Introduction	6-1
6.2	Methodology.....	6-1
6.3	Existing Environment.....	6-1
6.4	Potential Impacts.....	6-6
6.5	Mitigation Measures.....	6-8
6.6	Residual Impacts	6-9
7	BIODIVERSITY.....	7-1
7.1	Introduction	7-1
7.2	Methodology.....	7-5
7.3	Existing Environment.....	7-8
7.4	Field Survey Results	7-12
7.5	Potential Impacts.....	7-27
7.6	Mitigation Measures.....	7-35
7.7	Residual Impacts	7-38
7.8	Monitoring.....	7-41
8	HYDROLOGY AND HYDROMORPHOLOGY.....	8-1
8.1	Introduction	8-1
8.2	Statement of Authority	8-1
8.3	The Proposed Development	8-1
8.4	The Existing Environment.....	8-2
8.5	Methodology.....	8-7
8.6	Potential Impacts During Construction	8-12
8.7	Potential Impacts of the Proposed Scheme during Operation	8-15
8.8	Mitigation Measures.....	8-16
8.9	Monitoring.....	8-19

9	SOILS, GEOLOGY AND HYDROGEOLOGY	9-1
9.1	Introduction	9-1
9.2	Statement of Authority	9-1
9.3	Methodology.....	9-1
9.4	Existing Environmental Conditions.....	9-1
9.5	Potential Impacts.....	9-4
9.6	Mitigation Measures.....	9-5
9.7	Residual Impacts	9-7
10	LANDSCAPE AND VISUAL	10-1
10.1	Introduction	10-1
10.2	Statement of Authority	10-1
10.3	Methodology	10-1
10.4	Existing Environmental Conditions – Planning Policy	10-11
10.5	Existing Environmental Conditions – Baseline	10-20
10.6	Proposed Development	10-25
10.7	Mitigation/Avoidance by Design	10-27
10.8	Potential Effects.....	10-27
10.9	Mitigation and Avoidance Measures	10-46
10.10	Residual Impacts	10-48
11	ARCHAEOLOGICAL, ARCHITECTURAL AND CULTURAL HERITAGE	11-1
11.1	Introduction	11-1
11.2	Methodology	11-2
11.3	Existing Environment.....	11-8
11.4	Archaeological and Historical Background.....	11-9
11.5	Predicted Impacts during Construction.....	11-23
11.6	Mitigation Measures	11-25
11.7	Residual Impacts	11-27

12	NOISE AND VIBRATION	12-1
12.1	Introduction	12-1
12.2	Statement of Authority	12-1
12.3	Methodology	12-2
12.4	Existing Environment.....	12-6
12.5	Noise Impact Assessment	12-7
12.6	Mitigation Measures	12-20
12.7	Residual impacts.....	12-22
13	AIR QUALITY AND CLIMATE.....	13-1
13.1	Introduction	13-1
13.2	Statement of Authority	13-1
13.3	Methodology	13-2
13.4	Existing Environment.....	13-5
13.5	Air Quality & Dust Impact Assessment	13-6
13.6	Mitigation Measures	13-12
13.7	Residual Impacts	13-15
14	TRAFFIC AND TRANSPORT	14-1
14.1	Introduction	14-1
14.2	Statement of Authority	14-1
14.3	Transport Assessment Methodology.....	14-2
14.4	Existing Environment.....	14-4
14.5	Characteristics of the Proposed Development	14-6
14.6	Likely Significant Effects	14-14
14.7	Mitigation Measures	14-20
14.8	Residual Impacts	14-22

