

National Productivity Investment Fund for the Local Road Network Application Form



Department
for Transport

Applicant Information

Local authority name: [Norfolk County Council](#)

Bid Manager Name and position: [Paul Donnachie, Capital Programme Manager](#)

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Postal address: [Highways, Norfolk County Council, County Hall, Norwich, NR1 2SG](#)

Combined Authorities

If the bid is from an authority within a Combined Authority, please specify the contact, ensure that the Combined Authority has provided a note ranking multiple applications, and append a copy to this bid.

Name and position of Combined Authority Bid Co-ordinator:

Contact telephone number:

Email address:

Postal address:

When authorities submit a bid for funding to the Department, as part of the Government's commitment to greater openness in the public sector under the Freedom of Information Act 2000 and the Environmental Information Regulations 2004, they must also publish a version excluding any commercially sensitive information on their own website within two working days of submitting the final bid to the Department. The Department reserves the right to deem the business case as non-compliant if this is not adhered to.

Please specify the web-link where this bid will be published:

www.norfolk.gov.uk/what-we-do-and-how-we-work/our-budget-and-council-tax/our-budget/bids-and-funding-weve-won/roads-bids-and-funding-weve-won

SECTION A - Project description and funding profile

A1: Project name:

A140 Hempnall Roundabout

A2: Please enter a brief description of the proposed project (no more than 50 words)

The project will upgrade and improve an existing four-arm priority staggered junction on the A140 Norwich to Ipswich road to a four-arm roundabout to; reduce significant existing delays, support greater regional connectivity, address safety issues and importantly facilitate new development at Long Stratton including 1,800 dwellings, and approximately 9.5ha of employment land. Scheme plan is in Appendix B.

A3: Please provide a short description of area covered by the bid (no more than 50 words)

Hempnall crossroads is on the A140 regional corridor between Norwich and Ipswich. This junction with the B1527 and C497 is 10km south of Norwich and 1.5km north of Long Stratton. Long Stratton is identified as a centre for growth within the South Norfolk Local Plan and the Long Stratton Area Action Plan identifies that this junction requires improvement.

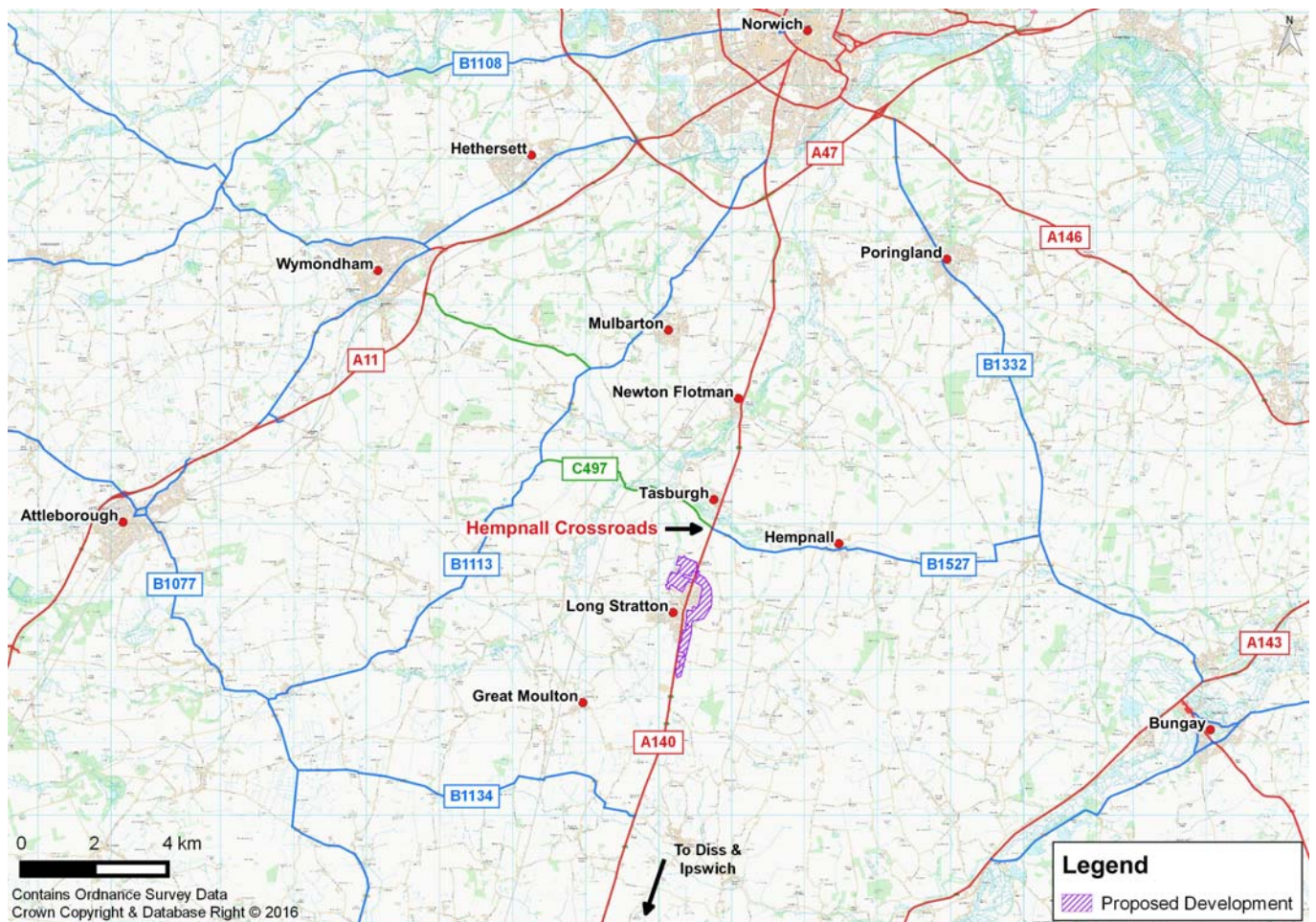


Figure 1: Area plan

OS Grid Reference: **TM 20464 94872**

Postcode: **NR15 2LH**

A4: How much funding are you bidding for? (please tick the relevant box):

Small project bids (requiring DfT funding of between £2m and £5m)

The total project cost is £4,358,465. A total of £3,050,925 is being sought from the DfT NPIF.

Large project bids (requiring DfT funding of between £5m and £10m)

A5: Has any Equality Analysis been undertaken in line with the Equality Duty?

Yes (please see Appendix C) No

A6: If you are planning to work with partnership bodies on this project (such as Development Corporations, National Parks Authorities, private sector bodies and transport operators) please include a short description below of how they will be involved.

Norfolk County Council has been working with local authority partners in Greater Norwich for a number of years. There is an adopted Core Strategy covering the Greater Norwich area of Broadland, South Norfolk and Norwich City. The Greater Norwich Growth Board is a partnership of Norfolk County Council, South Norfolk Council, Norwich City Council and Broadland District Council.

The partnership has agreed to pool a proportion of Community Infrastructure Levy to support a Growth Programme that includes 1,800 homes in Long Stratton. The Growth Board has agreed in principle to put £10m of pooled Community Infrastructure Levy (CIL) to support the Hempnall crossroads improvement and Long Stratton Bypass. The partnership has agreed to use some of that pooled CIL fund as an element of the local contribution to this bid.

South Norfolk Council adopted the Long Stratton Area Action Plan in May 2016. The Action Plan requires an improvement to the Hempnall junction to be delivered early in the life of the development. The council will continue working in partnership to help deliver this infrastructure improvement to facilitate growth in the area.

The councils expect Norfolk Homes to submit a planning application during Autumn 2017 for the housing development in Long Stratton. The council has been working with the housing developer and the landowners to facilitate the land being made available for the construction of the scheme and a Letter of Intent has been signed by both the council and the landowners.

A7. Combined Authority (CA) Involvement

Have you appended a letter from the Combined Authority supporting this bid? Yes No

N/A

A8. Local Enterprise Partnership (LEP) Involvement and support for housing delivery

Have you appended a letter from the LEP supporting this bid?

Yes (please see Appendix A) No

For proposed projects which encourage the delivery of housing, have you appended supporting evidence from the housebuilder/developer?

Yes No

Negotiations are ongoing with the developer. The phasing and delivery plan have yet to be agreed, however, the developer has been looking at the improvement of Hempnall as part of their emerging planning application and the developer has been actively involved in the preparation of this bid. As mentioned previously, the adopted Long Stratton Area Action Plan requires that an improvement to Hempnall is delivered early in the life of the development and a successful NPIF bid will provide certainty on the delivery of this project and support and encourage early delivery of housing.

Letters from the developers are attached in Appendix A.

SECTION B – The Business Case

B1: Project Summary

Please select what the project is trying to achieve (select all categories that apply):

Essential

- Ease urban congestion
- Unlock economic growth and job creation opportunities
- Enable the delivery of housing development

Desirable

- Improve Air Quality and /or Reduce CO2 emissions
- Incentivising skills and apprentices

- Other(s), Please specify –

Improving:

- road safety at junction with established accident record; and
- access from side roads onto busy A class road with unrestricted speed limit.

B2: Please provide evidence on the following questions (max 100 words for each question):

a) What is the problem that is being addressed?

A junction improvement is required as part of mitigation to unlock building of 1,800 houses. The A140 carries high flows of traffic at high speeds; traffic exiting side roads at the priority junction experience long delays (modelled at 45 seconds). Analysis demonstrates that by 2026 the junction will have reached capacity, exacerbating existing problems and constraining growth.

Eight accidents in the last 5 years resulted in 11 casualties, two categorised as serious, and are associated with turning movements from the minor roads. Accidents also impact on network performance, resulting in delays.

Retaining the existing arrangement is not viable. An improvement is required to accommodate future growth including the proposed local developments, and to address safety concerns.

b) What options have been considered and why have alternatives been rejected?

Various options have been considered:

1. Four Arm Roundabout
2. Traffic Signal Control junction based on the existing offset crossroad geometry
3. Traffic Signal Control crossroad including realignment the B1527 arm

Option 1 has been developed into an additional option, Option 4, which is the scheme proposed in this bid and shown in Appendix B. Options 2 and 3 are not considered acceptable by NCC as the highway authority because a signal controlled junction at an isolated rural location on a free flowing A road would pose safety issues and result in delays outside the peak hours.

c) What are the expected benefits/outcomes?

The scheme will:

- Help bring forward building of 1,800 houses at Long Stratton and approximately 9.5ha of employment land.
- Support regional connectivity both north-south on the economically important A140 Norwich to Ipswich road link, and east-west.
- Form part of a wider improvement package including the Long Stratton bypass.
- Overcome congestion on the minor arms including the B1527 which forms part of an east west connection from north Suffolk as well as serving local communities.
- Improve safety at the junction.
- Overcome widespread local concern about the current staggered crossroads.

d) Are there any related activities that the success of this project relies upon? For example, land acquisition, other transport interventions requiring separate funding or consents?

Land acquisition will be required to construct the scheme. NCC has been working with the housing developer and the landowners to facilitate the land being made available for the construction of the scheme and a Letter of Intent has been signed by both NCC and the landowners.

Planning consent under the Town and Country Planning Act 1990 will be required. There are no known objectors and the county council is confident that planning consent can be achieved within the time frame, and the programme shown in Appendix D reflects this.

e) What will happen if funding for this project is not secured - would an alternative (lower cost) solution be implemented?

If funding for this project is not available via NPIF it is anticipated that a planning application for a lower cost scheme is likely to be submitted by the developer as mitigation for the development traffic impact. However, such a scheme would only provide a basic level of improvement and would not address the strategic nature of the A140 corridor or provide a longer term solution that supports economic growth.

Furthermore, a developer led mitigation scheme is likely to be delivered at a later date and will not achieve the NPIF objectives to the same extent as the proposed roundabout.

f) What is the impact of the project – and any associated mitigation works – on any statutory environmental constraints?

The main environmental sensitivities within a 1km buffer include nature conservation features, cultural heritage assets, pedestrian routes, community facilities and Hempnall Beck River. There are three Defra Noise Important Areas also located within 1km of the proposed scheme. However, overall there is limited potential for significant traffic related environmental impacts in relation to air quality and noise. Potential does exist for impact on Priority Habitats within the soft estates adjacent to the junctions and increased impact of flooding as a result of increased impermeable areas, although these impacts will be resolved and/or mitigated through appropriate design. With respect to the Water Environment, a Flood Risk Assessment will now be required given the scheme's location within Flood Zone 1.

B3: Please complete the following table. Figures should be entered in £000s
(i.e. £10,000 = 10).

Table A: Funding profile (Nominal terms)

£000s	2017-18	2018-19	2019-20	2020-21
DfT funding sought		285.88	2,765.05	
Local Authority contribution*	149.02	122.52	660.36	375.64
Third Party contribution				
TOTAL	149.02	408.4	3,425.40	375.64

Notes:

- 1) Department for Transport funding must not go beyond 2019-20 financial year.
- 2) Bidders are asked to consider making a local contribution to the total cost. It is indicated that this might be around 30%, although this is not mandatory.

