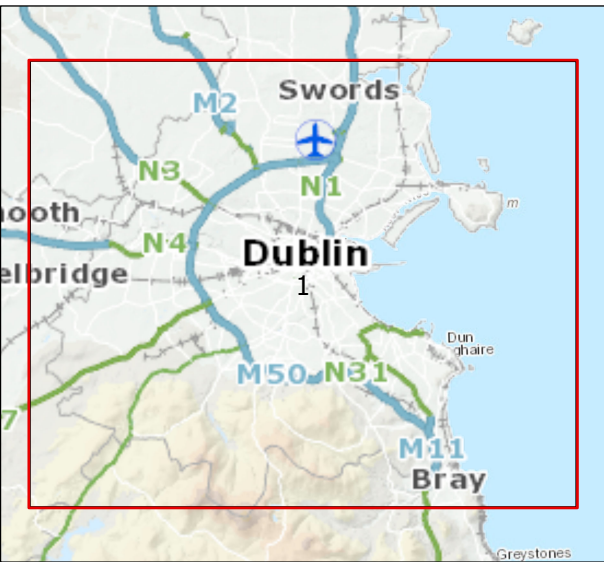
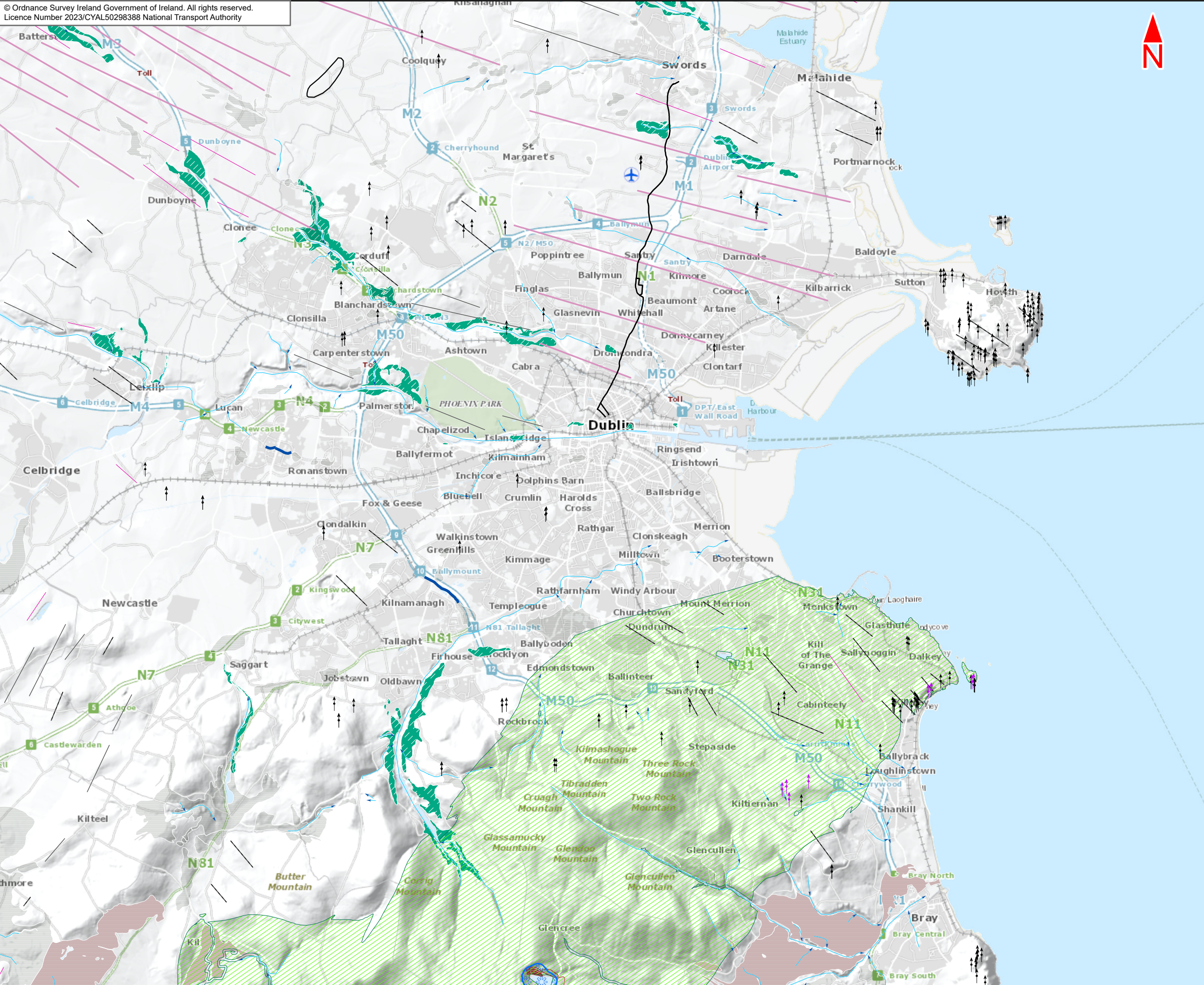


14.1 Regional Geomorphology





- Legend :**
- Swords to City Centre Core Bus Corridor Scheme
 - Landform**
 - Striae
 - Roche Moutonnee
 - LANDFORM**
 - Crag-and-Tail
 - Drumlin
 - Mega scale glacial lineation
 - Streamlined Bedrock
 - LANDFORM**
 - Esker ridge
 - Meltwater channel
 - Description**
 - Composite Thrust
 - Block Moraine
 - Landform**
 - Corries
 - Landform**
 - Indicator erratic source area
 - Deglacial Landforms**
 - Delta
 - Glaciofluvial Terrace
 - Hummocky Sand and Gravel
 - Moraine Ridge

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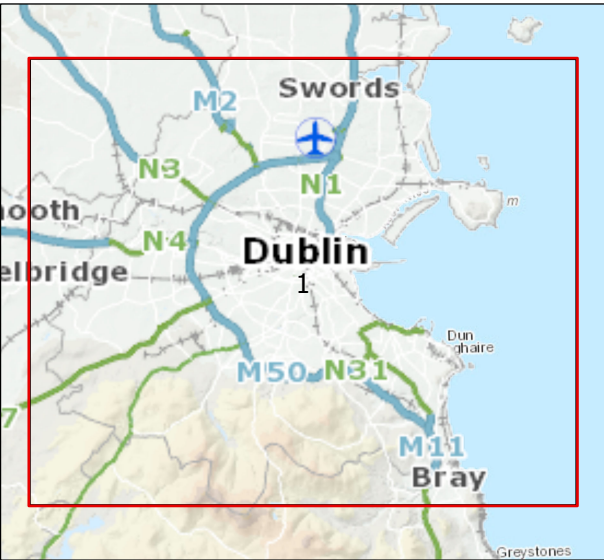
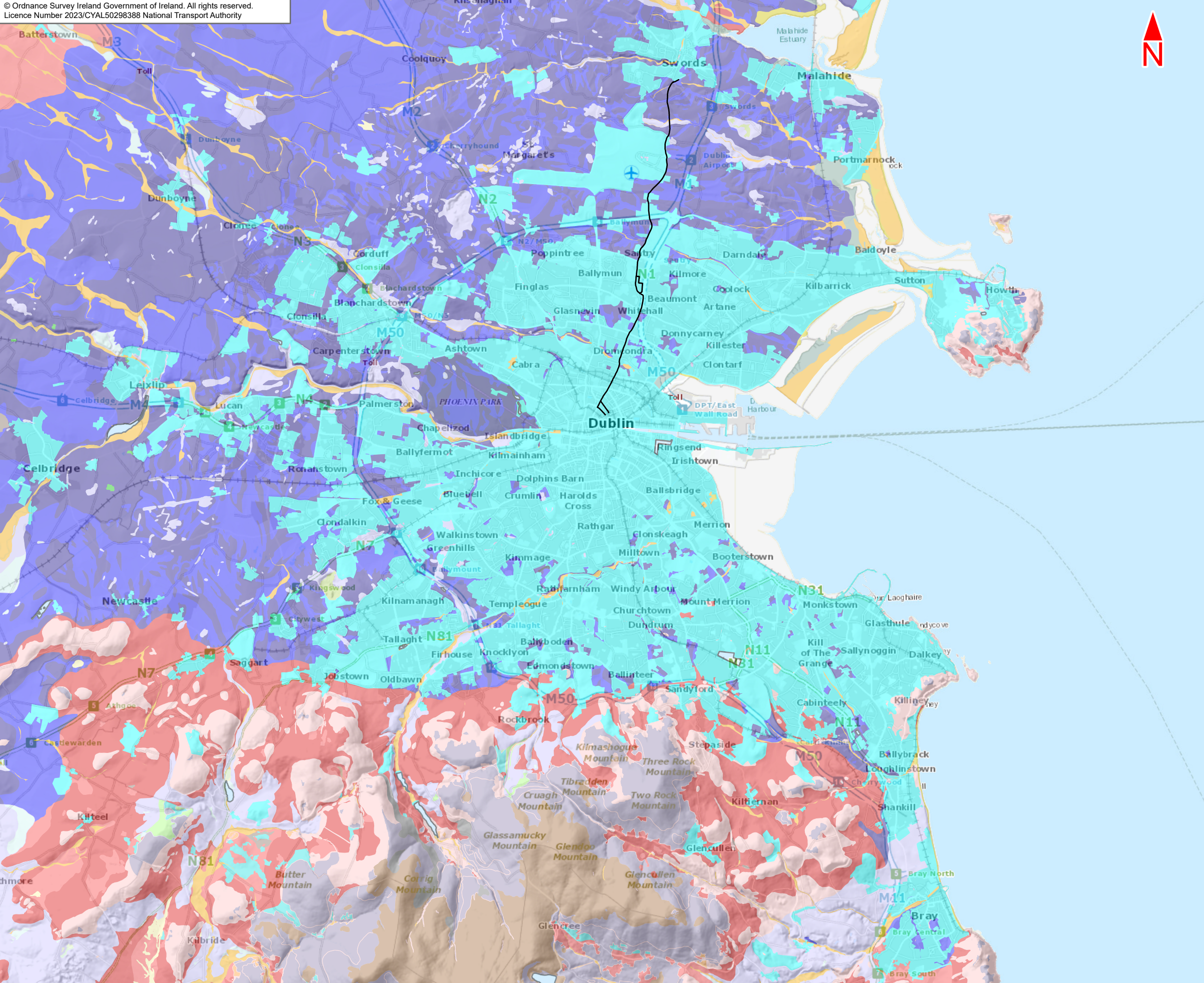
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| Client | |
|  Udarás Náisiúnta Iompair National Transport Authority | |
| Date | 02/05/2023 |
| Scale @ A3 | 1:125 000 |
| Project Code | BCIDE |
| Originator Code | JAC |

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| Consultant | |
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| Drawn | FG |
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| Approved | DK |
| QMS Code | |

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| Programme Title | | | |
| BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | |
| Drawing Title | | | |
| Swords to City Centre Core Bus Corridor Scheme Figure 14.1 Regional Geomorphology | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0001 | Sheet Number | 1 of 1 |
| Status | A | Rev | M01 |

14.2 Regional Soils





Legend :

- Swords to City Centre
Core Bus Corridor
Scheme

Teagasc Soils

AeoUND - Aeolian
Undifferentiated

AlluvMIN - Mineral
alluvium

AminDW - Acid Brown
Earths / Brown
Podzolics

AminPD - Surface
water Gleys / Ground
water Gleys Acidic

AminPDPT - Peaty
Gleys Acidic

AminSP - Surface
water Gleys / Ground
water Gleys Shallow

AminSRPT - Podzols
Peaty

AminSW - Lithosols /
Regosols

BktPT - Blanket peat

BminDW - Grey
Brown Podzolics /
Brown Earths Basic

BminPD - Surface
water Gleys / Ground
water Gleys Basic

BminPDPT - Peaty
Gleys Basic Parent
Materials Basic

BminSP - Surface
water Gleys / Ground
water Gleys Shallow

BminSPPT - Peaty
Gleys Shallow

BminSRPT - Lithosols
Peats

BminSW - Renzinas /
Lithosols

Cut - Raised Bog
cutaway/cutover

FenPT - Fen peat

Lac

Made

MarSands

MarSed

Scree

Water

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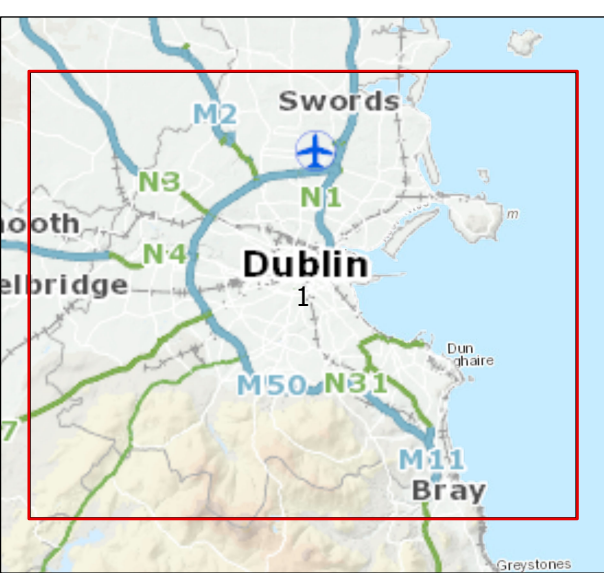
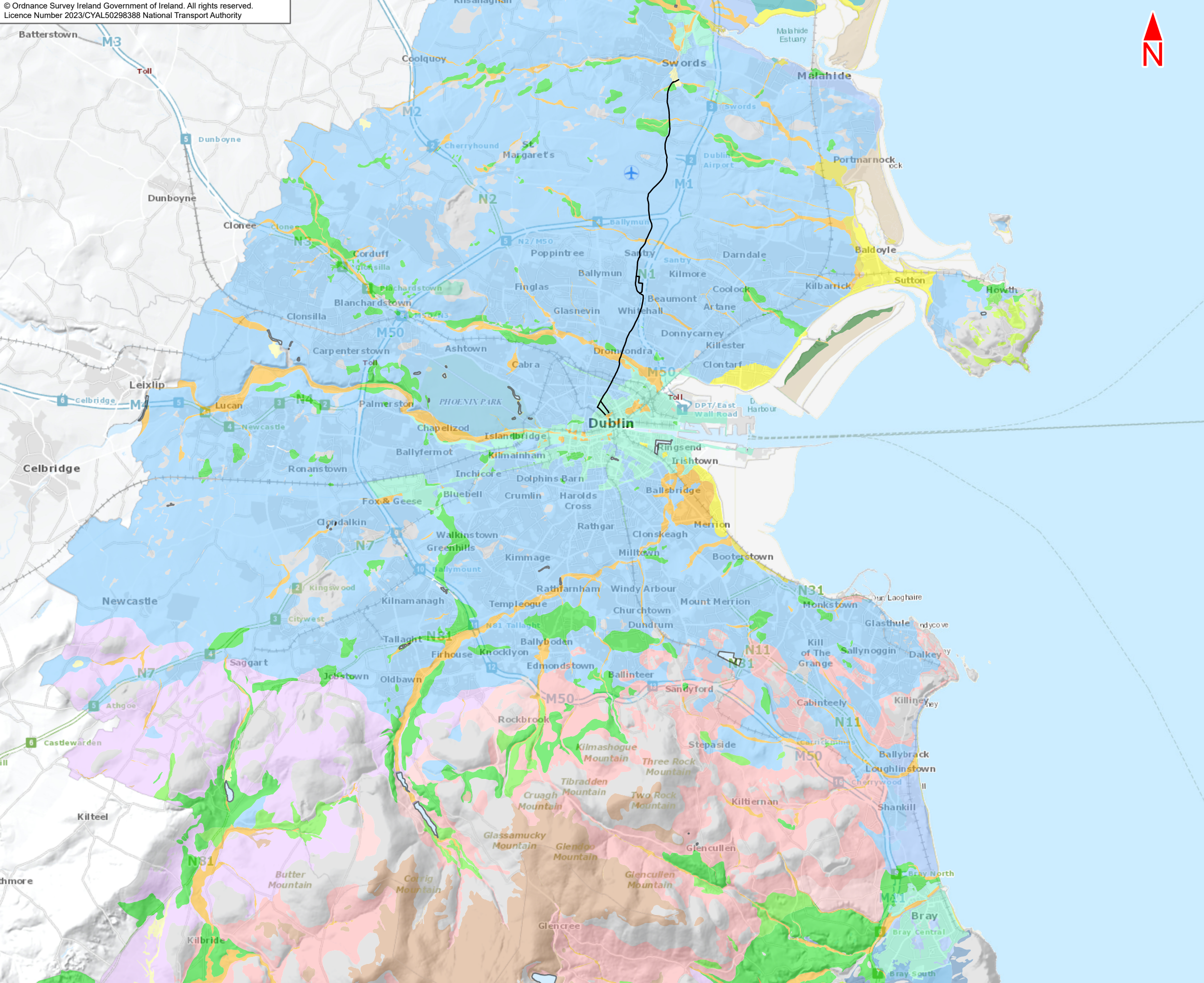
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| Originator Code | JAC |

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| NTA | | | Jacobs ARUP SYSTRA | | |
| Date | 02/05/2023 | Scale @ A3 | 1:125 000 | Drawn | FG |
| Project Code | BCIDE | Originator Code | JAC | Checked | PW |
| | | QMS Code | | Approved | DK |

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| Drawing Title | | | | | Swords to City Centre Core Bus Corridor Scheme Figure 14.2 Regional Soils | | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0002 | Sheet Number | 1 of 1 | Status | A | Rev | M01 | | |

14.3 Regional Subsoils






- Legend :**
- Swords to City Centre Core Bus Corridor Scheme
 - Quaternary Sediments - 1:50,000**
 - A, Alluvium
 - Ag, Alluvium (gravelly)
 - As, Alluvium (sandy)
 - Asi, Alluvium (silty)
 - BktPt, Blanket Peat
 - Cut, Cut over raised peat
 - GCh, Gravels derived from chert
 - GLs, Gravels derived from Limestones
 - GMp, Gravels derived from Metamorphic rocks
 - GGr, Gravels derived from granite
 - Rck, Bedrock outcrop or subcrop
 - Scree, Scree
 - L, Lacustrine sediments
 - Lsi, Lacustrine silts
 - Mbs, Marine beach sands
 - Mesc, Estuarine silts and clays
 - TdiMr, Tidal Marsh
 - IrSTCScs, Irish Sea Till derived from Cambrian sandstones and shales
 - IrSTLPScs, Irish Sea Till derived from Lower Palaeozoic sandstones and shales
 - IrSTLs, Irish Sea Till derived from Limestones
 - TCSs, Till derived from Cambrian sandstones and shales
 - TGr, Till derived from granites
 - TLPScs, Till derived from Lower Palaeozoic sandstones and shales
 - TLs, Till derived from limestones
 - TMp, Till derived from Metamorphic rocks
 - TQz, Till derived from quartzites
 - Ws, Windblown sands
 - Wsd, Windblown sands and dunes
 - Dam
 - Embankment
 - Landfill
 - Urban
 - Water

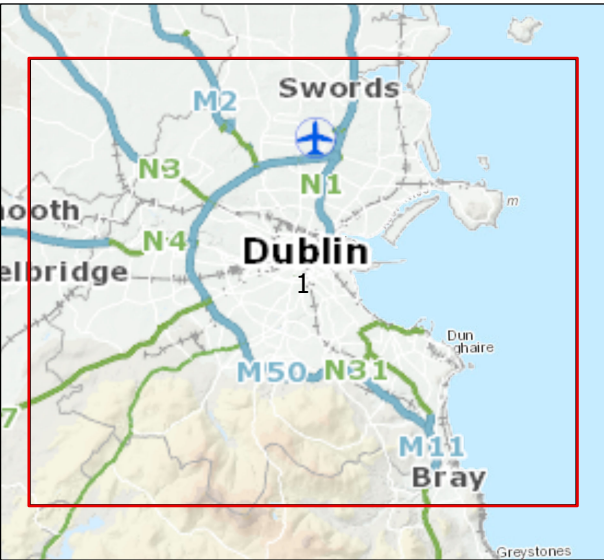
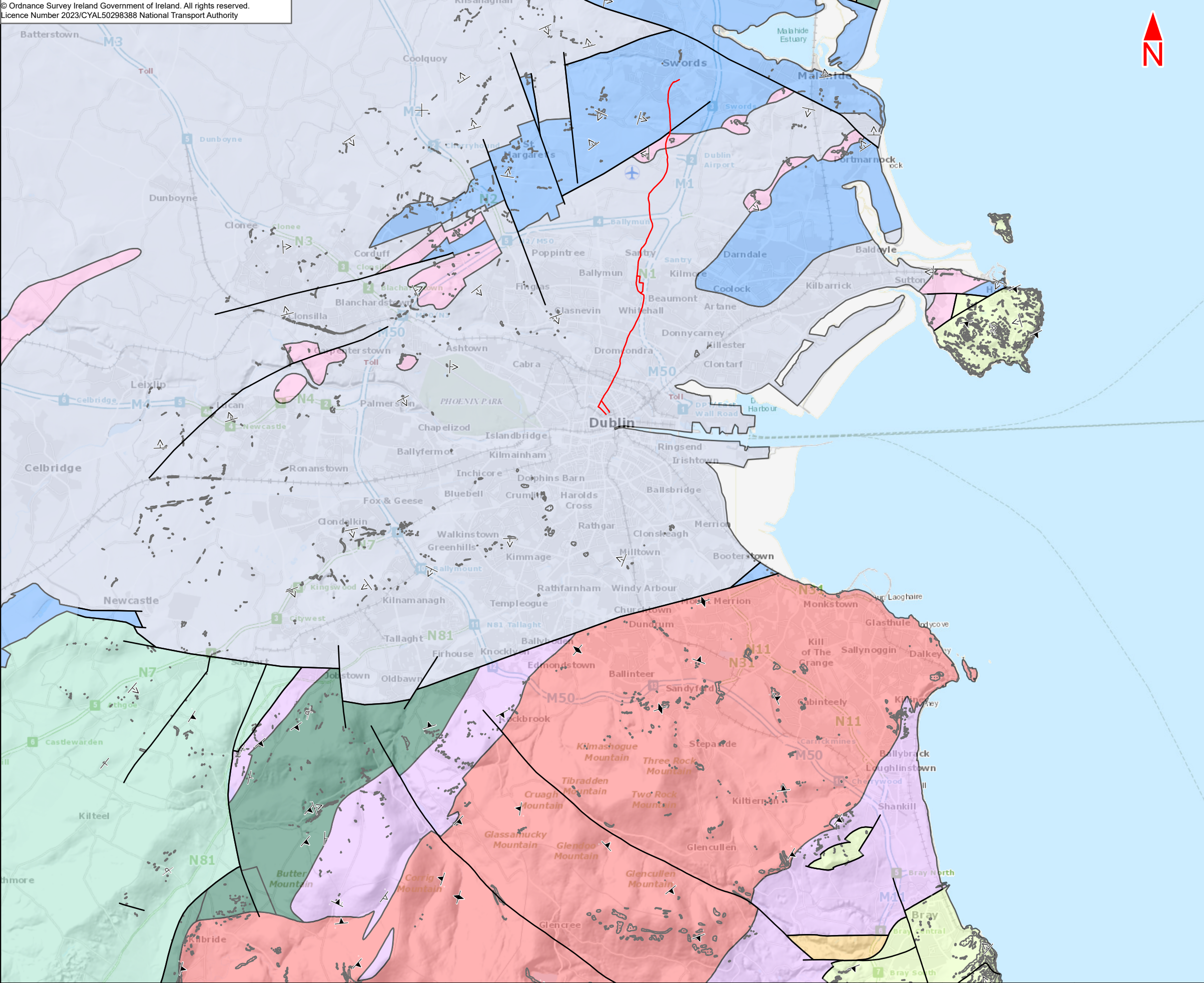
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| <p>Drawing Title</p> <p>Swords to City Centre Core Bus Corridor Scheme</p> <p>Figure 14.3</p> <p>Regional Subsoils</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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14.4 Regional Bedrock





- Legend :**
- Swords to City Centre Core Bus Corridor Scheme
 - GSI Bedrock Geological Faults - 1:500,000
 - GSI Bedrock Structural Symbols - 1:100,000**
 - First foliation parallel to bedding
 - Horizontal Bedding
 - Strike and dip of bedding, right way up
 - Strike and dip of bedding, way up unknown
 - Strike and dip of first foliation
 - Strike and dip of overturned bedding
 - Strike and dip of second foliation
 - Strike of vertical first foliation
 - GSI Bedrock Outcrop - 1:100,000**
 - GSI Bedrock Outcrop - 1:100,000
 - GSI Bedrock Geology - 1:500,000**
 - Visean basinal limestone "Calp"
 - Waulsortian mudbank
 - Courseyan limestone
 - Up Dev-Lr Carb ORS
 - Caledonian granite
 - Silurian sandstone, g'wacke, shale
 - Mid-Up Ordovician basic volcanics
 - Lr-Mid Ordovician slate
 - Lr-Mid Ordovician acid volcanics
 - Lr-Mid Ordovician basic volcanics
 - Cambrian greywacke, sandst, qtzite

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NTA
Udarás Náisiúnta Iompair
National Transport Authority