15	MATERIAL ASSETS	15-1
15.1	Introduction	15-1
15.2	Methodology	15-1
15.3	Characteristics of the Proposed Scheme.....	15-1
15.4	Existing Environment.....	15-2
15.5	Potential Impacts.....	15-8
15.6	Mitigation Measures	15-11
15.7	Residual Impacts	15-13
16	INTERACTIONS	16-1
16.1	Introduction	16-1
16.2	Interactions Matrix.....	16-1
16.3	Population & Human Health Interactions	16-1
16.4	Biodiversity Interactions	16-2
16.5	Hydrology & Hydromorphology Interactions.....	16-3
16.6	Soils, Geology and Hydrogeology Interactions	16-3
16.7	Landscape and Visual Interactions.....	16-3
16.8	Archaeology, Cultural and Built Heritage Interactions	16-3
16.9	Noise and Vibration Interactions	16-3
16.10	Air Quality Interactions.....	16-3
16.11	Traffic & Transport Interactions	16-4
16.12	Material Assets Interactions	16-4
17	SCHEDULE OF MITIGATION MEASURES.....	17-1
17.1	Introduction	17-1
17.2	Schedule of Mitigation Measures	17-1
18	REFERENCES	18-1
19	GLOSSARY.....	19-1

List of Tables

Table 1-1: EIA Team Competencies.....	1-6
Table 3-1: Summary of Scoping Responses	3-2
Table 3-2: Consultation Event Attendances.....	3-7
Table 5-1: Estimated construction programme	5-10
Table 5-2: Schedule of Principal Materials and Quantities.....	5-12
Table 6-1: Population change by council area 2006 to 2016.....	6-3
Table 6-2: Population Census Statistics for the Area	6-4
Table 7-1: Overview of fieldwork personnel and dates.....	7-6
Table 7-2: The six-level ecological valuation scheme - CIEEM guidelines (2016)	7-7
Table 7-3: Designated sites of relevance to the proposed development site	7-10
Table 7-4: Peak counts of birds recorded in Tymon Park in Jan – Apr 2018.....	7-23
Table 7-5: Identification of important ecological features: designated sites, habitats and flora	7-25
Table 7-6: Identification of important ecological features: fauna	7-26
Table 7-7: Habitats within the development footprint	7-28
Table 7-8: Summary of residual impacts	7-40
Table 8-1: Sub-catchments in the Study Area.....	8-4
Table 8-2: Comparison of FSU flows to ICM model flows (CFRAM and FAS current study)	8-11
Table 10-1: Categories of Landscape Sensitivity	10-4
Table 10-2: Magnitude of Landscape Change.....	10-5
Table 10-3: Significance of Effects.....	10-6
Table 10-4: Categories of Visual Receptor Sensitivity	10-8
Table 10-5: Categories of Visual Change	10-9
Table 10-6: Landscape Effects Summary Table.....	10-32
Table 10-7: Location of Proposed Photomontages	10-33
Table 10-8: Summary of Visual Effects	10-44

Table 11-1: Impact Definitions: Archaeology.....	11-7
Table 11-2: Impact Definitions: Architecture.....	11-8
Table 11-3: RMP sites within the receiving environment.....	11-17
Table 11-4: Built heritage assets within the receiving environment.....	11-18
Table 11-5: Place name analysis.....	11-20
Table 11-6: Demesne landscapes within the receiving environment	11-21
Table 11-7: Cultural heritage assets within the receiving environment	11-22
Table 11-8: Proposed mitigation measures.....	11-26
Table 12-1: Maximum permissible noise levels at the façade of dwellings during construction	12-2
Table 12-2: Construction noise threshold levels based on the BS 5228 ‘ABC’ method	12-3
Table 12-3: The noise limit criteria to be applied depending on the results of the screening processes	12-4
Table 12-4: Noise monitoring data during the daytime period on Tuesday 14 th May 2019.....	12-6
Table 12-5: Areas of proposed construction works and whether these are likely to result in a construction noise impact and require construction mitigation measures	12-9
Table 12-6: Typical Noise Levels from Construction Works likely to take place during the construction of proposed development.....	12-14
Table 12-7: Estimated construction programme	12-15
Table 12-8: Predicted worst-case construction noise levels at specific locations in proximity to potential future construction works.	12-16
Table 13-1: Limit Values.....	13-2
Table 13-2: Alert Thresholds for Sulphur Dioxide & Nitrogen Dioxide.....	13-3
Table 13-3: Target Values of Directive 2004/107/EC	13-3
Table 13-4: Target Values for Ozone from 2010	13-3
Table 13-5: Long Term Objectives for Ozone from 2020.....	13-3
Table 13-6: Information and Alert Thresholds for Ozone.....	13-4
Table 13-7: Rathmines EPA Air Quality monitoring station data (µg/m ³).....	13-5
Table 13-8: Tallaght EPA Air Quality monitoring station data (µg/m ³).....	13-5