B4: Local Contribution & Third Party Funding: Please provide information on the following questions (max 100 words on items a and b):

- a) Provide an outline of all non-DfT funding contributions to the project costs, the level of commitment, and when the contributions will become available.

The total cost of the project is estimated at £4.36m, and the profile for the delivery of funding will include some local contribution costs within 2017/18 and 2020/21.

*The total local contribution will amount to 30% and is expected to comprise developer contribution, pooled Community Infrastructure Levy and Growth Deal funding. The developer has suggested a contribution of around £350k, although the actual sum may be greater or less and will be determined as part of the planning process for the housing development in Long Stratton.

- b) List any other funding applications you have made for this project or variants thereof and the outcome of these applications, including any reasons for rejection.

No other funding applications have been made.

B5: Economic Case

This section should set out the range of impacts – both beneficial and adverse – of the project. The scope of information requested (and in the supporting annexes) will vary, including according to whether the application is for a small or large project.

A) Requirements for small project bids (i.e. DfT contribution of less than £5m)

- a) Please provide a description of your assessment of the impact of the project to include:

- Significant positive and negative impacts (quantified where possible) including in relation to air quality and CO₂ emissions.
- A description of the key risks and uncertainties;
- If any modelling has been used to forecast the impact of the project please set out the methods used to determine that it is fit for purpose

Overview

This application is for a small project, however, in addition to a description of the scheme impacts in this section, an initial quantified appraisal of the economic benefits has also been undertaken to present the anticipated benefit to cost ratio and value for money of the project.

Impacts

An improvement at Hempnall Crossroads forms part of the wider transport mitigation package, including a bypass of the village of Long Stratton, required to enable delivery of 1,800 new homes at Long Stratton. This strategic housing commitment is located just south of Norwich, the largest economy in the New Anglia LEP area, and set to receive the largest amount of growth in the coming years.

The strategic housing site at Long Stratton is well-sited to support employment growth within Norwich by expanding its labour market pool. In particular there are existing high-value jobs at the growing Norwich Research Park, University of East Anglia and Norfolk and Norwich Hospital cluster within easy reach of Long Stratton. The Norwich Research Park has recently been identified as an Enterprise Zone. Also within easy reach of the housing development is the recently identified Food Enterprise Zone at Easton, itself a growing employment centre. Housing at Long Stratton will also enlarge the jobs catchment for Norwich city centre. Long Stratton itself is a thriving town home to South Norfolk Council as well as a number of thriving smaller local businesses.

The improvement is sited on the A140, the major road link connecting Norwich to Ipswich, the other major economy in the New Anglia area. The A140 has been identified by the New Anglia Local Transport Board as a major economic link in the area requiring improvement to enable it to fulfil its strategic function, and is referenced in the Rees Jeffreys Road Fund which published its [report](#) on the A Major Road Network for England in October 2016. Funding for Hempnall Crossroads will overcome one barrier to the wider transport mitigation package coming forward and delivery of this junction improvement and the Long Stratton bypass will constitute a major enhancement on the A140. Together the improvements will improve connectivity between Norwich and Ipswich removing a major bottleneck within the village overcoming significant congestion problems on the corridor, as well as delivering a major improvement for the village residents and businesses.

Currently the Hempnall junction is an at-grade crossroads with the A140 Norwich to Ipswich road being the priority route. The C497 and B1527 form the minor arms. These roads not only cater for local traffic from surrounding settlements but are used as an east-west connection for traffic from north Suffolk and south east Norfolk. Localised queuing and congestion on these minor arms is evidenced, especially at peak times when vehicle delays are predicted to exceed 40 seconds. There is significant local concern about the crossroads and its safety record and there is widespread support for an improvement in the form of the roundabout being proposed.

The existing junction arrangement has been tested using the Junctions 8 PICADY module, which is an industry standard software for modelling priority controlled junctions. The junction has been assessed with 2015 survey flows. The junction operates within capacity in 2015, however, with average delays to side road traffic in excess of 40 seconds.

The proposed roundabout design has been assessed using the Junctions 8 ARCADY module, in the assessment a flat traffic flow profile has been assumed based on a review of the survey data and to allow for a consistent comparison between modelling software. This modelling approach is considered appropriate and proportionate to produce a suitably reliable junction assessment and associated results.

Forecast assessment traffic flows have been derived by applying TEMPro traffic growth to observed traffic flows, with alternative development assumptions to avoid double counting. The specific Long Stratton development traffic have been calculated from the TRICS database and trip distribution onto the network is based on trip distribution derived from census data.

The existing junction layouts and the proposed roundabout has been assessed with and without development traffic flows for 2020, 2026 and 2036 AM and PM peak hours. The results of the modelling indicate that by 2020 the existing junction is predicted to operate significantly over absolute capacity with maximum delays in excess of seven minutes. This continues to worsen significantly in the future year scenarios with maximum delays of up to 24 minutes predicted on the side roads.

A comparison of the change in delay between the existing scheme and the roundabout junction indicates that the scheme is predicted to result in delay savings in 2020 of 13 vehicle hours per day.

A review of the accident history in the vicinity of the junction indicates an average of 1.8 personal injury accidents per year. Narrative and causal factors suggest the majority of these are associated with turning movements to and from the side roads. A simple assessment based on the COBA manual has indicated that the roundabout scheme shows potential to reduce accident severity and rates. Research referenced within DMRB notes that on average roundabouts are safer than other junction types, and on average the proportion of fatal accidents at roundabouts is 0.35% compared to 0.88% of all other junction accidents.

The scheme would be likely to introduce some additional off-peak delay as vehicles on the A140 will need to slow to negotiate the roundabout. This would also be the case in the peak periods but the dis-benefit to ahead traffic is significantly outweighed by benefits that accrue to minor road traffic and by the safety benefits. Given the low off-peak flows on the minor roads it is considered that a priority control roundabout would be the least detrimental junction option to ahead traffic that still brings benefits to the side roads. Further details related to modelling can be provided on request.

Key risks and uncertainties

A comprehensive risk register has been generated and key risks within 'Very High and High' categories for each options are listed below and are detailed in Appendix E:

- Unforeseen archaeological finds;
- Requirements for additional traffic management;
- Variation between actual site conditions and assumptions used in design;

Value for Money

Although not required for small projects an assessment of VfM has been undertaken. To provide an indication of the value of journey time benefits the change in delay between the 'with' and 'without' scheme scenario has been quantified based on the junction modelling. For all options traffic demand from the 2020 opening year and 2036 forecast year without development scenarios have been used for consistency.

The results have been inputted to a bespoke spreadsheet prepared by Mouchel's Modelling & Economic Appraisal team to monetise the change in delay over a 60 year appraisal period and generate a present value of benefit. Estimated scheme costs are also entered to the spreadsheet to produce a present value of cost so that the benefit to cost ratio can be calculated. The spreadsheet has been peer reviewed and checked to provide quality assurance of the outputs produced and confirm its fitness for purpose.

The assessment has been run for AM and PM peak hour periods only and extended to a 1.5 hour period of benefits based on survey traffic flows.

The results of the economic assessment based on journey time changes only are summarised below. All values are in 2010 prices:

Present Value Benefits (PVB)	= 5,586,478
Present Value Costs (PVC)	= 2,726,300
Net Present Value (NPV)	= 2,860,178
Benefit to Cost Ratio (BCR)	= 2.05

Based on the BCR value above the scheme is predicted to provide high value for money.

A basic assessment of accident rates and severity between the junction options suggests that the roundabout has potential to reduce both the severity and frequency of accidents. While it has not been appraised using COBA this would be expected to provide additional benefits, and based on experience from other schemes this could be expected to be at least equal to 5% of the transit benefits. Furthermore, this improvement scheme could also be expected to deliver other economic benefits including reduced maintenance, improved journey reliability and wider economic benefits, experience of other schemes suggest these could be expected to be equal to at least 5% or 10% of the transit benefits. If these other benefits are included they could provide an additional minimum benefit of £1,675,943.

Adjusted Present Value Benefits (PVB)	= 7,262,421
Present Value Costs (PVC)	= 2,726,300
Adjusted Net Present Value (NPV)	= 4,536,121
Adjusted Benefit to Cost Ratio (BCR)	= 2.66
Value for Money category	= High

A quantified risk assessment has been produced and risk has been accounted for at £869,925 equivalent to 26.5% of scheme base costs. This is intended to mitigate for uncertainty surrounding scheme costs. The QRA is attached as Appendix F.

* *Small projects bids are not required to produce a Benefit Cost Ratio (BCR) but may want to include this here if available.*

b) Small project bidders should provide the following in annexes as supporting material:

Has a Project Impacts Pro Forma been appended?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A
Has a description of data sources / forecasts been appended?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A
Has an Appraisal Summary Table been appended?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> N/A

The following supporting information is appended to this bid:

Appendix G: Project Impacts Pro-Forma
Appendix H: Appraisal Summary Table
Appendix I: Environmental Constraints Plan

Other material supporting your assessment of the project described in this section should be appended to the bid.

** This list is not necessarily exhaustive and it is the responsibility of bidders to provide sufficient information to demonstrate the analysis supporting the economic case is fit-for-purpose.*

B) Additional requirements for large project bids (i.e. DfT contribution of more than £5m)

c) Please provide a short description (max 500 words) of your assessment of the value for money of the project including your estimate of the Benefit Cost Ratio (BCR) to include:

- Significant monetised and non-monetised costs and benefits
- Description of the key risks and uncertainties and the impact these have on the BCR;
- Key assumptions including: appraisal period, forecast years, optimism bias applied; and
- Description of the modelling approach used to forecast the impact of the project and the checks that have been undertaken to determine that it is fit-for-purpose.

d) Additionally detailed evidence supporting your assessment, including the completed [Appraisal Summary Table](#), should be attached as annexes to this bid. **A checklist of material to be submitted in support of large project bids has been provided.**

Has an Appraisal Summary Table been appended? Yes No N/A

- Please append any additional supporting information (as set out in the Checklist).

**It is the responsibility of bidders to provide sufficient information for DfT to undertake a full review of the analysis.*

B6 Economic Case:

Please describe the air quality situation in the area where the project will be implemented by answering the three questions below.

i) Has Defra's national air quality assessment, as reported to the EU Commission, identified and/or projected an exceedance in the area where the project will be implemented?

Yes No

ii) Is there one or more Air Quality Management Areas (AQMAs) in the area where the project will be implemented? AQMAs must have been declared on or before the 31 March 2017

Yes No

iii) What is the project's impact on local air quality?

Positive Neutral Negative

There are no AQMAs located within 1km of the proposed scheme. Data obtained from the SNDC 2015 local passive monitoring in Long Stratton indicates that annual average NO₂ concentration at the closest monitoring location to the proposed scheme is 17.33µg/m³. This is well below the 40µg/m³ as prescribed by the Air Quality Standards (AQS) England Regulations 2010. Similarly, available monitoring data for the wider area also show that air quality is within the AQS prescribed limits. It is not anticipated that the proposed scheme will result in any significant changes to local air quality.

iv) Does the project promoter incentivise skills development through its supply chain?

Yes No N/A

Norfolk County Council and its supply chain (Tarmac / Mouchel & Dynniq) have key targets built into existing contracts to develop and train new Apprentices. This will be reinforced by the forthcoming County Council Plan which is currently being developed in line with the new 'Caring for our County' priorities. This will include a specific ambition to create more apprenticeships across Norfolk, including within Norfolk County Council.

B7. Management Case - Delivery

a) A project plan (typically summarised in Gantt chart form) with milestones should be included, covering the period from submission of the bid to project completion.

Has a project plan been appended to your bid? Yes (please see Appendix D)

b) If delivery of the project is dependent on land acquisition, please include a letter from the respective land owner(s) to demonstrate that arrangements are in place to secure the land to enable the authority to meet its construction milestones.

Has a letter relating to land acquisition been appended? Yes (please see Appendix A)

c) Please provide in Table C summary details of your construction milestones (at least one but no more than 6) between start and completion of works:

Table C: Construction milestones

Milestones	Estimated Date
Preliminary design complete	February 2018
All licences and approvals secured	September 2019
Advance works to commence	September 2019
Construction start (main works)	October 2019
Opening date	May 2020
Completion of works	August 2020

d) Please list any major transport projects costing over £5m in the last 5 years which the authority has delivered, including details of whether these were completed to time and budget (and if not, whether there were any mitigating circumstances)

- Postwick Hub including Phase 1 of Park and Ride expansion (completed on time and budget)
- £5.3m Kings Lynn, Edward Benefer way access road (completed on time and budget)
- Great Yarmouth Beacon Park to A143 link road scheme delivered as part of the DfT Pinch Point funding (completed on time and budget)
- Improvement to the A12/A143 junction, scheme value £6.779m
- Norwich Northern Distributor Road (in progress)
- Norwich fringe drainage project (in progress)

This is in addition to the annual Highways Capital Programme of integrated transport and maintenance schemes. This is approximately £120m each financial year, including some £85m of external funding and this programme is typically delivered to within a £50,000 tolerance.

Delivery of the above requires effective partnership working, and often rapid mobilisation of both design and contractor resource. Our contractual arrangements provide flexibility to achieve this, with additional flexibility to engage the Eastern Highways Alliance if required.