Date
02/05/2023

Scale @ A3
1:125 000

Project Code
BCIDE

Originator Code
JAC

Consultant

Jacobs
ARUP
SYSTRA

Drawn
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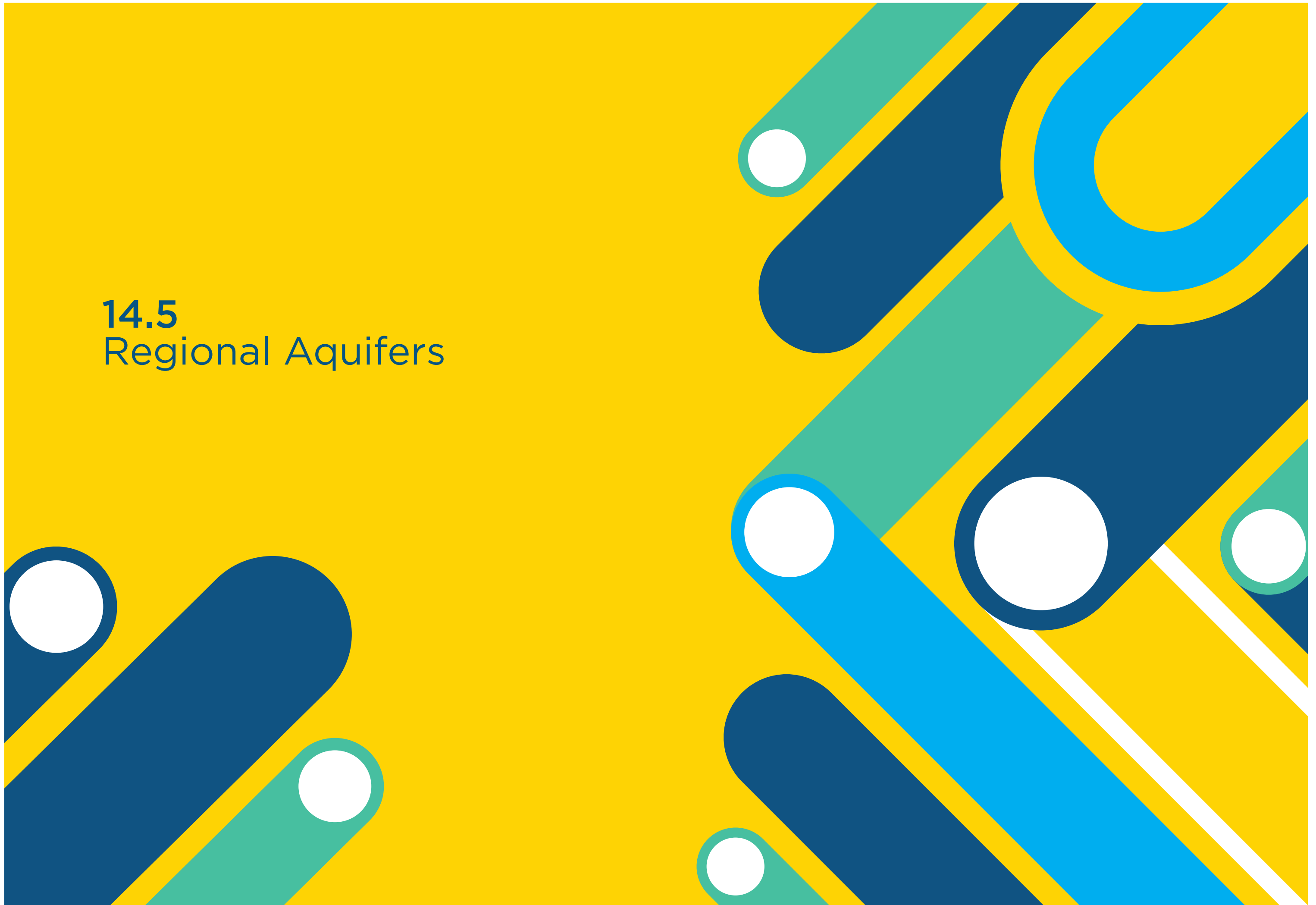
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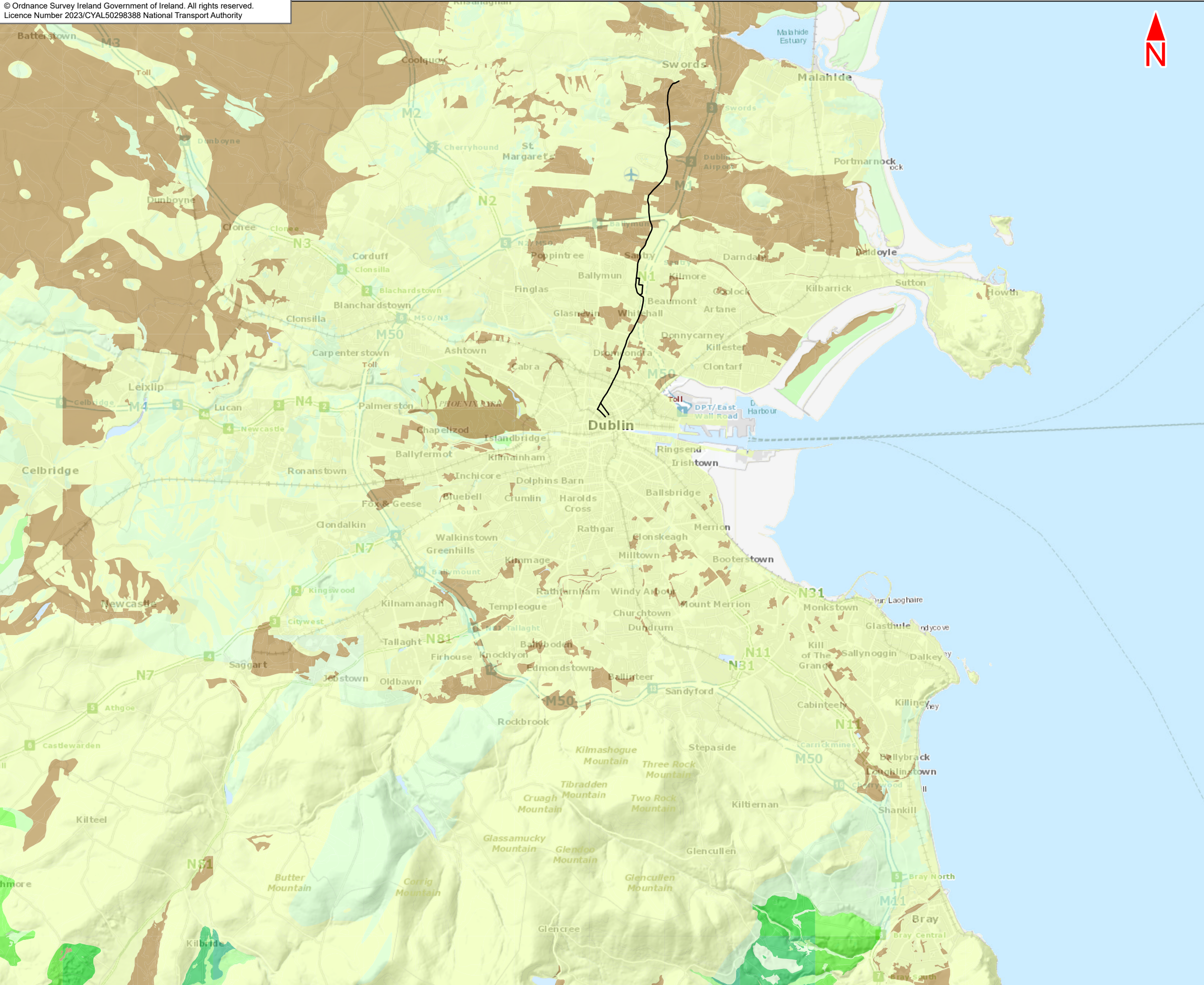
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| Swords to City Centre Core Bus Corridor Scheme Figure 14.4 Regional Bedrock | | | | |
| Drawing File Name | Sheet Number | Status | Rev | |
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14.5 Regional Aquifers



14.6 Regional Groundwater Recharge

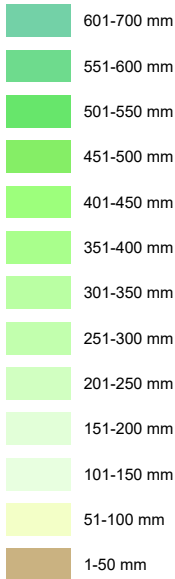




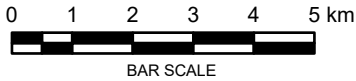
Legend :
Swords to City Centre Core Bus Corridor Scheme

GSI Groundwater Recharge

Annual Recharge (mm)



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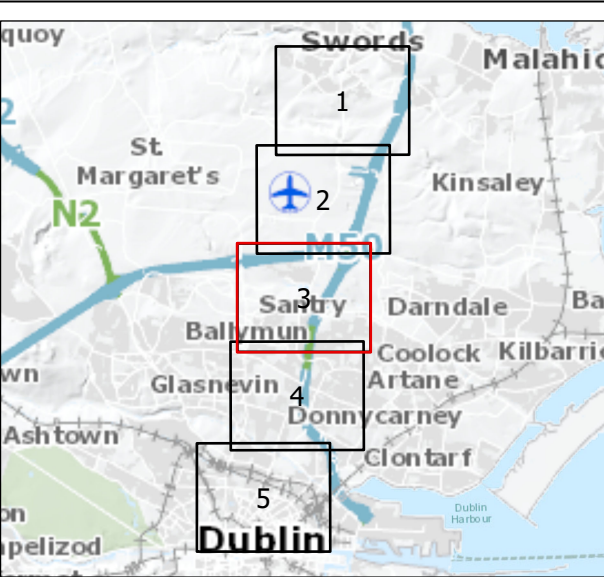
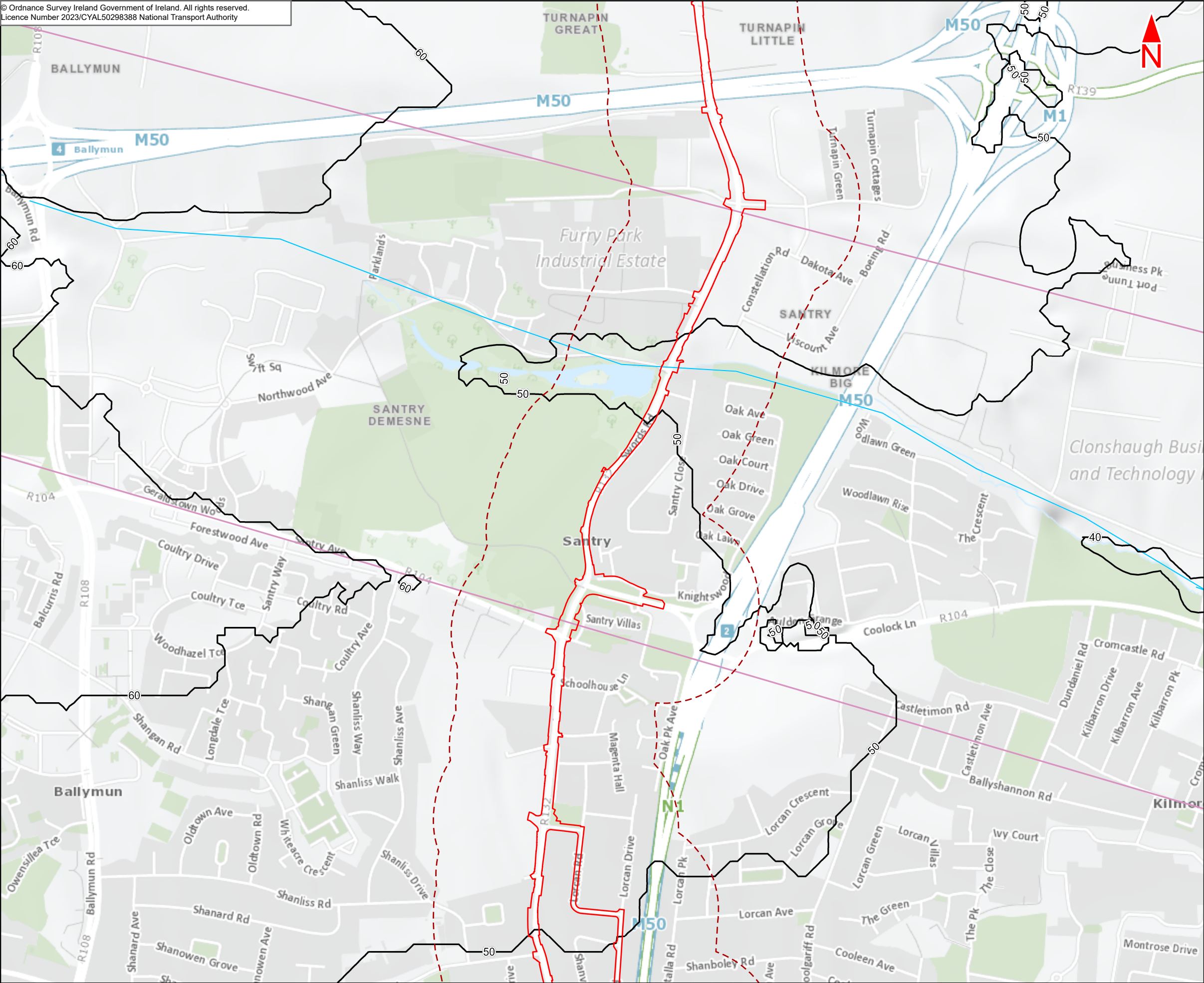
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Jacobs ARUP SYSTRA

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| Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | | |
| Drawing Title Swords to City Centre Core Bus Corridor Scheme Figure 14.6 Regional Groundwater Recharge | | | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0006 | Sheet Number | 1 of 1 | Status | A |
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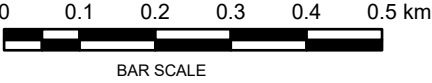
14.7 Topography and Geomorphology




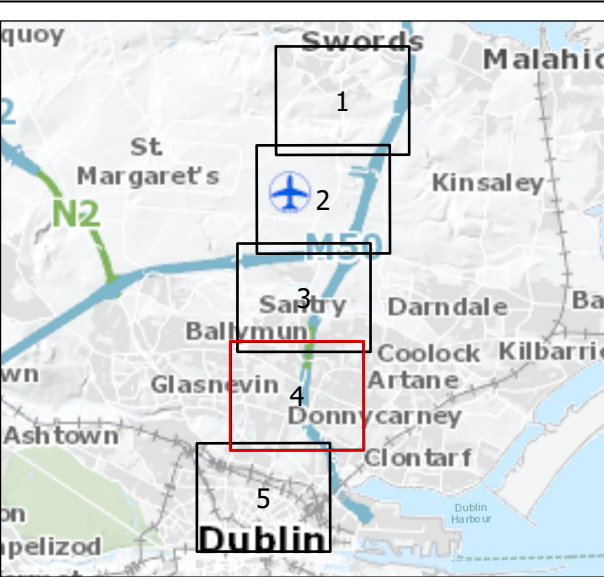
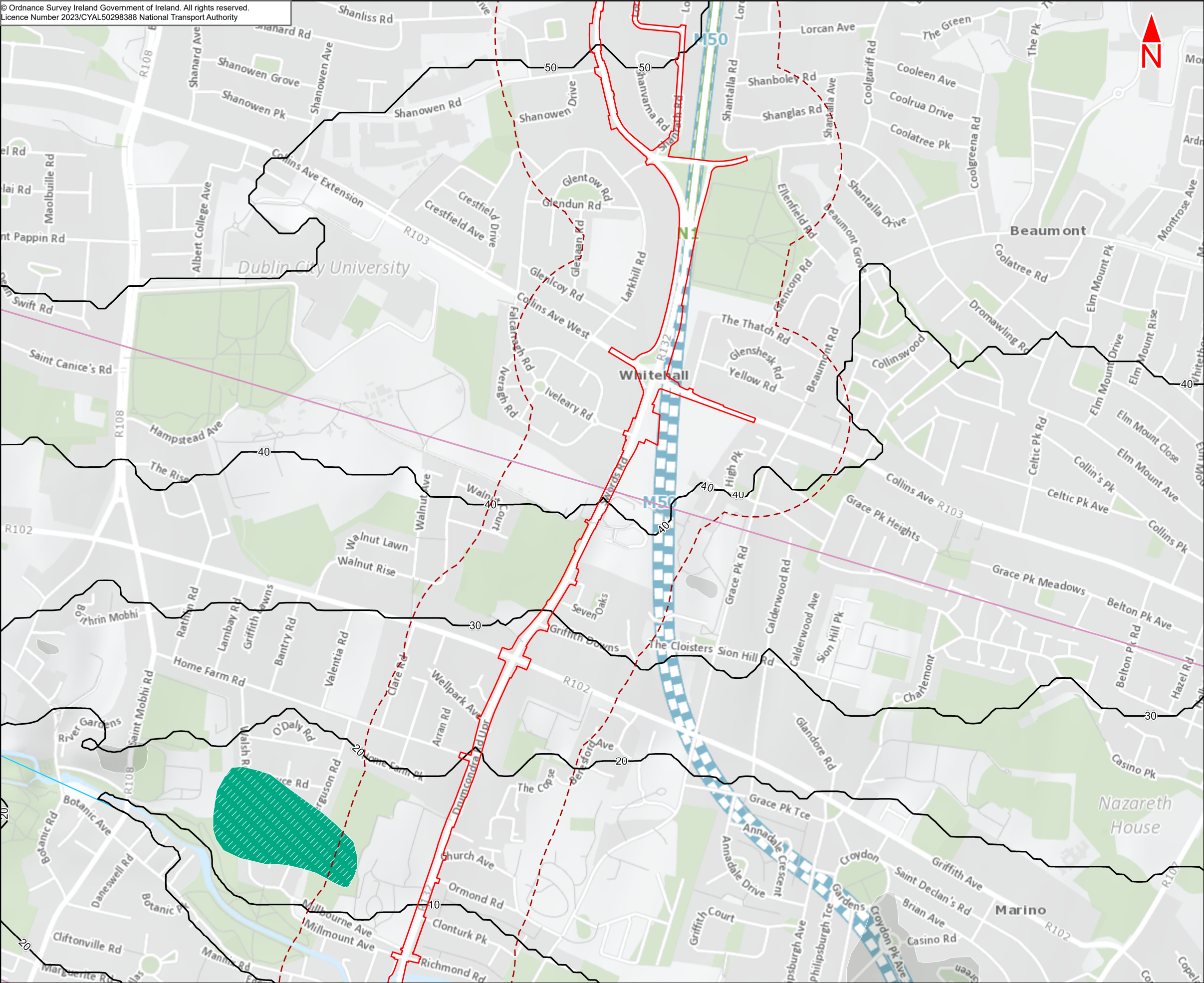


- Legend :
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - EPA Contours
 - Subglacial Lineation Landforms
 - LANDFORM
 - Mega scale glacial lineation
 - Meltwater Landforms
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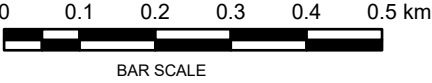


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| Rev | Date | Drn | Chk'd | App'd | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M01 | May 23 | FG | PW | DK | ISSUE FOR PHASE 4 : PLANNING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Date | 02/05/2023 | Scale @ A3 | 1:10000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Code | BCIDE | Originator Code | JAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | QMS Code | Drawn FG | Checked PW | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | Approved DK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Programme Title | | BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0103 | Sheet Number | 3 of 5 | Status A | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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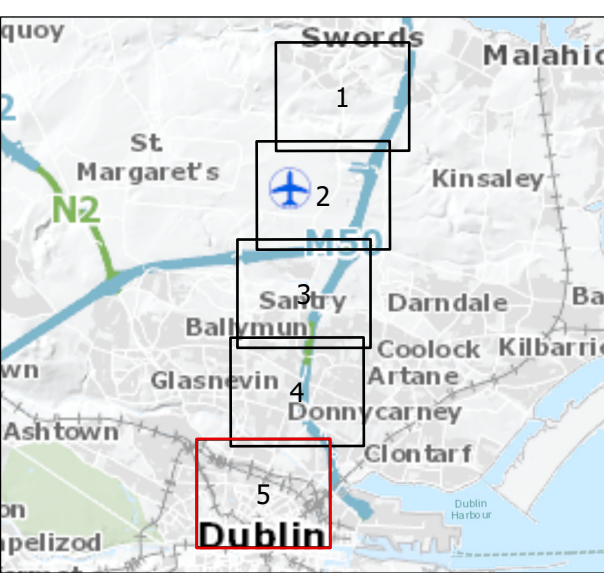
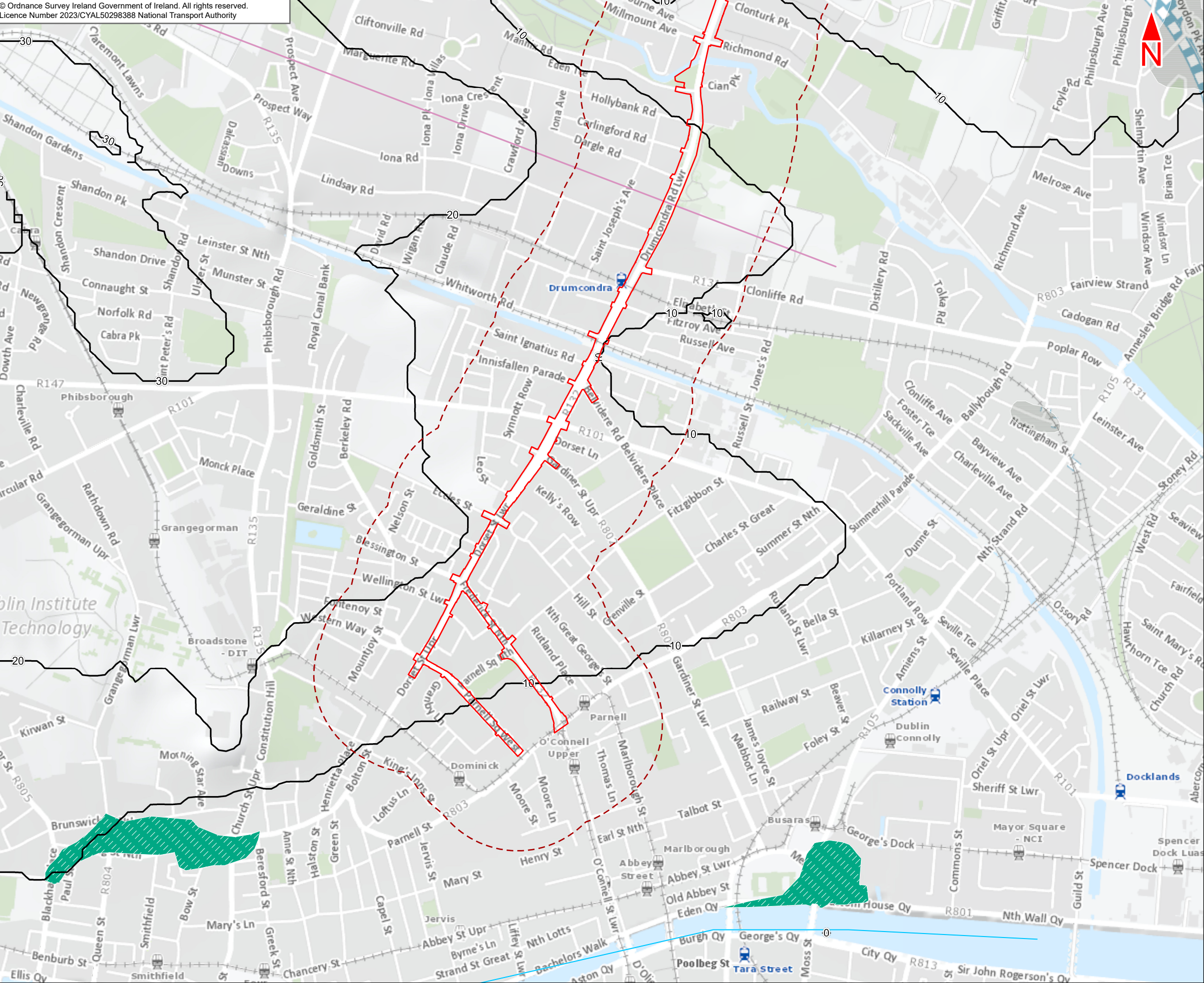


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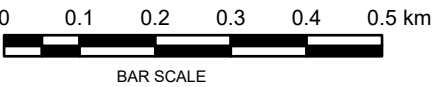
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| Rev | Date | Drn | Chk'd | App'd | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M01 | May 23 | FG | PW | DK | ISSUE FOR PHASE 4 : PLANNING | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Project Code | BCIDE | Originator Code | JAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Drawn | FG | Checked | PW | Approved | DK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Drawing File Name | Sheet Number | Status | Rev | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0104 | 4 of 5 | A | M01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



Legend :

- Swords to City Centre Core Bus Corridor Scheme
- 250m Study Area
- EPA Contours
- Subglacial Lineation Landforms
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| Rev | Date | Drn | Chk'd | App'd | Description |
|-----|--------|-----|-------|-------|------------------------------|
| M01 | May 23 | FG | PW | DK | ISSUE FOR PHASE 4 : PLANNING |

