





### N3 Virginia Bypass

## Option Selection Report Volume 4: Stage 1 Assessment Appendices



May 2023







### **Document Control Sheet**

| Client:         | Cavan County Council  |
|-----------------|---|
| Project Title:  | N3 Virginia Bypass  |
| Document Title: | Option Selection Report Volume 4: Stage 1 Assessment Appendices |
| File Name:      | 19408-BT-GN-XX-RP-Z_2003_Option Selection Report Volume 4       |

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|                               |                            |                             |                     |                  |

|                          | Document         | Revision            |                      |                       | Documen                        | t Verification                 | 1                                |
|--------------------------|------------------|---------------------|----------------------|-----------------------|--------------------------------|--------------------------------|----------------------------------|
| Issue Date<br>(DD/MM/YY) | Revision<br>Code | Suitability<br>Code | Author<br>(Initials) | Checker<br>(Initials) | Reviewer As Per PMP (Initials) | Approver As Per PMP (Initials) | Peer Review<br>(Initials or N/A) |
|                          | Add              | hyperlink to Ve     | erification Ema      | il on PIM Reg         | ister for each                 | issue                          |                                  |
| 27/10/2021               | P01              | S3                  | Various              | Various               | тс                             |                                |                                  |
| 19/07/2022               | C01              | A2                  | AS / EZ              | EZ                    | тс                             | TC                             |                                  |
| 11/05/2023               | C02              | A2                  | EZ                   | тс                    | тс                             | TC                             |                                  |
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# Overarching Structure of Option Selection Report

| Volume Ref. No. & Title                           | Contents  |
|---|---|
| Volume 0 – Executive Summary                      |   |
| Volume 1 – Main Report                            |   |
| Volume 2 – Drawings                               | Part A – Corridor Drawings  Part B – Constraints and Environmental Drawings   |
| Volume 3 – Constraints Study Report               | Main Report   |
| Volume 4 – Stage 1 Assessment<br>Appendices       | Assessment Part A – Not Used Part B – Assessment Scoring Matrix  vironmental Appraisal Main Report & Associated Appendices  Part A – Assessment of Alternatives Part B – Traffic Modelling Report Part C – Not Used Part D – Not Used |
| Report  | Main Report & Associated Appendices   |
| Volume 6 – Engineering Appendices                 | Part B – Traffic Modelling Report  Part C – Not Used  |
| Volume 7 – Project Appraisal Balance Sheet (PABS) | Part C – Not Used Part D – Not Used Part E – RSA Stage F Part 1 Report Part F – RSA Stage F Part 2 Report Part G – Road Safety Impact Assessment Part H – Geotechnical SOI & PSSR  PARS   |



#### Part A - Not Used





## Part B – Assessment Scoring Matrix



| 5.4km 1-   | 19.2km >19.2km<br>-15 >15<br>2km <2km | 14.6<br>10<br>4                                 | 15.9   | 15.9   | 17.1                                  | 19.5                                  |                       | t Option 7 Orange West |   |           |                          | 01   | 04                 | US  | 04                        | - 03   | 04                     | 03   | 09            | 09                    | 00                       | End       | 09                    | End       | 01                             | End                         | 00                    | 00                    | Link 15                                      |
|--|---------------------------------------|---|--|--|---------------------------------------|---------------------------------------|-----------------------|------------------------|---|-----------|--------------------------|--|--------------------|---|---------------------------|--|------------------------|--|---------------|-----------------------|--------------------------|-----------|-----------------------|-----------|--------------------------------|-----------------------------|-----------------------|-----------------------|--|
| <12 12 12 13 14 15 15 14 15 15 14 15 15 14 15 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16 | - 15 >15<br>2km <2km                  | 10  | 15.9   | 15.9   | 17.1                                  | 19.5                                  |                       |                        |   |           | 1                        |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
| <12 12 12 13 14 15 15 14 15 15 14 15 15 14 15 15 15 16 16 16 16 16 16 16 16 16 16 16 16 16 | - 15 >15<br>2km <2km                  | 10  | 13   | 11   | 17.1                                  |                                       |                       |                        |   | 22.0      | 16.0                     | 10.1   | 17.1               | 16.0  | 16.9                      | 16.7   | 17.6                   | 16.6   | 22.5          | 21.4                  | 10.5                     | 20.0      | 21.0                  | 22.0      | 16.5                           | 16.3                        | 10.5                  | 10.0                  | 16.1   |
| 5.4km 1-   | 2km <2km                              | 4   |  |  | 9                                     | 13                                    | 18.2                  | 20.6                   | 17  | 19        | 16.0<br>14               | 10   | 12                 | 12  | 9                         | 16.7   | 17.6                   | 10   | 23.5          | 18                    | 19.5                     | 20.9      | 18                    | 18        | 9                              | 10.3                        | 18.5                  | 18.9<br>14            | 10.1   |
| 5.4km 5.4 -  |                                       | 3.2   | 2  | 2  | 2                                     | 2                                     | 2                     | 2                      | 2   | 2         | 2                        | 4  | 2                  | 2   | 2                         | 2  | 2                      | 2  | 2             | 2                     | 2                        | 2         | 2                     | 2         | 4                              | 2                           | 2                     | 2                     | 2  |
| <3 3   |                                       |   | 0.9  | 0.9  | 0.3                                   | 0.5                                   | 0.0                   | 0.0                    | 0.3   | 0.3       | 0.9                      | 3.6  | 0.3                | 1.3   | 0.3                       | 0.4  | 0.3                    | 0.4  | 0.3           | 0.0                   | 0.3                      | 0.3       | 0.0                   | 0.3       | 2.1                            | 0.5                         | 0.0                   | 1.2                   | 0.9  |