B8. Management Case – Statutory Powers and Consents (Essential)

a) Please list if applicable, each power / consent etc. already obtained, details of date acquired, challenge period (if applicable), date of expiry of powers and conditions attached to them. Any key dates should be referenced in your project plan.

No statutory processes have been completed to date.

b) Please list if applicable any outstanding statutory powers / consents etc. including the timetable for obtaining them.

- Obtain approval from Norfolk County Council Environment, Development and Transport Committee July 2018.
- Planning consent under the Town and Country Planning Act 1990 will be required. The planning application is programmed for submission in October 2018 and our programme anticipates receiving planning permission in February 2019.

- Ordinary water course consent from Lead Local Flood Authority June 2018.
- TROs (including SRO) to be processed between September 18 and September 19.

B9. Management Case – Governance

As with all highways capital schemes, the tried and tested standard Norfolk County Council corporate project management guidelines will be followed. This is based on PRINCE2 methodology whereby normal good project management and governance arrangements will be applied. This includes maintaining a detailed project management plan, risk register and effective financial management.

This tried and tested arrangement has successfully delivered thousands of schemes over the years, including many DfT funded projects.

A Project Lead has already been identified in this document. In addition, the Highways Capital Programme Manager will be the Project Sponsor. A dedicated Project Manager and Project Team, comprising suitable experienced and qualified staff, will be established to design and deliver the works. These will be appointed from within the County Council's existing resources, which are further supplemented by Mouchel team members and expertise.

This project team will report to both the Project Sponsor and to an established Project Delivery Team (PDT) board which oversees major scheme delivery throughout the County.

In line with national best practice and corporate project management guidelines, projects will follow the standard delivery processes which will include monthly financial reviews, gateway review meetings at key milestones, and early contractor involvement meetings.

Phasing the works in sections and over different financial years will allow the project scope to be tailored as required and ensure full budget spend combined with flexibility with on the ground delivery.

B10. Management Case - Risk Management

All projects will be expected to undertake a Quantified Risk Assessment (QRA) and a risk register should be included. Both should be proportionate to the nature and complexity of the project. A Risk Management Strategy should be developed that outlines how risks will be managed.

Has a QRA been appended to your bid? Yes No

Has a Risk Management Strategy been appended to your bid? Yes No

The risk register is included as Appendix E. It covers mobilisation, securing design and construction resources, streetworks / permit issues and the impact on commuter routes, underground utility apparatus, potential need for diversion, and financial aspects.

It should be noted that in terms of buildability, a key risk has been mitigated through securing required land. QRA is in Appendix F.

Please provide evidence on the following points (where applicable) with a limit of 50 words for each:

a) What risk allowance has been applied to the project cost?

A quantified risk assessment (Appendix F) has been produced and risk has been accounted for at £869,925 equivalent to 26.5% of scheme base costs. This is intended to mitigate for uncertainty surrounding scheme costs.

b) How will cost overruns be dealt with?

NCC will determine the optimum value for money delivery route (through our term contract with Tarmac or the Eastern Highways Alliance) and apply established project management methods to deliver within budget. Sufficient QRA contingency is included to cover foreseeable risks which will be rigorously managed.

c) What are the main risks to project timescales and what impact this will have on cost?

The risk register, Appendix E, details the main risks to project timescales including the following:

- Unforeseen archaeological finds;
- Requirements for additional traffic management;
- Objections to design
- Access problems
- Requirements for additional traffic management

B11. Management Case - Stakeholder Management (Essential)

The bid should demonstrate that the key stakeholders and their interests have been identified and considered as appropriate. These could include other local authorities, the Highways England, statutory consultees, landowners, transport operators, local residents, utilities companies etc. This is particularly important in respect of any bids related to structures that may require support of Network Rail and, possibly, train operating company(ies).

a) Please provide a summary in no more than 100 words of your strategy for managing stakeholders, with details of the key stakeholders together with a brief analysis of their influences and interests.

Key stakeholders already involved in discussions about this bid include South Norfolk Council, Norfolk Homes and the landowner. Many statutory consultees are already aware of local aspirations for a roundabout in the area and will be consulted as included on the appended delivery programme. It is the council's intention to undertake a stakeholder and community consultation (including exhibitions) prior to submitting the Planning application. Utilities apparatus in the area has been identified and considered, and formal consultation will follow in due course.

b) Can the project be considered as controversial in any way? Yes No

c) Have there been any external campaigns either supporting or opposing the project?

Yes No

The following have raised concerns, on behalf of residents and road users, about safety and the operation of the junction and requested improvements.

- The Rt Hon Richard Bacon MP
- Local Member, Cllr Alison Thomas, deputy leader of Norfolk County Council
- South Norfolk District Council
- Tharston Parish Council
- Long Stratton Parish Council
- Hempnall Parish Council (specifically requesting a roundabout)
- Shelton & Hardwick Parish Council
- Wacton Parish Council
- Fritton & Morningthorpe Parish Council

d) For large projects only please also provide a Stakeholder Analysis and append this to your application.

Has a Stakeholder Analysis been appended? Yes No N/A

e) For large projects only please provide a Communications Plan with details of the level of engagement required (depending on their interests and influence), and a description of how and by what means they will be engaged with.

Has a Communications Plan been appended? Yes No N/A

B12. Management Case – Local MP support (Desirable)

e) Does this proposal have the support of the local MP(s);

The Rt Hon Richard Bacon MP, South Norfolk Yes No

A letter of support from Rt Hon Richard Bacon MP, and one Cllr Alison Thomas is appended in Appendix A.

B13. Management Case - Assurance (Essential)

We will require Section 151 Officer confirmation (Section D) that adequate assurance systems are in place.

This confirmation is provided in Section D.

SECTION C – Monitoring, Evaluation and Benefits Realisation


C2. Please set out, in no more than 100 words, how you plan to measure and report on the benefits of this project, alongside any other outcomes and impacts of the project.


Norfolk County Council will monitor the site following completion in terms of network operation and safety. South Norfolk Council will monitor progress of housing (and employment) provision in the area, particularly in relation to planned growth at Long Stratton. This will include:

1. Reduction of reported road accidents over a 5 year period commencing from the scheme opening date. This will be compared against the 5 year accidents record prior to opening.
2. Reduction in average delay in the AM and PM Peak on the minor arms recorded 1 year after scheme opening.
3. Delivery of dwellings
4. Delivery of Long Stratton bypass

The benefits will be reported in the County Councils' Network Management Operation Plan, updates to Members in our regular reporting in Annual Monitoring Reports of Development Plan documents.

SECTION D: Declarations

D1. Senior Responsible Owner Declaration	
As Senior Responsible Owner for the A140 Hempnall Roundabout scheme I hereby submit this request for approval to DfT on behalf of Norfolk County Council and confirm that I have the necessary authority to do so.	
I confirm that Norfolk County Council will have all the necessary statutory powers in place to ensure the planned timescales in the application can be realised.	
Name: Mr Nick Tupper	Signed: 
Position: Assistant Director (Highways), Norfolk County Council	

D2. Section 151 Officer Declaration	
As Section 151 Officer for Norfolk County Council I declare that the project cost estimates quoted in this bid are accurate to the best of my knowledge and that Norfolk County Council	
<ul style="list-style-type: none"> - has allocated sufficient budget to deliver this project on the basis of its proposed funding contribution - accepts responsibility for meeting any costs over and above the DfT contribution requested, including potential cost overruns and the underwriting of any funding contributions expected from third parties - accepts responsibility for meeting any ongoing revenue requirements in relation to the project - accepts that no further increase in DfT funding will be considered beyond the maximum contribution requested and that no DfT funding will be provided for this bid in 2020/21. - confirms that the authority has the necessary governance / assurance arrangements in place and, for smaller project bids, the authority can provide, if required, evidence of a stakeholder analysis and communications plan in place - confirms that if required a procurement strategy for the project is in place, is legally compliant and is likely to achieve the best value for money outcome 	
Name: Mr Simon George	Signed: 

HAVE YOU INCLUDED THE FOLLOWING WITH YOUR BID?

Combined Authority multiple bid ranking note (if applicable)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
Map showing location of the project and its wider context	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Combined Authority support letter (if applicable)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	<input checked="" type="checkbox"/> N/A
LEP support letter (if applicable)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Housebuilder / developer evidence letter (if applicable)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Land acquisition letter (if applicable)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Projects impact pro forma (must be a separate MS Excel)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Appraisal summary table	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A
Project plan/Gantt chart	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> N/A

Appendices

- Appendix A: Letters of Support / Intent
- Appendix B: Scheme plan
- Appendix C: Equality Analysis
- Appendix D: Delivery programme
- Appendix E: Risk Register
- Appendix F: QRA
- Appendix G: Project Impacts Pro-Forma
- Appendix H: Appraisal Summary Table
- Appendix I: Environmental Constraints Plan

Appendix A: Letters of Support/Intent

Haydn Davies
Department for Transport
Great Minster House
33 Horseferry Road
London
SW1P 4DR

Thursday, 29th June 2017

Dear Mr Davies,

Hempnall Crossroads Improvements

New Anglia Local Enterprise Partnership fully supports this bid to deliver an improvement at the Hempnall Crossroads on the A140. This junction improvement forms part of the wider transport package, including a bypass of the village of Long Stratton, required to enable delivery of 1,800 new homes at Long Stratton. This strategic housing commitment is located just south of Norwich, the largest economy in the New Anglia LEP area, and set to receive the largest amount of growth in the coming years. The scheme is identified as a key priority in the LEP's Strategic Economic Plan.

The wider package of transport measures will bring major improvements to the A140, which connects Norwich to Ipswich, the other major economy in the New Anglia area. The A140 corridor has been identified by our Local Transport Board partners as one of the major economic links in the area during development work on our integrated transport strategy. With Norfolk and Suffolk County Councils we are undertaking a more detailed study for how this route might better serve this vital economic link and our new Economic Strategy which will be published in the autumn.

We will continue to work with Norfolk County Council on ways to bring forward the wider transport package at Long Stratton, including the improvement at Hempnall Crossroads for which a Community Infrastructure Levy contribution of £10m has been recognised and agreed by the local authorities forming the Greater Norwich Growth Board.

In summary, we can confirm that we fully support the proposals being put forward. Enabling an improvement at Hempnall will deliver a major part of the transport package facilitating delivery of the 1,800 houses at Long Stratton and also overcome traffic problems on this regionally strategic part of the highway network in the form of accidents and local congestion.

Yours sincerely



Chris Starkie
Managing Director

Letter of Intent by Developer

This Letter of Intent ("this letter") is made on the 28th day of June 2017

BETWEEN:

- (1) **THE NORFOLK COUNTY COUNCIL** of County Hall Martineau Lane Norwich NR1 2DH ("the Council")

-AND-

- (2) [REDACTED]
[REDACTED]

and sets out as follows:

1. The property that is the subject of this letter is located at Hempnall and is shown coloured purple on the plan number PKA019 – MP – 6000 – 001A annexed to this letter ("the Property") or a lesser extent that may be determined once planning permission is granted.
2. The Owners are the owners or have control of the ownership of the Property.
3. The Council wishes to purchase the Property from the Owners in order to carry out the Works in consideration of the payment to the Owners of the Purchase Price.
4. This letter will establish the terms of the purchase agreement between the Council and the Owners.
5. The Works are the junction improvement scheme shown indicatively on plan number PKA019 – MP – 2900 – 001C annexed to this Agreement ("the Works").
6. The Council intends to secure partial funding for the Works by making a funding bid to the National Productivity Investment Fund 2018/19 and 2019/20 ("the Fund").
7. The Long Stop Date means 31 December 2020.
8. The Purchase Price means such sum as is determined pursuant to paragraph 10 of this letter.
9. Subject to:
 - 9.1 funding for at least 70% of the cost of the Works being secured from the Fund or otherwise available to the Council as certified by the Council's Head of Finance acting reasonably (the Council underwriting the balance of the cost of the Works);
 - 9.2 the grant of planning permission for the carrying out of the Works; and

- 9.3 the obtaining of all statutory and technical approvals to enable the Works to commence as certified by the Council's Director of Community and Environmental Services acting reasonably

(collectively "the Condition");

the Owners will within three months of the Condition being satisfied transfer or procure the transfer of the Property to the Council and the Council will on completion of the said transfer pay to the Owners the Purchase Price as payment in full for the Property.

10. The Purchase Price shall be the market value of the Property at the date the Condition is satisfied ("the Valuation Date") with vacant possession but if the parties cannot agree such market value then the Purchase Price shall be the price as determined by an independent third party expert appointed by the parties or in the event of disagreement as to who the expert shall be as appointed by the President of the RICS or such other officer of the RICS so empowered on the application of either party. The expert shall ascertain the market value by reference to the valuation procedures set out in the compulsory purchase legislation current at the Valuation Date and shall include in the valuation compensation for any growing crops in the Property at the Valuation Date.
11. If the Condition has not been satisfied by the Long Stop Date then either the Council or the Owners may terminate this letter thereafter by giving written notice to the other to that effect.
12. The Council will keep the Owners informed from time to time as to the progress of the satisfaction of the Condition.
13. The Council will use its best endeavours to complete the Works within 12 months of the date the Property is transferred from the Owners to the Council and will underwrite the shortfall between the cost of the Works and the money it receives pursuant to paragraph 9.1.
14. Following completion of the Works, if any part of the Property has not been utilised by the Council, the Council will transfer any unused Property back to the Owners within three months.
15. The Owners may continue to farm the Property until the Property is transferred to the Council.
16. The Owners will permit the Council or agents acting for the Council access to the Property at reasonable times on prior reasonable notice only (of not less than 5 Working Days) for the purpose of carrying out surveys and preparing plans provided that the Owners shall not be obliged to permit access if to do so would cause

damage to growing crops unless the Council pays compensation to the Owners for any crop loss as a result of such access.

