

APPENDIX B2

Summary of the Constraints and Enhancement Opportunities Associated with the Canal Link Route Options

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Table B2. Summary of the Constraints and Enhancement Opportunities Associated with the Canal Link Route Options 1 to 4 Based on Existing Available Data.

Option number	Non-Stat Designated Sites (SINCs)	Protected Species Records and Protected Species Habitat Potential	Enhancement Opportunities	Consultation Summary
<p>Option 1 (and variations)</p>	<p>Passes through and/or adjoins three <u>SINCs</u>:</p> <p>Approx 1km of route passes through a lagoon at Gamston Pits (<i>An extensive area of gravel workings with associated habitats of open water, marsh, scrub and woodland - of particular ornithological interest</i>)</p> <p>Approx 1.5km of route passes through Holme Pierrepont Country Park (<i>A valuable mosaic of carr, scrub, marginal and open-water habitats around a series of old gravel workings</i>). Route passes through eastern edge of Skylarks nature reserve, and western edge of old gravel workings</p> <p>Connection to Grantham Canal at Grantham Canal (Bassingfield to River Trent) (<i>An urban stretch of canal with a good aquatic plant community</i>)</p>	<p>Approx 50% of route passes through waterbodies associated with Gamston Pits and Holme Pierrepont Country Park. This could have implications for waterfowl, and potentially water vole and otter, through direct disturbance and indirectly through changes in hydrology which alter the suitability of the habitat for these species. Desk study indicates that the complex supports up to 20 Schedule 1 birds.</p> <p>Potential loss of breeding bird habitat in scrub along Polser Brook south of Radcliffe Road (see extended Phase 1 habitat plan TN 2, 3, 4, 6, 7, 15)</p> <p>Potential impact on bats through loss of trees with bat roosting potential (see Phase 1 habitat plan TN 3, 6 and 7).</p> <p>Routes 1a and 1b join Grantham Canal at a point where there is a record of otter and water vole. Further survey and potential mitigation would be required for both these species for all Option 1 routes.</p> <p>The route follows a section of Polser Brook known to support water vole with good habitat potential. Additionally a section of Polser brook downstream was found to have habitat potential for white clawed crayfish. Further survey and potential mitigation would be required for both these species</p> <p>The route joins the River Trent at a relatively undisturbed section of the river. There are water vole and otter records within 2km of this connection point. Further survey on the Trent and adjacent water courses would be required for both</p>	<p>Maintain and enhance area of grassland for butterflies and damselflies through suitable management (see extended Phase 1 habitat plan TN 2)</p> <p>Enhance pond by removing some scrub to allow in more light and deepen to aid water retention (see extended Phase 1 habitat plan TN 3)</p> <p>Clear some growth around overgrown areas of Polser Brook ditches to remove clogging and excessive shade, enhancing ditches for water vole</p> <p>Plant up gaps in hedgerows (see extended Phase 1 habitat plan at TNs16 and 17) to improve connectivity and provide wildlife corridor.</p>	<p><u>Nottinghamshire County Council/</u> <u>Rushcliffe Borough Council/EA:</u></p> <p>Holme Pierrepont/Colwick Country Park/Netherfield Lagoons complex is extremely important for both breeding and wintering birds, and Schedule 1 birds breed at Holme Pierrepont. Impacts on these areas are likely to be most significant.</p>