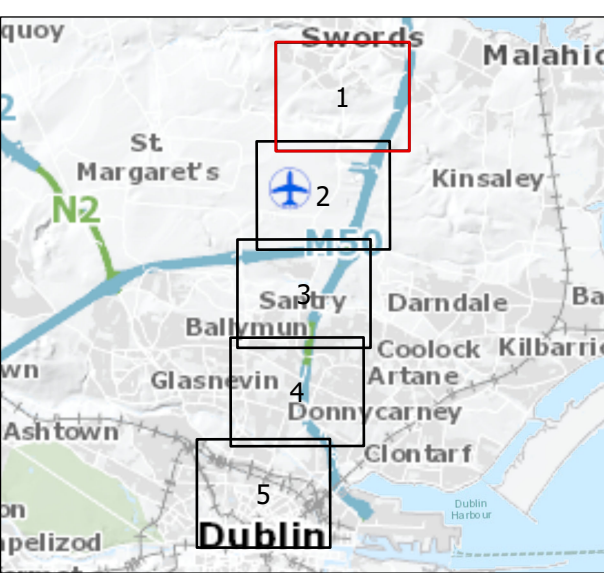
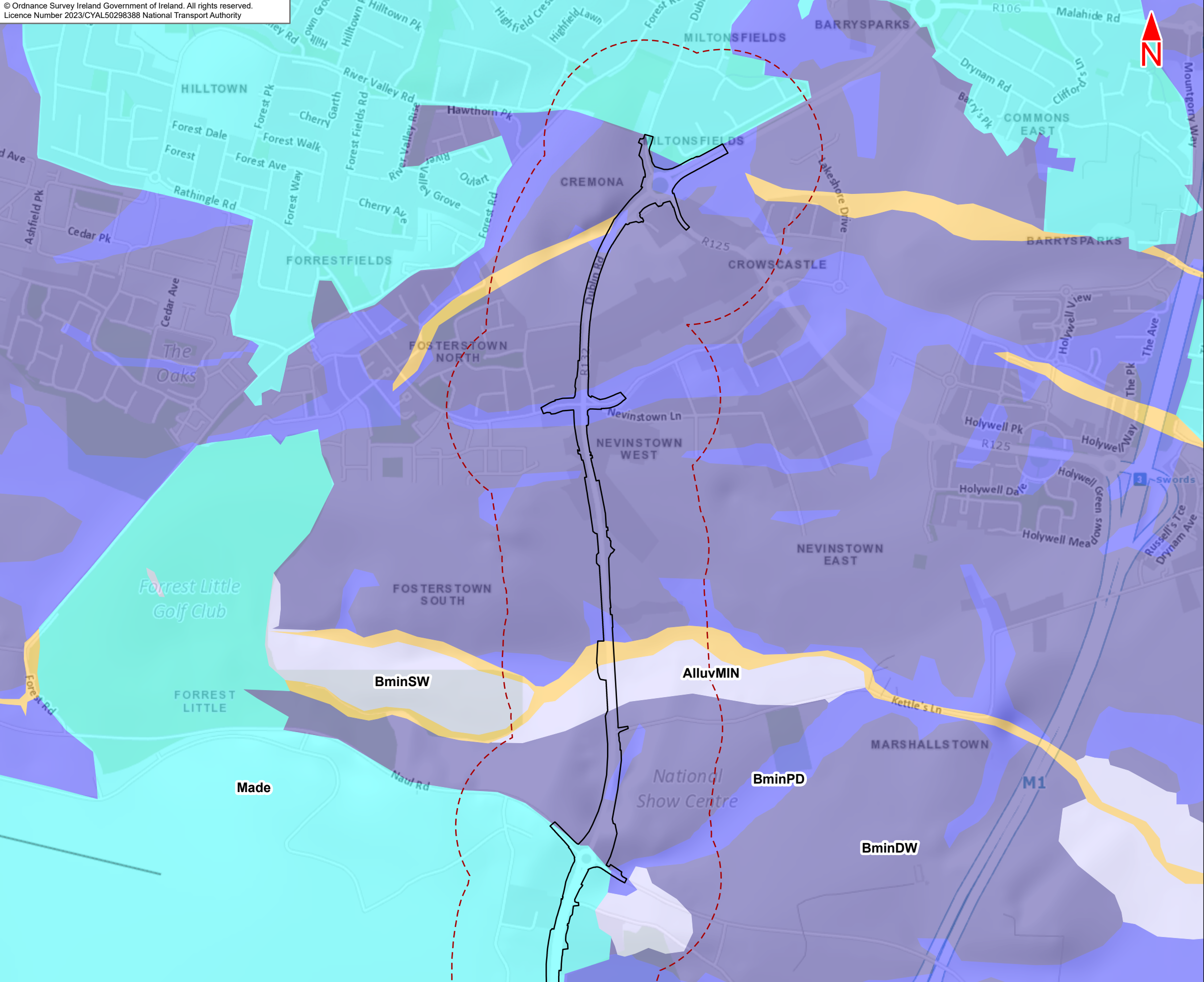
Client
NTA
Udarás Náisiúnta Iompair
National Transport Authority

Consultant
Jacobs ARUP SYSTRA

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|----------------------------------------------------------------------------------------------------------------|------------------------|-------------|------------|--|
| Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | |
| Drawing Title Swords to City Centre Core Bus Corridor Scheme Figure 14.7 Topography and Geomorphology | | | | |
| Drawing File Name BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0105 | Sheet Number 5 of 5 | Status A | Rev M01 | |

14.8 Soil Deposits





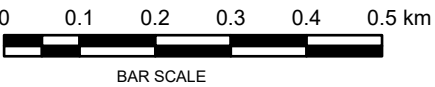
Legend :

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- 250m Study Area

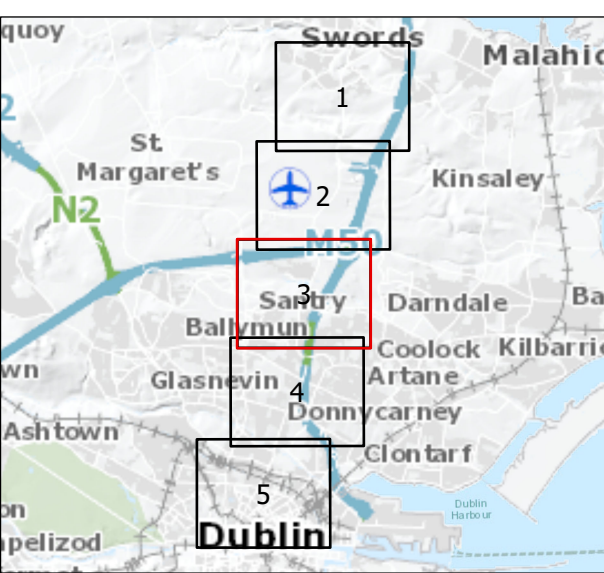
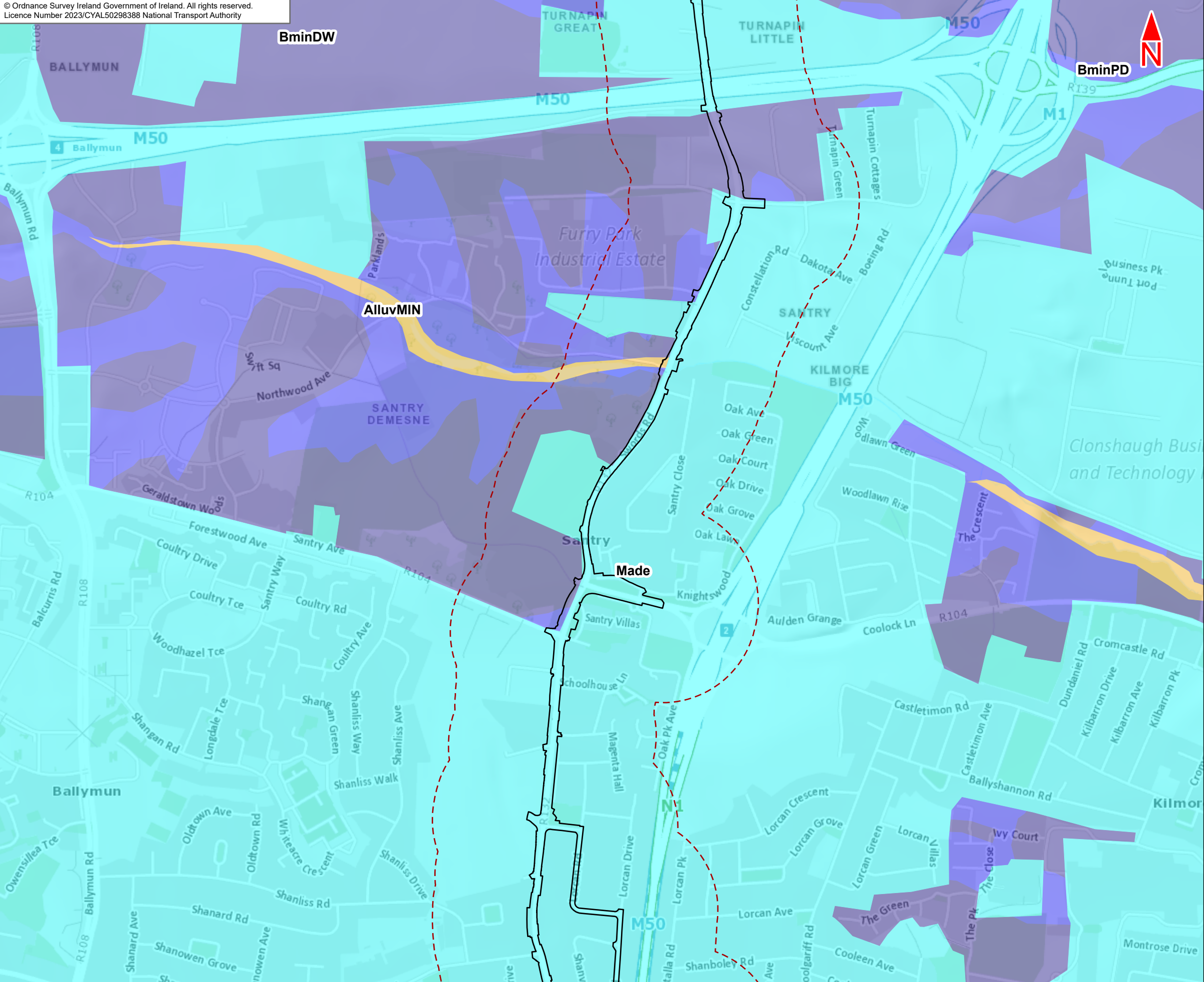
Teagasc Soils

- AlluvMIN - Mineral alluvium
- BminDW - Grey Brown Podzolics / Brown Earths Basic
- BminPD - Surface water Gleys / Ground water Gleys Basic
- BminSW - Renzinas / Lithosols
- Made

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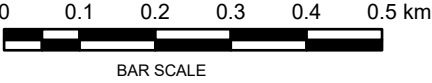
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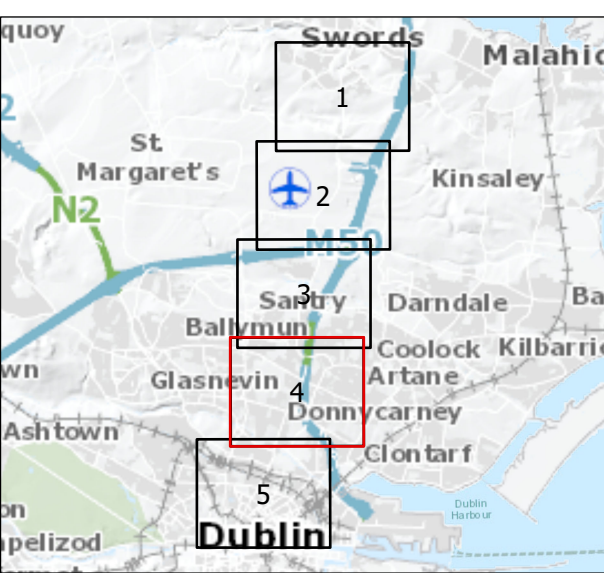
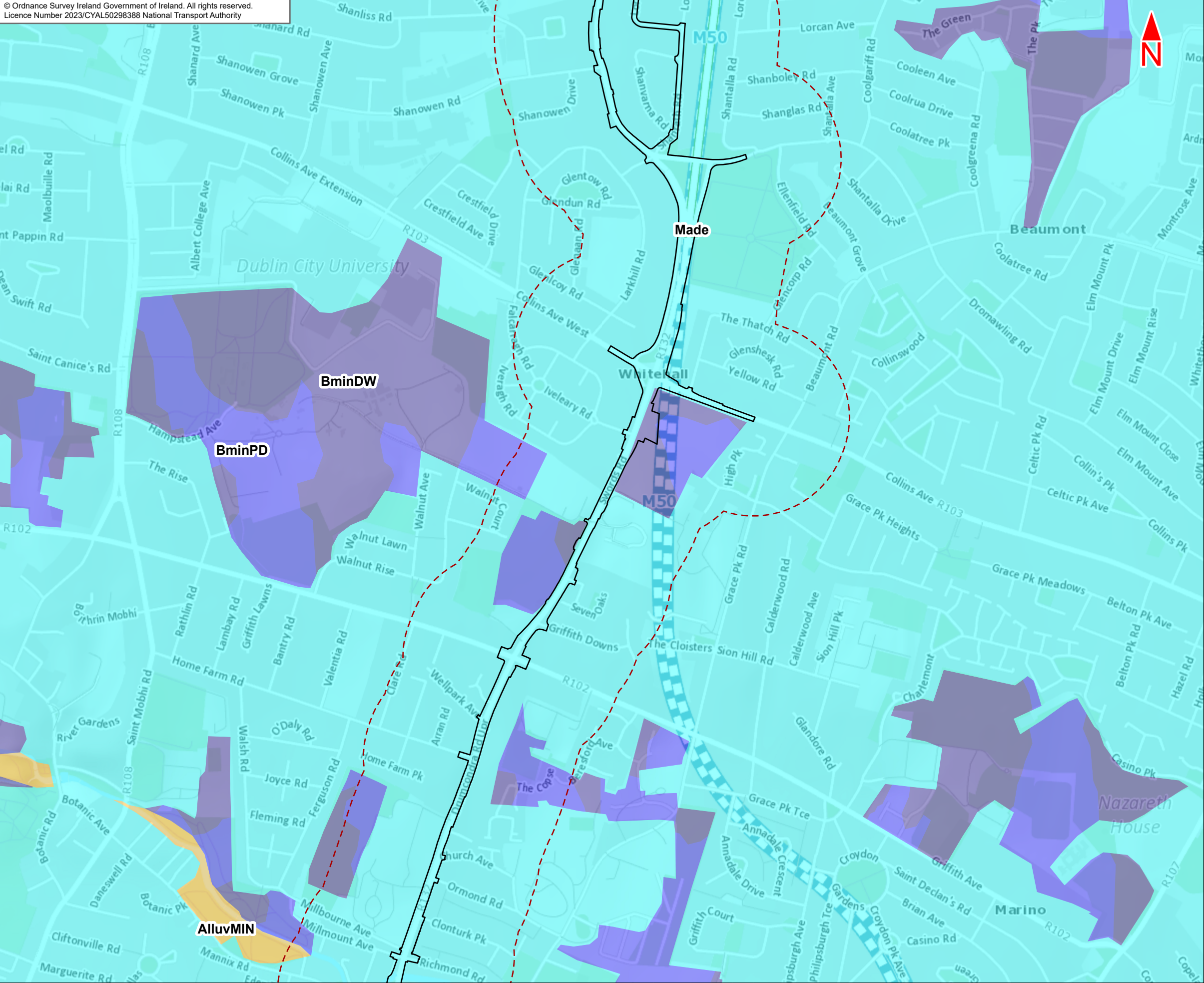
Legend :

- Swords to City Centre Core Bus Corridor Scheme
- 250m Study Area
- Teagasc Soils**
 - AlluvMIN - Mineral alluvium
 - BminDW - Grey Brown Podzolics / Brown Earths Basic
 - BminPD - Surface water Gleys / Ground water Gleys Basic
 - Made

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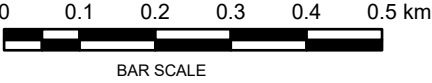
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| Consultant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Drawn | FG | Checked | PW | Approved | DK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Drawing File Name | Sheet Number | Status | | | | Rev | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0203 | 3 of 5 | A | | | | M01 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



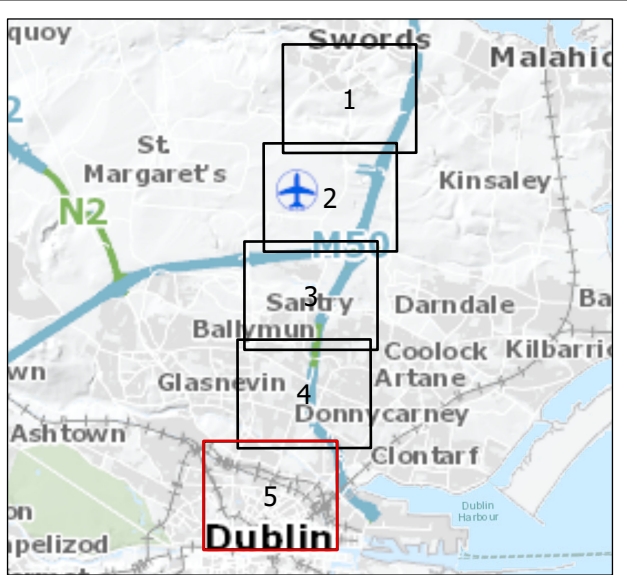
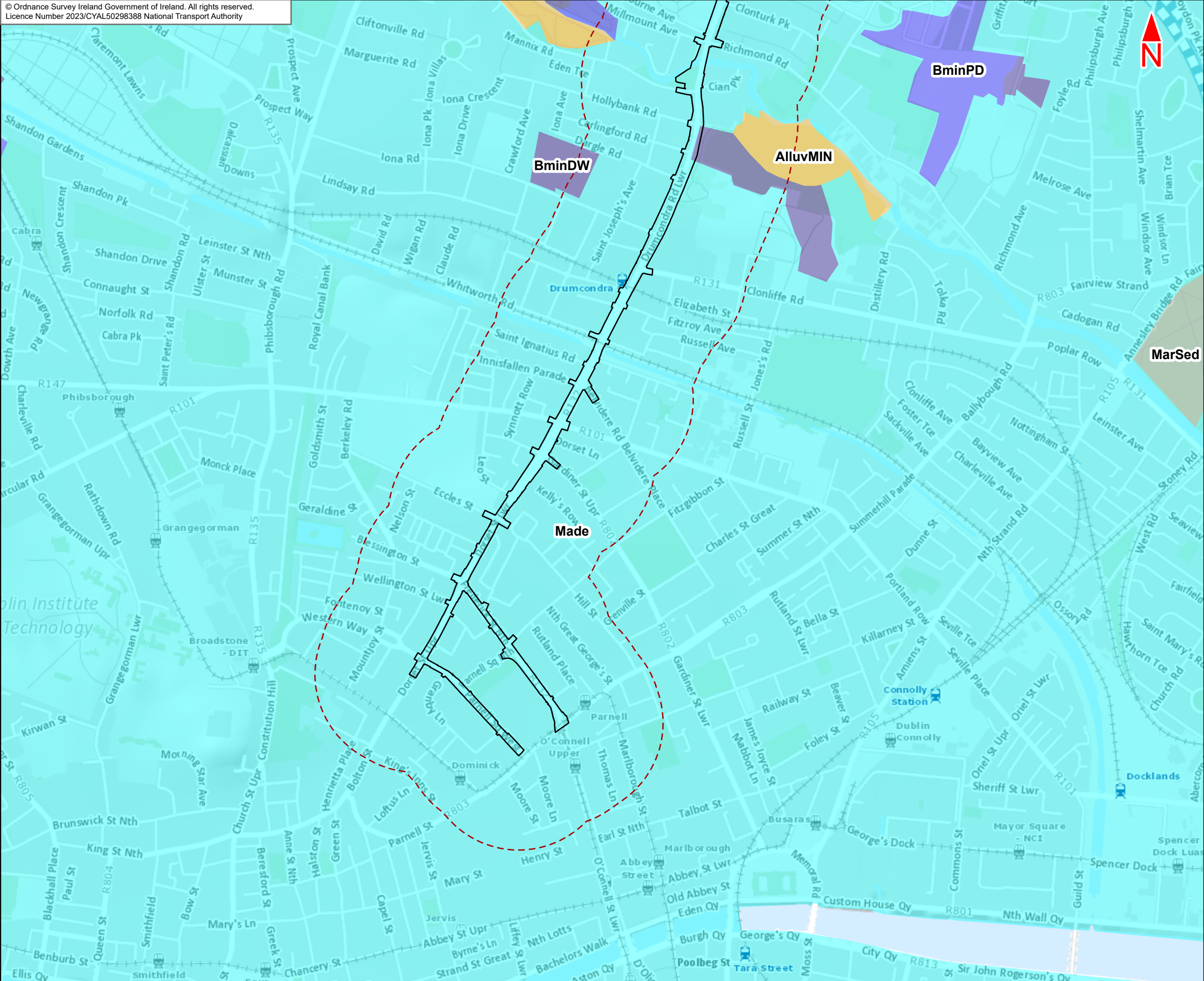
Legend :

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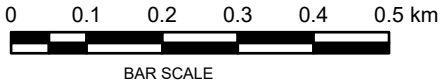
- Swords to City Centre Core Bus Corridor Scheme

- 250m Study Area

Teagasc Soils

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|---------------------------------------------------------|
| AlluvMIN - Mineral alluvium |
| BminDW - Grey Brown Podzolics / Brown Earths Basic |
| BminPD - Surface water Gleys / Ground water Gleys Basic |
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| M01 | May 23 | FG | PW | DK | ISSUE FOR PHASE 4 : PLANNING |
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Client

 **NTA**
Údarás Náisiúnta Iompair
National Transport Authority

Date

Scale @ A3

02/05/20

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Consultant

Jacobs
ARUP SYSTRA

Drawn

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| Programme Title | BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS |
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| Drawing Title | Swords to City Centre Core Bus Corridor Scheme Figure 14.8 Soil Deposits |
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Drawing File Name
BCIDE-JAC-ENV GT-0002 XX 00-DR-GG-0205

Sheet Number

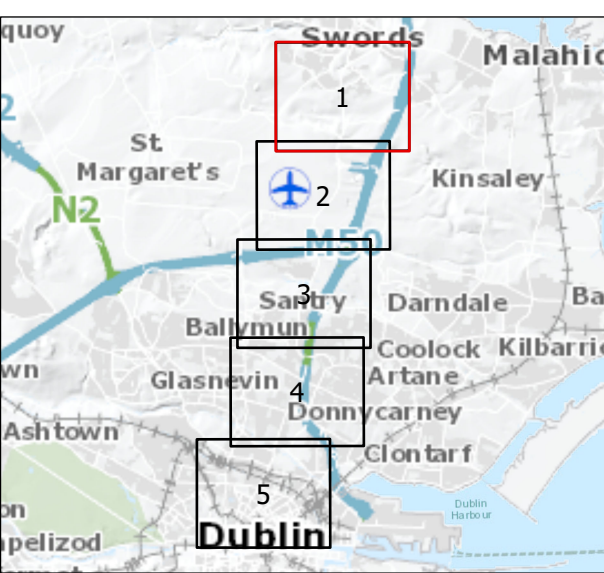
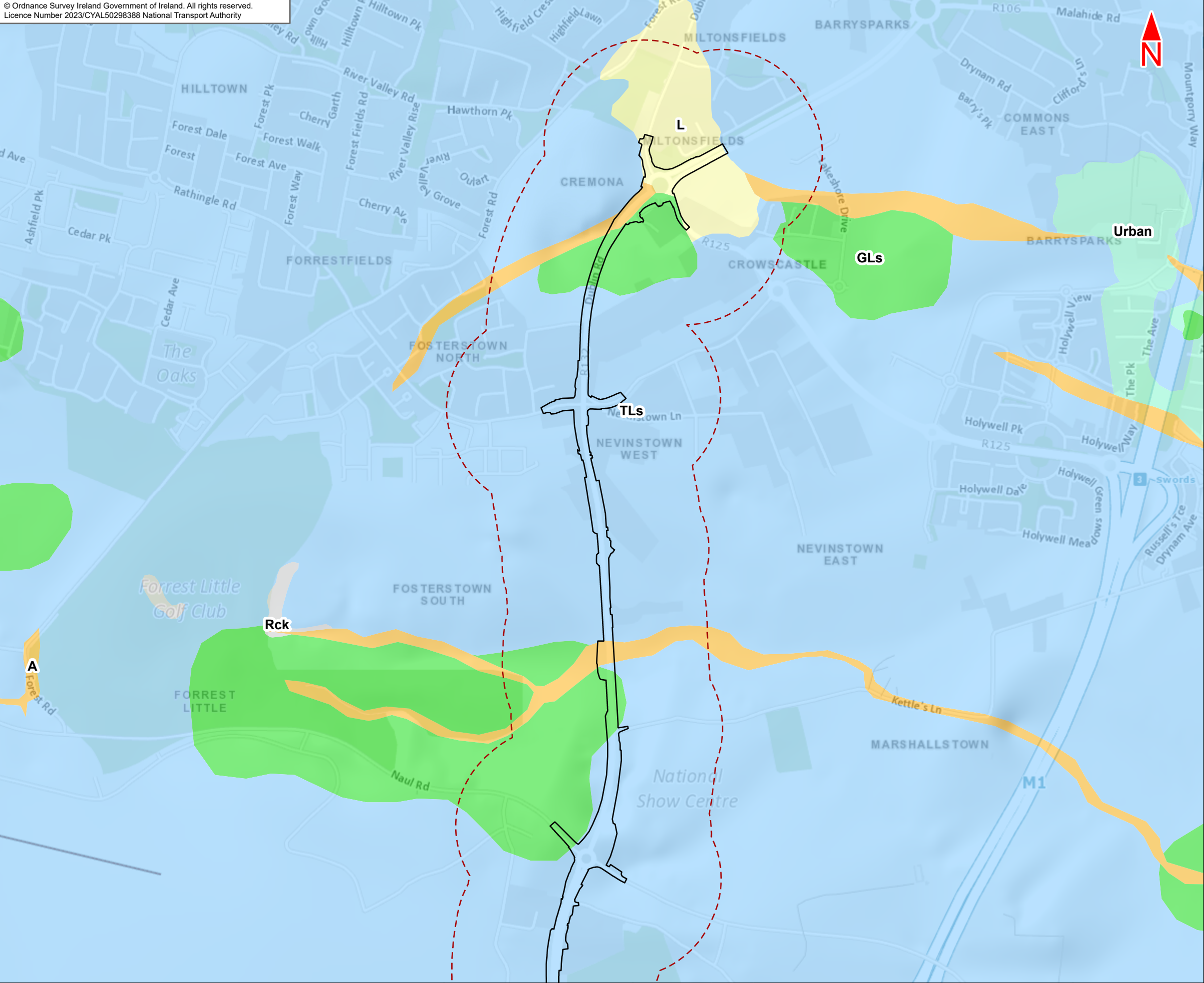
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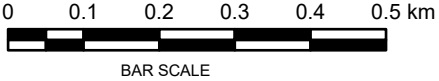
14.9 Subsoil Deposits