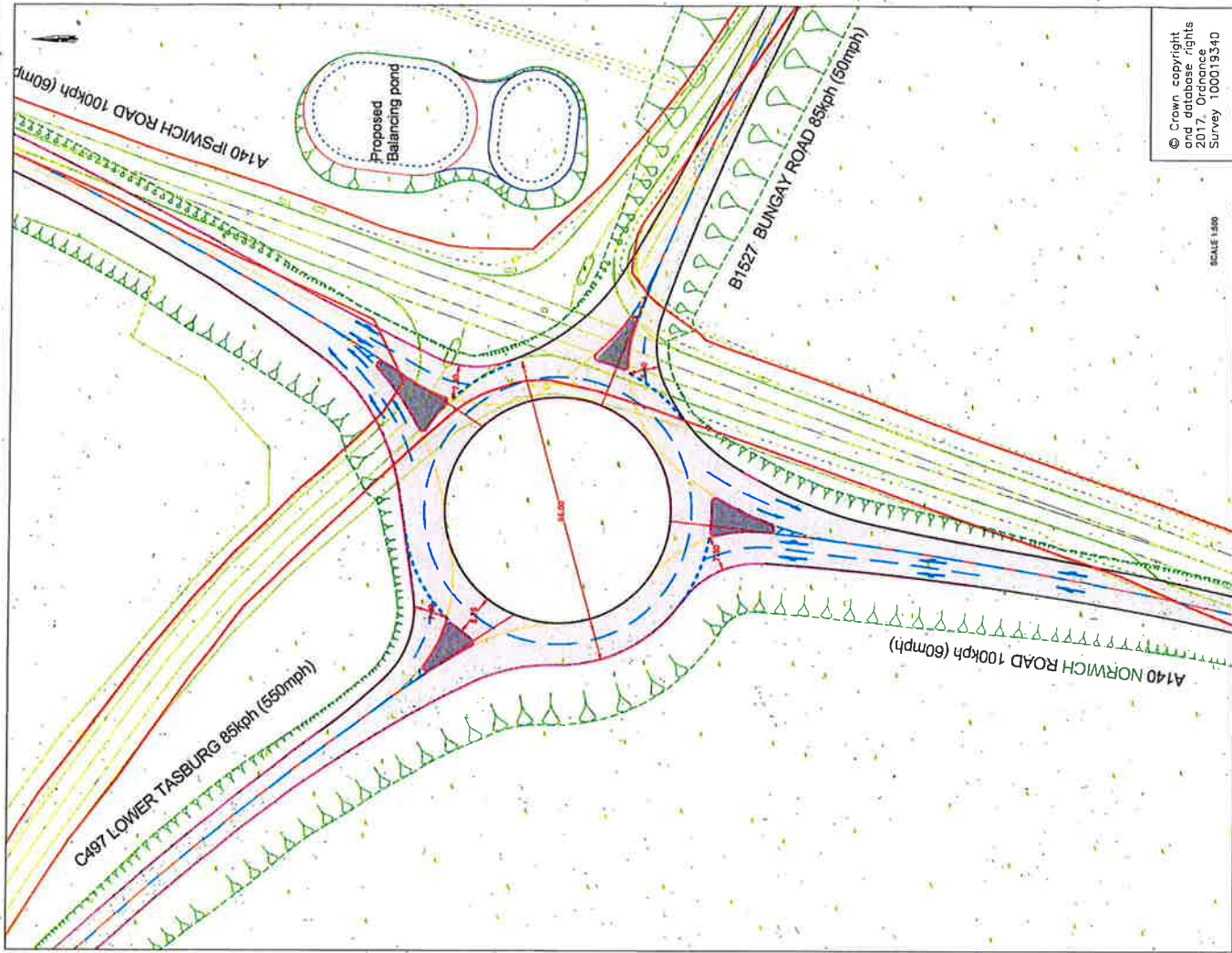
17. By signing this letter the Owners are not acknowledging that the Works are necessary highway improvement works which are required for the development as envisaged by the Long Stratton Area Action Plan adopted in May 2016 ("the Development").
18. Subject to the Condition being satisfied neither the Owners nor any other landowner or developer in relation to the Development will be expected to contribute more than 30% of the cost of the Works, and payment of such contribution will be determined through the planning process for the Development.
19. The parties shall be responsible for their own costs in connection with this letter and the purchase agreement referred to in paragraph 4 of this letter.
20. This letter accurately reflects the understanding between the Owners and the Council.
21. This letter is signed below by/on behalf of the parties under hand.

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]

[Redacted signature block]



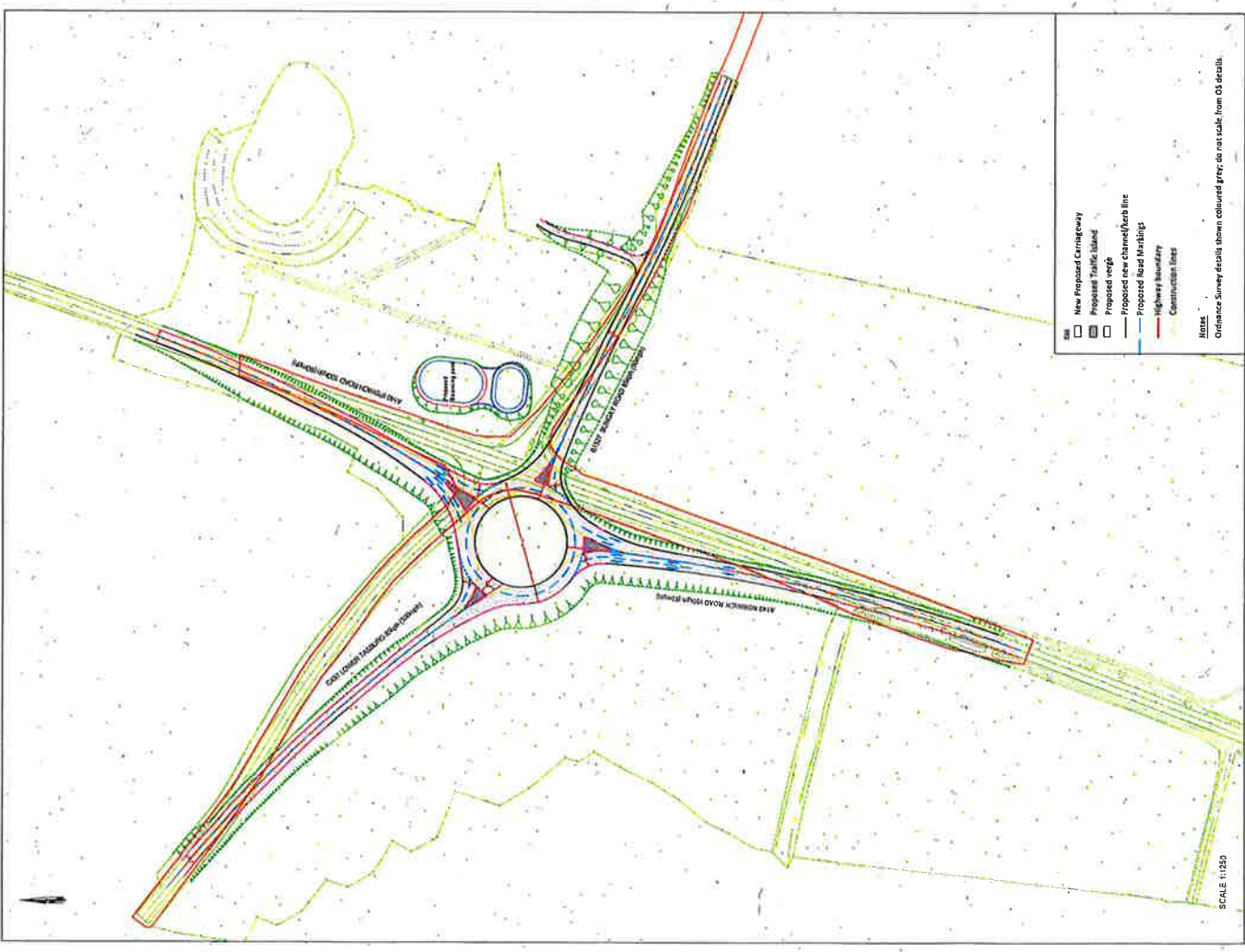
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and database rights
2017. Ordnance
Survey 100019340

SCALE 1:500

PKA019

REV.	DESCRIPTION	DATE	INITIALS	DATE
A	Added proposed road markings and line names	05/17	OS	05/17
B	Revised on station line alignment and access track location	05/17	DG	05/17
C	Final layout & Council format design completed - 2nd set updates	05/17	DG	05/17

REV.	DESCRIPTION	DATE	INITIALS	DATE
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C	Final layout & Council format design completed - 2nd set updates	05/17	DG	05/17



- New Proposed Criswegway
- Proposed Traffic Island
- Proposed verge
- Proposed new channel/kerb line
- Proposed Road Markings
- Highway boundary
- Construction lines

Notes:
Ordnance Survey details shown coloured grey; do not scale from OS details.

DRAWING TITLE
A140 Long Stratton:
Hempnall Crossroads
Roundabout Design

**Tom McCabe -
Executive Director of
Community and Environmental Services
Norfolk County Council
County Hall, Wardslaw Lane
Norwich NR1 2AG**



SCALE 1:1250



Richard Bacon, M.P.

MEMBER OF PARLIAMENT FOR SOUTH NORFOLK

House of Commons
London SW1A 0AA

Senior Researcher
Tel 01379 651979
Email rigbym@parliament.uk

Mr Paul Donnachie
Capital Programme Manager - Highways and Transport
Community and Environmental Services
Norfolk County Council
Martineau Lane
NORWICH NR1 2DH

26 June 2017

Dear Paul

Thank you for your email of 19th June 2017 outlining Norfolk County Council's intention to bid to DfT for NPIF funding.

I am pleased to support both Norfolk County Council's bids, which I believe will uphold the NPIF's objectives and bring significant benefits to local communities and businesses alike.

I would like to offer the following comments and observations on the two projects at the centre of Norfolk County Council's bid:

A140/C497/B1527 Hempnall Crossroads

I am a frequent user of this junction and I regularly receive complaints from constituents about delays and accidents experienced at this very busy junction. Furthermore, I am aware that requests for improvements have been raised on numerous occasions by both the local member for Norfolk County Council (who is also the Deputy Leader), Hempnall Parish Council and Tharston & Hapton Parish Council.

A146/C203 George Lane, Loddon

The A146 has a reputation locally as being a dangerous road and it is good news that the County Council is pressing for improvements to be made. I understand this to be a consented development with an approved Section 278 agreement, which will also incorporate improvements for pedestrians, promoting accessibility for the local community.

I fully support both improvement proposals. I believe they will support the NPIF's objectives of easing congestion on important local routes, unlocking economic and job creation opportunities, and enabling delivery of new housing developments.

I would add that there is a widespread perception that traffic congestion is primarily an urban issue. I hope that due recognition will be given to the fact that traffic congestion is also a problem affecting the highway network in rural areas in my constituency, particularly between the larger urban centres. In addition, safety at rural junctions like these is of particular concern where the speed limit is unrestricted, particularly on busy A class roads.

I very much hope these bids will be approved, and I know that the communities involved will benefit greatly from the proposed infrastructure improvements.

Yours sincerely

RICHARD BACON MP
Member of Parliament for South Norfolk

Email: richardbaconmp@parliament.uk

Web: www.richardbacon.org.uk

AT/MBC

27 June 2017

Tel: 01603 223201

Paul Donnachie
Capital Programme Manager
Highways and Transport
Community and Environmental Services
County Hall (Floor 2)

Dear Paul

Thank you for your email of 27 June 2017 outlining Norfolk County Councils intention to bid to DfT for NPIF funding.

I would be delighted to support the County Councils bid for **A140/C497/B1527 Hempnall Crossroads**, which I believe will support the NPIF objectives and bring significant benefits to local communities and businesses alike.

I regularly receive complaints from residents about delays and accidents experienced at this very busy and dangerous junction. I have received many requests for improvements which have been raised on numerous occasions by several of my Parish Councils in the vicinity. Namely, Hempnall, Long Stratton, Tasburgh, Tharston & Hapton, Shelton & Hardwick, Wacton, Fritton & Morningthorpe.