| <3 3   |                                       | 1.35  | 0.9  | 0.9  | 0.9                                   | 0.9                                   | 0.9                   | 0.9                    | 0.9   | 0.9       | 0.9                      | 1.35   | 0.9                | 0.9   | 0.9                       | 0.9  | 0.9                    | 0.9  | 0.9           | 0.9                   | 0.9                      | 0.9       | 0.9                   | 0.9       | 1.35                           | 0.9                         | 0.9                   | 0.9                   | 0.9  |
|  | 6.6km >6.6km                          | 4.3   | 5.0  | 5.3  | 5.1                                   | 5.6                                   | 4.8                   | 6.1                    | 7.1   | 8.5<br>0  | 7.7<br>0                 | 3.6<br>0   | 5.3                | 6.1   | 4.5<br>0                  | 6.4  | 6.4                    | 5.8  | 10.2          | 7.5                   | 6.6                      | 7.2<br>0  | 6.5                   | 7.9       | 4.7<br>0                       | 4.8<br>0                    | 6.5                   | 6.0                   | 4.4<br>0                                     |
|  | - 6 >6                                | 7   | 5  | 3  | 3                                     | 4                                     | 1                     | 1                      | 1   | 2         | 3                        | 7  | 3                  | 3   | 3                         | 3  | 3                      | 3  | 2             | 2                     | 1                        | 1         | 2                     | 1         | 5                              | 3                           | 1                     | 1                     | 3  |
| 0 1  |                                       | 3   | 1  | 1  | 1                                     | 1                                     | 1                     | 1                      | 2   | 0         | 1                        | 3  | 1                  | 1   | 1                         | 1  | 1                      | 1  | 1             | 1                     | 1                        | 2         | 1                     | 0         | 3                              | 1                           | 2                     | 2                     | 1  |
| <10 11   | - 20 >20                              | 5   | 8  | 9  | 7                                     | 6                                     | 13                    | 11                     | 11  | 10        | 7                        | 6  | 6                  | 9   | 8                         | 10   | 7                      | 9  | 8             | 10                    | 10                       | 9         | 10                    | 9         | 6                              | 6                           | 12                    | 12                    | 5  |
|  |                                       | unknown   | unknown  | unknown  | unknown                               | unknown                               | unknown               | unknown                | unknown   | unknown   | unknown                  | unknown  | unknown            | unknown                                       | unknown                   | unknown  | unknown                | unknown  | unknown       | unknown               | unknown                  | unknown   | unknown               | unknown   | unknown                        | unknown                     | unknown               | unknown               | unknown                                      |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
| 0,000m <sup>3</sup> ±250,0<br>±1,000   | 00m3 -<br>,000m3 >±1,000,000r         | -683,195  | -108,044   | 576,374  | 618,645                               | 647,195                               | 405,495               | 3,767,614              | 1,344,245   | 1,673,102 | 129,564                  | -688,493   | 176,579            | 530,227                                       | 370,388                   | 607,820  | 683,773                | 506,098  | 1,900,242     | 1,447,056             | 1,065,968                | 1,170,976 | 2,799,584             | 1,547,093 | 295,239                        | 506,730                     | 777,215               | 827,802               | 729,239                                      |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
| <8.7 8.7   | - 9.3 >9.3                            | 10.312  | 10.236   | 9.050  | 8.345                                 | 8.435                                 | 9.126                 | 8.703                  | 8.529   | 8.357     | 9.534                    | 10.601   | 9.215              | 9.288   | 8.815                     | 8.721  | 9.146                  | 8.417  | 9.155         | 8.632                 | 8.526                    | 8.564     | 8.524                 | 8.570     | 9.229                          | 8.772                       | 8.740                 | 9.055                 | 9.060  |
|  |                                       | 6   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  | 1             |                       |                          |           |                       |           |                                |                             |                       |                       | 6  |
|  |                                       |   |  |  |                                       |                                       | -                     |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       | 1   | 4  | 5  | 5                                     | 6                                     | 7                     | 5                      | 3   | 1         | 4                        | 1  | 6                  | 8   | 6                         | 7  | 7                      | 6  | 3             | 2                     | 4                        | 2         | 3                     | 1         | 3                              | 5                           | 8                     | 9                     | 5  |
|  |                                       | 4   | 1  | 0  | 0                                     | 1                                     | 0                     | 3                      | 4   | 4         | 2                        | 4  | 0                  | 0   | 0                         | 0  | 0                      | 0  | 4             | 4                     | 2                        | 4         | 3                     | 4         | 2                              | 0                           | 0                     | 0                     | 0  |