Table 13-9: Areas of proposed construction works and whether these are likely to result in a construction noise impact and require construction mitigation measures	13-8
Table 13-10: Dust Management Plan	13-14
Table 14-1: Assessment Criteria.....	14-3
Table 14-2: Traffic estimates based on loads and estimated duration of works.....	14-12
Table 14-3: Summary of Impacts	14-18
Table 15-1: Licensed Waste Facilities in proximity to the Scheme	15-6
Table 16-1: Summary of Impact Interactions	16-4
Table 17-1: Population & Human Health Mitigation Measures (Chapter 6, Page 6-8)	17-1
Table 17-2: Biodiversity Mitigation Measures (Chapter 7, Pages 7-35 – 7-38).....	17-1
Table 17-3: Hydrology and Hydromorphology Mitigation Measures (Chapter 8, Pages 8-16 – 8-20) 17-4	
Table 17-4: Soils, Geology & Hydrogeology Mitigation Measures (Chapter 9, Pages 9-5 – 9-7)	17-6
Table 17-5: Landscape and Visual Mitigation Measures (Chapter 10, Pages 10-46 to 10-48)	17-8
Table 17-6: Archaeological, Architectural and Cultural Heritage Mitigation Measures (Chapter 11, Page 11-26 – 11-27).....	17-11
Table 17-7: Noise and Vibration Mitigation Measures (Chapter 12, Page 12-20 – 12-21).....	17-13
Table 17-8: Air Quality and Climate Mitigation Measures (Chapter 13, Page 13-12 – 13-15)	17-14
Table 17-9: Traffic and Transport Mitigation Measures (Chapter 14, Pages 14-20 to 14-22).....	17-17
Table 17-10: Material Assets Mitigation Measures (Chapter 15, Pages 15-11 to 15-12).....	17-17

List of Figures

Figure 1-1: River Poddle Location	1-2
Figure 4-1: Photographs of the flooding at Harold’s Cross October 2011	4-2
Figure 4-2: Option 2 Tymon flood storage embankment	4-8
Figure 4-3: Option 2 Whitehall Park with terracing	4-9
Figure 4-4: Option 1 flood protection proposals for Ravensdale Park.....	4-11
Figure 7-1: Designated Sites	7-42

Figure 7-2: Habitat Map (Tymon Park)	7-43
Figure 7-3: Tymon Survey - Tymon North.....	7-44
Figure 7-4: Tymon Park (west)	7-45
Figure 7-5: Bat survey – Tymon Park (east)	7-46
Figure 7-6: Bat Survey – Whitehall / Wainsfort Manor	7-47
Figure 7-7: Bat Survey – Fortfield Road / Ravensdale	7-48
Figure 8-1: River Poddle surrounding waters quality	8-21
Figure 8-2: Hydrological Estimation Points.....	8-22
Figure 8-3: Q-Values of the River Poddle and other surrounding rivers 2007-2017.....	8-23
Figure 8-4: Transitional water risk in relation to the River Poddle.	8-24
Figure 8-5: River Poddle catchment as per the FSU web tool.	8-25
Figure 8-6: Critical Storm duration by reach of the River Poddle.	8-26
Figure 9-1: Soils in the surrounding areas of the River Poddle.....	9-8
Figure 9-2: River Poddle Quarternary Sediments.	9-9
Figure 9-3: River Poddle Flood Alleviation Scheme Characteristics	9-10
Figure 9-4: River Poddle Groundwater Vulnerability.	9-11
Figure 10-1. Key Views and Prospects (indicative). Source: Dublin City Development Plan	10-49
Figure 11-1: South western end of the proposed Scheme showing archaeological, architectural and cultural heritage assets.....	11-28
Figure 11-2: North eastern end of the proposed Scheme showing archaeological, architectural and cultural heritage assets.....	11-29
Figure 11-3: Extract from Roque’s Map of County Dublin, 1760	11-30
Figure 11-4: Extract from Roque’s Map of County Dublin, 1760	11-31
Figure 11-5: Extract from Taylor's map of the environs of Dublin, 1816 from Kimmage to Harold’s Cross	11-32
Figure 11-6: Extract from Duncan’s Map of the County of Dublin 1821, showing the course of the Poddle from Tallaght flowing north eastwards.....	11-33