I fully support this improvement proposal. I believe it will support the NPIF objectives of easing congestion on important local routes, unlocking economic and job creation opportunities, and enabling delivery of new housing developments. As there is significant growth planned for Long Stratton the improvement is an essential infrastructure requirement needed before development can commence. More importantly however, improving the Hempnall crossroads will bring much needed safety improvements for my residents and for all users of the A140.

I very much hope the bid will be approved, and look forward to seeing the significant benefits it will bring to the local and wider communities.

Yours sincerely



Cllr Alison Thomas
Deputy Leader of the Council
Member for Long Stratton Division
www.norfolk.gov.uk

Tharston and Hapton Parish Council
5 Goshawk Mews, Norwich, NR7 8DE
01603 568612 tharstonandhapton@gmail.com
2 Villages One Parish

Mr Martin Wilby
c/o Tom McCabe
Director EDT
Norfolk County Council
Martineau lane
Norwich
Norfolk

31st October 2016

Dear Mr Wilby

At our recent Parish Council meeting I was asked to contact you regarding the issues around the dangerous nature of the junction at Hempnall Crossroads on the A140 for our parishioners.

Many concerns have been raised by our Parish Councillors and parishioners at parish meetings regarding this very dangerous junction and the future traffic issues any bypass would bring to this already horrendous junction. It is not only very dangerous for our parishioners to use but also a real accident black spot.

Our parishioners and Parish Councillors ask that you look at this issue with real urgency and what issues the extra traffic flowing at a dangerous speed will bring to this already congested area.

The Councillors and Parishioners ask you to look at the improvements that can be made to the junction as there have been numerous accidents at this junction in the past and we are very concerned that, one of these days, in a 60 limit, it is only a matter of time before there will be an accident that results in one or more deaths at this crossroads. We feel that the improvements could be along the same lines as the improvements made to the Pulham junction which seem to work very well and have definitely made that area easier to use and alleviated the congestion that area used to have.

Our Parish Council are aware of the modelling plans for the Hempnall Crossroads junction and we would like to know at what stage these are at please and await your reply on these plans.

I know that other Parish Councils around this junction are also very concerned on this issue.

I await your comments.

Yours sincerely

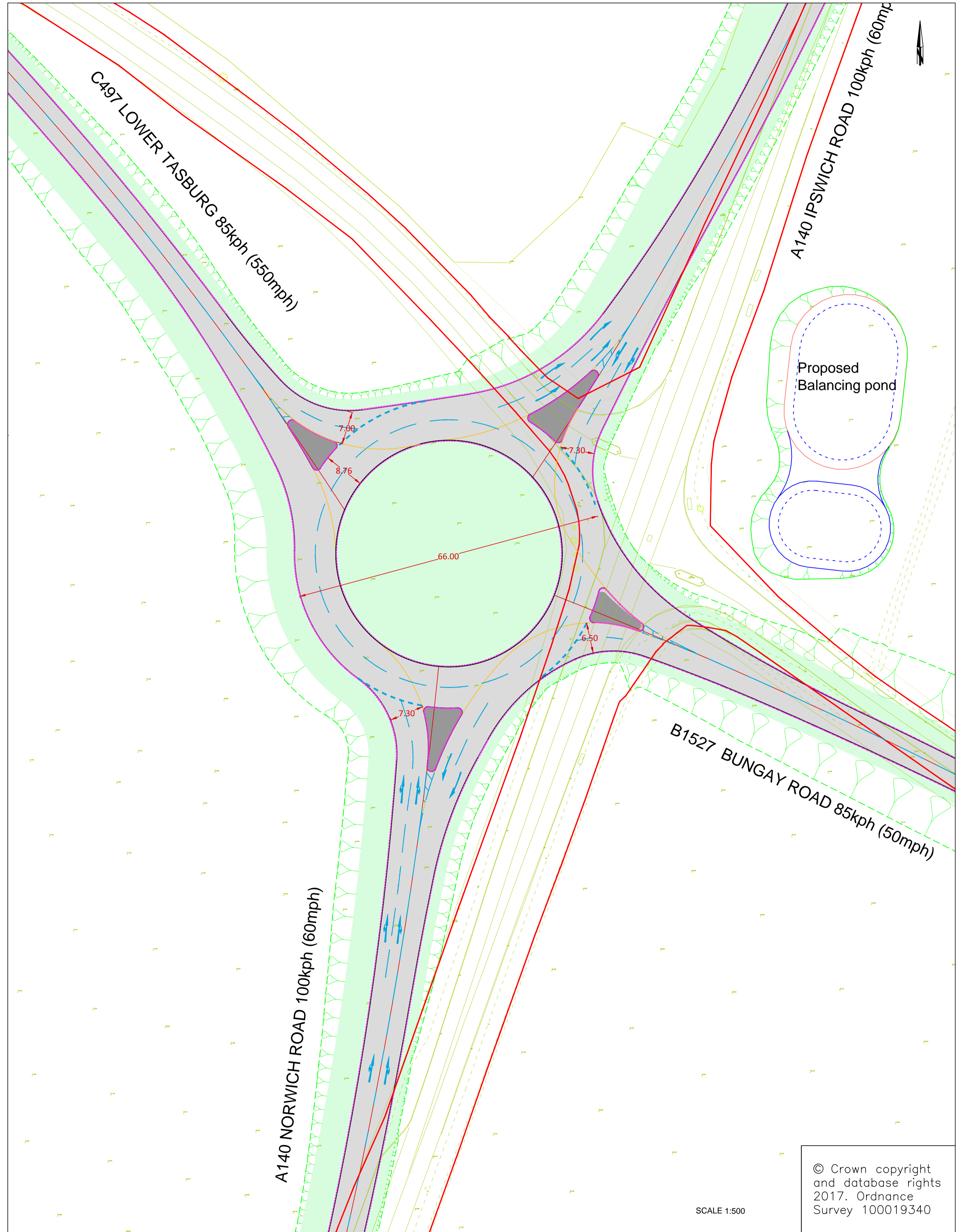
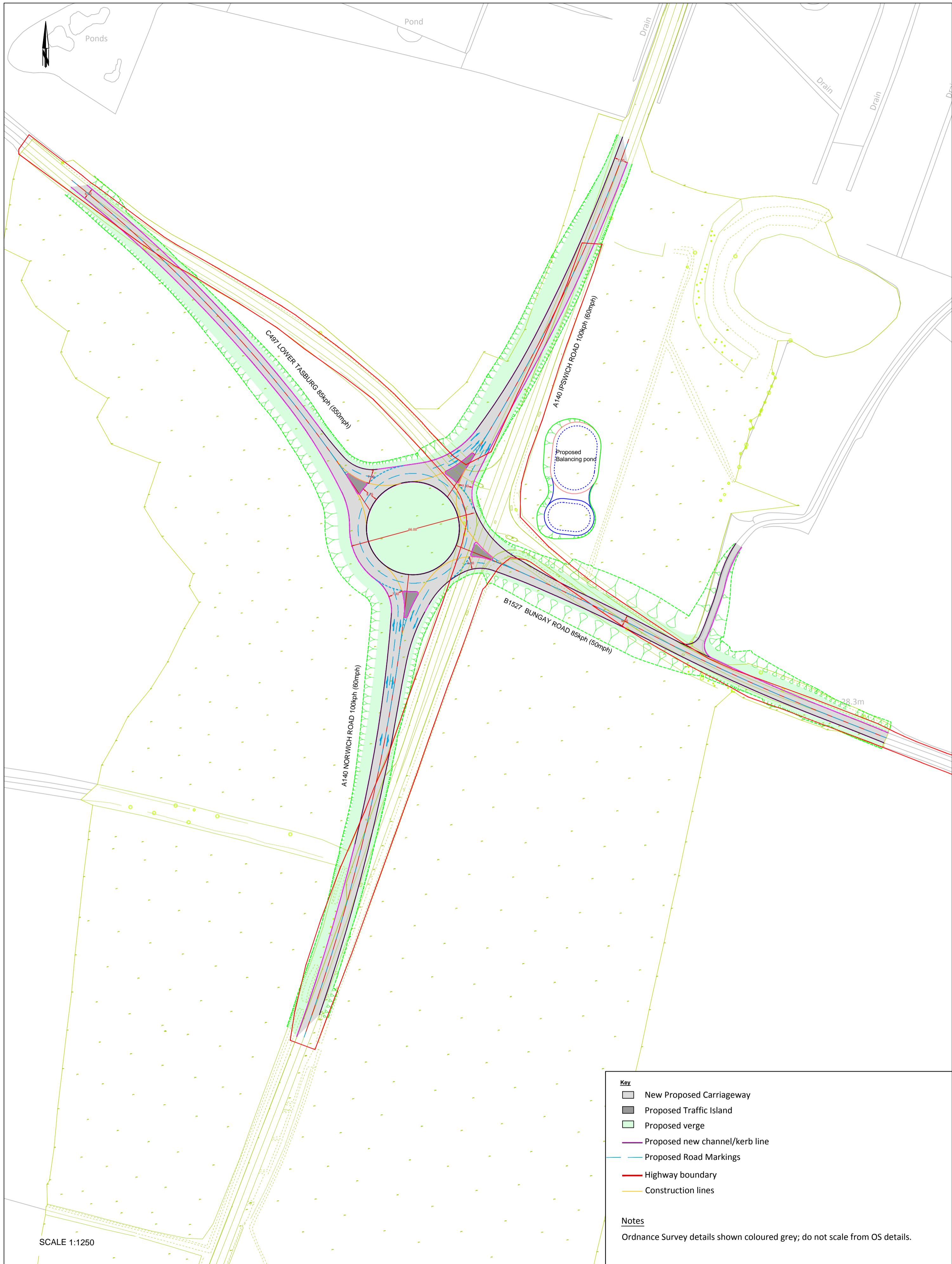


Alan Arber
Parish Clerk-Tharston and Hapton Parish Council

cc. Alison Thomas
cc. Des Falcher

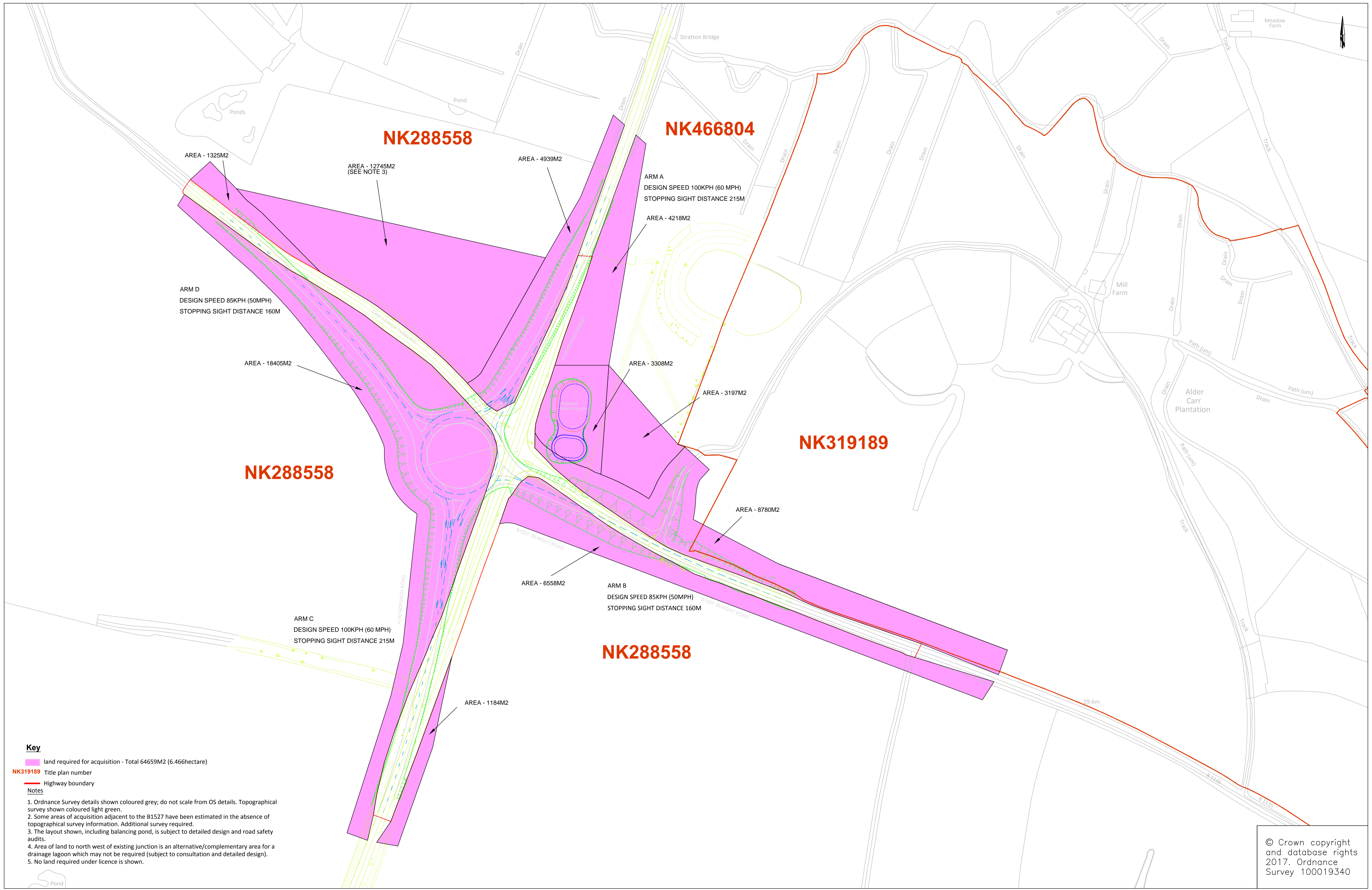
Chairman: Mr N Putter
Councillors: Mrs J Goodall Brown, Mr G Bleach, Mr V Hake, Mr W Howson
Clerk: Mr A Arber

Appendix B: Scheme Plan



REV.	DESCRIPTION	DRAWN BY	CHECKED	DATE
A	Added proposed road markings and lane arrows	DG	AJC	06/17
B	Revised on eastern arm alignment and access track included	DG	AJC	06/17
C	Draft stamp & Cannon overlay design removed. File ref updated	AJC	AJC	06/17

SURVEYED BY	INITIALS	DATE	DRAWING No.
OS			PKA019-MP-2900-001C
DESIGNED BY	DG	05/17	PROJECT TITLE
DRAWN BY	DG	05/17	Long Stratton-A140 Hempnall Cross Roads Junction Improvement
CHECKED BY	AJC	05/17	SCALE
			1:500/1:1250 @ A1
			FILE No.
			PKA019



Key
 Land required for acquisition - Total 64659M2 (6.466hectare)
 NK319189 Title plan number
 Highway boundary

- Notes**
1. Ordnance Survey details shown coloured grey; do not scale from OS details. Topographical survey shown coloured light green.
 2. Some areas of acquisition adjacent to the B1527 have been estimated in the absence of topographical survey information. Additional survey required.
 3. The layout shown, including balancing pond, is subject to detailed design and road safety audits.
 4. Area of land to north west of existing junction is an alternative/complementary area for a drainage lagoon which may not be required (subject to consultation and detailed design).
 5. No land required under licence is shown.