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		these species with potential mitigation requirements.		
Option 2 (and variations)	<p><u>Passes through and/or adjoins two SINC:</u></p> <p>Passes through Gamston Pits (<i>An extensive area of gravel workings with associated habitats of open water, marsh, scrub and woodland - of particular ornithological interest</i>) Passes through 3 undisturbed lagoons to north of designation, and northern edge of large A52 lagoon.</p> <p>Connection to Grantham Canal at Grantham Canal (Bassingfield to River Trent) (<i>An urban stretch of canal with a good aquatic plant community</i>)</p> <p><u>Passes adjacent to three SINCs:</u></p> <p>Passes through drain approximately 50m east (downstream) of Adbolton Marsh (<i>A good mixed habitat association including the scarce Trent-side inundation community type</i>). Potential secondary hydrological constraints.</p> <p>Connection to River Trent is on opposite bank to Colwick Country Park (<i>A good mixed habitat assemblage primarily of vertebrate zoological interest, but also of value for its invertebrate and plant communities</i>)</p>	<p>Majority of route passes through waterbodies associated with Gamston Pits. These lagoons are currently undisturbed. This could have implications for waterfowl, and potentially water voles and otter, through direct disturbance and indirectly through changes in hydrology which alter the suitability of the habitat for these species. Desk study indicates that the complex supports up to 20 Schedule 1 birds.</p> <p>Potential loss of breeding bird habitat (see extended Phase 1 habitat plan TN 8, 9, 12)</p> <p>Potential impact on bats through loss of trees with bat roosting potential (see extended Phase 1 habitat plan TNs 8 and 9)</p> <p>Possible disturbance to breeding lapwing during construction of the route (see extended Phase 1 habitat plan TN18).</p> <p>The Option 2 route joins the River Trent at a point where there is a water vole record. Option 2a is also close to this area. Additionally there is an otter record approximately 1km north east of the connection to the River Trent. Additionally the route crosses three unnamed ditches. Further survey at these sections would be required for both these species with potential mitigation requirements.</p> <p>As per Option 1, the route joins Grantham Canal at a point where there is a record of otter and</p>	<p>The removal of some of the dense bulrush in the pond to the west of the route at Adbolton Marsh (see Extended Phase 1 Plan TN19), to prevent drying out and maintain areas of open water, would ensure the site supports a good variety of wildlife (however this must be done with minimal impact on existing ecology at this site which offers good invertebrate and bird habitat with records of sedge warbler)</p> <p>The removal of dense scrub to reduce shading of the dry ditch off Polser Brook north of A52 (see extended Phase 1 Habitat Plan TN12) and de silting could enhance aquatic connectivity of Polser Brook with Grantham Canal and River Trent. This could be of benefit to fish, water vole and otter.</p> <p>As per Option 1, clearance of overhanging vegetation around overgrown areas of Polser Brook ditches, to remove clogging and excessive shade, would enhance the ditches for water vole.</p>	<p><u>Nottinghamshire County Council/ _____ Rushcliffe Borough Council:</u></p> <p>Holme Pierrepont/Colwick Country Park/Netherfield Lagoons complex is extremely important for both breeding and wintering birds, and Schedule 1 birds breed at Holme Pierrepont. Impacts on these areas are likely to be most significant.</p>

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		<p>water vole. Also route follows a section of Polser Brook known to support water vole with good habitat potential. Additionally a section of Polser brook downstream was found to have habitat potential for white clawed crayfish. Further survey of Polser Brook and adjacent water courses and potential mitigation would be required for these species.</p>		
<p>Option 3</p>	<p><u>Passes through and/or adjoins two SINCs:</u></p> <p>Passes through Adbolton Pond (<i>Ponds, surrounded by mature woodland, that display a locally characteristic hydrophilic plant community and are also of zoological interest. One of these ponds is also a great crested newt pond</i>)</p> <p>Connection to Grantham Canal at Grantham Canal (Bassingfield to River Trent) (<i>An urban stretch of canal with a good aquatic plant community</i>)</p> <p>Connection to River Trent is on opposite bank to Colwick Country Park (<i>A good mixed habitat assemblage primarily of vertebrate zoological interest, but also of value for its invertebrate and plant communities</i>)</p>	<p>The route passes through Adbolton Pond Local Wildlife Site; This may result in a potential loss of</p> <ul style="list-style-type: none"> • great crested newt habitat; • breeding bird habitat; and • unidentified tree with bat roost potential. <p>(see extended Phase 1 Habitat Survey TN13)</p> <p>Further survey would be required to determine actual presence of these species and mitigation measures may be required.</p> <p>Loss of sections of four hedgerows. Further surveys would be required to determine value of these hedgerows, mitigation may be required.</p> <p>There are water vole records at the connection point to Grantham Canal, and within 1km of the connection point to the River Trent. Additionally the route crosses one unnamed ditch north of Gamston Bridge. Further survey on these sections would be required and potential mitigation will be required.</p>	<p>Gap up hedgerows to the north west of the route to improve connectivity (see extended Phase 1 Habitat Plan TN20);</p> <p>Enhance small pond to the west of the route by removing some of the surrounding willow and scrub to reduce shading (see extended Phase 1 Habitat Plan TN14).</p> <p>Removal of some of the vegetation overgrowing the ditch network (south of caravan site) to reduce shading would enhance the ditch network by improving connectivity and its suitability for water vole.</p>	<p><u>British Waterways:</u> This is most favourable in terms of opening up the maximum length of canal to increased water flow, reducing extensive cover by duckweed.</p>