|  |                                       | 2 182   | 2.455  | 2 545  | 2 545                                 | 2 273                                 | 2 364                 | 2,000                  | 2,000   | 2 182     | 2 273                    | 2 182  | 2 455              | 2 273   | 2 455                     | 2 364  | 2 364                  | 2.455  | 2,000         | 2 091                 | 2 273                    | 2.091     | 2 182                 | 2 182     | 2 364                          | 2 545                       | 2 273                 | 2 182                 | 2.545  |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       | 4   | 9  | 4  | 3                                     | 3                                     | 3                     | 4                      | 3   | 2         | 5                        | 5  | 5                  | 3   | 1                         | 5  | 3                      | 4  | 4             | 5                     | 1                        | 3         | 2                     | 4         | 3                              | 0                           | 1                     | 1                     | 1  |
|  |                                       | 0   | 0  | 0  | 0                                     | 0                                     | 0                     | 0                      | 0   | 0         | 0                        | 0  | 0                  | 0   | 0                         | 0  | 0                      | 0  | 0             | 0                     | 0                        | 0         | 0                     | 0         | 0                              | 0                           | 0                     | 0                     | 0  |
|  |                                       | No  | No   | No   | Yes                                   | No                                    | No                    | No                     | No  | No        | No                       | No   | No                 | No  | No                        | Yes  | Yes                    | Yes  | No            | No                    | No                       | No        | No                    | No        | Yes                            | No                          | No                    | No                    | No   |
|  |                                       | No  | No   | No   | No                                    | No                                    | Yes                   | Yes                    | Yes   | Yes       | Yes                      | No   | No                 | No  | No                        | No   | No                     | No   | Yes           | Yes                   | Yes                      | Yes       | Yes                   | Yes       | No                             | No                          | Yes                   | Yes                   | No   |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       | 544   | 263  | 175  | 177                                   | 214                                   | 227                   | 266                    | 181   | 239       | 208                      | 438  | 220                | 165   | 167                       | 185  | 183                    | 188  | 260           | 198                   | 230                      | 263       | 188                   | 222       | 344                            | 154                         | 190                   | 206                   | 156  |
|  |                                       | 3   | 3  | 1  | 2                                     | 1                                     | 3                     | 3                      | 3   | 1         | 2                        | 4  | 2                  | 0   | 1                         | 1  | 2                      | 2  | 3             | 4                     | 1                        | 1         | 2                     | 2         | 2                              | 0                           | 0                     | 0                     | 1  |
|  |                                       | 19  | 27   | 15   | 11                                    | 10                                    | 10                    | 26                     | 10  | 17        | 21                       | 19   | 19                 | 13  | 8                         | 17   | 11                     | 14   | 15            | 12                    | 17                       | 25        | 13                    | 17        | 10                             | 7                           | 19                    | 18                    | 6  |
|  |                                       | 140   | 50   | 27   | 42                                    | 56                                    | 60                    | 50                     | 46  | 67        | 40                       | 92   | 42                 | 20  | 42                        | 41   | 45                     | 44   | 69            | 49                    |                          | 61        | 42                    | 47        | 69                             | 26                          | 46                    | 62                    | 39   |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       | 195   | 70   | 52   | 52                                    | 68                                    | 65                    | 60                     | 47  | 70        | 57                       | 201  | 71                 | 50  | 55                        | 48   | 52                     | 50   | 65            | 48                    | 67                       | 62        | 57                    | 69        | 170                            | 61                          | 41                    | 46                    | 56   |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       | 0   | 0  | 0  | 0                                     | 0                                     | 0.08                  | 0.02                   | 0   | 0         | 0                        | 0  | 0                  | 0   | 0                         | 0  | 0                      | 0  | 0             | 0.08                  | 0                        | 0         | 0.02                  | 0         | 0                              | 0                           | 0.02                  | 0.02                  | 0  |
|  |                                       | 0   | 0  | 0  | 0                                     | 0                                     | 0.86                  | 0                      | 0   | 0         | 0.38                     | 0  | 0                  | 0   | 0                         | 0  | 0                      | 0  | 0             | 0                     | 0.37                     | 0         | 0                     | 0         | 0                              | 0                           | 0                     | 0                     | 0  |
|  |                                       | 0.39  | 0.48   | 0.53   | 0.39                                  | 0.34                                  | 0.11                  | 0.15                   | 0.06  | 0.05      | 0.12                     | 0.39   | 0.63               | 0.45  | 0.37                      | 0.19   | 0                      | 0.37   | 0.05          | 0.16                  | 0.06                     | 0.06      | 0.31                  | 0         | 0                              | 0.49                        | 0.08                  | 0.17                  | 0.38   |