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Tom McCabe
 Executive Director of
 Community and Environmental Services
 Norfolk County Council
 County Hall, Martineau Lane
 Norwich NR1 2SG

DRAWING TITLE
 A140 Long Stratton:
 Hempnall Crossroads Roundabout Design
 Land Plan

REV.	DESCRIPTION	DRAWN BY	CHECKED	DATE
A	Draft stamp removed; file ref. updated	AJC	AJC	06/17

SURVEYED BY	INITIALS	DATE	DRAWING No.
	OS		PKA019-MP-6000-001A
DESIGNED BY	DG	06/17	PROJECT TITLE
DRAWN BY	DG	06/17	Long Stratton-A140 Hempnall Cross Roads Junction Improvement
CHECKED BY	AJC	06/17	SCALE
			1:1250 @ A1
			FILE No.
			PKA019

Appendix C: Equality Analysis



A140/C497/B1527 Hempnall Roundabout

Equality Assessment – Findings and Recommendations

21 June 2017

Paul Donnachie

This assessment helps you to consider the impact of service changes on people with protected characteristics. You can update this assessment at any time so that it informs ongoing service planning and commissioning.

For help or more information please contact Corporate Planning & Partnerships team, email: cpp@norfolk.gov.uk or tel: 01603 222611.

Contents

		Page
1.	The purpose of an equality assessment	3
2.	The legal context	3
3.	The assessment process	3
4.	The proposal	4
5.	Who is affected by this proposal	4
6.	Potential impact	
7.	Accessibility considerations	
8.	Recommended/mitigating actions	
9.	Evidence used to inform this assessment	
10.	Further information and contact details	
	Guidance notes to help you complete this assessment	

The purpose of an equality assessment

1. Equality assessments help decision-makers (either elected members, or officers with delegated authority) to consider the impact of proposals on people with protected characteristics¹, prior to decisions being taken. This ensures that:
 - Every opportunity can be taken to maximise accessibility for disabled and older people, and promote equality for people with 'protected characteristics'.
 - Mitigating actions can be developed if adverse impact is identified.

The Legal context

2. Public authorities have a duty under the Equality Act 2010 to consider the implications of proposals on people with protected characteristics. The Act states that public bodies must pay due regard to the need to:
 - Eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under the Act²;
 - Advance equality of opportunity between people who share a relevant protected characteristic and people who do not share it³;
 - Foster good relations between people who share a relevant protected characteristic and people who do not share it⁴.

The full Act is available [here](#).

The assessment process

You can change or amend this wording as appropriate for your needs.

3. This equality assessment comprises two phases:
 - **Phase 1** – we gather evidence on the proposal – looking at the people who might be affected, the findings of related assessments and public consultation, contextual information about local areas and populations and other relevant data. Where appropriate, we engage with residents, service users and stakeholders to better understand any issues that must be taken into account.
 - **Phase 2** – we analysis all the results. We make sure that any impacts highlighted by residents and stakeholders inform the final assessment. If the evidence indicates that the proposal may impact adversely on people with protected characteristics, mitigating actions are identified.

When completed, the findings of the assessment are provided to decision-makers, to enable any issues to be taken into account before a decision is made.

The proposal

4. Summarise here the proposal being assessed.

The proposal is to upgrade an existing 'hot-spot' junction along the A140 to a four arm roundabout. This improvement will minimise delays for traffic, support greater regional connectivity, address safety issues and importantly act as a catalyst for new development at Long Stratton including 1,800 dwellings in addition to retail and employment land

The proposal is in response to the DfT National Productivity Investment Fund for the Local Road Network. It is currently at bid stage and has to be submitted prior to 5pm on 31 June 2017. A decision on whether DfT will fund is expected around Autumn 2017.

Who is affected?

5. The proposal will affect people with the following protected characteristics:

People of all ages	NO
A specific age group (please state if so):	YES
Older people	
Disability (all disabilities and long-term health conditions)	YES
Gender reassignment (e.g. people who identify as transgender)	NO
Marriage/civil partnerships	NO
Pregnancy & Maternity	NO
Race (different ethnic groups, including Gypsies and Travellers)	NO
Religion/belief (different faiths, including people with no religion or belief)	NO
Sex (i.e. men/women/intersex)	NO
Sexual orientation (e.g. lesbian, gay and bisexual people)	NO

Analysis of the people affected

6. Provide an analysis of the people who will be affected by the proposal.

[click here](#)

Note – this section is essential – unless you have a clear understanding of who will be affected, you cannot fully assess the potential impact.

Potential impact

It is likely that disabled people and older people may be impacted as a result of these works for the following reasons

- Some roads and paths will not be accessible during certain periods of time, which will likely have a disproportionate impact on people with limited mobility or have some form of sensory impairments.
- People who rely on transport, either their own car or public transport may be impacted at certain time during this work

Accessibility considerations

Describe here how accessibility will be incorporated into the proposal.

7. Accessibility is a priority for Norfolk County Council.

Planning and delivery of the works.

This will be subject to early contractor involvement including discussion with street works to mitigate the disruptive elements of project delivery.

This will include the provision of safe methods of working, which may include temporary walkways, road closures and diversions, and advance warning.

In accordance with Safety at Street Works and Roads Works. A code of Practice Oct 2013 DfT.

Access would have to be maintained to services such as Doctors surgeries and other centres of provision for vulnerable groups.

The scheme will improve pedestrian and cycling accessibility/safety by reducing traffic speeds

For guidance on the minimum and maximum access considerations that could be built into your proposal, please speak with Neil Howard, Equality & Accessibility Officer, email neil.howard@norfolk.gov.uk; Tel: 01603 224196

Recommended actions

8. If your assessment has identified any adverse impact, set out here any actions that will help to mitigate it.

	Action	Lead	Date
1.	Planning and delivery of the works. This will be subject to early contractor involvement including discussion with street works to mitigate the disruptive elements of project delivery. For instance if a road is closed in an urban/village environment which contains important footway route, the provision could be maintained by the use of a banksman who could	Highway	

	Action	Lead	Date
	lead groups through the site. If there was a need for a temp pathway beside it on the road, it would have to be wide enough for a manual/power wheelchair or a blind person with a guide dog and will it be ramped at both ends		
2.	Co-ordination of Road & Street works; Norfolk is a Permit Authority and permission to undertake the work is required, from NCC Street works who will co-ordinate the works. For instance method of work may be stated on the use of signing and guarding of temporary footways. If this was not complied with then a breach of the regulations would take place and be subject to enforcement and fines.	Street works	Throughout the project if the bid is successful.
3.	Works requiring road closures require a temporary traffic regulatory order which will be subject to consultation and publicity.	Highway Design	Throughout the project if the bid is successful.
4	Advising and aiding highway users and in particular vulnerable users to transverse the works. Referencing <ul style="list-style-type: none"> • The Safety at Street Works and Road Works A Code of Practice Oct 2014, • Best Practice as it is developed Nationally or locally from the reviews being undertaken on how to make works on the highway accessible for those with disabilities and other vulnerable groups • Any local concerns that becomes apparent. 	Contractor	Throughout the project if the bid is successful.

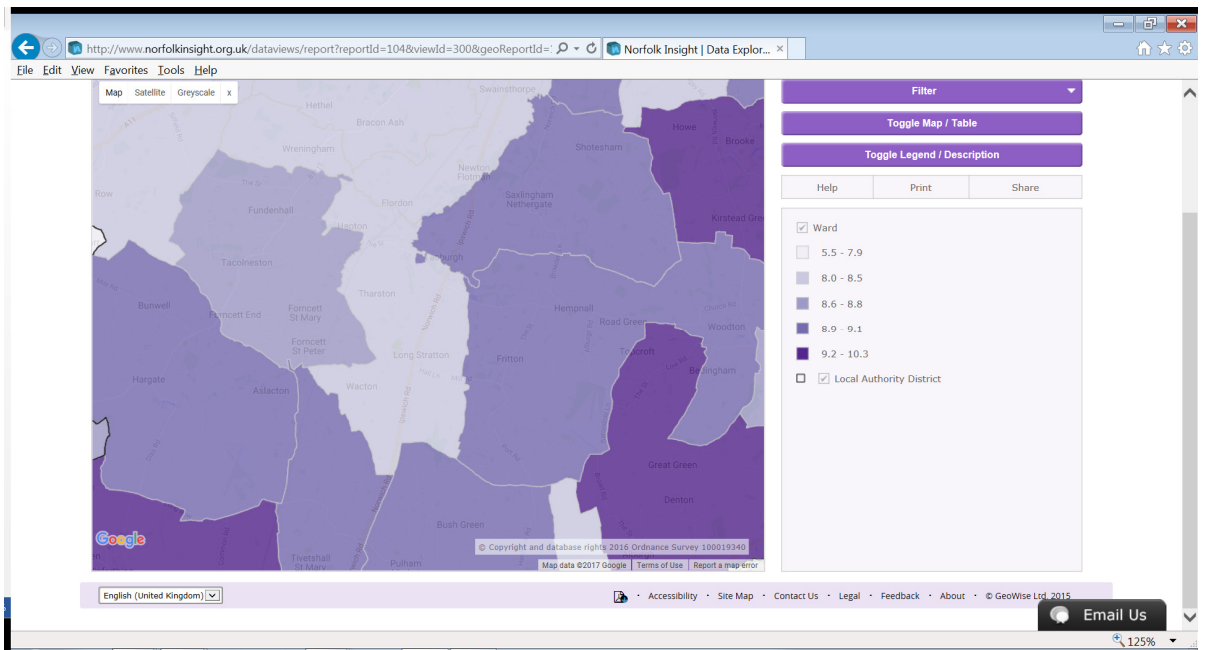
Evidence used to inform this assessment

9. See below

- Equality Act 2010
- Public Sector Equality Duty
- Safety at Street Works and Roads Works. A code of Practice Oct 2013 DfT
- Relevant business intelligence
 - On Norfolk Insight our Information Management Team have created a dataset of people aged 18-64 predicted to have a moderate or serious physical disability. This dataset is based on the prevalence data for moderate and serious disability by age included in the Health Survey for England, 2001 and published by PANSI (Projecting Adult Needs and Service Information). The prevalence rates have been applied to the latest mid-year Office for National Statistics (ONS) population estimates of the 18 to 64 population to give estimated numbers predicted to have a moderate or serious physical disability.
 - You can view the data spatially, in tabular format or download the data for a variety of administrative, health and statistical geographies from county to neighbourhood level on Norfolk Insight. Each data view will provide you with

comparators for Norfolk County, the East of England Region and Nationally for England. View the Physical Disability dataset at

- <http://www.norfolksight.org.uk/dataviews/view?viewId=300>
- See below screen shot. The analysis shows that the area where the scheme is located (Hempnall) does not have a concentration of this vulnerable group above the Norfolk average.



Further information

10. For further information about this equality impact assessment please contact Paul Donnachie, Capital Programme Manager



If you need this document in large print, audio, Braille, alternative format or in a different language please contact contact 0344 800 8020 or 0344 800 8011 (Textphone).

Guidance notes

Completing this assessment – what you need to know:

- Find out if you need to conduct an equality impact assessment (see below)
- Remind yourself what constitutes a good equality impact assessment (see below)
- Work through the three simple steps on the next page.