- Legend :
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - 250m Study Area
 - Quaternary Sediments - 1:50,000
 - A, Alluvium
 - GLs, Gravels derived from Limestones
 - Rck, Bedrock outcrop or subcrop
 - L, Lacustrine sediments
 - TLs, Till derived from limestones
 - Urban

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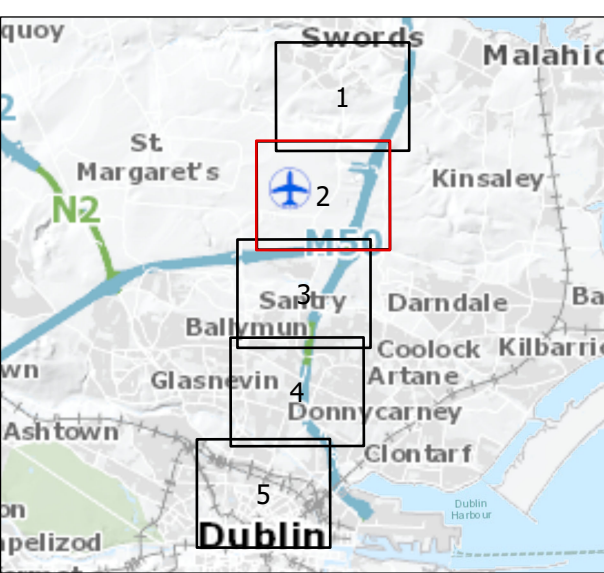
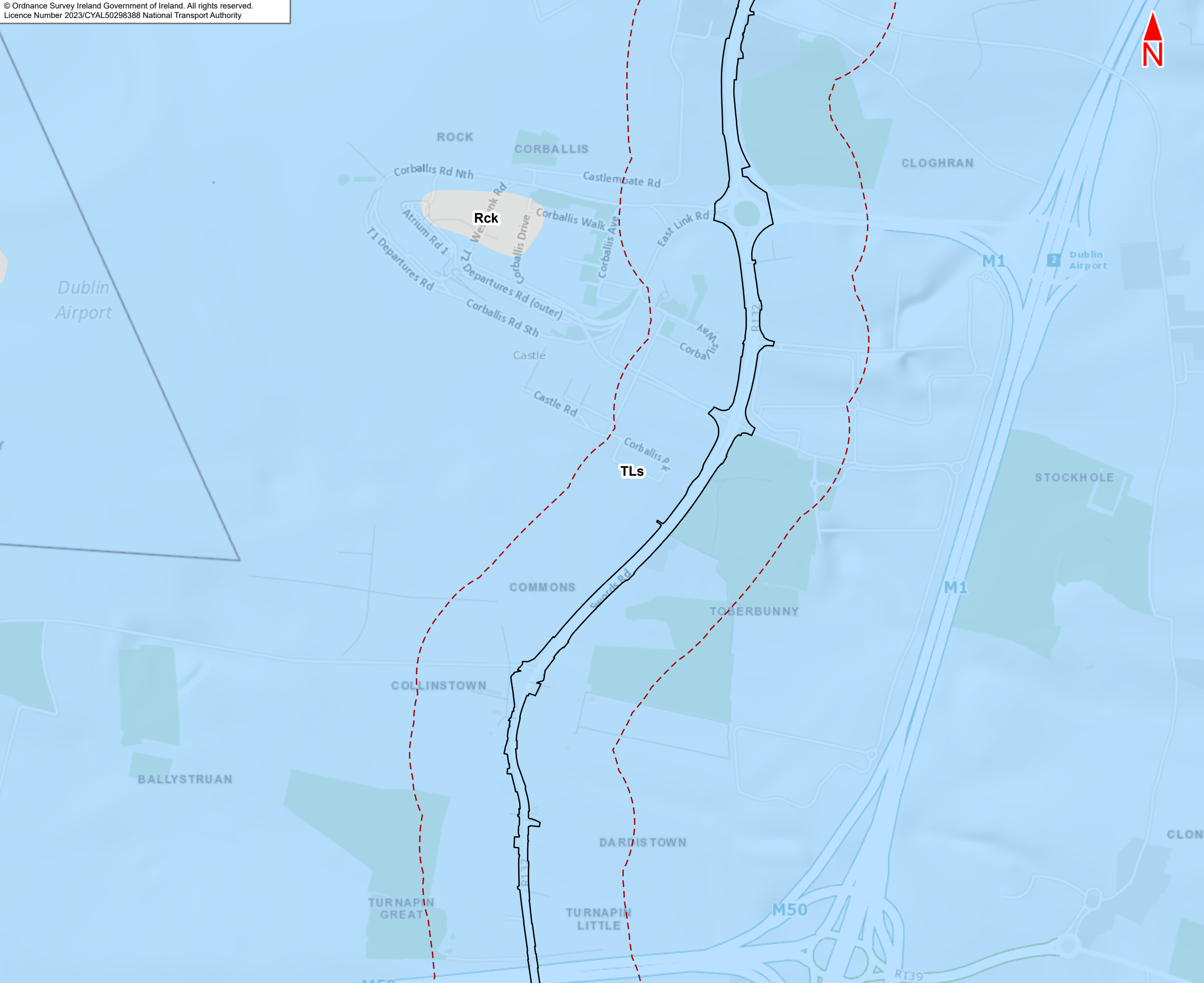


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| Drawn | FG | Checked | PW | Approved | DK |
| QMS Code | | | | | |

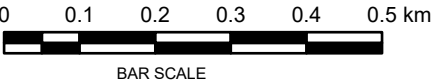
| Programme Title | | | | |
|-----------------------------------------------------------------------------------|--------------|--------|-----|--|
| BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | |
| Drawing Title | | | | |
| Swords to City Centre Core Bus Corridor Scheme Figure 14.9 Subsoil Deposits | | | | |
| Drawing File Name | Sheet Number | Status | Rev | |
| BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0301 | 1 of 5 | A | M01 | |



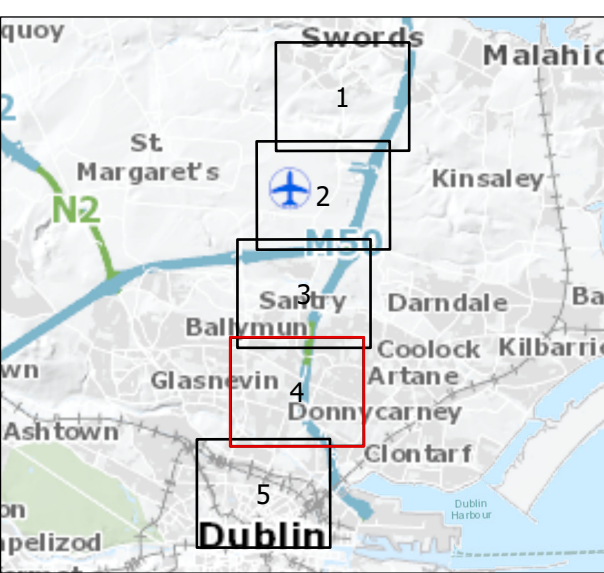
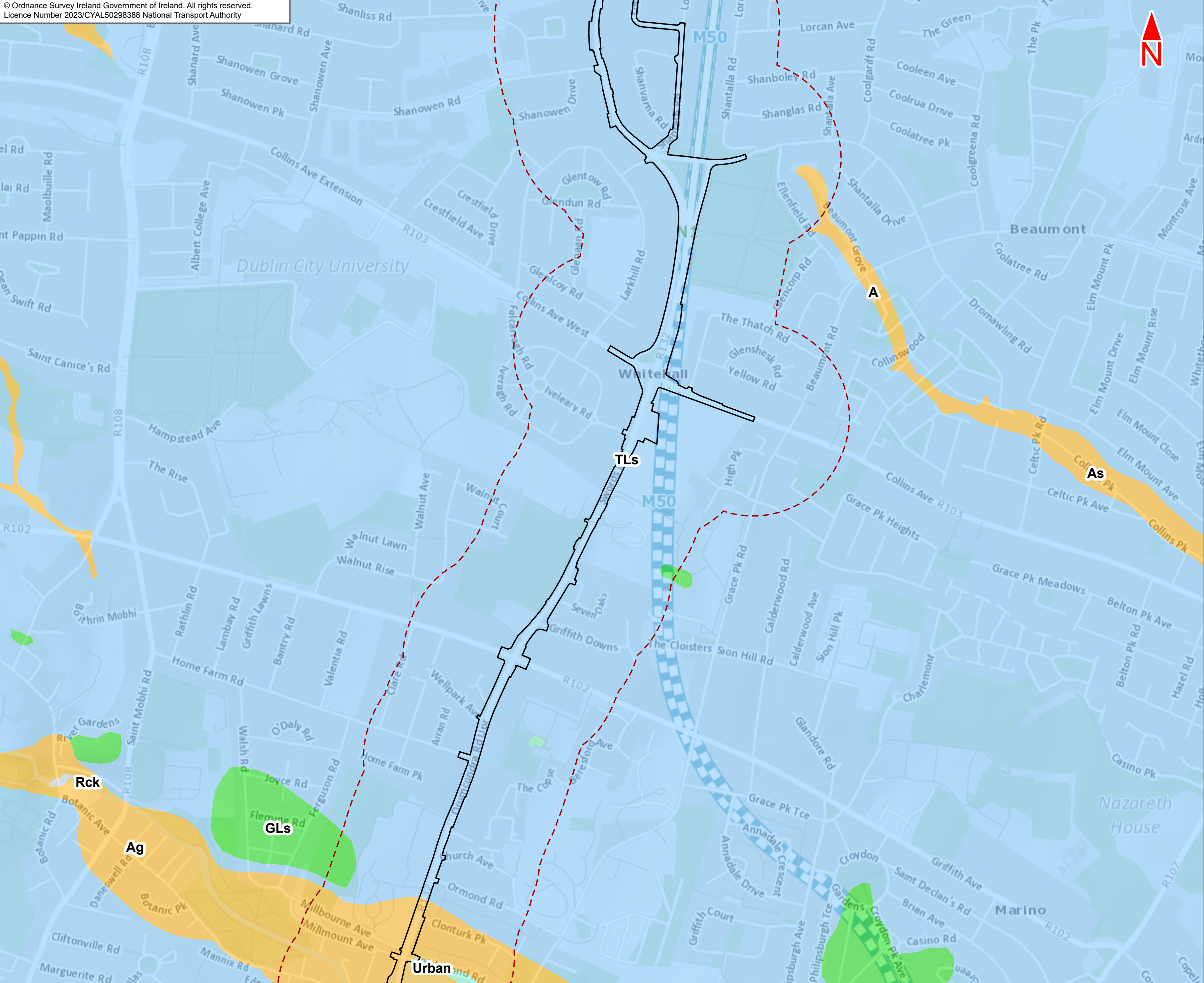
Legend :

- Swords to City Centre Core Bus Corridor Scheme
- 250m Study Area
- 250m Study Area
- Quaternary Sediments - 1:50,000
- Rck, Bedrock outcrop or subcrop
- TLs, Till derived from limestones

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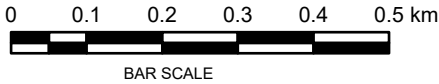
| <div>Disclaimer</div> <div><div>a. © National Transport Authority (NTA) 2023. This drawing is confidential and the copyright in it is owned by NTA. This drawing must not be either loaned, copied or otherwise reproduced in whole or in part or used for any purpose without the prior permission of NTA.</div><div>b. This drawing is to be used for the design element identified in the titleblock. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.</div><div>c. O.S. data used for plans are printed under © Ordnance Survey Ireland Government of Ireland. All rights reserved. Licence Number 2023/CYAL50298388 National Transport Authority. All elevations are in metres and relate to OSI Geoid Model (OSGM15) Malin Head. All Co-ordinates are in Irish</div></div> <div><div>Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.</div><div>d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.</div><div>e. The information contained herein has been provided by the NTA but does not purport to be comprehensive or final. Recipients should not rely on the information. Neither the NTA nor any of its directors, officers, employees, agents, stakeholders or advisers make any representation or warranty as to, or accept any liability or responsibility in relation to, the adequacy, accuracy, reasonableness or completeness of the information provided as part of this document or any matter on which the information is based (including but not limited to loss or damage arising as a result of reliance by recipients on the information or any part of it. Any liabilities are hereby expressly disclaimed.</div></div> <div><div><div><div><div><div></div><div>Project Ireland 2040</div><div>Building Ireland's Future</div></div></div></div></div><div><table><tr><th>Rev</th><th>Date</th><th>Drn</th><th>Chk'd</th><th>App'd</th><th>Description</th></tr><tr><td>M01</td><td>May 23</td><td>FG</td><td>PW</td><td>DK</td><td>ISSUE FOR PHASE 4 : PLANNING</td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr></table></div><div><div><div><div><div></div><div>Udaráis Náisiúnta Iompair</div><div>National Transport Authority</div></div></div></div><div><div><div><div></div><div>Jacobs</div><div>ARUP SYSTRA</div></div></div></div></div><div><table><tr><td>Date</td><td>02/05/2023</td><td>Scale @ A3</td><td>1:10000</td></tr><tr><td>Project Code</td><td>BCIDE</td><td>Originator Code</td><td>JAC</td></tr></table></div><div><table><tr><td>Drawn</td><td>FG</td><td>Checked</td><td>PW</td><td>Approved</td><td>DK</td></tr><tr><td colspan="6">QMS Code</td></tr></table></div><div><div><div>Programme Title</div><div>BUSCONNECTS DUBLIN</div><div>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</div><div>Drawing Title</div><div>Swords to City Centre Core Bus Corridor Scheme</div><div>Figure 14.9</div><div>Subsoil Deposits</div></div><div><div>Drawing File Name</div><div>BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0302</div><div>Sheet Number</div><div>2 of 5</div><div>Status</div><div>A</div><div>Rev</div><div>M01</div></div></div></div> | | | | | | | | | | Rev | Date | Drn | Chk'd | App'd | Description | M01 | May 23 | FG | PW | DK | ISSUE FOR PHASE 4 : PLANNING | | | | | | | | | | | | | | | | | | | | | | | | | Date | 02/05/2023 | Scale @ A3 | 1:10000 | Project Code | BCIDE | Originator Code | JAC | Drawn | FG | Checked | PW | Approved | DK | QMS Code | | | | | |
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| Date | 02/05/2023 | Scale @ A3 | 1:10000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Code | BCIDE | Originator Code | JAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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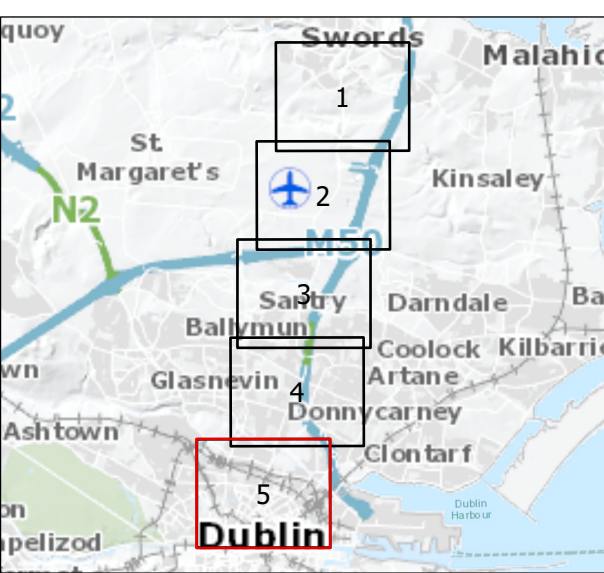
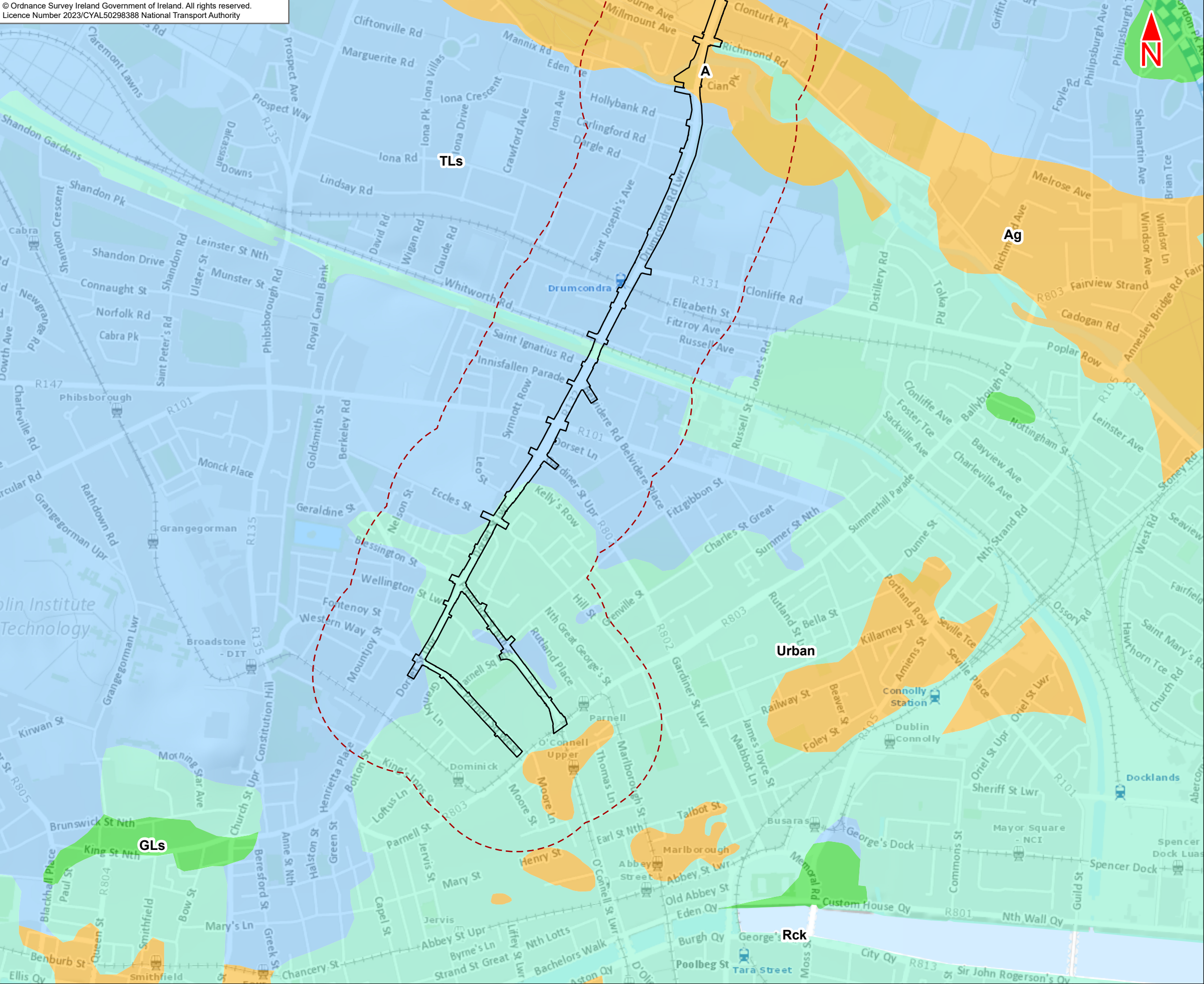
Legend :

- Swords to City Centre Core Bus Corridor Scheme
- 250m Study Area
- 250m Study Area
- Quaternary Sediments - 1:50,000
- A, Alluvium
- Ag, Alluvium (gravelly)
- As, Alluvium (sandy)
- GLs, Gravels derived from Limestones
- Rck, Bedrock outcrop or subcrop
- TLs, Till derived from limestones
- Urban

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- Legend :
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - 250m Study Area
 - Quaternary Sediments - 1:50,000
 - A, Alluvium
 - Ag, Alluvium (gravelly)
 - GLs, Gravels derived from Limestones
 - Rck, Bedrock outcrop or subcrop
 - TLs, Till derived from limestones
 - Urban

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Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.
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| Rev | Date | Drn | Chk'd | App'd | Description |
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| M01 | May 23 | FG | PW | DK | ISSUE FOR PHASE 4 : PLANNING |
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Client

NTA
Udarás Náisiúnta Iompair
National Transport Authority

Date 02/05/2023
Scale @ A3 1:10000
Project Code BCIDE
Originator Code JAC

Consultant

JACOBS ARUP SYSTRA

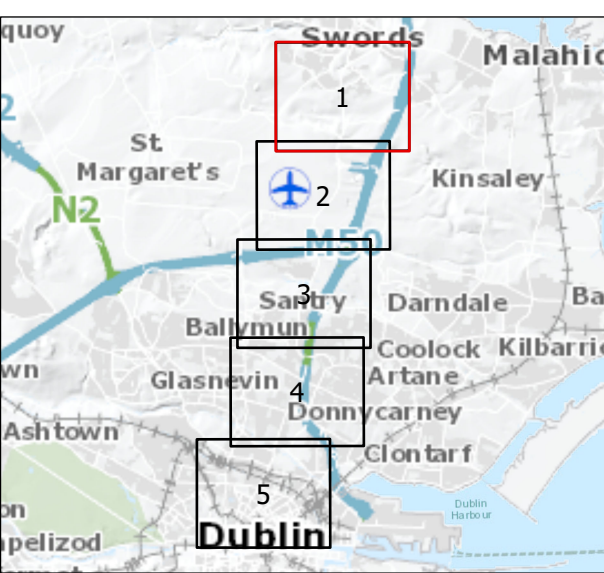
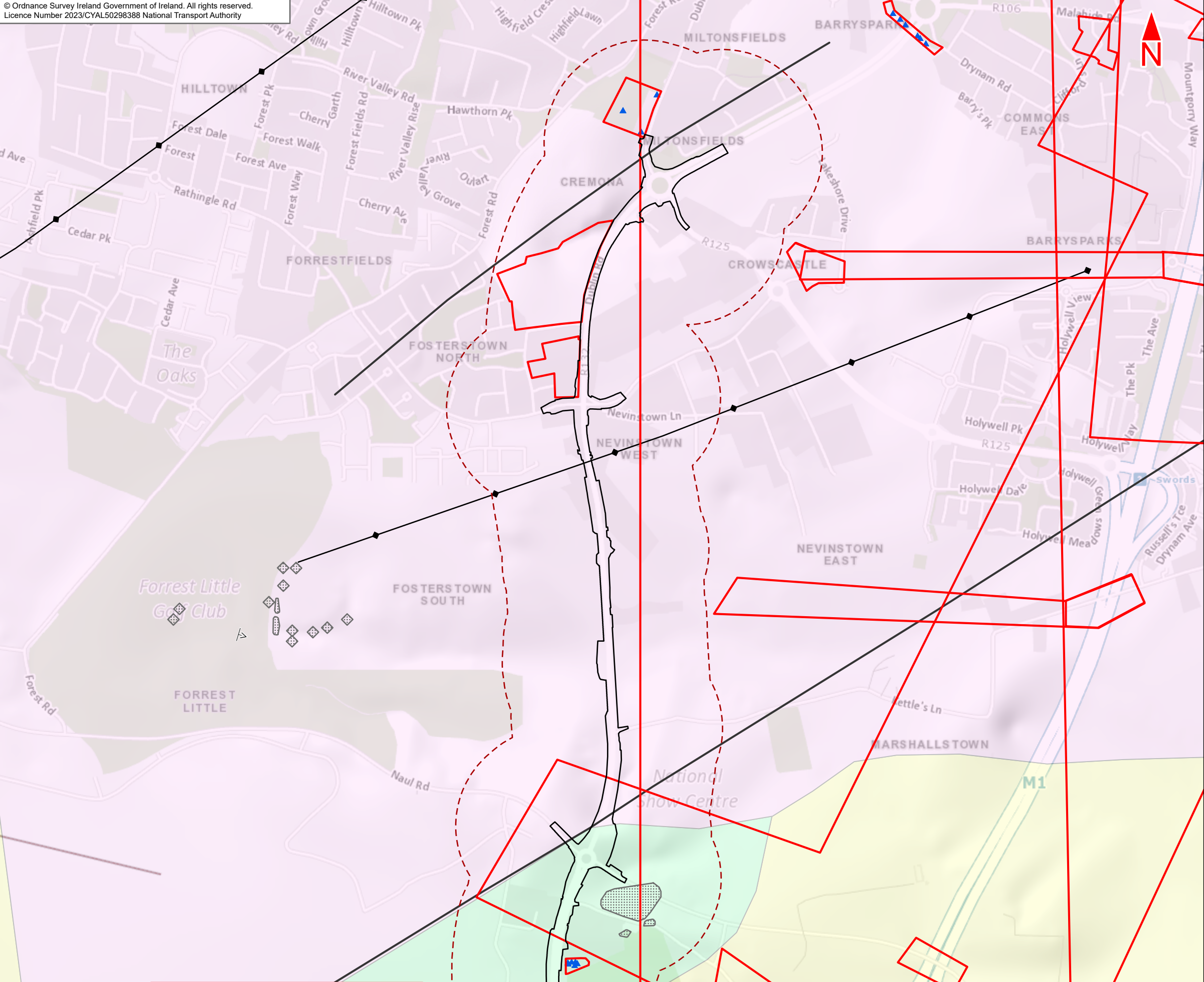
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Checked PW
Approved DK