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<p>Option 4 (and variations)</p>	<p><u>Passes through and/or adjoins two SINCs:</u></p> <p>Approx 1km of route passes through Cotgrave Colliery (<i>A mosaic of habitats on a former colliery site with unusual plant communities and a notable flora</i>). This route also passes through a large pond.</p> <p>Connection to Grantham Canal is within Grantham Canal Cotgrave (<i>A section of canal with notable emergent and bank-side plant communities</i>)</p> <p><u>Passes adjacent to three SINCs:</u></p> <p>Approx 200m of the route skirts the eastern boundary of Holme House Grassland (<i>notable neutral grassland</i>). A sliver of this SINC may be lost to this route.</p> <p>Connection to River Trent is on opposite bank to Netherfield Pits (<i>A series of mature lakes in an area of old gravel workings - of faunal and floral interest</i>) and Trent North Bank (<i>Trent-side flood-bank with a characteristic grassland community</i>).</p>	<p>This route follows the line of a disused railway, a habitat which generally develops into valuable wildlife corridors with potential for a range of protected species. The following potential constraints exist:</p> <ul style="list-style-type: none"> • The disused railway is bordered by dense scrub and lines of trees, all of which could provide nesting opportunities for birds; • Potential loss of unknown bat tree roosts if mature trees need to be removed along the route; • Railway lines provide good habitat for common reptile species; • The banks of the railway may contain badger setts; <p>Option 4b crosses Polser Brook, which is known to support water vole. Additionally a section of Polser brook upstream was found to have habitat potential for white clawed crayfish. Further survey of Polser Brook and adjacent water courses and potential mitigation would be required for these species.</p> <p>Additionally the route passes adjacent to two ponds, which have the potential to support great crested newts, with the railway providing refuge/hibernation opportunities.</p> <p>The route joins Grantham Canal at a point where there are records of a water vole. Additionally there are records of otter within 3km of the connection point to Grantham Canal.</p>	<p>It would be possible to provide artificial refugia/hibernacula for reptiles/amphibians in suitable habitats along the route to enhance the habitat for them.</p> <p>The planting up of gaps in hedgerows would improve connectivity and provide wildlife corridors.</p>	

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		Further survey would be required for all these species, and potential mitigation may be required.		
<p>The following additional options are based predominantly on desk study. Field survey did not focus on the direct impact zone of these additional options. Furthermore, the consultation stage did not include these options, so there are no specific comments. However, general comments are applicable to issues related to these options so are included where relevant. The potential constraints and opportunities relevant to these additional options are briefly described.</p>				
<p>Option T1</p>	<p><u>This option does not pass through any SINCs.</u></p> <p><u>This option passes adjacent to three SINCs:</u></p> <p>Approx 300m of this option skirts the western boundary of Gamston Pits, (An extensive area of gravel workings with associated habitats of open water, marsh, scrub and woodland - of particular ornithological interest)</p> <p>The option then passes through</p> <p>Adbolton Ponds (Ponds, surrounded by mature woodland, that display a locally characteristic hydrophilic plant community and are also of zoological interest. One of these ponds is also a great crested newt pond) and</p> <p>Adbolton Marsh (A good mixed habitat association including the scarce Trent-side inundation community type). Potential secondary hydrological constraints</p> <p>Connection to Grantham Canal at Grantham Canal (Bassingfield to</p>	<p>This route passes predominantly through semi improved grassland, species poor semi improved grassland, amenity grassland, and small areas of mixed woodland. The route seeks to follow existing boundary features and topography, including linear vegetation hedgerows and, where possible, retains these features.</p> <p>There is the potential for badger setts to be located along field boundaries near to hedgerows.</p> <p>Any loss of trees or buildings may result in an impact on bats and birds</p> <p>Any work on field margins may result in loss to rare arable flora.</p> <p>Any loss of hedgerows may result in loss of ecologically significant hedgerows.</p> <p>Losses of grassland may result in impact on reptiles and harvest mice. Additionally there is potential loss of terrestrial GCN habitat.</p> <p>Further surveys for these species and potential mitigation would be required.</p>	<p>As this route follows existing boundary features and topography, the adjacent green infrastructure route could seek to plant up gaps in hedgerows to improve connectivity and provide wildlife corridors.</p>	