Do I need to conduct an equality impact assessment?

You need to conduct an equality impact assessment if you are planning, changing or commissioning policies, projects, strategies, infrastructure or services and this may impact on people - eg service users or staff.

When do I need to undertake it?

The findings of your assessment must be made available to decision-makers before a final decision is taken. You cannot justify a decision after it has been taken.

What constitutes a good equality impact assessment?

The principles below, drawn from case law, explain what is essential:

- **Proportionate** - where a proposal may affect large numbers of vulnerable people, the need to pay 'due regard' is very high.
- **Sufficient evidence** – you must consider what evidence you have and what further information may be needed to inform your assessment.
- **Consultation** - if a proposal constitutes a significant change to an existing service, people affected should expect to be consulted.
- **Genuine assessment** - the courts expect to see written evidence of a comprehensive and objective assessment. Your assessment will be considered inadequate if issues are only considered at a broad level or if relevant evidence is not taken into account.
- **No delegation** – the decision-makers responsible for determining the proposal cannot delegate consideration of the equality impact assessment to anyone else.
- **Contracted services** – the Council is responsible for ensuring that contracted services comply with equality law and do comply in practice.
- **Actions to mitigate any negative impact** – if adverse impact is identified by an assessment, consideration must be given to measures to avoid or mitigate this before agreeing the decision.

It is not always possible to adopt the course of action that will best promote the needs of people with protected characteristics. However, assessments enable informed decisions to be made, that take into account every opportunity to minimise disadvantage.

1 The protected characteristics are:

Age – e.g. a person belonging to a particular age or a range of ages (for example 18 to 30 year olds).

Disability - a person has a disability if she or he has a physical or mental impairment which has a substantial and long-term adverse effect on that person's ability to carry out normal day-to-day activities.

Gender reassignment - the process of transitioning from one gender to another.

Marriage and civil partnership

Pregnancy and maternity

Race - refers to a group of people defined by their race, colour, and nationality (including citizenship) ethnic or national origins.

Religion and belief - has the meaning usually given to it but belief includes religious and philosophical beliefs including lack of belief (such as Atheism).

Sex - a man or a woman.

Sexual orientation - whether a person's sexual attraction is towards their own sex, the opposite sex or to both sexes.

² Prohibited conduct:

Direct discrimination occurs when someone is treated less favourably than another person because of a protected characteristic they have or are thought to have, or because they associate with someone who has a protected characteristic.

Indirect discrimination occurs when a condition, rule, policy or practice in your organisation that applies to everyone disadvantages people who share a protected characteristic.

Harassment is “unwanted conduct related to a relevant protected characteristic, which has the purpose or effect of violating an individual’s dignity or creating an intimidating, hostile, degrading, humiliating or offensive environment for that individual”.

Victimisation occurs when an employee is treated badly because they have made or supported a complaint or raised a grievance under the Equality Act; or because they are suspected of doing so. An employee is not protected from victimisation if they have maliciously made or supported an untrue complaint.

3 The Act specifies that having due regard to the need to advance equality of opportunity might mean:

- Removing or minimizing disadvantages suffered by people who share a relevant protected characteristic that are connected to that characteristic;
- Taking steps to meet the needs of people who share a relevant protected characteristic that are different from the needs of others;
- Encouraging people who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such people is disproportionately low.

4 Having due regard to the need to foster good relations between people and communities involves having due regard, in particular, to the need to (a) tackle prejudice, and (b) promote understanding.

Appendix D: Delivery programme

ID	Task Name	Duration	Start	Finish	Predecessors	2017				2018				2019				2020			
						Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Qtr 1	Qtr 2	Qtr 3	Qtr 4
1	PKA019 HEMPSTALL CROSSROADS PROGRAMME																				
2																					
3	Total duration including feasibility	885 days	Mon 10/04/17	Fri 28/08/20																	
4																					
5	Mobilisation/Feasibility	59 days	Mon 10/04/17	Thu 29/06/17																	
30																					
31	Preliminary Design	155 days	Mon 03/07/17	Fri 02/02/18	5																
62																					
63	Consultation	40 days	Mon 05/02/18	Fri 30/03/18	31																
66																					
67	Land acquisition	160 days	Mon 05/02/18	Fri 14/09/18	31																
72																					
73	Planning application (includes internal approval)	235 days	Mon 02/04/18	Fri 22/02/19	63																
82																					
83	Discharge Planning conditions	155 days	Mon 25/02/19	Fri 27/09/19	73																
85																					
86	Licences/approvals	326 days	Mon 02/04/18	Mon 01/07/19	63																
91																					
92	Ecological surveys (Apr-Sept)	40 days	Mon 07/05/18	Fri 29/06/18																	
96																					
97	TROs approvals and consultation	270 days	Mon 17/09/18	Fri 27/09/19	67																
99																					
100	Detailed design	169 days	Mon 17/09/18	Thu 09/05/19	67																
127																					
128	Procurement (EHA)	100 days	Mon 13/05/19	Fri 27/09/19	100																
131																					
132	Construction & Supervision (inc. any advance works)	155 days	Mon 30/09/19	Fri 01/05/20	128,97,83																
135																					
136	Post Project	70 days	Mon 04/05/20	Fri 07/08/20	132																
137																					

Project: Hempnall
Date: Tue 27/06/17

Task		External Tasks		Manual Task		Finish-only	
Split		External Milestone		Duration-only		Deadline	
Milestone		Inactive Task		Manual Summary Rollup		Progress	
Summary		Inactive Milestone		Manual Summary		Manual Progress	
Project Summary		Inactive Summary		Start-only			

Appendix E: Risk Register

Project Risk, Issue and Opportunity Register															
Project Number				Date	30/05/2017										
Project Title		A140 Hempnall option 4		Version	1										
Client		Norfolk County Council / DFT		Current Risk Status of Project (gross risk)				M							
Project Manager				Risk Status of Project if all mitigation				L							
Risk Register Ref	Hazard/Risk Name	Effect/Consequence	Open / Closed	Risk owner	Rank	%	Cat	Initial Risk Exposure			(P x CI)				
								Min	Most Likely	Max					
A Funding / Third parties															
A1	Failure to secure funding in time to commence construction	Delays to programme whilst priority is agreed Integration activities between scheme planners at extra cost Unknown surrounding planned schemes	Open	NCC	1	VL	3%	1	VL					1	
A2	Local funding contributions may be withheld	1. Higher priority work 2. Lack of funding	Open	NCC	1	VL	3%	1	VL					1	
B Programme / Contract															
B2	Planning process results in unexpected planning condition being imposed	Delays Renegotiation Increased cost to meet condition	Open	NCC	3	M	36%	2	L	17,679	26,519	35,359		6	
B4	High court challenge	DOC statutory / High court challenge process goes on longer than expected	Open	NCC	1	VL	3%	1	VL	3,536	10,608	17,679		1	
B5	Risk arising from land	unwillingness to sell, delays in CPO process	Open	NCC	1	VL	3%	1	VL	3,536	10,608	17,679		1	
C Scope Change															
C4	Traffic modelling used for assessment and economic appraisal may not be accepted	1. Inability to support the findings extra modelling work and delay	Open	NCC / Designer	1	VL	3%	1	VL	3,536	10,608	17,679		1	
C6	Variation between actual site conditions / topo and assumptions used in design	1. lack of scope definition	Open	NCC / Designer	2	L	13%	2	L	5,000	10,000	15,000		4	
C8	Project location may extend to wider area than first	Increased costs to residents impacted. More relocation required. Associated delays	Open	NCC / Designer	2	L	13%	3	M	35,359	70,717	106,076		6	
C9	Objections to design may transpire	Re-design. Programme slippage. Reputational damage	Open	NCC / Designer	2	L	13%	2	L	17,679	26,519	35,359		4	
C13	Departures may not be granted	Redesign Increased costs Delays	Open	NCC / Designer	3	M	36%	3	M	35,359	70,717	106,076		9	
C14	Client may require road design for heavy loads	Additional funds required. Re-design and delays to plan implementation	Open	NCC / Designer	2	L	13%	3	M	35,359	70,717	106,076		6	
C16	May be unable to achieve safe NMU facilities with identified land	May not be resolved until safety audit complete Potential delay Increased cost	Open	NCC / Designer	1	VL	3%	1	VL	3,536	10,608	17,679		1	
C17	Variation between actual site conditions and assumptions used in design	risk more expansive ground works	Open	NCC / Designer	3	M	36%	4	H	106,076	141,434	176,793		12	
C18	Additional land following redesign	Need to buy land	Open	NCC / Designer	1	VL	3%	2	L	17,679	26,519	35,359		2	
C19	Changes in junction design		Open	NCC / Designer	1	VL	3%	2	L	5,000	10,000	20,000		2	
C20	Need to make late changes to design for planning reasons		Open	NCC / Designer	1	VL	3%	2	L	5,000	10,000	20,000		2	
C21	Unexpected aesthetic requirements		Open	NCC / Designer	1	VL	3%	2	L	5,000	10,000	20,000		2	
D Weather - Greater than a 1:10															
D1	Adverse weather conditions greater than 1 in 10 year storm	Delays to ground works Complaints Compensation for contractors	Open	NCC	3	M	36%	3	M	35,359	70,717	106,076		9	
E Design Risk Products / Materials															
E1															
F Environmental															
F1	Endangered species may be found to be present in location of project	Make area safe for endangered species Relocate where applicable Schedule relocation at suitable time Delays to project and associated cost for rehoming and delays	Open	NCC / Designer	3	M	36%	2	L	17,679	26,519	35,359		6	
F2	Environmental contamination is uncovered on the land	Additional cost for testing and treating and removal	Open	NCC / Designer	3	M	36%	5	VH	176,793	353,586	530,379		15	
F3	Lack of access to undertake environmental surveys	1. Land owners restrict access	Open	NCC	2	L	13%	2	L	50,000	100,000	200,000		4	
F4	invasive species may be found to be present in location of	Additional cost for testing and treating and removal	Open	NCC / Designer	2	L	13%	2	L	17,679	26,519	35,359		4	
G Third parties stats															
G1	Access may become problematic pre construction for stats diversion	Potential delays. Cost increase	Open	NCC	3	M	36%	3	M	35,359	70,717	106,076		9	
G2	Land value may increase	Cost increase. Delays whilst land value negotiations take place	Open	NCC	1	VL	3%	2	L	17,679	26,519	35,359		2	
G4	Local landowners may object to the scheme	Potential delays. Cost increase to agree a more acceptable 'look'. Reputational damage	Open	NCC	2	L	13%	1	VL	3,536	10,608	17,679		2	
G5	cost of stats diversions greater than anticipated	increase cost to the scheme		NCC	3	M	36%	3	M	35,359	70,717	106,076		9	
H Flooding															
I Existing Structures															
J Resources															
J1	Change to employer/ designer team members		Open	NCC / Designer	1	VL	3%	1	VL	3,536	10,608	17,679		1	
J2	Insufficient skilled design staff available (NCC & professional service provider)		Open	NCC / Designer	1	VL	3%	1	VL	3,536	10,608	17,679		1	
K Tender / Contract															
K1	Tender - Challenge to tender process	Delays to schedule	Open	NCC / Designer	3	M	36%	2	L	17,679	26,519	35,359		6	
K2	Tender - Limited interest in construction tender	higher than expected tenders	Open	NCC / Designer	2	L	13%	2	L	17,679	26,519	35,359		4	
KE	Contractor availability to tie in with programme		Open	NCC / Designer	2	L	13%	2	L	17,679	26,519	35,359		4	
L Approvals															
L1	Changes in legislation or regulation	Increased costs Delays to schedule	Open	NCC / Designer	3	M	36%	2	L	17,679	26,519	35,359		6	
L2	failure to achieve NCC EDT Committee approval		Open	NCC / Designer	2	L	13%	2	L	17,679	26,519	35,359		4	
M Products															
M1	Specialist materials / equipment may not be ready	increase cost and time	Open	NCC / Designer	2	L	13%	2	L	17,679	26,519	35,359		4	
N Modelling /Standard of Protection															
O Site Conditions															
O1	Ground conditions are more favourable than expected	Reduced in ground engineering work and costs	Open	Designer	2	L	13%	2	L	-50,000	-100,000	-250,000		4	
O2	Land may be required for compensation	Increased cost associated with land acquisition	Open	Designer	2	L	13%	3	M	35,359	70,717	106,076		6	
O3	Risk of mine workings in or around scheme location	Increased costs. Delay to plan	Open	Designer	2	L	13%	3	M	35,359	70,717	106,076		6	
O4	Services may be uncovered above the levels assumed in the estimate	Increased cost Delays to activities whilst services are addressed	Open	Designer	3	M	36%	3	M	35,359	70,717	106,076		9	
O5	Unknown buried structures	Increased cost Delays to activities	Open		2	L	13%	2	L	17,679	26,519	35,359		4	
P Construction															
P2	Presence of soft ground is uncovered	1. Type of ground is assumed as stable 2. Weather / floods	Open	NCC	2	L	13%	2	L	17,679	26,519	35,359		4	
P3	Potential for unexploded ordinance	Delay in start of the scheme Analysis and study Removal costs	Open	NCC	3	M	36%	2	L	17,679	26,519	35,359		6	