|  |                                       | 10, 26, 27, 32, 34                              | 6, 19, 31, 26, 27  | 6, 12, 19, 25  | 12, 18                                | 5, 7, 8, 16, 17, 21, 25               | 36, 38, 35            | 3, 2, 44, 41, 40       | 39, 36  | 3, 43     | 6, 12, 33, 32            | 10, 26, 27, 19, 32, 34                             | 12, 18, 31, 26, 27 | 6, 12, 19, 25                                 | 12, 18. 25                | 6, 12  | 13                     | 6, 12, 18  | 3, 43, 39, 36 | 3, 43, 38, 35         | 39, 36                   | 39, 36    | 3, 2, 44, 41, 40      | 3, 43     | 10, 34                         | 12, 18, 25                  | 39, 36                | 39, 36                | 12, 19, 25                                   |
|  |                                       | Major impact on C                               |  |  |                                       |                                       |                       |                        |   |           |                          | Major impact c = 2                                 |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           | Adjacent to Killyconny Bog     |                             |                       |                       |  |
|  |                                       | Blackwater, Minor impact                        |  | impact site 12. Mod impact   | ct SAC. Major impact on site          | og<br>es                              | Lough Ramor pNHA and  | Crosses Boyne SAC/SPA  |   |           | Impacts on L. Ramor pNHA | Blackwater, Minor impac                            |                    | Mod. Impact site 6. Major<br>impact sites 12, | Major impact on site 12 & | Adjacent to Killyconny Bog<br>SAC. Mod. Impact site 6. |                        | g SAC. Mod impact sites 6 &                            |               | Crosses Boyne SAC/SPA | Impacts on L. Ramor pNHA |           | Crosses Boyne SAC/SPA |           | Blackwater. Minor impact       | Major impact on site 12, 18 | Crosses Boyne SAC/SPA | Crosses Boyne SAC/SPA | Major impact Site 12.<br>Mod impact site 19. |
|  |                                       | site 10. Major impact sites<br>34, 32, 26 & 27. |  | one 19. Major impact site<br>25.   | 12 & 18.                              |                                       | crosses Boyne SAC/SPA |                        |   |           | 1                        | site 10. Major impact site<br>34, 19, 32, 26 & 27. | 18, 26 & 27.       | 19 & 25.                                      | as. Mod impact site 25.   | Major impact site 12.                                  | эм Mod impact site 13. | <ol> <li>Major impact site 18 (B<br/>site).</li> </ol> | `[            |                       |                          |           |                       |           | site 10. Major impact site 34. | & .D.                       |                       |                       | Major impact site 25.                        |
|  |                                       | 3   | 1  | 1  | 1                                     | 1                                     | 1                     | 1                      | 2   | 0         | 1                        | 3  | 1                  | 1   | 1                         | 1  | 1                      | 1  | 1             | 1                     | 1                        | 2         | 1                     | 0         | 3                              | 1                           | 2                     | 2                     | 1  |
|  |                                       | 5   | 8  | 9  | 7                                     |                                       |                       | 11                     | 11  |           |                          |  | 6                  | 9   |                           |  | 7                      | 9  | 8             |                       |                          | 9         |                       | 9         | 6                              | 6                           |                       |                       | S  |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    | 0   |                           |  |                        |  |               |                       |                          |           |                       |           | -                              |                             |                       |                       | 0  |
|  |                                       |   | ,  |  |                                       | ,                                     |                       |                        |   |           |                          |  | ·                  | ,   |                           |  |                        | · ·  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
| <2 2   | -4 >4                                 | 3.44  | 4,42   | 7.00   | 5.46                                  | 7.2                                   | 0.37                  | 0.81                   | 0.27  | 0.77      | 2.29                     | 4.12   | 5.57               | 6.38  | 6.42                      | 4.21   | 3.58                   | 5.4  | 0.52          | 0.77                  | 0.62                     | 0.27      | 0.95                  | 0.69      | 4.29                           | 7.00                        | 0.4                   | 0.4                   | 6.86   |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       |   |  |  |                                       |                                       |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       |   |  |  | 1                                     | 1                                     |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       | 3   | 2  | 1  | 1                                     | 1                                     | 3                     | 2                      | 1   | 1         | 3                        | 3  | 1                  | 1   | 1                         | 1  | 2                      | 1  | 1             | 3                     | 3                        | 1         | 2                     | 1         | 3                              | 1                           | 2                     | 2                     | 1  |
|  |                                       |   |  |  | 1                                     | 1                                     |                       |                        |   |           |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |
|  |                                       | 2 2-4 >4  | 6 1 1 4 2.182  4 0 0 No No No 1 544 3 29 140 295 0 0 0 0 0,39 10,26,27,32,34 Major impact on R. sets of the set of the se | 6 6 6  1 1 4  4 1  2.182 2.455  4 9 0 0 0 No N | 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 | 1                     |                        | 1 4 5 5 6 7 5 5 7 5 7 | 1         |                          |  |                    |   |                           |  |                        |  |               |                       |                          |           |                       |           |                                |                             |                       |                       |  |