QMS Code

| Programme Title | | | | |
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| BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | |
| Drawing Title | | | | |
| Swords to City Centre Core Bus Corridor Scheme Figure 14.9 Subsoil Deposits | | | | |
| Drawing File Name | Sheet Number | Status | Rev | |
| BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0305 | 5 of 5 | A | M01 | |

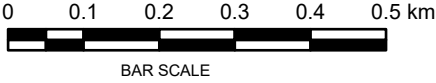
14.10 Bedrock Geology





- Legend :**
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - GSI Geotechnical Sites
 - GSI Geotechnical Boreholes
 - GSI Bedrock Structural Symbols - 1:100,000**
 - Strike and dip of bedding, right way up
 - Anticlinal Axis
 - Fault
 - GSI Bedrock Outcrop - 1:100,000**
 - GSI Bedrock Outcrop - 1:100,000
 - GSI Bedrock Geology - 1:100,000**
 - Tober Colleen Formation
 - Waulsortian Limestones
 - Malahide Formation

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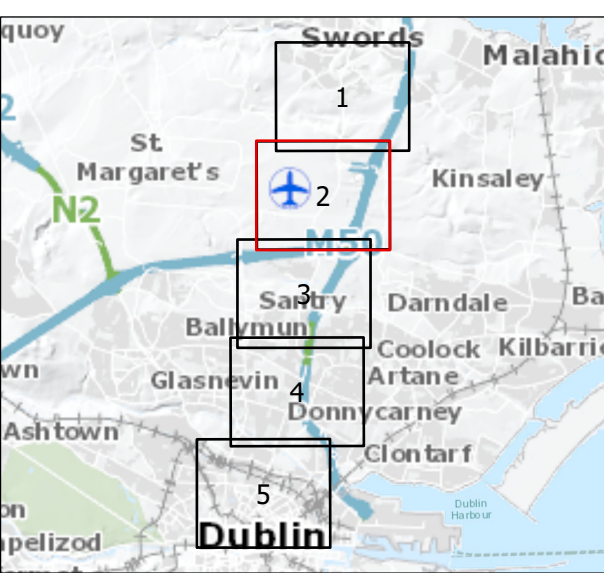
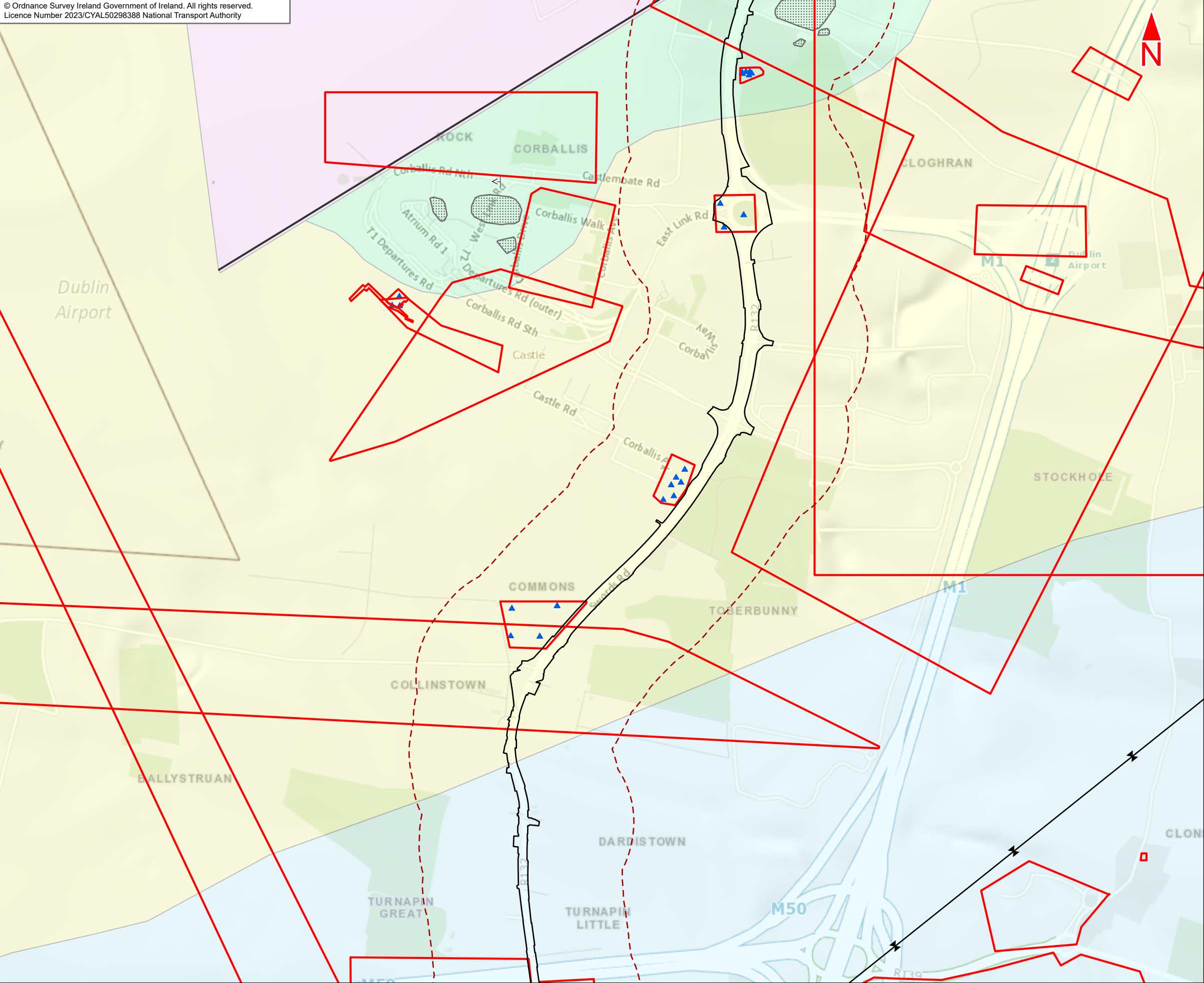


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| Client | |
|  Udarás Náisiúnta Iompair National Transport Authority | |
| Date | 02/05/2023 |
| Scale @ A3 | 1:10000 |
| Project Code | BCIDE |
| Originator Code | JAC |

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| BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | |
| Drawing Title | | | | |
| Swords to City Centre Core Bus Corridor Scheme Figure 14.10 Bedrock Geology | | | | |
| Drawing File Name | Sheet Number | Status | Rev | |
| BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0401 | 1 of 5 | A | M01 | |



- Legend :**
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - GSI Geotechnical Sites
 - GSI Geotechnical Boreholes
 - GSI Bedrock Structural Symbols - 1:100,000**
 - Strike and dip of bedding, right way up
 - Fault
 - Synclinal Axis
 - GSI Bedrock Outcrop - 1:100,000**
 - GSI Bedrock Outcrop - 1:100,000
 - GSI Bedrock Geology - 1:100,000**
 - Lucan Formation
 - Tober Colleen Formation
 - Waulsortian Limestones
 - Malahide Formation

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| Rev | Date | Drn | Chk'd | App'd | Description |
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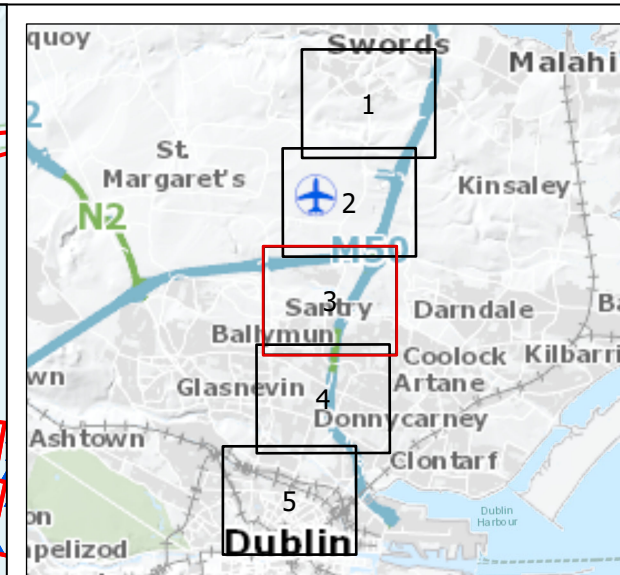
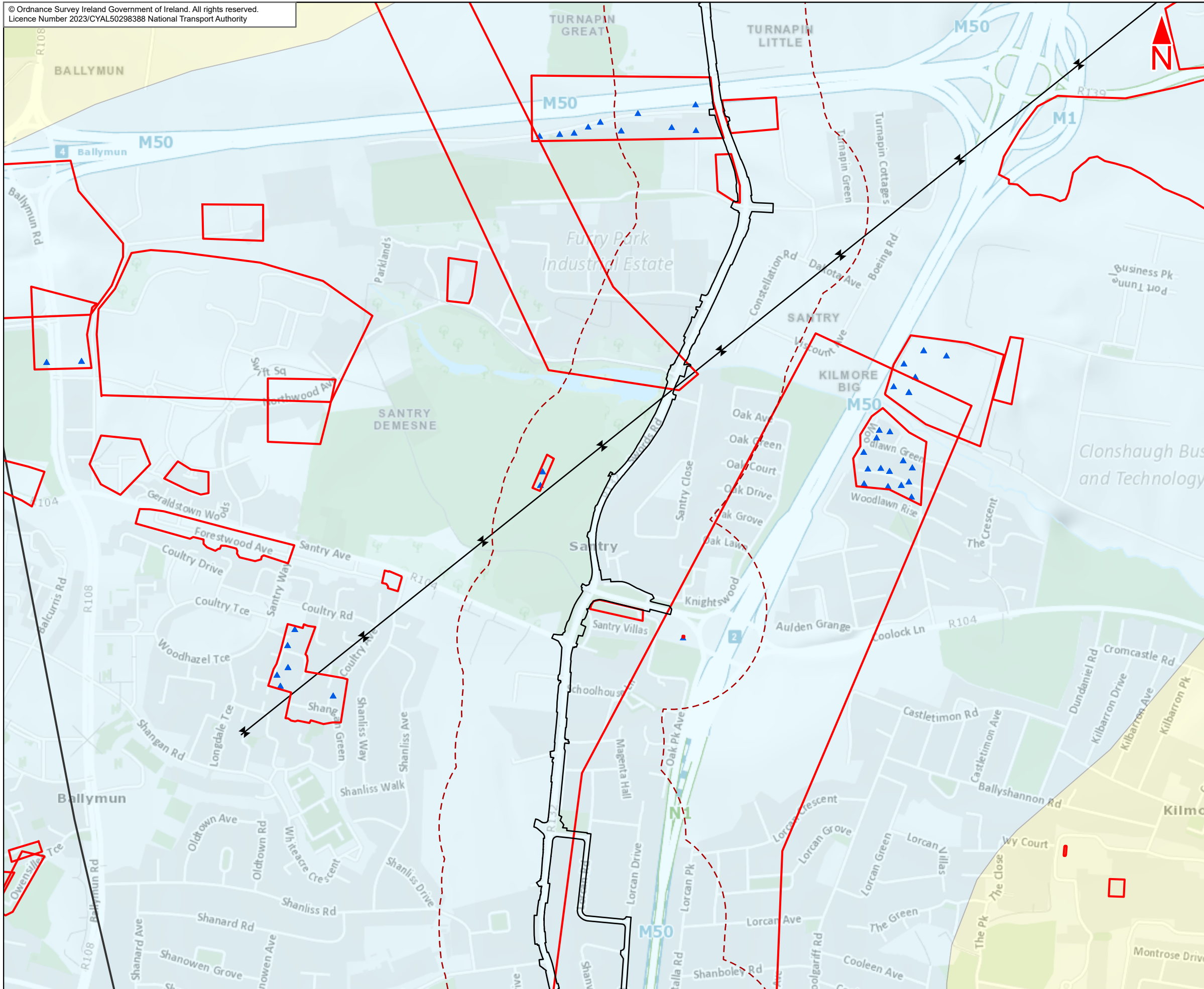


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| Project Code | BCIDE | Originator Code | JAC |



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| Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | | |
| Drawing Title Swords to City Centre Core Bus Corridor Scheme Figure 14.10 Bedrock Geology | | | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0402 | Sheet Number | 2 of 5 | Status | A |
| Rev | M01 | | | | |



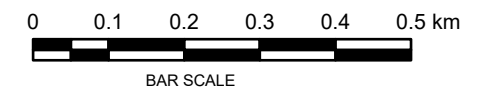
Legend :

-
- Swords to City Centre Core Bus Corridor Scheme
 - - - 250m Study Area
 [Red Box] GSI Geotechnical Sites
 ▲ GSI Geotechnical Boreholes
 — Fault

GSI Bedrock Geology - 1:100,000

-  Lucan Formation
-  Tober Colleen Formation

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Client


NTA
Údarás Náisiúnta Iompair
National Transport Authority

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| Date 02/05/2023 | Scale @ A3 1:1000 |
| Project Code BCIDE | Originator Code JAC |

Consultant

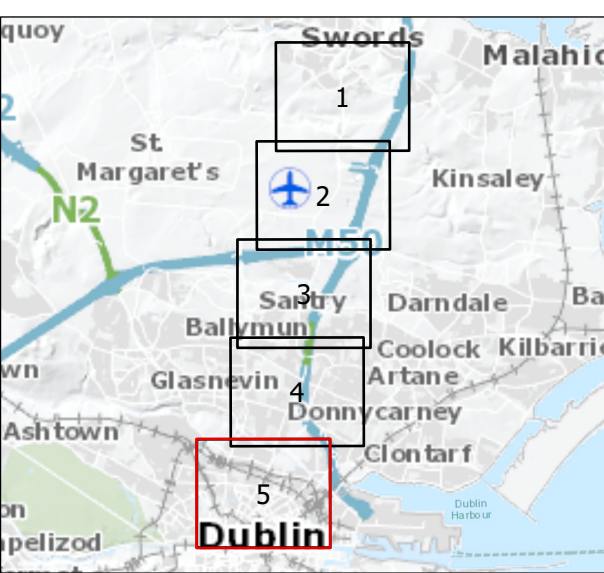
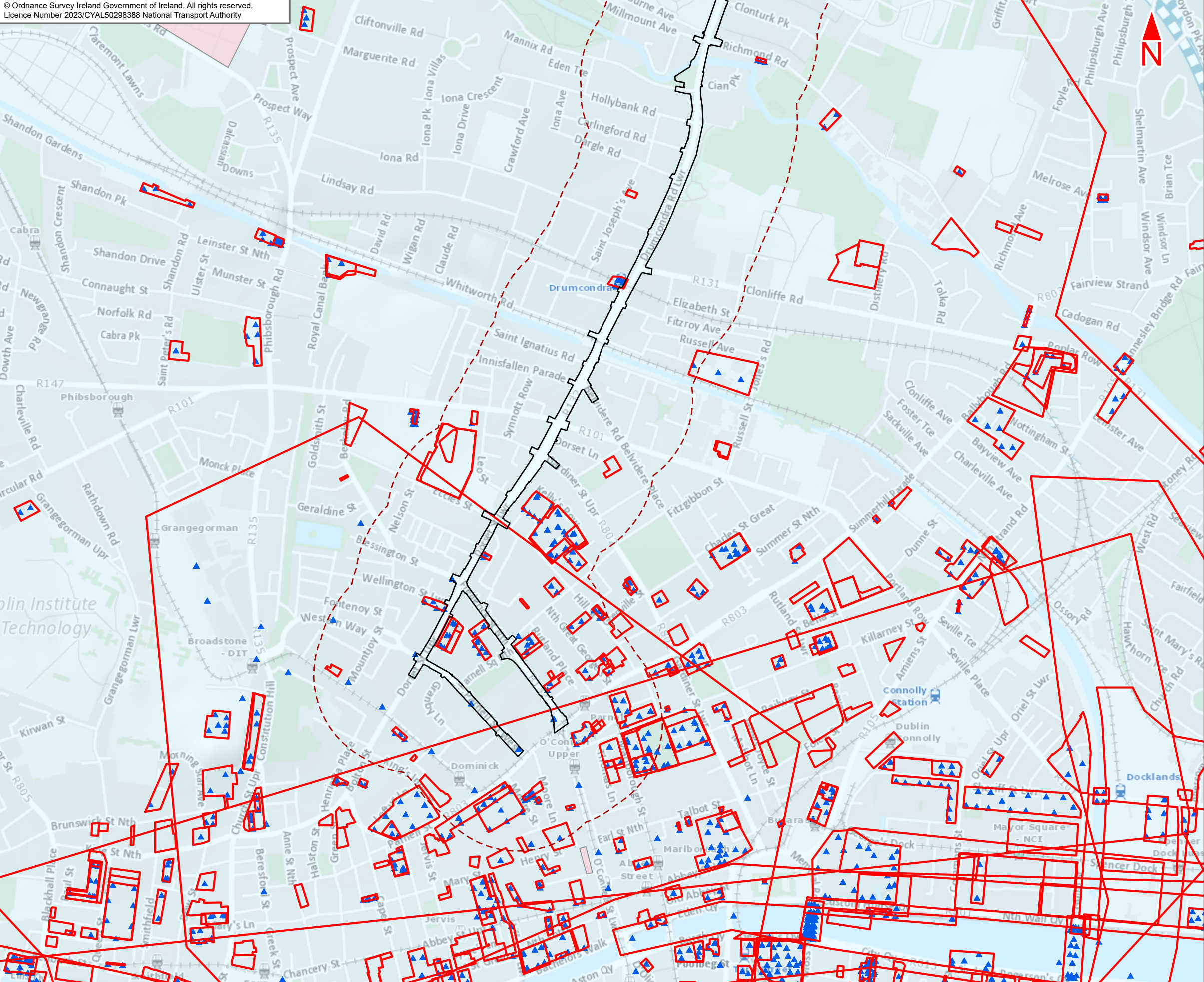
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| Programme Title | BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS |
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| Drawing Title | Swords to City Centre Core Bus Corridor Scheme Figure 14.10 Bedrock Geology |
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| BCIDE-IAC-ENV GT-0002 XX 00-DR-GG-0403 | 3 of 5 | A | M01 |



- Legend :**
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - GSI Geotechnical Sites
 - Geological Heritage Site
 - GSI Geotechnical Boreholes
- GSI Bedrock Geology - 1:100,000**
- Lucan Formation

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| NTA Udarás Náisiúnta Iompair National Transport Authority | |
| Date | 02/05/2023 |
| Project Code | BCIDE |
| Scale @ A3 | 1:10000 |
| Originator Code | JAC |

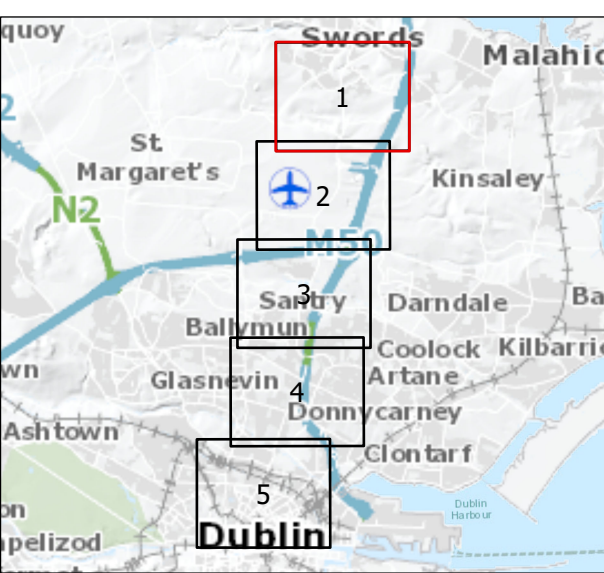
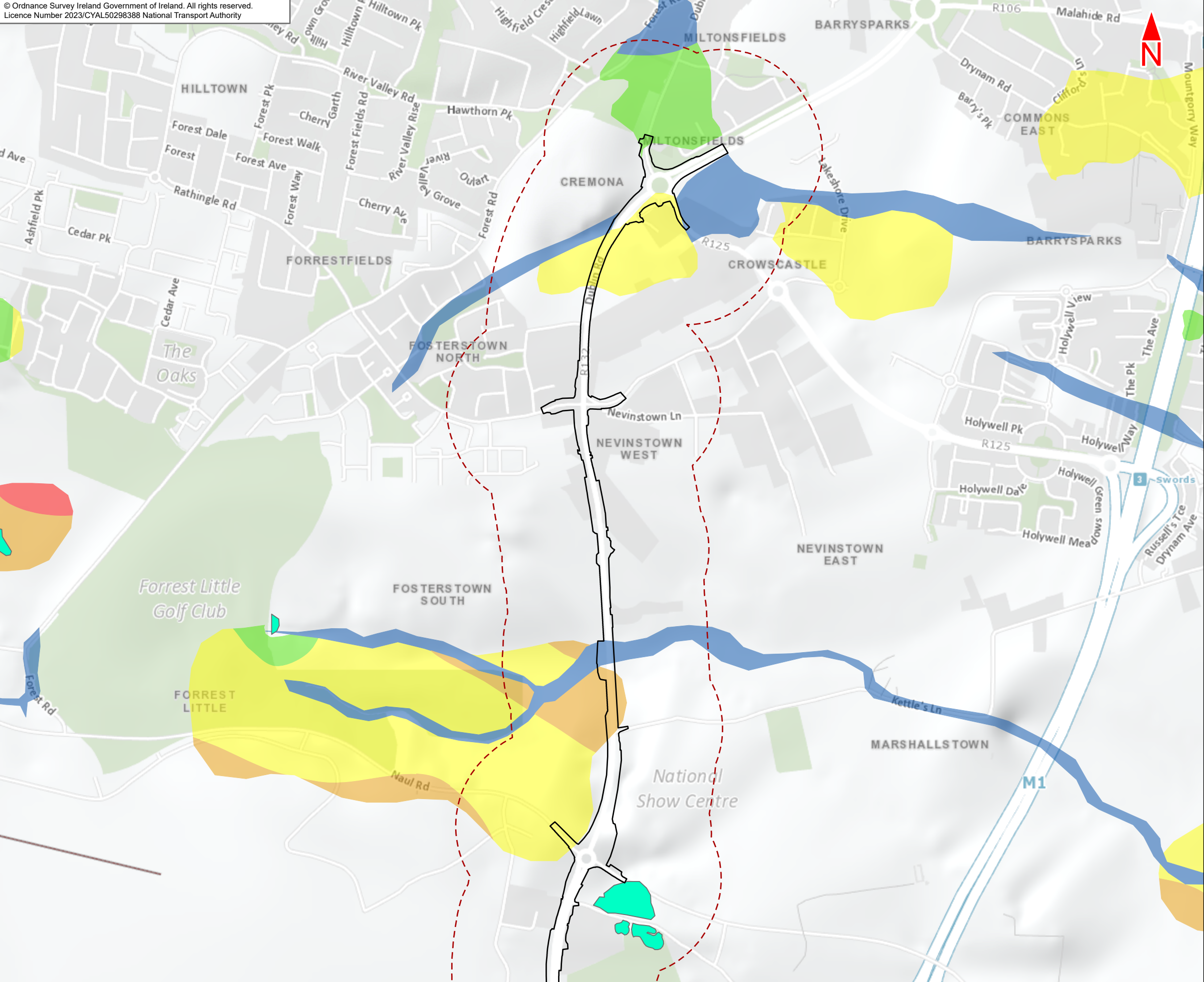
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| Approved | DK | |
| QMS Code | | |