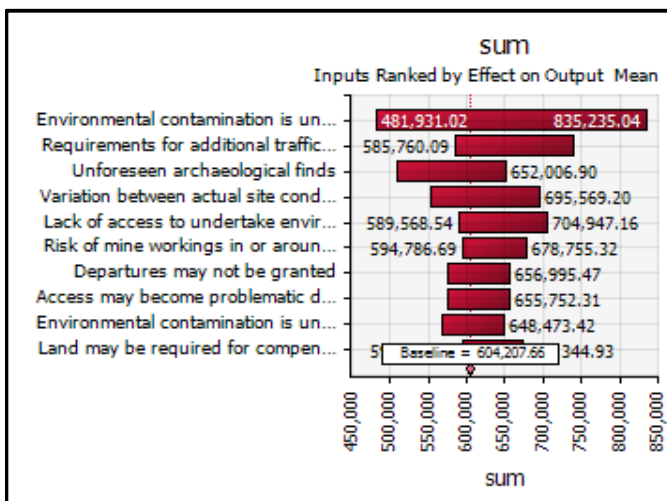
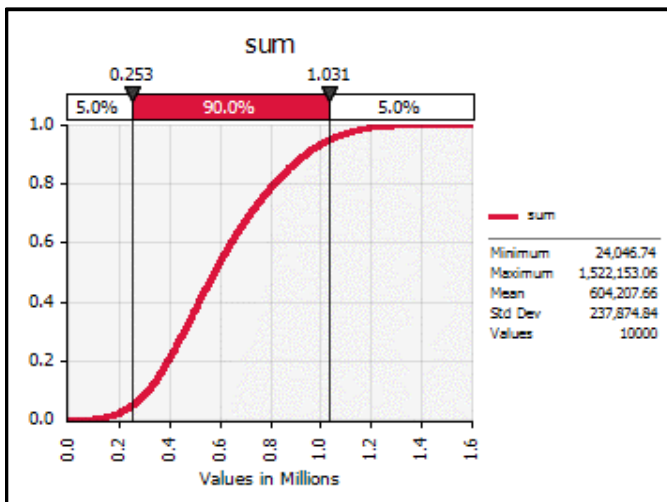
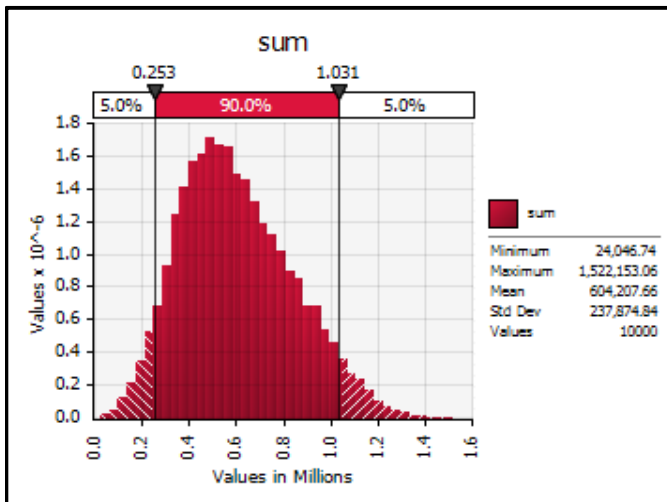
P4	Unforeseen archaeological finds	Increased cost to protect and remove (where applicable) Schedule delays	Open	NCC	4	H	66%	4	H	106,076	141,434	176,793	16
P5	Complaints to the project and stakeholders due to noise	Change to working hours resulting in delays Damage to reputation as work can not complete to schedule	Open	Contractor	3	M	36%	2	L	17,679	26,519	35,359	6
P8	Adverse weather conditions less than 1 in 10 year storm	Delays to ground works Complaints Compensation for contractors	Open	Contractor	3	M	36%	3	M	35,359	70,717	106,076	9
P9	Protestors to the project may physically stop work	Delays to project	Open	Shared	1	VL	3%	2	L	17,679	26,519	35,359	2
P10	Vandalism to project or project property may occur	Increased costs to secure area Increased costs for repair and replace	Open	Contractor	2	L	13%	2	L	17,679	26,519	35,359	4
P11	Supplier may underperform	Delays Renegotiation Increased cost to meet condition	Open	Contractor	2	L	13%	2	L	17,679	26,519	35,359	4
P12	Access may become problematic during construction	Potential delays. Cost increase	Open	Contractor	3	M	36%	3	M	35,359	70,717	106,076	9
P14	Suds drainage	increase in drainage requirement's	Open	NCC	3	M	36%	3	M	35,359	70,717	106,076	9
P16	Requirements for additional traffic management	changes to TM requirement's during construction	Open	NCC	2	L	13%	2	L	100,000	150,000	200,000	4
P18	Temporary availability of land for compounds, staging areas,	increase cost as compound would not be local to site	Open	NCC	1	VL	3%	1	VL	3,536	10,608	17,679	1
										1,297,442	2,263,782	3,195,123	

Appendix F: QRA

@RISK Output Report for sum

Performed By: Robert S Cameron

Date: 08 June 2017 10:40:57



Simulation Summary Information

Workbook Name	Hempnall option 4 Risk Rigi
Number of Simulations	1
Number of Iterations	10000
Number of Inputs	89
Number of Outputs	45
Sampling Type	Monte Carlo
Simulation Start Time	08/06/2017 10:39
Simulation Duration	00:00:06
Random # Generator	Mersenne Twister
Random Seed	2088628896

Summary Statistics for sum

Statistics	Percentile
Minimum	5% 252,951
Maximum	10% 316,511
Mean	15% 357,877
Std Dev	20% 393,183
Variance	25% 426,767
Skewness	30% 457,782
Kurtosis	35% 487,495
Median	40% 516,451
Mode	45% 546,821
Left X	50% 577,851
Left P	55% 608,675
Right X	60% 643,883
Right P	65% 679,895
Diff X	70% 720,238
Diff P	75% 764,968
#Errors	80% 814,063
Filter Min	85% 869,915
Filter Max	90% 938,628
#Filtered	95% 1,031,368

Change in Output Statistic for sum

Rank	Name	Lower	Upper
1	Environmental con	481,931	835,235
2	Requirements for a	585,760	740,672
3	Unforeseen archae	509,323	652,007
4	Variation between	553,976	695,569
5	Lack of access to u	589,569	704,947
6	Risk of mine workir	594,787	678,755
7	Departures may no	575,208	656,995
8	Access may becom	574,547	655,752
9	Environmental con	568,943	648,473
10	Land may be requir	594,739	672,345

Appendix G: Project Impacts Pro-Forma

Project: A140 Hempnall Roundabout

Scheme Impact Pro Forma for Small Project Bids - Please fill in the cells highlighted in yellow

NPIF

Year of assessment	2020
--------------------	------

Scenario	Input Data / Key Performance Indicators	Unit	AM Peak Hr Weekday	PM Peak Hr Weekday
Do-Minimum	Number of highway trips affected	vehicles	2,569	2,348
	Total vehicle travelled time	vehicle-hours	13	8
	Total vehicle travelled distance	vehicle-km	0	0
	Highway peak period conversion factor	-	1.50	1.50
	Number of PT passenger trips on affected routes	passenger trips	45	63
	Total PT travelled time	passenger-hrs	0.23	0.21
	PT peak period conversion factor	-	1.50	1.50
Do-Something	Number of highway trips affected	vehicles	2,569	2,348
	Total vehicle travelled time	vehicle-hours	4	3
	Total vehicle travelled distance	vehicle-km	0	0
	Highway peak period conversion factor	-	1.50	1.50
	Number of PT passenger trips on affected routes	passenger trips	45	63
	Total PT travelled time	passenger-hrs	0.08	0.09
	PT peak period conversion factor	-	1.50	1.50

Appendix H: Appraisal Summary Table

Appraisal Summary Table			Date produced:		28.06.2017		Contact:				
Name of scheme:		A140 Hempnall Crossroads					Name				
Description of scheme:		Conversion of the existing staggered priority crossroads to a priority control roundabout					Organisation				
							Role		Promoter/Official		
Impacts	Summary of key impacts	Assessment									
		Quantitative			Qualitative	Monetary £(NPV)	Distributional 7-pt scale/ vulnerable grp				
Economy	Business users & transport providers	The scheme will provide additional capacity. This will reduce queueing and delay with predicted saving of 13 PCU hours per weekday in the 2020 opening year this is equivalent to 3,419 hours per annum. This is predicted to provide benefits of more than £1,903,973 million for business users over a 60 year appraisal period (Expressed in 2010 prices).		Value of journey time changes(£)		£1,903,973		-	£1,903,973		
			Net journey time changes (£)								
			0 to 2min	2 to 5min	> 5min						
			1903973								
	Reliability impact on Business users	The proposed scheme is predicted to operate within operational capacity to 2026 and therefore queueing and delay should not be excessive or subject to significant variation.					Moderate Beneficial				
	Regeneration										
	Wider Impacts	The scheme will provide additional capacity to allow development in the local area		1,800 new homes and 9.5 hectares of commercial development at Long Stratton		Moderate Beneficial					
Environmental	Noise	The scheme is not anticipated to result in any noticeable change in noise levels within the nearby Noise Important Areas.					Neutral				
	Air Quality	The scheme design will not result in changes to the speed of road traffic and therefore, no potential significant negative impact on local air quality is anticipated.					Neutral				
	Greenhouse gases	There is no impact anticipated on greenhouse gas emissions in the context of regional and national emissions.		Change in non-traded carbon over 60y (CO2e)				Neutral			
			Change in traded carbon over 60y (CO2e)								
	Landscape	The open landscape views and rural character with a network of public rights of ways will potentially be impacted with the introduction of the scheme, although this can be softened with planting to provide screening as mitigation.					Slight Adverse				
	Townscape	The scheme extent is contained within an area influenced by the existing road corridor and immediate surrounding agricultural land and therefore is not anticipated to significantly alter the views which contribute to the townscape feature.					Neutral				
	Historic Environment	The scheme will involve some physical works outside the existing road boundary and therefore an increased likelihood of encountering unknown buried heritage assets.					Slight Adverse				
	Biodiversity	The scheme will involve some physical works outside the existing road boundary and therefore potentially, an increased area of impact on biodiversity features, specifically Priority Habitats adjacent to the road boundary.					Slight Adverse				
Water Environment	The scheme will involve the introduction of new areas of hardstanding, which would increase total impermeable surface area and potentially result in a change to discharge volumes in and around the junction.					Slight Adverse					
Social	Commuting and Other users	The scheme will result in a significant net delay saving at the Hempnall crossroads junction on the A140. The proposal is predicted to result in savings of 13 PCU hours per weekday in the 2020 opening year this is equivalent to 3,419 hours per annum. This is predicted to provide benefits of more than £3,682,505 million for commuting and other users over a 60 year appraisal period (Expressed in 2010 prices).		Value of journey time changes(£)		£3,682,505		-	£3,682,505		
			Net journey time changes (£)								
			0 to 2min	2 to 5min	> 5min						
			3682505								
		Reliability impact on Commuting and Other users	Please see text regarding reliability impact on business users					Moderate Beneficial			
		Physical activity	There may be potential to improve crossing facilities through use of splitter islands					Neutral			
		Journey quality	Vehicle users: Significantly improved journey times and reduced queueing delay for minor road traffic. Will result in greatest benefit for minor road users especially in terms of traveller stress factors					Slight Beneficial			
		Accidents	A high level assessment has indicated the proposed scheme is predicted to result in a reduction of personal injury accident frequency and severity					Moderate Beneficial			
		Security						Neutral			
		Access to services						Neutral			
	Affordability						Neutral				
	Severance						Neutral				
	Option and non-use values						Neutral				
Public Account	Cost to Broad Transport Budget	PVC = £2,727,300 (based on 2017 total cost of £4,358,465) NCC / Developer Contribution (2017) £1,307,539 (30%) Broad Transport Budget (2017) 3,050,925 (70%)					-		£2,727,300		
	Indirect Tax Revenues						Neutral				

Appendix I: Environmental Constraints Plan

KEY

- Option 4 - NCC variant roundabout design
- 250m Buffer Area
- 500m Buffer Area
- 1KM Buffer Area
- Nature Conservation and Landscape
- National Landscape Character Areas (NCA)
- Pollution Incidents
- Category 4 (No Impact)
- Cultural Heritage
- Listed Building
- Historic Landfill Sites
- Scheduled Monument
- Noise
- Noise Important Areas
- Water Environment
- Flood Zone 3
- Flood Zone 2
- River/Open Water
- People and Communities
- Footpath

Ver	Amendments	Originated by and date	Checked by and date	Approved by and date	BA
A		IW 06/06/2017	OE 07/06/2017		08/06/2017

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mouchel
building great relationships

Client: **Norfolk County Council**

Project: **NPIF - Hemphall Crossroads**

Drawing title: **Environmental Sensitivities Plan**
Option 4 - NCC Variant Roundabout Design

Drawing No.: **Figure 3**

Scale @A3: **1:10,000**

Purpose: **Information**