| Option Reference   |         | Parameters  | Option 1 Red East  | t Option 2 Purple E                        | East Option 3 Cyan East                       | st Option 4 Blue East                            | Option 5 Light Green<br>East                     | Option 6 Magenta We      | Vest Option 7 Orange West  | Option 8 Blue West                       | . Option 9 Red West                      | est Option 10 Yellow East                    | Link 1 East - Option 01                           | Link 2 East - Option 02-                               | Link 3 East – Option 03-<br>03               | Link 4 East – Option 05-                          | Link 5 East - Option 04-                               | ink 6 East – Option 04- 1                                | ink 7 East – Option 04-                           | 04- Link 8 West - Option 08- Lin<br>09   | 8- Link 9 West - Option 06- Li<br>09   | ink 10 West - Option 08 1 | 08 Link 11 West – Option 08-L<br>End | 08-Link 12 West - Option 07- | n 07-Link 13 West – Option 09-<br>End            | n 09- Link 14 East – Option 04-<br>01            | 04- Link 15 East - Option 03-<br>End | 03- Link 16 West - Option 07-<br>06              | 1 07- Link 17 West - Option 08- L<br>06         | 08- Link 18 East - Option 03-<br>Link 15 |           |
|--|---------|-------------|--------------------|--|---|--|--|--------------------------|--|--|--|--|---|--|--|---|--|--|---|--|--|---------------------------|--------------------------------------|------------------------------|--|--|--------------------------------------|--|---|--|-----------|
| nents  | GREEN   | AMBER RED   |                    |  |   |  |  |                          |  |  |  |  |   |  |  |   | 1  |  | 1   |  | 1                                      | 1                         | 1                                    |                              |  |  |                                      |  |   |  | $\top$    |
| OLOGY, ARCHITECTURAL & CULTURAL  | +       |             |                    | _  |   |  |  |                          |  | _  |  |  |   |  |  |   |  |  |   |  |  |                           |                                      |                              | <u> </u>   | <u> </u>   |                                      |  | _   |  |           |
| E  | +       |             |                    |  |   |  |  | 4                        |  |  |  |  | 4   |  |  |   | $\overline{}$  |  |   |  |  |                           |                                      |                              |  |  |                                      | 4  | 4   | 4  | 4         |
| gy, Architectural and Cultural Heritage -<br>acts directly within alignment footprint  |         | 1           | ,                  | 0  | 0   | ,  | 1 '  | 0                        | 0  | 0  | 0  | 1  | ,   | ,  | , I  | 1 2   | 1 0  | 0  | 1 ,   |  | 1 ,                                    | 1 0                       | 0                                    | 1 ,                          | 1 ,  | 1  | , ,                                  | 0  |   | 0  |           |
| of archaeological sites & designed   |         |             | -                  | Ĭ  | , i   |  | · '  | l ĭ                      | _   '  | 1  | Ĭ  | '  | •   | '  | 1 1  |   | 1  | 1  | 1 '   | 1  | 1 1                                    | 1                         | 1 ,                                  | Ι .                          | 1 '  | 1 .  | 1 .                                  | _   ·  | "   | 1  |           |
| logy. Architectural and Cultural Heritage -  | 1       | 1           | +                  | _  |   | +  | +  |                          | +  |  | +  | +  | +   | +  |  | ·   | 1  | 1  |   | +  | 1                                      | T                         | 1                                    |                              |  | <u> </u>   |                                      | <del>                                     </del> |   |  | +         |
| acts within 300m design corridor (incl.  |         | 1           |                    |  |   |  | ·   '  |                          | 1  | 1  |  | '  |   | '  | 1  | 1   | 1  | 1  | 1   | 1  | 1                                      | 1                         | 1 '                                  | 1                            | '  | 1  | 1                                    |  | 1   | 1  |           |
| farchaeological sites & designed landscapes)   | 1       |             | 8                  | 10   | 5   | 4  | 10   | 11                       | - 6  | 8  | 12                                       | 8  | 9   | 8  | 7  | 6   | 8  | 4  | 7 '   | 20   | 15                                     | 7                         | 10                                   | 7                            | 11   | 7  | 5                                    | - 6  | 6   | 1  | _         |
| TURE   |         | 1           |                    |  |   |  |  | A = 7                    |  | 4  |  | 4 7  |   |  |  |   |  |  |   |  |  |                           | 4                                    |                              | 4  |  | 4                                    |  | 4   |  | 4         |
| ure (Length of option within Agricultural  |         | 1           | 14.46              | 15.18                                      | 14.64   | 15.59  | 18.56  | 17.29                    | 19.77  | 20.77                                    | 22.34                                    | 15.07  | 14.94   | 15.51  | 14.98  | 15.25   | 15.81  | 17.33  | 15.07   | 22.86  | 20.25                                  | 19.03                     | 20.48                                | 20.14                        | 22.47  | 16.24  | 13.72                                | 17.88  | 18.19   | 13.89                                    | Т         |
| ure (Length of option within improved  | +       |             | 12.90              | 10.18                                      | 10.59   | 12.12  | 12.68  | 15.76                    | 17.39  | 19.55                                    | 20.05                                    | 12.59  | 12.74   | 12.23  | 10.96  | 11.18   | 12.87  | 13.95  | 11.96   | 21.28  | 18.42                                  | 17.99                     | 19.78                                | 17.91                        | 20.33  | 13.72  | 9.86                                 | 17.00  | 17.25   | 9.22                                     | +         |
| d/arable land  | ++      | +-          |                    |  |   |  |  |                          |  |  |  |  |   |  |  |   |  |  |   |  |  |                           |                                      |                              |  |  |                                      |  |   |  | +         |
| are - farmhouse properties - direct hits   |         |             | 0                  | 0  | 1   | 0  | 2  | 1.00                     | 1  | 0  | 2  | 2  | 0   | 0  | 0  | 0   | 0  | 0  | 0   | 2  | 2                                      | 0                         | 0                                    | 1                            | 2  | 0  | 0                                    | 0  | 0   | 1  |           |
| ure - farmyard buildings - direct hits   | $\perp$ |             | 2                  | 5  | 4   | 4  | 3  | 1.00                     | 3  | 2  | 1  | 2  | 5   | 5  | 5  | 2   | 6  | 4  | 3   | 1  | 1                                      | 2                         | 2                                    | 2                            | 1  | 3  | 2                                    | 2  | 1   | 3  | -         |