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| Programme Title | | | |
| BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | |
| Drawing Title | | | |
| Swords to City Centre Core Bus Corridor Scheme Figure 14.10 Bedrock Geology | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0405 | Sheet Number | 5 of 5 |
| Status | A | Rev | M01 |

14.11

Granular Aggregate Potential





- Legend :
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - Pits and Quarries Areas
 - GSI Aggregate Potential Mapping - Granular Aggregate Potential
 - Very High potential
 - High potential
 - Moderate potential
 - Low potential
 - Very Low potential

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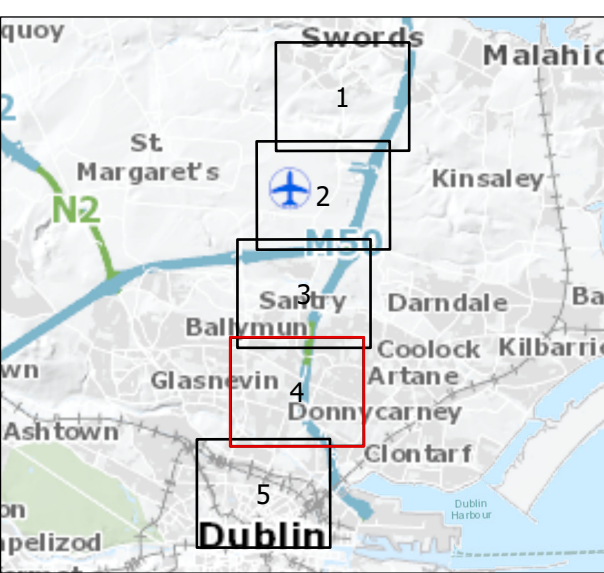
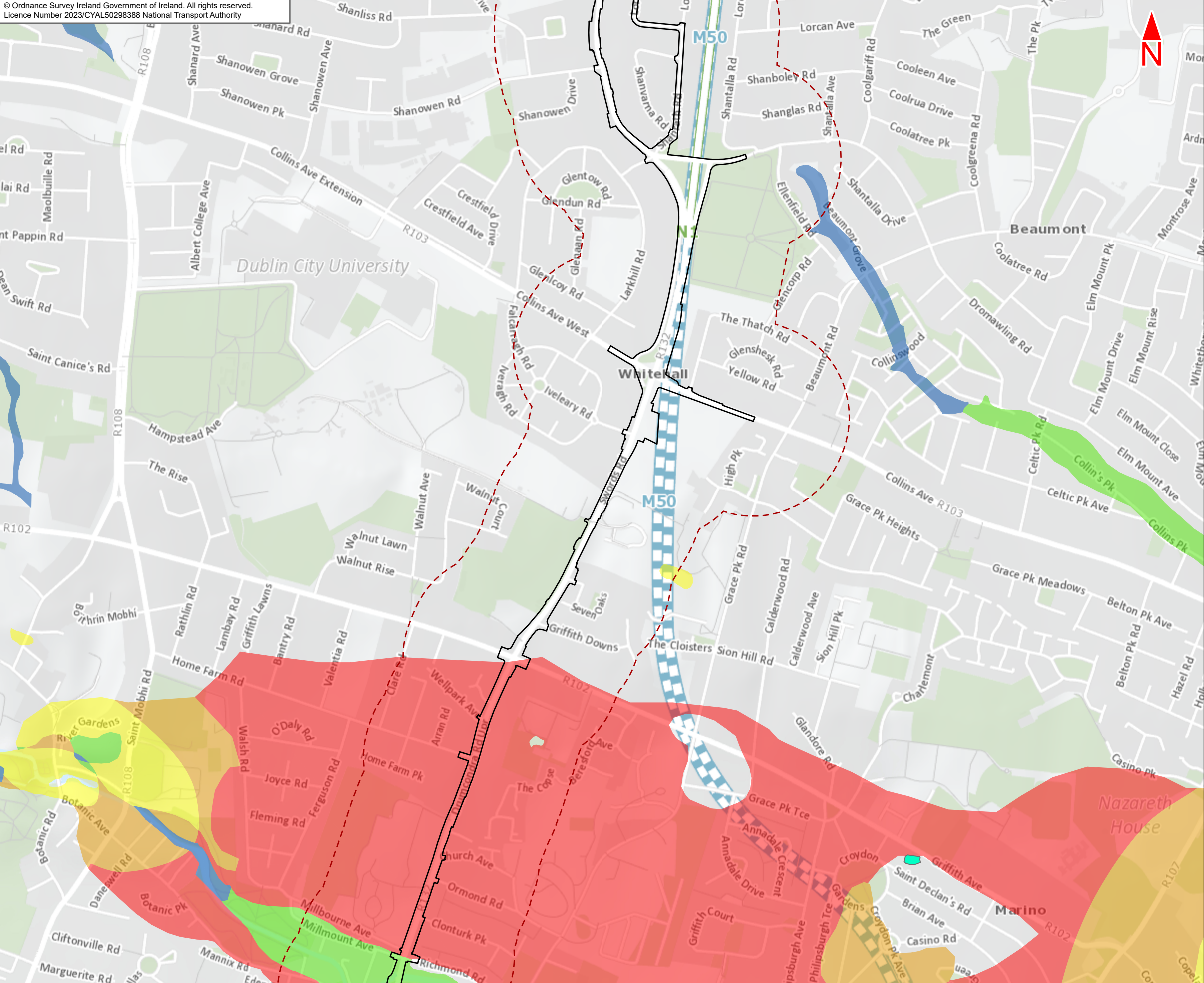


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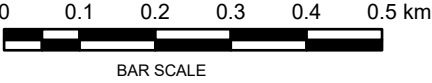
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| Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | | |
| Drawing Title Swords to City Centre Core Bus Corridor Scheme Figure 14.11 Granular Aggregate Potential | | | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0501 | Sheet Number | 1 of 5 | Status | A |
| Rev | M01 | | | | |

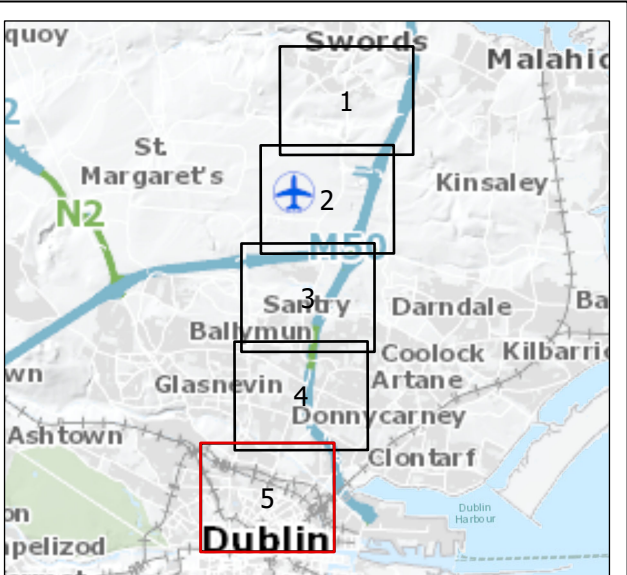
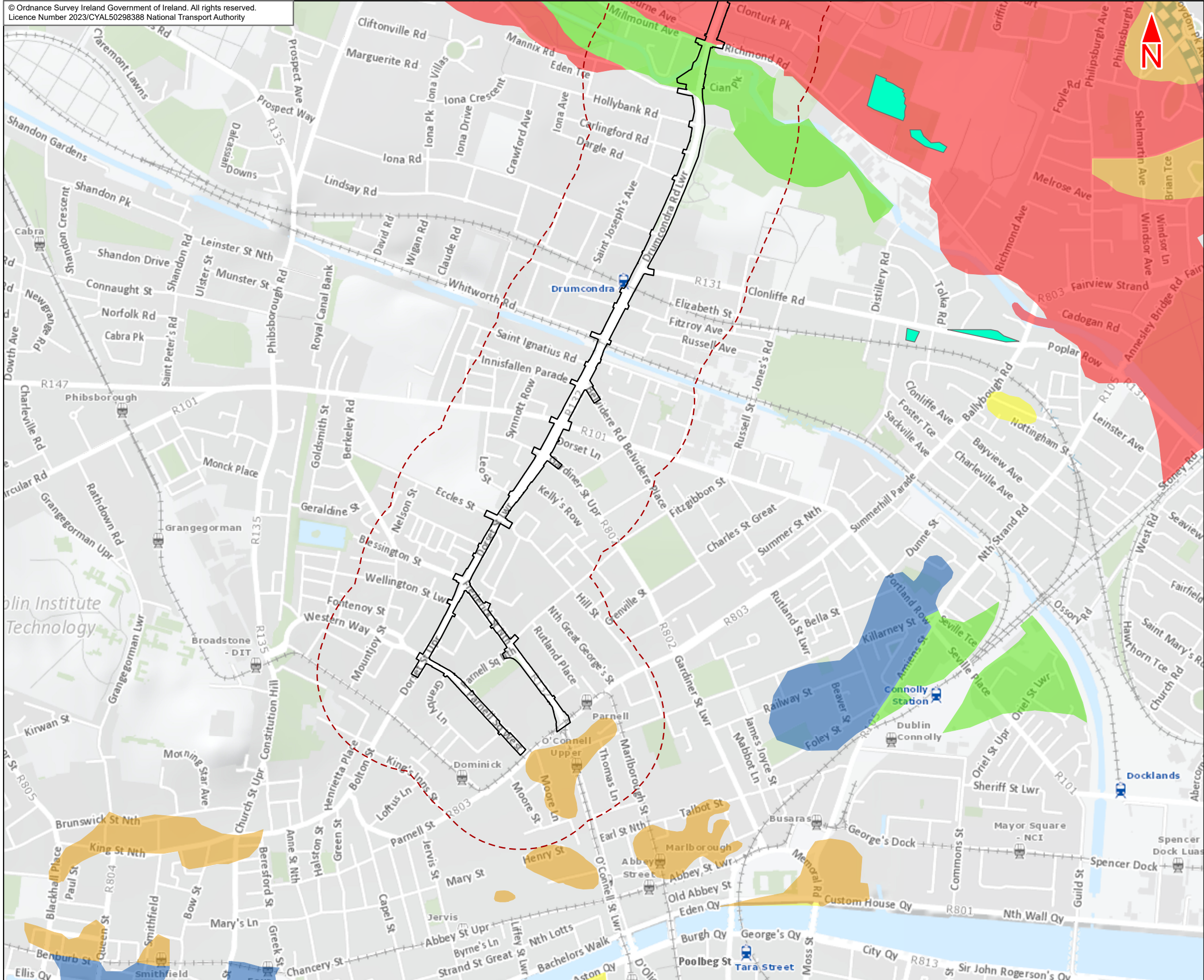


- Legend :
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - Pits and Quarries Areas
 - GSI Aggregate Potential Mapping - Granular Aggregate Potential
 - Very High potential
 - High potential
 - Moderate potential
 - Low potential
 - Very Low potential

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Legend :

- Swords to City Centre Core Bus Corridor Scheme

- 250m Study Area

- 
- Pits and Quarries Areas

GSI Aggregate Potential Mapping - Granular Aggregate Potential

- Very High potential

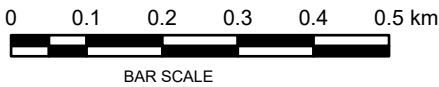
- High potential

- Moderate potential

- Low potential

- Very Low potential

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Client


NTA
Údarás Náisiúnta Iompair
National Transport Authority

Date _____

Scale @ A3

Project Code

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Consultant

Jacobs
ARUP SYSTRA

Drawn

Checked

Approved

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| <p>Programme Title</p> <p>BUSCONNECTS DUBLIN</p> <p>CORE BUS CORRIDORS INFRASTRUCTURE WORKS</p> |
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Drawing title

Swords to City Centre Core Bus Corridor Scheme
Figure 14.11
Granular Aggregate Potential

Drawing File Name

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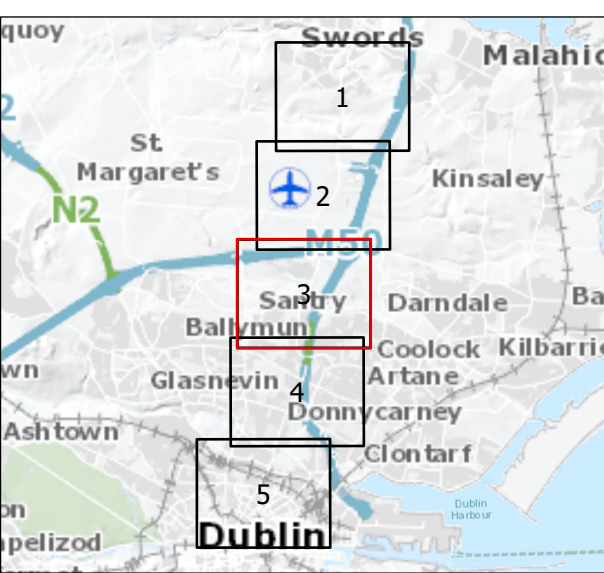
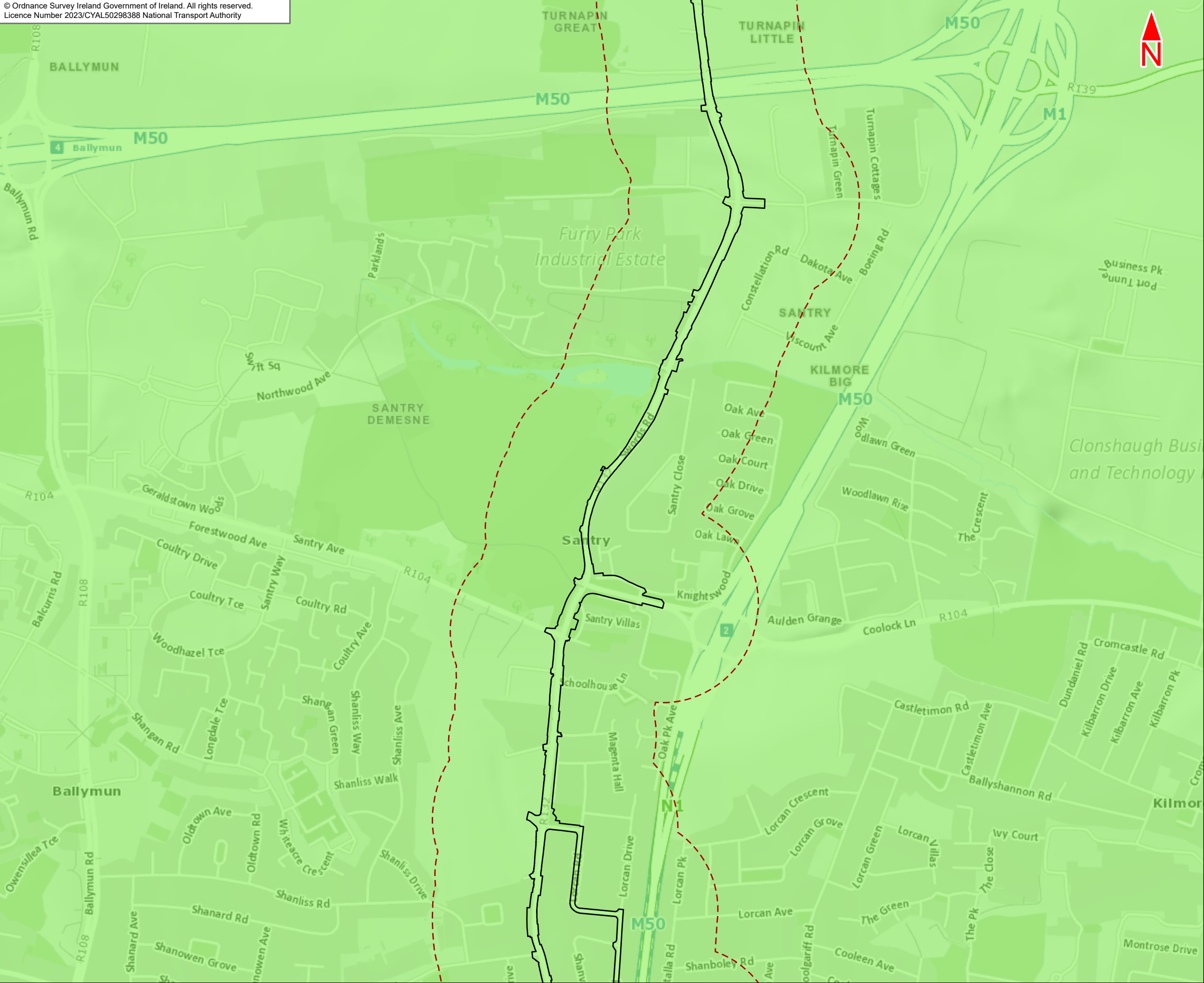
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14.12

Crushed Rock Aggregate Potential





Legend :

— Swords to City Centre Core Bus Corridor Scheme

- - - 250m Study Area

GSI Aggregate Potential Mapping - Crushed Rock Aggregate Potential

Low potential

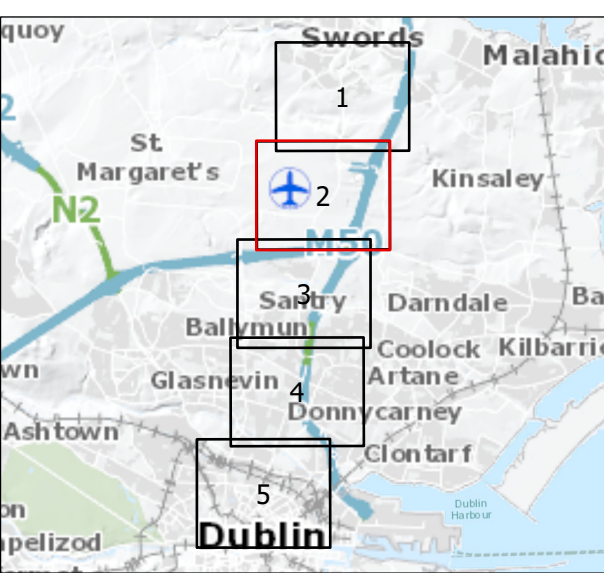
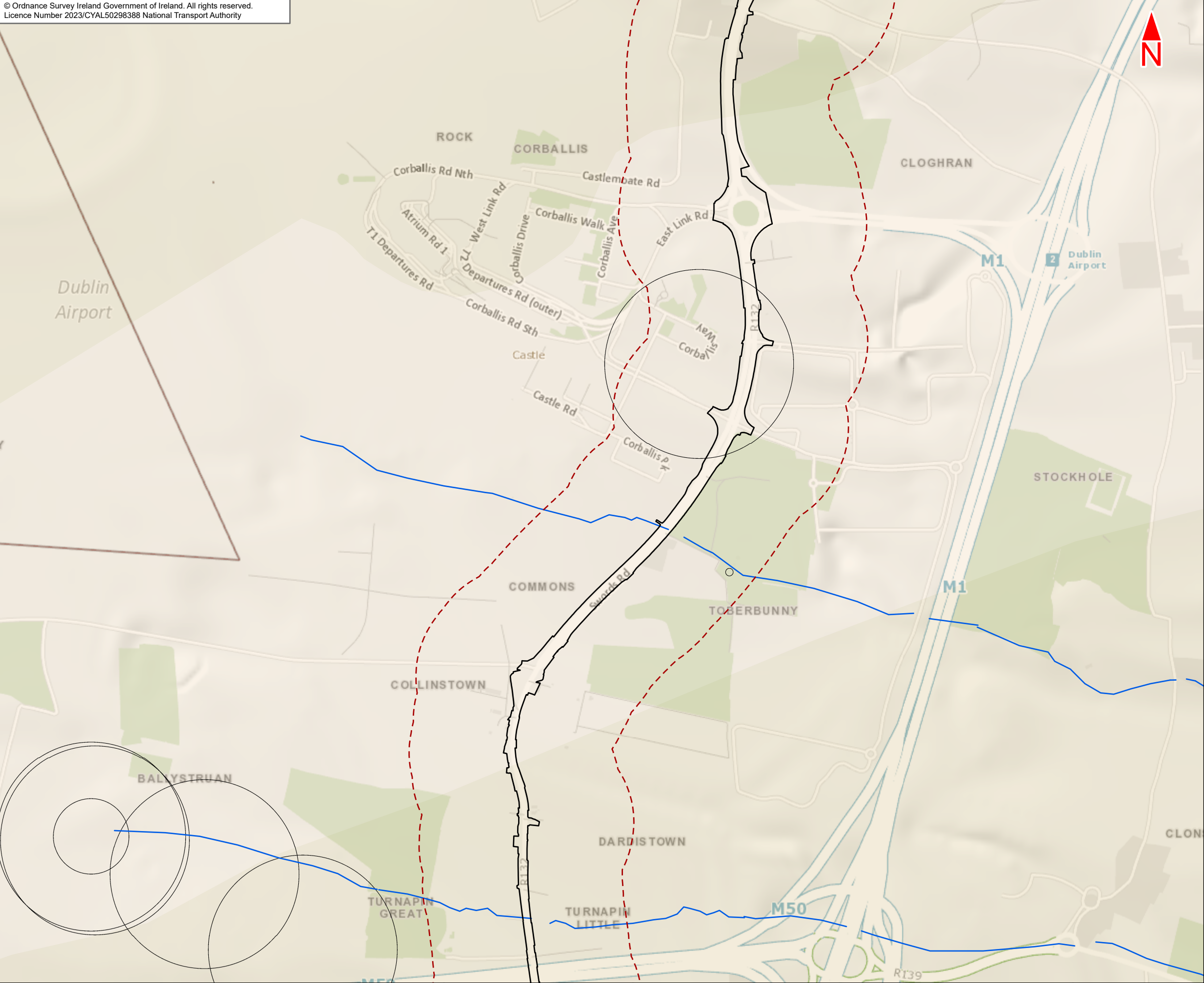
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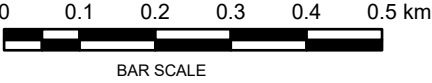
14.13 Aquifers





- Legend :**
- Swords to City Centre Core Bus Corridor Scheme
 - - - 250m Study Area
 - Rivers Of Dublin
 - Groundwater Wells and Springs
- GSI Bedrock Aquifer**
- Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones (LI)
 - Poor Aquifer - Bedrock which is Generally Unproductive except for Local Zones (PI)

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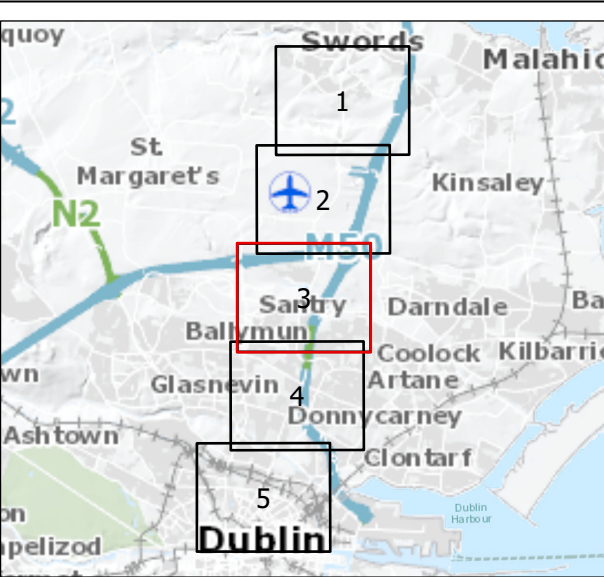
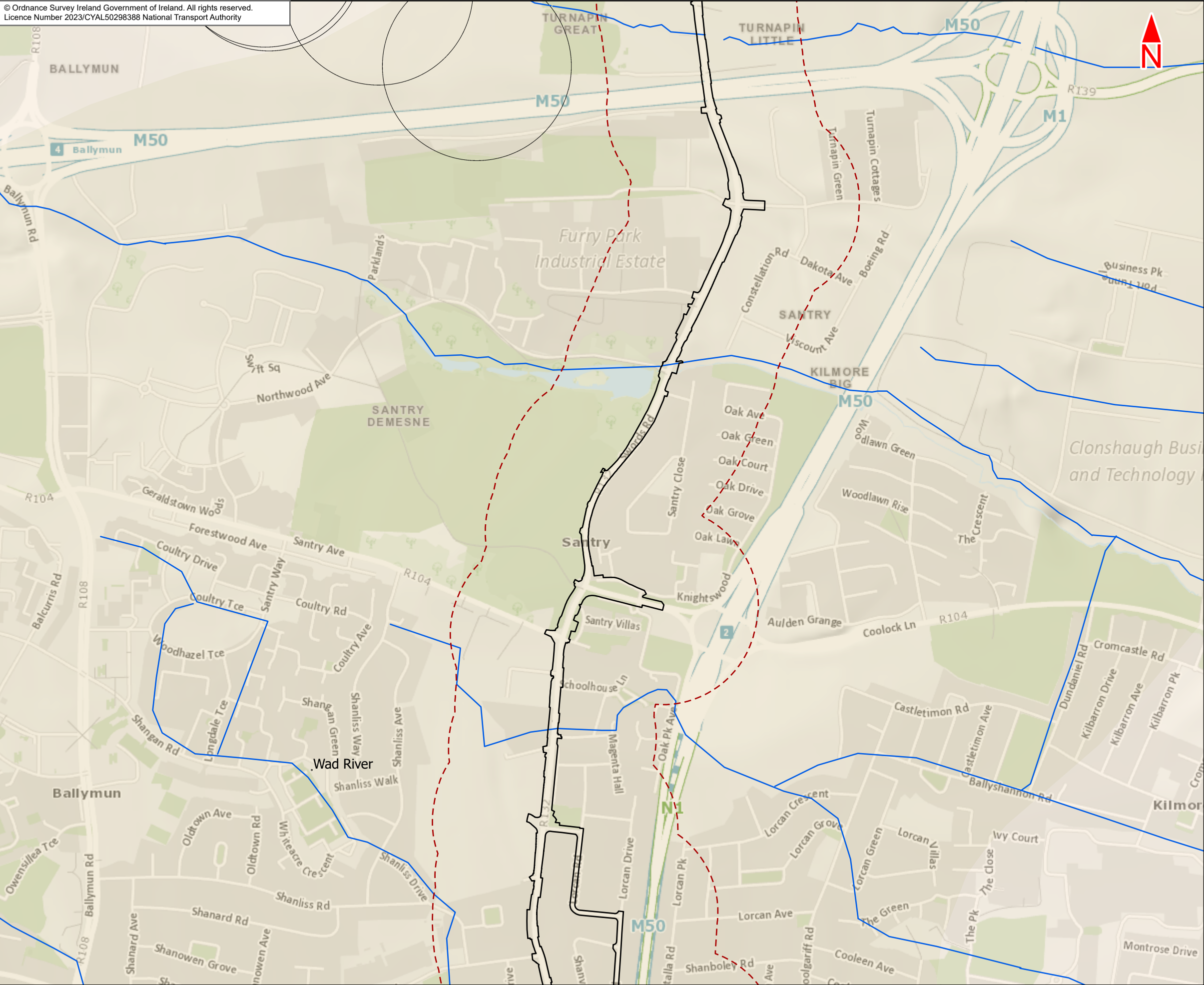
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| Client NTA Udarás Náisiúnta Iompair National Transport Authority | | Consultant Jacobs ARUP SYSTRA | | |
| Date 02/05/2023 | Scale @ A3 1:10000 | Drawn FG | Checked PW | Approved DK |
| Project Code BCIDE | Originator Code JAC | QMS Code | | |