Figure 11-7: Extract from Ordnance Survey 6-inch map, 1843 showing the Poddle as it flows through Kimmage	11-34
Figure 11-8: Extract from Ordnance Survey 6-inch map, 1843 showing the Poddle as it flows northeast of Kimmage towards Harold’s Cross	11-35
Figure 11-9: Extract from Ordnance Survey 5-foot map, 1876 showing Tinker Mill and Brook Lawn	11-36
Figure 11-10: Extract from Ordnance Survey 5-foot map, 1876 showing Larkfield Mill	11-37
Figure 11-11: Extract from Ordnance Survey 25-inch map, 1906-9 showing Mount Jerome	11-38
Figure 12-1: Flow Chart for the Identification of Appropriate Noise Criteria (Ref. EPA Guidance Note NG4).....	12-23
Figure 12-2: Baseline noise monitoring locations - Tuesday 14 th May 2019	12-24

List of Plates

Plate 10-1: Lake, grassland and trees in Tymon Park.....	10-50
Plate 10-2: Open River channel in grassland at Tymon Park	10-50
Plate 10-3: Topography slopes towards the lakes south of Limekiln Road	10-51
Plate 10-4: View 1 of open grass lined channel from west of Wellington Lane	10-52
Plate 10-5: View 2 of open grass lined channel from west of Wellington Lane	10-52
Plate 10-6: River Poddle in open green space north of Templeville Road	10-53
Plate 10-7: View 1 of Bridge, wall and trees in southern end of Ravensdale Park	10-54
Plate 10-8: View 2 Bridge, wall and trees in southern end of Ravensdale Park	10-54
Plate 10-9: High concrete wall at Ravensdale Park	10-55
Plate 10-10: Mature trees and grass with low enclosing wall at Ravensdale Park.....	10-55
Plate 10-11: View 1 of dense trees and vegetation along riverbank at St. Martin’s Drive.....	10-56
Plate 10-12: View 2 of dense trees and vegetation along riverbank at St. Martin’s Drive.....	10-56
Plate 10-13: Mature trees and undergrowth and grass create enclosure give a sense of naturalness along the river corridor.....	10-57
Plate 10-14: View 1 of Poddle corridor at Mount Argus Close	10-58
Plate 10-15: View 2 of Poddle corridor at Mount Argus Close	10-58

Plate 10-16: River flows through grass with some trees on bank at Mount Argus Church Grounds..	10-59
Plate 10-17: Wall contains river with dense vegetation along bank at Mt Jerome	10-60
Plate 11-1: Location of castle DU022-007, facing east	11-39
Plate 11-2: Location of proposed flood defence embankment, Tymon Park, facing east	11-39
Plate 11-3: Compound location, facing NE	11-39
Plate 11-4: Wall at eastern end of Tymon Park, facing N.....	11-39
Plate 11-5: North of Templeville Rd., facing S	11-40
Plate 11-6: Ravensdale Park, facing NE	11-40
Plate 11-7: Poddle Park, facing NE	11-40
Plate 11-8: Location of weir DU018-043003 facing SW.....	11-40