| are - key agricultural constraints on option   |         |             | 1                  | 3  | 3   | 4  | 4  | 6.00                     | 2  | 6  | 5  | 4  | 1   | 3  | 4  | 4   | 6  | 4  | 5   | 3  | 4                                      | 6                         | 5                                    | 3                            | 5  | 4  | 3                                    | 6  | 8   | 2  | 1         |
| ture - Length of option on key agricultural<br>ints  |         |             | 0.45               | 1.25                                       | 1.04  | 1.42   | 0.65   | 2.65                     | 0.52   | 1.94                                     | 1.45                                     | 1.54   | 0.45  | 0.94   | 1.04   | 1.07  | 2.09   | 1.42   | 2.04  | 1.30   | 1.45                                   | 1.95                      | 1.94                                 | 1.07                         | 1.45   | 1.50   | 1.00                                 | 2.21   | 2.59  | 0.70                                     | T         |
| INITIES  | +       |             | +                  | +  | _   | +  | +  | +                        | +  |  | +  | +  | +   | +  |  | 1   | 1  | 1  |   |  | 1                                      | 1                         |                                      |                              | <del>                                     </del> | T  |                                      | +  | +   |  | _         |
| tial / Private Properties including  | + + + + | <del></del> |                    |  |   | <del></del>                                      |  |                          |  |  |  |  |   | <del></del> '  |  |   |  |  |   |  |  |                           | <del></del>                          |                              | <del></del>                                      | <del></del>                                      | <del></del>                          | <del></del>                                      |   |  |           |
| ses - direct hits  |         | 1-3 >3      | 1                  |  | 2   | 2  | 3  | 2                        | 3  | 0  | 3  |  | 1   | 2  | 1  | 0   | 3  | 2  | 2   | 3  |  | 0                         | 0                                    | 2                            | 3  | 2  | 0                                    | 0  | 0   | 1  | 4         |
| tial Gardens<br>nities severed   | <1      | 1-3 >3      |                    | 4  |   | •  | •  | 1                        | 2  | 3  | 2  | 3  | 4   | 4  | 1  | 0   | 1  | 0  | 1   | 2  | 3                                      | 1                         | 3                                    | 2                            | 2  | •  | 1                                    | 1  | 1   | 1  | 4         |
| nity impacts within 300m (schools, sports  | ++      |             |                    |  |   | 0  | 0  | 0                        | 0  |  | 4  | 4  |   | 0  |  | 0   |  | 0  |   | 0  |  | 0                         | 0                                    |                              |  | 0  | 0                                    |  |   | 0  |           |
| & churches etc)  | <1      |             |                    |  |   | -  | -  | -                        |  |  | 4  |  | 4   | -  |  |   |  |  |   | -  |  | -                         | -                                    |                              |  | -  | -                                    | •  |   | -  | 4         |
| Green  |         |             | 3                  | 2  | 4   | 5  | 5  | 3                        | 4  | 4  | 4  | 1  | 3   | 4  | 4  | 7   | 3  | 5  | 2   | 4  | 2                                      | 5                         | 6                                    | 2                            | 4  | 4  | 9                                    | 5  | 5   | 8  | 4         |
| Orange   |         |             | 3                  | 6  | 5   | 3  | 3  | 4                        | 5  | 4  | 3  | 5  | 2   | 5  | 4  | 2   | 4  | 5  | 5   | 4  | 1                                      | 3                         | 3                                    | 6                            | 3  | 3  | 0                                    | 2  | 2   | 2  | 4         |
|  |         |             |                    |  |   |  |  |                          |  | 4  |  |  |   | 4  |  |   |  |  |   |  |  |                           |                                      |                              |  |  | 4                                    |  |   | 4  | 4         |
| Red  |         |             | 5                  | 3  | 2   | 3  | 3  | 4                        | 2  | 3  | 4  | 5  | 6   | 2  | 3  | 2   | 4  | 1  | 4   | 3  | 8                                      | 3                         | 2                                    | 3                            | 4  | 4  | 2                                    | 4  | 4   | 1  | 4         |
| Average score  |         |             | 1.818              | 1.909                                      | 2.182   | 2.182  | 2.182  | 1.909                    | 2.182  | 2.091                                    | 2.000                                    | 1.636  | 1.727   | 2.182  | 2.091  | 2.455   | 1.909  | 2.364  | 1.818   | 2.091  | 1.455                                  | 2.182                     | 2.364                                | 1.909                        | 2.000  | 2.000  | 2.636                                | 2.091  | 2.091   | 2.636                                    | 4         |
|  |         |             |                    |  |   | 4  |  | 4                        |  |  | 4  | 4  | 4   | 4  |  |   |  |  |   |  |  |                           |                                      |                              |  |  |                                      |  | 4   |  | 4         |
| ated Total Scheme Cost (€m)  |         |             |                    |  |   |  |  |                          |  |  |  |  |   |  |  |   |  |  |   |  |  |                           |                                      |                              |  |  |                                      |  |   |  | 4         |
| ,  |         |             |                    |  |   |  |  |                          |  |  |  |  |   |  |  |   |  |  |   |  |  |                           |                                      |                              |  |  |                                      |  |   | 4  | 4         |
| Green  |         |             |                    | 4  | A = I   | 1  |  | 1                        |  | 4  | 4  | 1  |   | 1  | ( )  | 1   | 4  | 1  | 1   |  | 4                                      | 4                         | 4                                    | 4                            |  | 4  | 1                                    |  |   | 1  | 4         |
| Orange   |         |             | 1                  | 1  | 1   |  |  |                          |  |  |  |  |   |  | 1  |   | 1  |  |   |  | 4                                      | 1                         |                                      |                              |  | 1  |                                      | 1  | 1   |  | 4         |