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| Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | |
| Drawing Title Swords to City Centre Core Bus Corridor Scheme Figure 14.13 Aquifers | | | | |
| Drawing File Name BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0702 | Sheet Number 2 of 5 | Status A | Rev M01 | |



- Legend :
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - Rivers Of Dublin
 - Groundwater Wells and Springs
- GSI Bedrock Aquifer
- Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones (LI)
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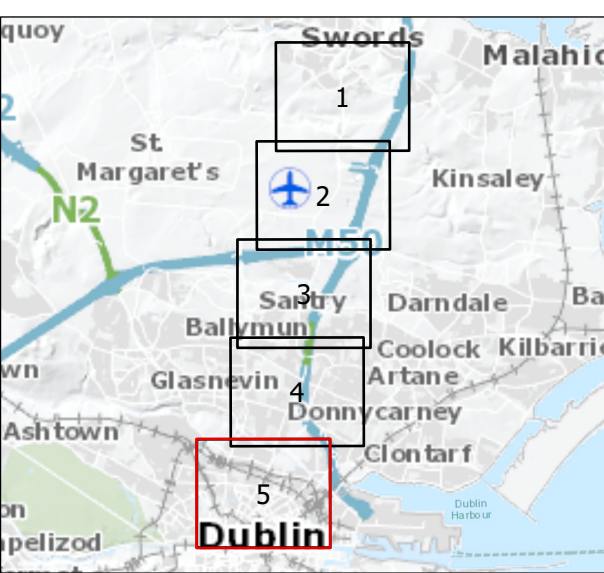
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Consultant

Jacobs
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| Programme Title BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | | |
| Drawing Title Swords to City Centre Core Bus Corridor Scheme Figure 14.13 Aquifers | | | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0703 | Sheet Number | 3 of 5 | Status | A |
| Rev | M01 | | | | |



- Legend :
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - Rivers Of Dublin
 - Groundwater Wells and Springs
- GSI Bedrock Aquifer
- Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones (LI)

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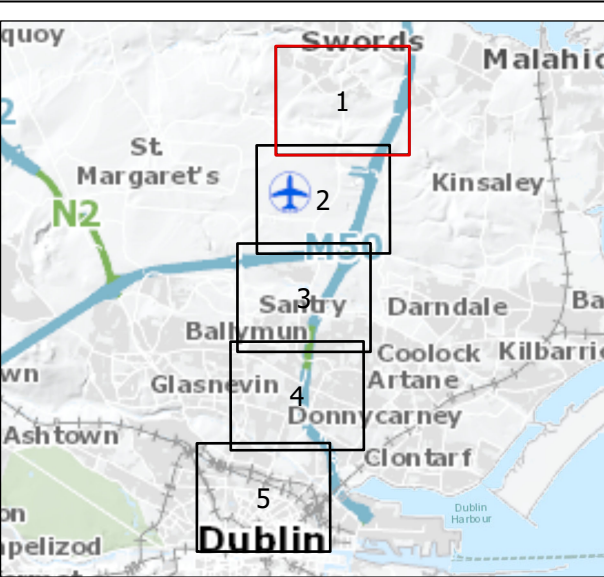
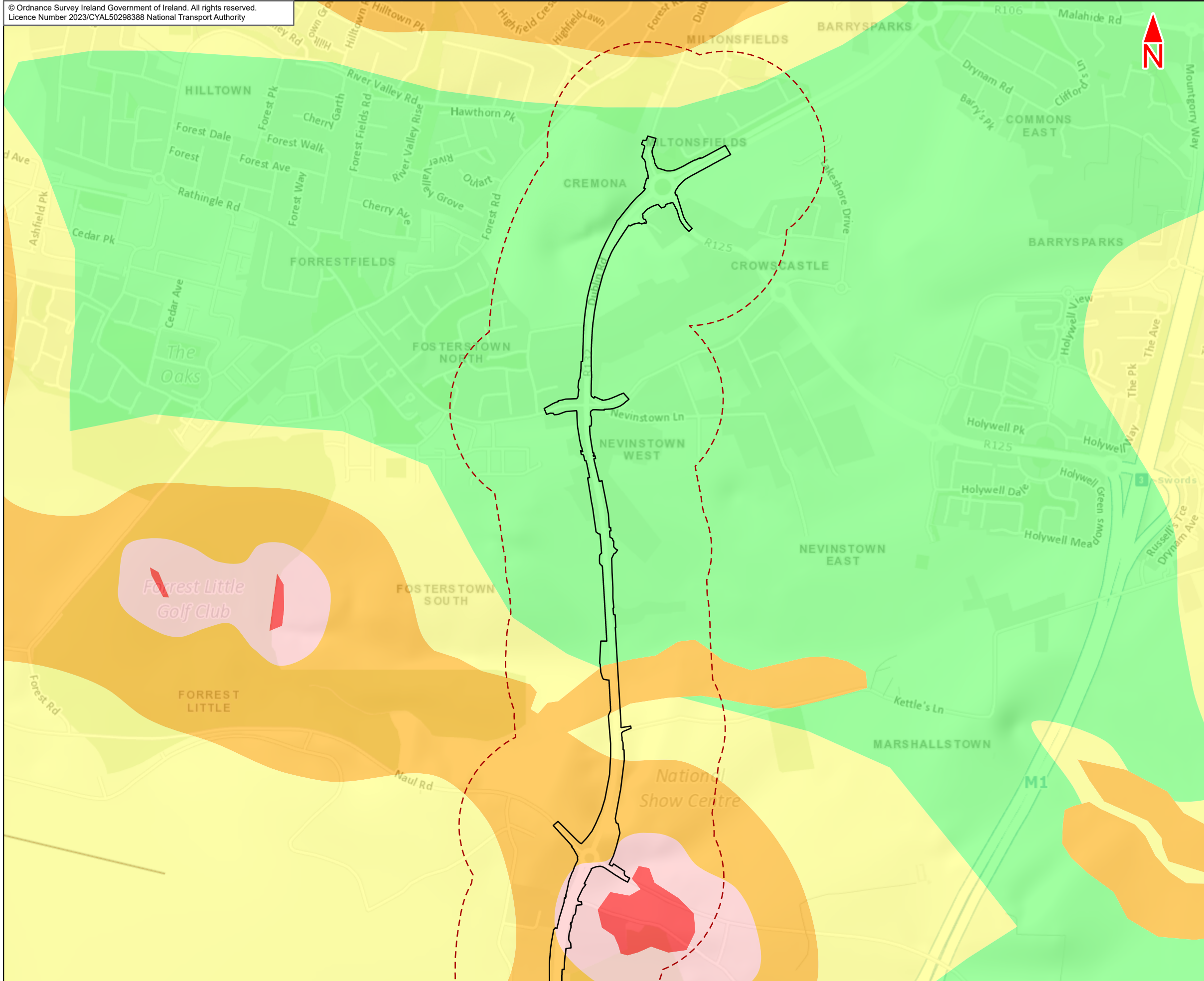
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| NTA Udarás Náisiúnta Iompair National Transport Authority | | Jacobs ARUP SYSTR | | |
| Date | 02/05/2023 | Scale @ A3 | 1:10000 | Drawn |
| Project Code | BCIDE | Originator Code | JAC | QMS Code |
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| Swords to City Centre Core Bus Corridor Scheme Figure 14.13 Aquifers | | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0705 | Sheet Number | 5 of 5 | Status |
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14.14 Groundwater Vulnerability





Legend :

———— Swords to City Centre Core Bus Corridor Scheme

250m Study Area

GSI National Groundwater Vulnerability

Extreme (X) Rock at/close to surface or Karst

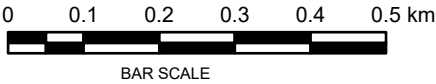
Extreme

High

Moderate

Low

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Údarás Náisiúnta Iompair
National Transport Authority

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| Date | 02/05/2023 |
| Project Code | BCIDE |

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| Scale @ A3 | 1:10000 |
| Originator Code | JAC |

Consultant

Jacobs
ARUP SYSTRA

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| QMS Code | |

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Approved
DK

Programme Title **BUSCONNECTS DUBLIN
CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

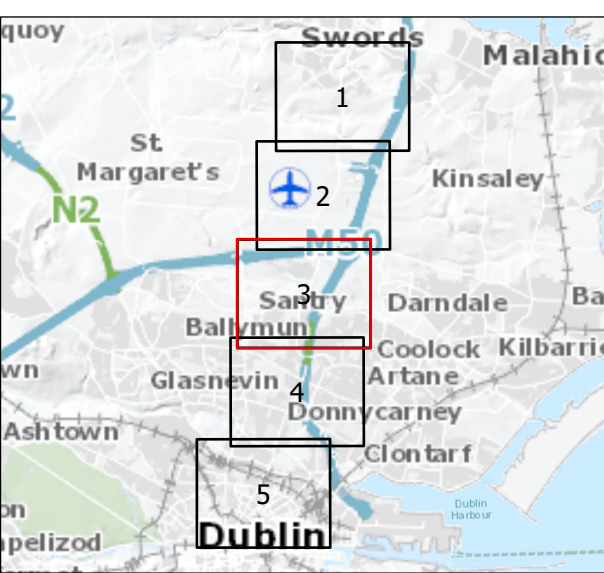
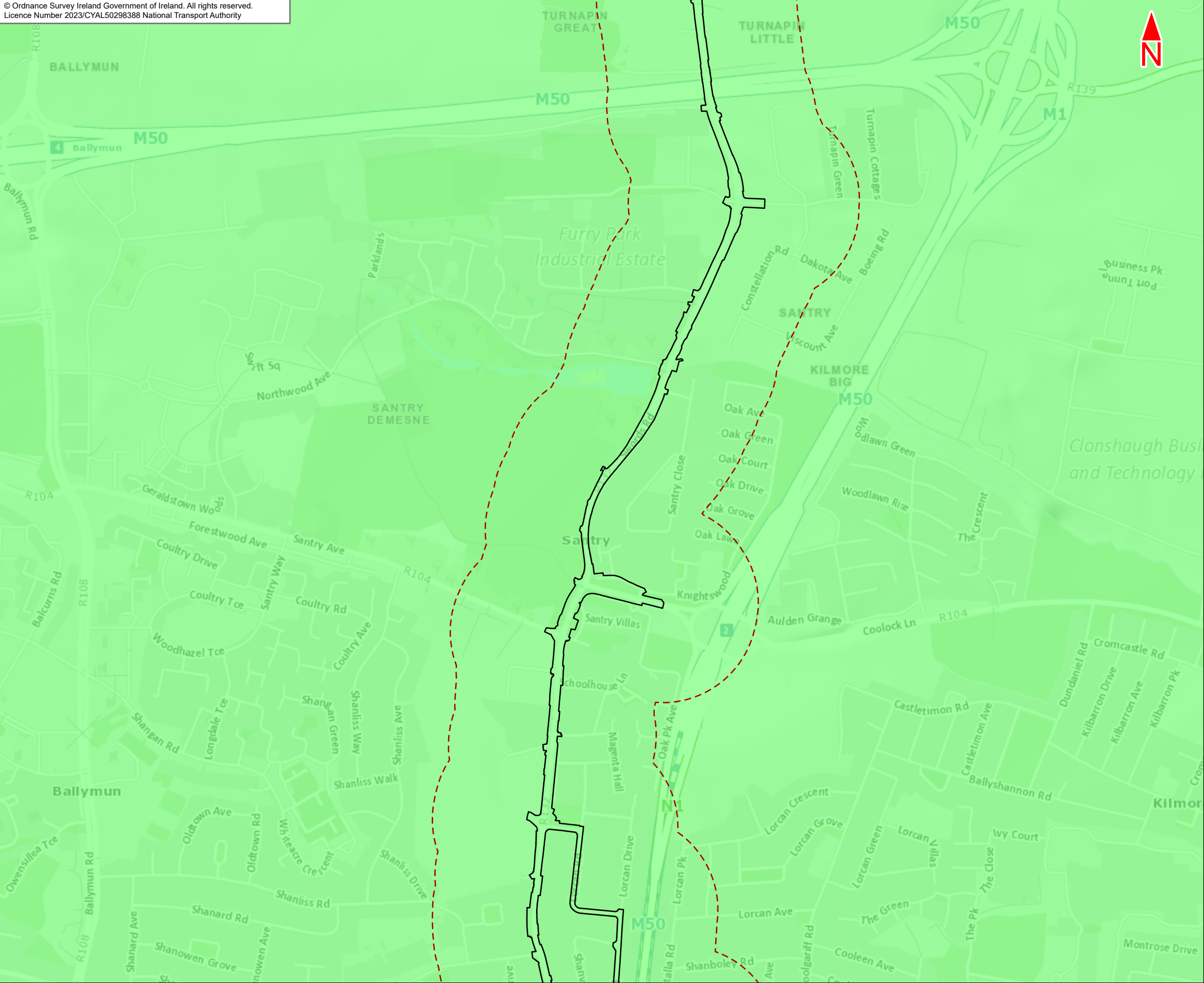
Drawing Title Swords to City Centre Core Bus Corridor Scheme
Figure 14.14
Groundwater Vulnerability

Drawing File Name
BCIDE-JAC-ENV GT-0002 XX 00-DR-GG-0801

Sheet Number
1 of 5

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Legend :

— Swords to City Centre Core Bus Corridor Scheme

- - - 250m Study Area

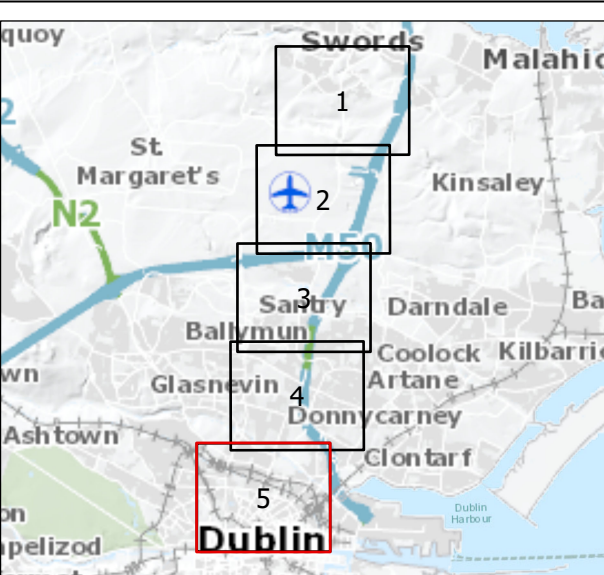
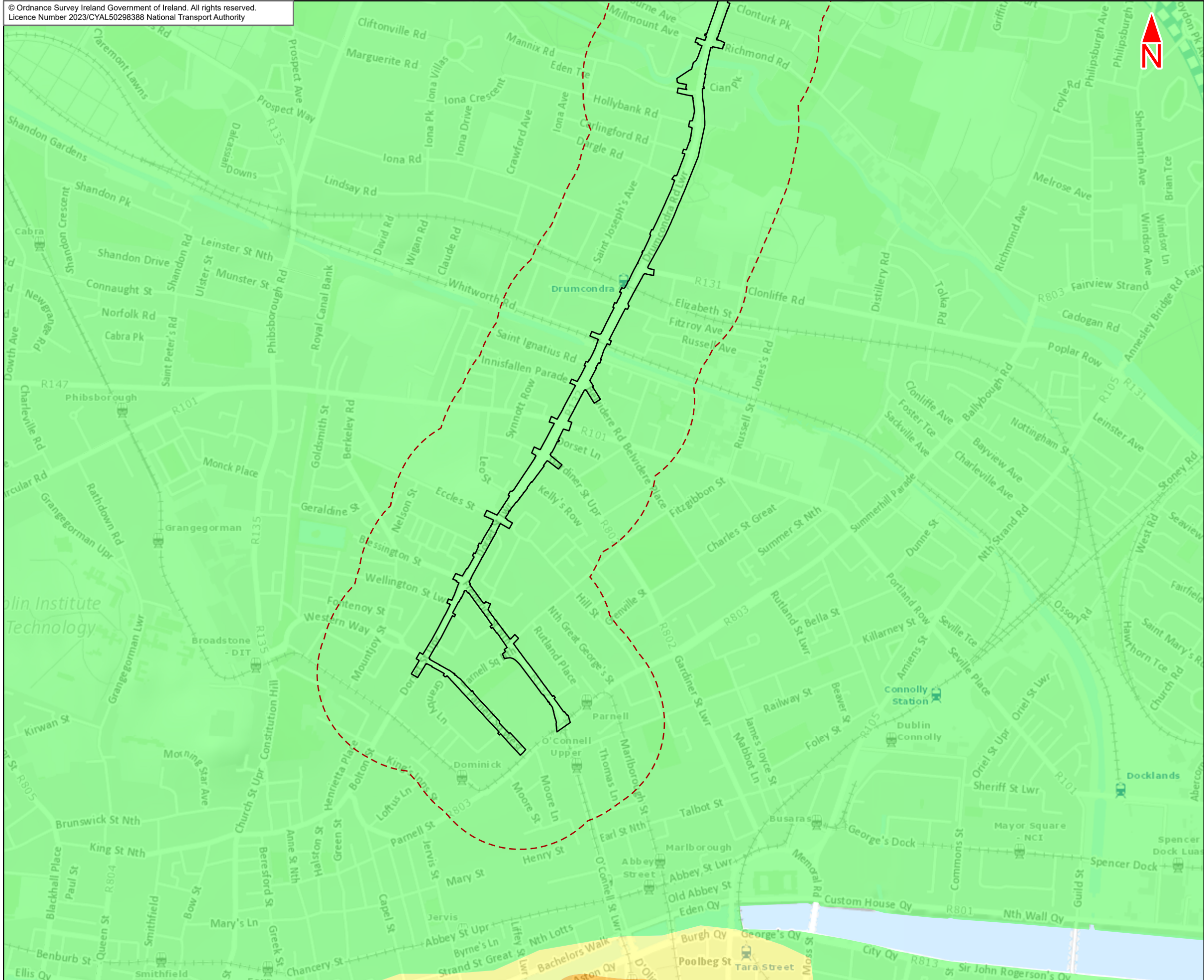
GSI National Groundwater Vulnerability

Low

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| | M01 | May 23 | FG | PW | DK | ISSUE FOR PHASE 4 : PLANNING | | | | Date | 02/05/2023 | Scale @ A3 | 1:10000 | Drawn | FG | Checked | PW | Approved | DK | Drawing Title Swords to City Centre Core Bus Corridor Scheme Figure 14.14 Groundwater Vulnerability | | | | | | |
| | | | | | | | | | | Project Code | BCIDE | Originator Code | JAC | QMS Code | | | Drawing File Name BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0803 | | | | Sheet Number | 3 of 5 | Status | A | Rev | M01 |



Legend :

———— Swords to City Centre Core Bus Corridor Scheme

250m Study Area

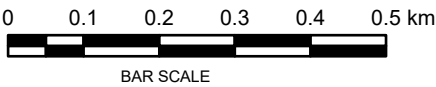
GSI National Groundwater Vulnerability

High

Moderate

1000

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[illegible]

Client

 **NTA**
Údarás Náisiúnta Iompair
National Transport Authority

Date
02/05/2023

Project Code
BCIDE

| | |
|-----------------|---------|
| Scale @ A3 | 1:10000 |
| Originator Code | JAC |

Consultant

Jacobs
ARUP SYSTRA

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| Drawn |
| FG |
| QMS Code |

Checked
PW

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| Approved DK | |
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Programme Title **BUSCONNECTS DUBLIN
CORE BUS CORRIDORS INFRASTRUCTURE WORKS**

Figure Title
Swords to City Centre Core Bus Corridor Scheme
Figure 14.14
Groundwater Vulnerability