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	<p>River Trent (<i>An urban stretch of canal with a good aquatic plant community</i>)</p> <p>Connection to River Trent is on opposite bank to Colwick Country Park (<i>A good mixed habitat assemblage primarily of vertebrate zoological interest, but also of value for its invertebrate and plant communities</i>)</p>			
Option H	<p><u>This option passes through three SINCs</u></p> <p>Approx 1km of route passes through a lagoon at Gamston Pits (<i>An extensive area of gravel workings with associated habitats of open water, marsh, scrub and woodland - of particular ornithological interest</i>).</p> <p>Approx 0.5km of Option H passes through Holme Pierrepont Country Park (<i>A valuable mosaic of carr, scrub, marginal and open-water habitats around a series of old gravel workings</i>). Route passes through eastern edge of Skylarks nature reserve, and western edge of old gravel workings</p> <p>Connection to Grantham Canal at Grantham Canal (Bassingfield to River Trent) (<i>An urban stretch of canal with a good aquatic plant community</i>)</p> <p><u>This option passes adjacent to one SINC:</u></p>	<p>Approximately 1km of this site passes through the A52 lagoon at Gamston Pits, one of only one or two breeding sites in the county for . Deepening the A52 pit would be detrimental to the black-necked grebes. They prefer shallow warm ponds for breeding, with extensive fringe habitat. Scrub removal may also open out areas, removing cover, which has the potential to increase levels of disturbance. Also this species is targeted by egg thieves. Scrub habitat against the wetland fringe is also important for migrant warblers including grasshopper warbler, whitethroat, sedge and reed warbler. Desk study indicates that the complex supports up to 20 Schedule 1 birds.</p> <p>This route could also have implications for waterfowl, and potentially water vole and otter, through direct disturbance and indirectly through changes in hydrology which alter the suitability of the habitat for these species.</p> <p>The southern part of this route passes predominantly through arable fields which may result in following constraints:</p>	<p>Hedgerows could be enhanced (gapped up) and extended to connect to the canal link. This would improve connectivity</p>	<p>Nottinghamshire CC, Natural England, Environment Agency, Rushcliffe Borough Council, County Bird Recorder have all highlighted the value of Gamston pit for birds and in particular breeding black necked grebe.</p> <p>General aspiration from all consultees is for canal link to avoid Holme Pierrepont Complex</p>

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	<p>Connection to River Trent is on opposite bank to Colwick Country Park (<i>A good mixed habitat assemblage primarily of vertebrate zoological interest, but also of value for its invertebrate and plant communities</i>)</p>	<p>There is the potential for badger setts to be located along field boundaries near to hedgerows.</p> <p>Any loss of trees or buildings may result in an impact on bats and birds</p> <p>Any work on field margins may result in loss to rare arable flora.</p> <p>Any loss of hedgerows may result in loss of ecologically significant hedgerows.</p> <p>Further surveys for these species and potential mitigation would be required.</p>		
Option M	<p><u>Option M passes through two SINCS:</u></p> <p>Passes between two water bodies on the eastern side of Gamston Pits (Blotts Pits) (<i>An extensive area of gravel workings with associated habitats of open water, marsh, scrub and woodland - of particular ornithological interest</i>)</p> <p>Connection to Grantham Canal at Grantham Canal (Bassingfield to River Trent) (<i>An urban stretch of canal with a good aquatic plant community</i>)</p>	<p>The majority of this route crosses, follows or runs adjacent to Polser Brook, which is known to support water vole. Additionally the substrate of this section was found to have habitat potential for white clawed crayfish. Further survey and potential mitigation would be required for both these species.</p> <p>The Marina would result in a large area of arable land being lost. This may result in the following constraints:</p> <p>There is the potential for badger setts to be located along field boundaries.</p> <p>Any loss of trees or buildings may result in an impact on bats and birds</p> <p>Any work on field margins may result in loss to</p>	<p>The canal link and parts of the Marina could be designed to include water vole features (e.g. coir rolls, emergent and bank zone planting, penetrable banks for burrowing) particularly on the off-side. Polser brook could be enhanced for water vole and serve as back water to the new canal link. Enhancement could be achieved through selective vegetation clearance to prevent overshadowing, de-silting and appropriate planting. The land between the canal link and Polser brook could also be enhanced through appropriate planting with species that</p>	<p>Nottinghamshire CC, Natural England, Environment Agency, County Bird Recorder have all highlighted the value of Holme Pierrepont Complex for a variety of birds</p> <p>General aspiration from all these consultees is for the canal link to avoid Holme Pierrepont Complex if possible.</p> <p>Rushcliffe Borough Council highlighted value of Polser Brook for water vole, and aspiration for canal link to avoid water</p>

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		<p>rare arable flora.</p> <p>Any loss of hedgerows may result in loss of ecologically significant hedgerows.</p> <p>Further surveys would be required to confirm actual presence of protected species/habitats and inform mitigation strategies if necessary.</p>	<p>provide food and shelter for a variety of wildlife.</p> <p>Hedgerows could be planted up around the canal link, and connected to the infrastructure route to enhance connectivity.</p>	<p>vole habitat.</p>