| O.ogc  |         |             |                    | سب   |   | 4  |  | 4                        |  | 4  | 4  |  |   | 4  | $\longrightarrow$                            |   | <u> </u>   |  |   |  | +                                      |                           |                                      |                              | 4  | 4  | 4                                    | 4  |   | 4  | 4         |
| Red  |         |             |                    |  | A = 1   |  | 1  | 4                        | 1  | 1  | 1  |  | 1   | 4  |  |   | 4  |  |   | 1  | 1                                      |                           | 1                                    | 1                            | 1  | 4  | 4                                    |  |   | 4  | 4         |
| Average score  |         |             | 2.000              | 2.000                                      | 2.000   | 3.000  | 1.000  | 3.000                    | 1.000  | 1.000                                    | 1.000                                    | 3.000  | 1.000   | 3.000  | 2.000  | 3.000   | 2.000  | 3.000  | 3.000   | 1.000  | 1.000                                  | 2.000                     | 1.000                                | 1.000                        | 1.000  | 2.000  | 3.000                                | 2.000  | 2.000   | 3.000                                    | 4         |
|  |         |             | Average Scores v   | calculated based on                        | n the number of Green, Orange a               | and Peds. The average f                          |  | d in chaosine options. F | and one an indication of the   |  | h ontion for considerat                  |  |   | alculated based on the n                               |  | Pade The average score                            |  | - theories ontions, but g                                |   | overall performance of each opti   | - ation for consideration              |                           | alculated based on the               |                              | and Park. The average sr                         |  | in chancing options, b               | an indication of the                             | e overall performance of each o                 |  | -vetion d |
|  |         |             |                    |  |   |  |  |                          | dentifying options to be shortlist   |  |  |  |   | du   | ring comparison and shortli                  | isting. The significance of                       | individual impacts is also 7                           | consideration in identify                                | ifying options to be shortliste                   | sted.  |  |                           |                                      | shr                          | urtlisting. The significance                     | of individual impacts is al-                     | o a consideration in iden*           | lentifying options to be shortlis                | risted.   |  |           |
| tal Average Score  |         |             | 6.000              | 6.364                                      | 6.727   | 7.727  | 5.455  | 7.273                    | 5.182  | 5.091                                    | 5.182                                    | 6.909  | 4.909   | 7.636  | 6.364  | 7.909   | 6.273  | 7.727  | 7.273   | 5.091  | 4.545                                  | 6.455                     | 5.455                                | 5.091                        | 5.182  | 6.364  | 8.182                                | 6.364  | 6.273   | 8.182                                    |           |
|  | ÷       |             |                    |  |   | +  | +  | _                        | +  | +  | +  | Side road crossings &                        | +   |  |  |   |  |  |   | $\overline{}$  |  |                           |                                      |                              |  | <del></del>                                      | _                                    | +  | $\overline{+}$                                  |  | Ĵ         |
| ı  |         | 1           |                    | Alignment geometry<br>impacts on Bruse Hil |   |  |  |                          | Length, side road  | 1  |  | lengths, alignment                           |   |  |  |   | 1  | 1  | 1   | Lough Sand Constant  | Length, Road Crossings,                | Length, earthworks, air   | . It was side and                    | Length, side road            | Length, side road                                |  |                                      |  |   | 4  |           |
| itep 1 - Contributing Reasons for Elimination  |         | .           |                    | Murmod Hill (deep                          | p   |  | Length, archaeology<br>(direct hit on historic   | Continu Landsonna 8      | Air crossings, earthworks, L   | Length, side road<br>crossings & length, | Length, side road<br>crossings & length, | geometry, air quality,<br>impact on NHA,     |   | 4  |  | 1   | 1  | 1  | 1   | Length, Road Crossings, Ea<br>Earthworks, Air Quality, No<br>Archaeology Agriculture & | Noise, Ecology, Lanscape               | quality, ecology (impact  | t crossings & length,                | consisse anathropic sic      | earthworks, air quality,                         |  |                                      |  |   | 4  | 4         |
| J 1 - Contributing Reasons for Emmission   |         | .           |                    | cuttings =18m and h<br>embankments =15m    |   |  | demesne), agriculture,<br>property impacts, cost | viewal Agricultura       | Quality, property  | earthworks, cost                         | earthworks, cost                         | landscape & visual,<br>agriculture, property |   | 4  |  | 1   | 1  | 1  |   | Archaeology, Agriculture, &<br>Property Impacts, Cost Ag                               | lz                                     | landscape & visual,       | anticulture sect                     | impacts, community           | erty androneless against-up                      |  |                                      |  |   | 4  | 4         |
| 1  |         |             |                    | property impacts                           |   | 4  | property impaces, case                           |                          | impacts, cost  |  |  | impacts, community                           |   | 4  |  | 1   | 1  | 1  |   | Property impacts, cc   | Agriculture, Property<br>Impacts, Cost | agriculture, cost         |                                      | impacts, cost                | community impacts,                               | .st  |                                      |  |   | 4  |           |
|  | ++      |             |                    | 4  | _   | +  | +  | +                        | +  | +  | +  | impacts                                      | _   | 4  | +  |   | 1  |  |   | +  |  | $\leftarrow$              | +                                    | <del></del> '                | +  | +  | +                                    | 4  | +   | +  | 4         |
| 1  |         | .           |                    |  | Compared with Link 18.                        | ·8   |  |                          | The state of the s |  | 4  |  | 4   | -  | 1  | l '   | Compared with Option                                   | 1  | 1   |  | 4                                      | T P                       | 1                                    | 1                            |  | Compared with Option                             | . [                                  |  | _ r   |  |           |