Drawing File Name
BCIDE-JAC-ENV GT-0002 XX 00-DR-GG-0805

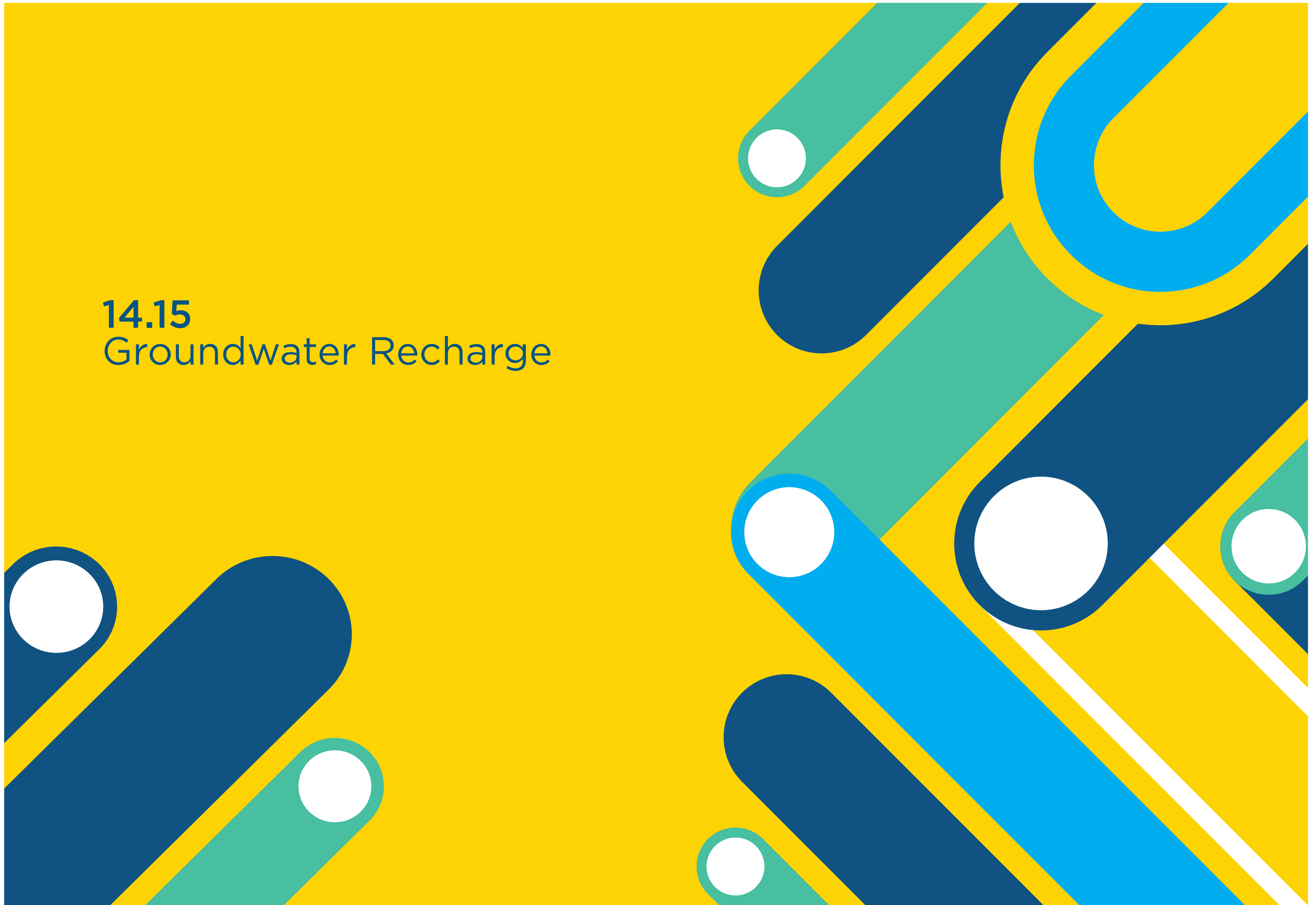
Sheet Number
5 of 5

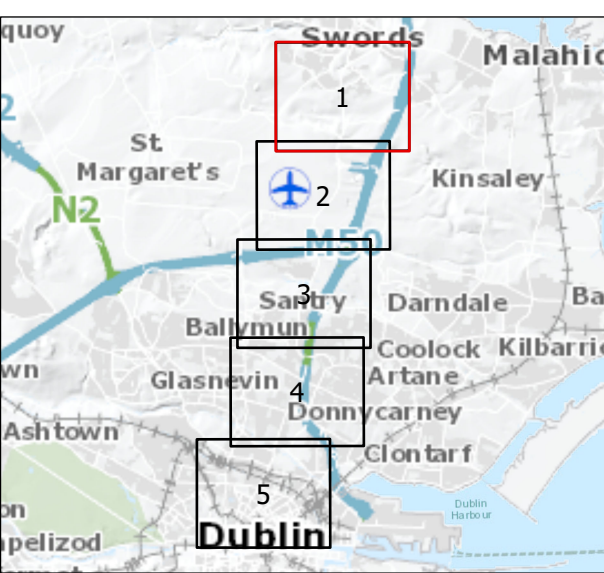
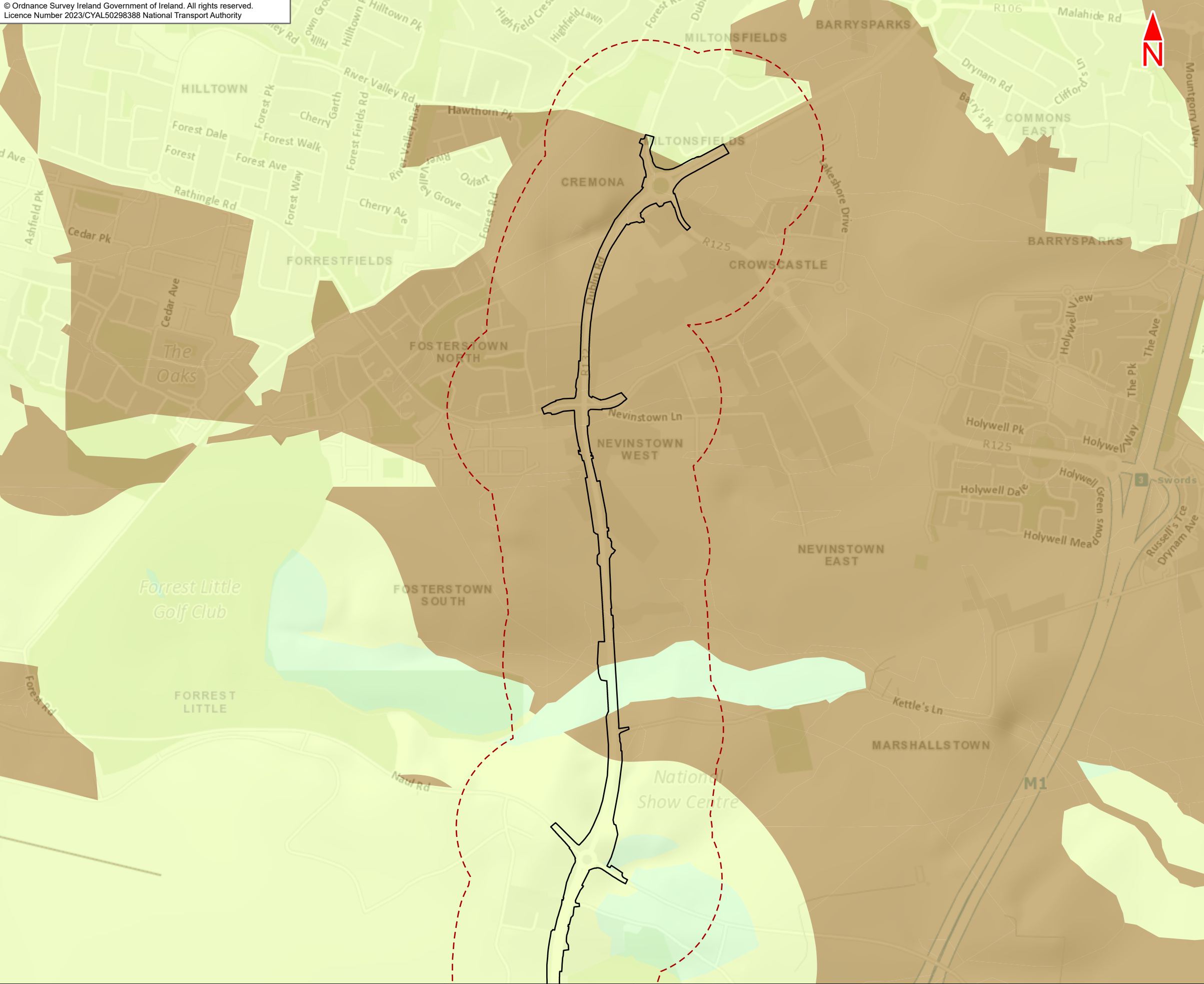
Status
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Rev
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14.15

Groundwater Recharge

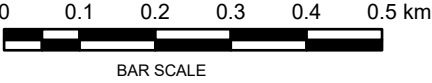




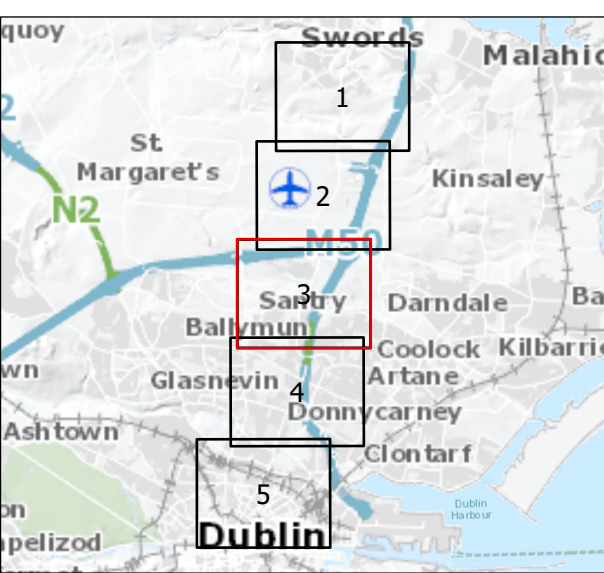
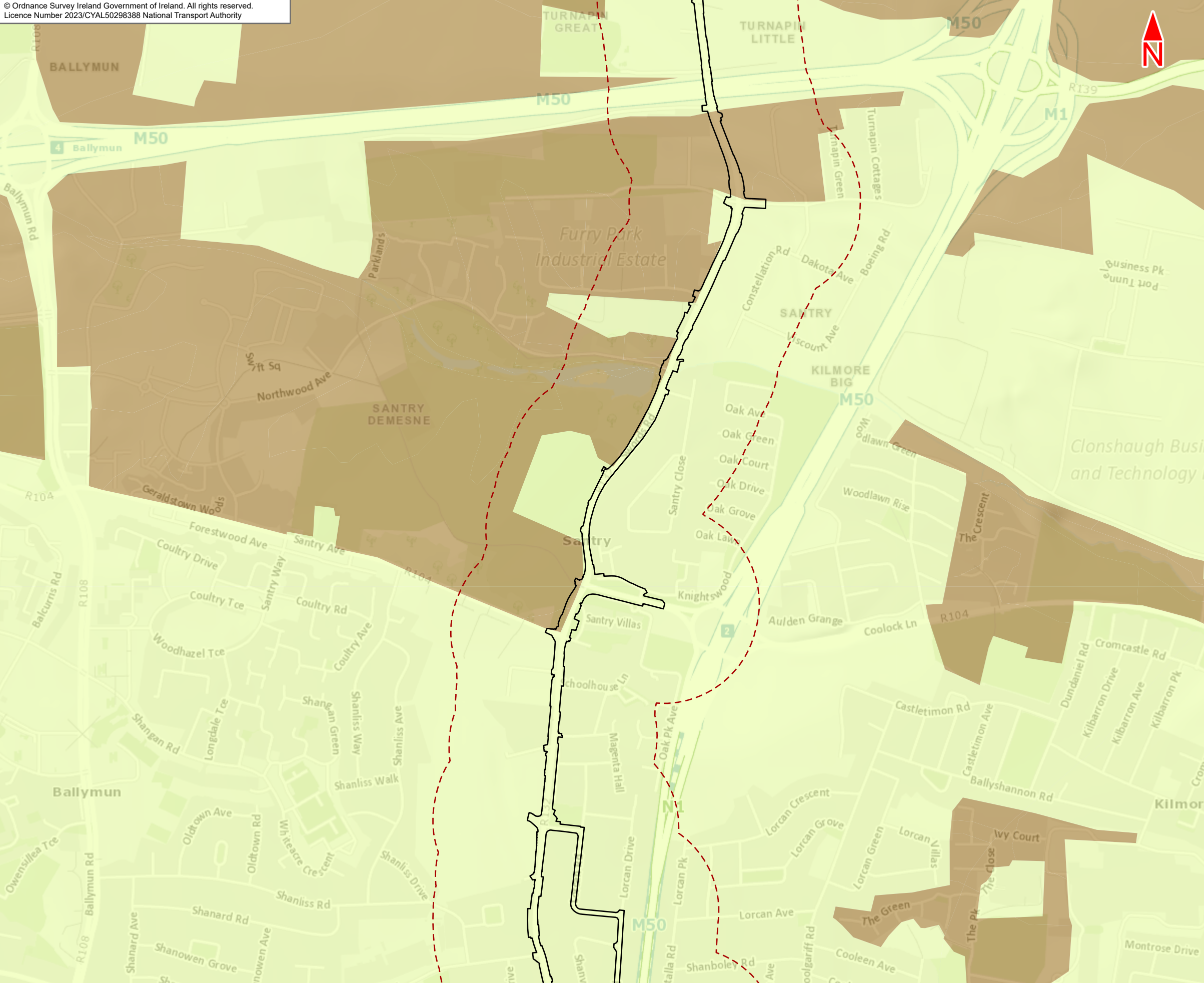
Legend :

- Swords to City Centre Core Bus Corridor Scheme
- 250m Study Area
- GSI Groundwater Recharge**
- Annual Recharge (mm)**
- 151-200 mm
- 51-100 mm
- 1-50 mm

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Legend :

— Swords to City Centre Core Bus Corridor Scheme

- - - 250m Study Area

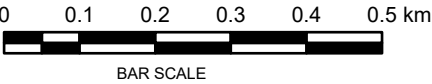
GSI Groundwater Recharge

Annual Recharge (mm)

51-100 mm

1-50 mm

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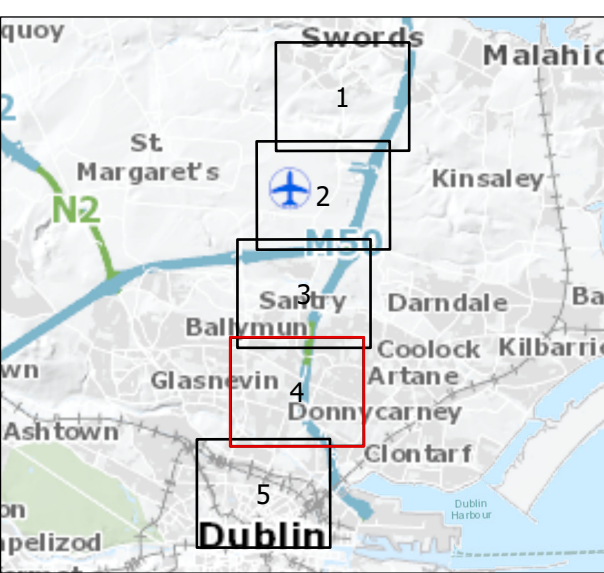
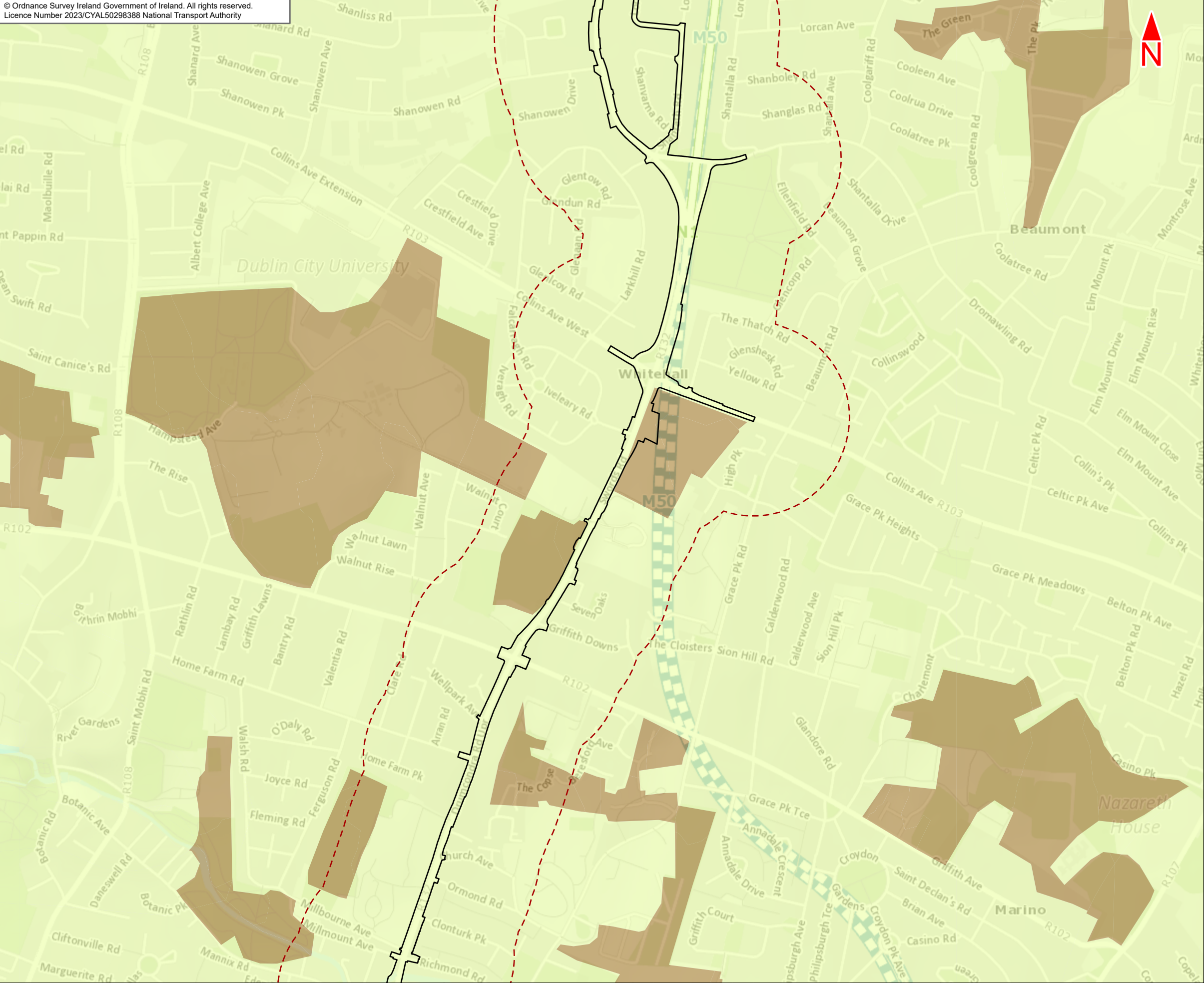
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| Rev | Date | Dn | Chk'd | App'd | Description |
|-----|--------|----|-------|-------|------------------------------|
| M01 | May 23 | FG | PW | DK | ISSUE FOR PHASE 4 : PLANNING |
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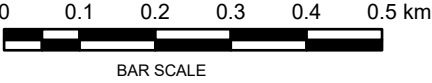
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| Client | | Consultant | | |
| NTA Údarás Náisiúnta Iompair National Transport Authority | | Jacobs ARUP SYSTRA | | |
| Date | 02/05/2023 | Scale @ A3 | 1:10000 | Drawn FG |
| Project Code | BCIDE | Originator Code | JAC | Checked PW |
| | | Approved DK | | |
| | | QMS Code | | |

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| Programme Title | | | | |
| BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | |
| Drawing Title | | | | |
| Swords to City Centre Core Bus Corridor Scheme Figure 14.15 Groundwater Recharge | | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0903 | Sheet Number | 3 of 5 | Status A |
| Rev | M01 | | | |



- Legend :
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - GSI Groundwater Recharge
 - Annual Recharge (mm)
 - 151-200 mm
 - 51-100 mm
 - 1-50 mm

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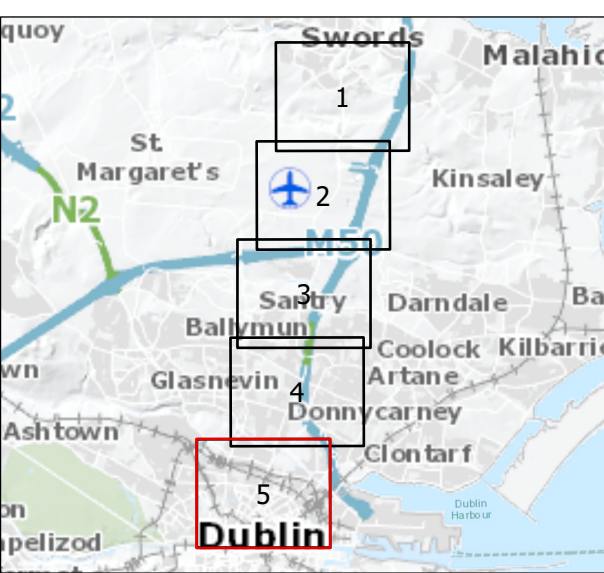
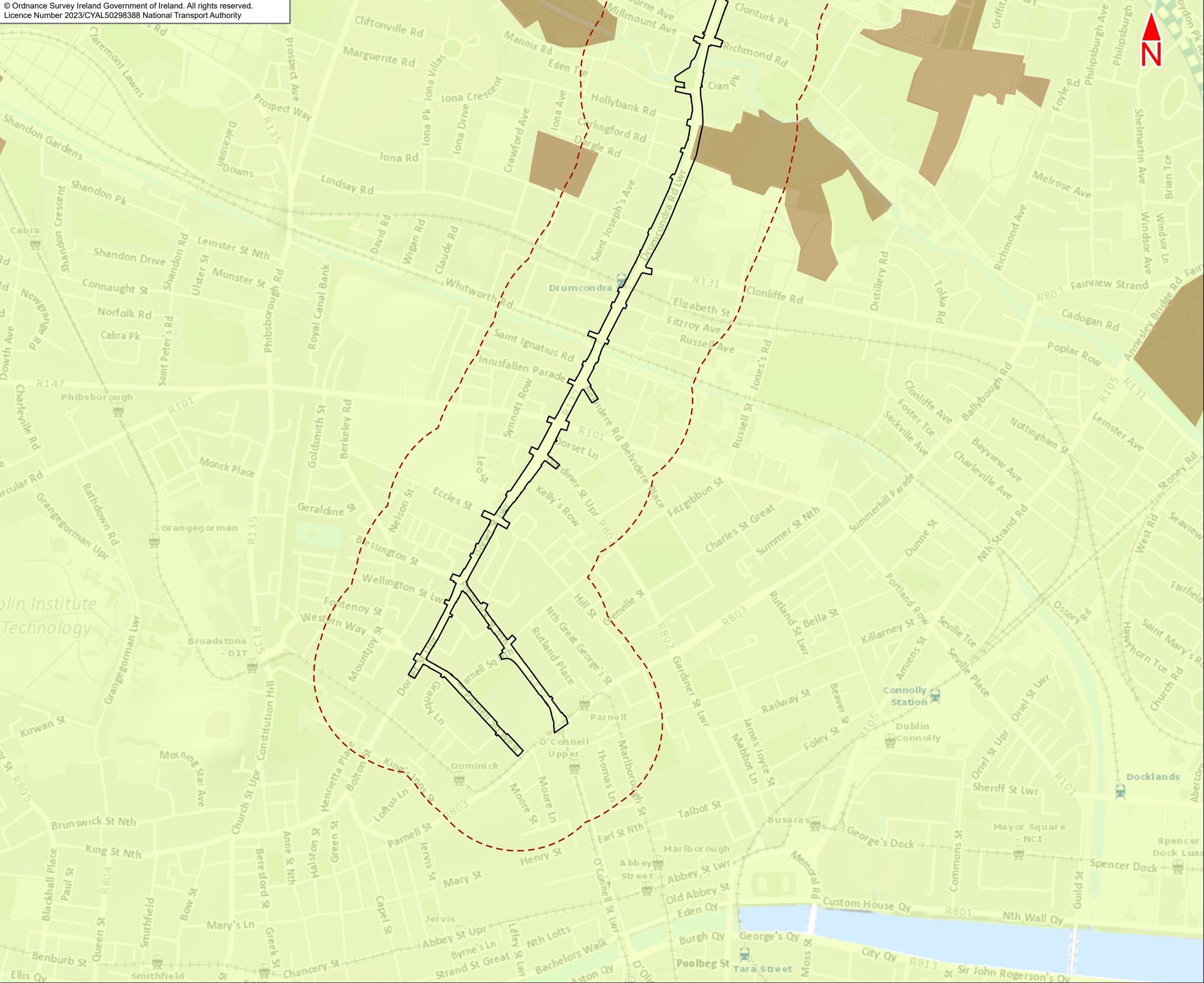


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| Client | |
|  Udarás Náisiúnta Iompair National Transport Authority | |
| Date | 02/05/2023 |
| Scale @ A3 | 1:10000 |
| Project Code | BCIDE |
| Originator Code | JAC |

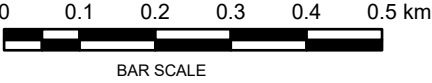
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| Consultant | | |
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| Drawn | FG | Checked |
| | | PW |
| Approved | DK | |
| QMS Code | | |

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|----------------------------------------------------------------------------------------|----------------------------------------|--------------|--------|--------|
| Programme Title | | | | |
| BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | |
| Drawing Title | | | | |
| Swords to City Centre Core Bus Corridor Scheme Figure 14.15 Groundwater Recharge | | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0904 | Sheet Number | 4 of 5 | Status |
| | | | | A |
| Rev | M01 | | | |



- Legend :
- Swords to City Centre Core Bus Corridor Scheme
 - 250m Study Area
 - GSI Groundwater Recharge
 - Annual Recharge (mm)
 - 51-100 mm
 - 1-50 mm

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b. This drawing is to be used for the design element identified in the title block. Other information shown is to be considered indicative only. The drawing is to be read in conjunction with all other relevant design drawings.
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Transverse Mercator Grid (ITM) as defined by OSI active local GPS station.
d. Information concerning the position of apparatus shown on this drawing is based on drawings supplied by the utility owners and/or the utility works contractor, whilst every care has been taken in the preparation of this drawing, positions should be taken as approximate and are intended for general guidance only and no representation is made by the NTA as to the accuracy, completeness, sufficiency or otherwise of this drawing and the position of the apparatus. The information contained herein does not purport to be comprehensive or final as the apparatus is subject to being altered and/or superceded. Recipients should not rely on this information. Any liabilities are hereby expressly disclaimed.

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| Rev | Date | Dwn | Chk'd | App'd | Description |
|-----|--------|-----|-------|-------|------------------------------|
| M01 | May 23 | FG | PW | DK | ISSUE FOR PHASE 4 : PLANNING |
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|-----------------------------------------------------------------|------------|----------------------|---------|----------|
| Client | | Consultant | | |
| NTA Udarás Náisiúnta Iompair National Transport Authority | | Jacobs ARUP SYSTR | | |
| Date | 02/05/2023 | Scale @ A3 | 1:10000 | Drawn |
| Project Code | BCIDE | Originator Code | JAC | QMS Code |
| | | | | |

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|----------------------------------------------------------------------------------------|----------------------------------------|--------------|--------|--------|
| Programme Title | | | | |
| BUSCONNECTS DUBLIN CORE BUS CORRIDORS INFRASTRUCTURE WORKS | | | | |
| Drawing Title | | | | |
| Swords to City Centre Core Bus Corridor Scheme Figure 14.15 Groundwater Recharge | | | | |
| Drawing File Name | BCIDE-JAC-ENV_GT-0002_XX_00-DR-GG-0905 | Sheet Number | 5 of 5 | Status |
| | | | | A |
| Rev | M01 | | | |