| 1  |         | .           |                    |  | Eliminated due to option<br>length, side road |  |  |                          |  |  | 4  |  | Compared with Option                              |  | 1  | 1   | 04.Eliminated due to side<br>road crossings, side road | Compared with Option                                     | Compared with Option<br>04.Eliminated due to side |  | 4                                      | 1                         | 1                                    | 1                            |  | 04 Blue. Eliminated due<br>to link road lengths. |                                      |  | - P   |  |           |
| 1  |         | .           |                    |  | crossings, side road                          | mainline length, side                            | ,  |                          |  |  | 4  |  | 01. Eliminated due to<br>option length, link road | 04. Eliminated due to                                  | Compared with Option 03. Eliminated due to 1 |   | watercourse crossings                                  | to mainline length, side                                 | road crossings & lengths,                         | .15,   | 4                                      | 1                         | 1                                    | 1                            |  | to link road lengths,<br>watercourse crossings,  | . [                                  |  | Compared with Link 16.                          | .  |           |
| 1  |         | .           |                    |  | lengths, watercourse                          |  |  |                          |  |  | 4  | ·  | lengths, alignment                                | lengths, alignment                                     | side road crossings, link                    | mainline length, small                            | alignment geometry, air                                |  | d small watercourse                               |  | 4                                      | 1                         | 1                                    | 1                            |  | strategic services<br>crossings, alignment       |                                      |  | Eliminated due to<br>mainline length, link road |  |           |
| tep 2 - Mini Competition   |         | .           |                    |  | noise PIR, ecology, length                    | ength agricultural impacts,                      |  |                          | The state of the s |  | 4  |  | geometry, earthworks,<br>ecology, length through  | s, geometry, noise PIR,                                | road & side road length, w                   | watercourse crossings,<br>alignment geometry, air | quality, noise PIR,                                    | alignment geometry,                                      | geometry, air quality,                            |  | 4                                      | T P                       | 1                                    | 1                            |  | geometry, noise PIR,                             |                                      |  | lengths, earthworks,                            |  |           |
| 1  |         | .           |                    |  | of route through soft                         | property impacts and<br>cost. Potential indirect |  |                          |  |  | 4  |  | soft ground, agriculture,                         | re, property impacts and                               | ecology, archaeology and q                   | quality, noise PIR,                               | impacts, community                                     | noise PIR, landscape & r<br>visual and cost. Excessive a | noise PIR, ecology,                               |  | 4                                      | 1                         | 1                                    | 1                            |  | landscape & visual,<br>agricultural impacts and  |                                      |  | alignment geometry,<br>noise PIR and cost.      |  |           |
| 1  |         | .           |                    |  | agriculture, property                         |  |  |                          |  |  | 4  |  | property impacts and cost.                        | cost. Impact of option on<br>Bruse Hill also a factor. | cost. a                                      | agriculture and cost.                             | impacts and cost.                                      | earthworks at  | impact, community                                 |  | 4                                      | 1                         | 1                                    | 1                            |  | cost. Impact of 3 river                          |                                      |  | noise rin and tox.                              |  |           |
| 1  |         | .           |                    |  | impact, community<br>impacts and cost.        | SAC.   | ,  |                          |  |  | 4  |  | COM.  | Bruse nin augu a                                       | 1  | 1   | vicinity of Murmod Hill                                | Lisnabantry also a factor.                               | impacts and cost.                                 |  | 4                                      | 1                         | 1                                    | 1                            |  | crossings north of<br>Virginia also a factor.    |                                      |  | - P   |  | 4         |
|  |         | 1           |                    |  | impaca una casa                               | •  |  |                          | The state of the s |  | 4  |  | 4   | -  | 1  | l '   | also a factor.   | 1  | 1   |  | 4                                      | T P                       | 1                                    | 1                            |  | virgina also a rac                               |                                      |  | _ r   |  |           |
| in the second se |         |             |                    |  |   |  |  |                          |  |  |  |  |   |  |  |   |  |  |   | 4  |  | +                         | +                                    | +                            |  | 4  | +                                    | _  | -   | +  | _         |
| options Retained for Stage 2 Options   | +       |             | Shortlisted to Sta | ee   |   |  |  |                          |  |  |  |  |   |  |  | ١.  | 1  | 1  |   |  |  |                           | 1                                    |                              |  |  | Shortlisted to Stage                 | age Shortlisted to Stage                         | -   | Shortlisted to Stage                     | ·ae       |
| Options Retained for Stage 2 Options Assessment  |         |             | Shortlisted to Sta | age  |   | \ \ \\   |  |                          |  |  |  |  |   |  |  |   |  |  |   |  | 1                                      |                           |                                      | \                            |  | <b>V</b>   | Shortlisted to Stage<br>2            | age Shortlisted to Stage<br>2                    | 46  | Shortlisted to Stage<br>2                | \tage     |