Report to	Norwich highways agency committee 15 September 2016	**Item**
Joint Report of	Head of city development services and Executive director of community and environmental services	8
Subject	Transport for Norwich – Dereham Road/Guardian Road/Sweet Briar Road Junction Improvement	

Purpose

To seek approval to consult on the proposals for the Dereham Road/Guardian Road/Sweet Briar Road Junction Improvement project and to begin the statutory processes required for the dedication of allotment land that would be required to implement the proposed scheme as described in this report. Members are also asked to note the Traffic Regulation Orders that would be required to enforce the scheme as described.

Recommendations

That the committee:

1. Approves for consultation the proposals included in the Dereham Road/Guardian Road/Sweet Briar Road Junction Improvement project, including:
   (a) Provision of a new enlarged (48 metre diameter) roundabout in place of the existing (38 metre diameter) roundabout.
   (b) Provision of a controlled pedestrian crossing on Dereham Road, immediately east of its junction with Hellesdon Road.
   (c) Provision of a controlled pedestrian crossing on Guardian Road, Road, approximately 42 metres south of the roundabout.
   (d) A reduction in the length of the existing Dereham Road city bound bus lane by approximately 59 metres.
2. Notes the following Traffic Regulation Orders/pedestrian crossing notices that would be required for the implementation of the scheme as described in this report, including:
   (a) The reduction of the existing Norwich bound 24-hour, 7-days a week bus lane on Dereham Road by approximately 59 metres.
   (b) The provision of the new pedestrian crossing on Dereham Road, immediately to the east of the junction with Hellesdon Road.
   (c) The provision of the new pedestrian crossing on Guardian Road.
3. Asks the Head of city development services at Norwich City Council to begin the necessary statutory procedures associated with dedicating part of the existing Bellacre and Woodland allotment land to the northwest and northeast of the junction to highway; as required by the proposed scheme.

4. Agrees that the outcome of the proposed consultation will be reported to a future meeting of the committee.

Service Priorities

The project helps meet the Norwich City Council's priorities 'To make Norwich a Safe and Clean City' and 'To make Norwich a Prosperous City'.

This project supports the Norfolk County Council's priorities, by:

- supporting, developing and maintaining the infrastructure that helps our economy to promote real sustainable jobs;
- providing good infrastructure where businesses can succeed and grow;
- helping to improve and safeguard the quality of life for all the people of Norfolk;
- promoting prosperity by championing the best practices, ideas and innovation for local economic success

Scheme Timescales

The preliminary scheme programme is as follows:

- A four week public consultation of scheme proposals in October/November 2016
- Consideration of consultation feedback in November/December 2016
- Refine the proposals where necessary and present the scheme in January 2017
- Start of construction in autumn 2017, with completion within a year

Financial implications

The scheme development and implementation costs of this project will be developed and refined as the design is progressed. The scheme will be funded by from the New Anglia Local Enterprise Partnership and from developer funding via the Community Infrastructure Levy (CIL). The funding of £1.65m for an improvement at this junction is already approved and prioritised through the agreed Transport for Norwich budget via the Greater Norwich Growth Board.

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Report

Strategic Objectives

1. Norwich and its surrounding area is becoming an increasingly popular area to live, work and visit. It is the number one shopping destination in the Eastern Region and becoming one the Nation's premier cultural centres. To ensure the Greater Norwich Area continues to be popular and grow, the transport systems need to be able to cope with the increased demand.

2. The Norwich area Transportation Strategy (NATS) now more widely known as Transport for Norwich (TfN) is the adopted strategy which will deliver the transport improvements needed over the next 15 plus years. The strategy recognises everybody's journeys are different and does not look to force people to use one particular mode. It does look to give people viable options on how they choose to travel and actively promote sustainable transport. To do this in some areas of the network there needs to be a re-balance of the highway space available.

3. The Strategy details the plan for future delivery of improvements in order to develop sustainable transport, reduce congestion and improve air quality within the Greater Norwich area. The strategy has already delivered key improvements such as the award winning Norwich Bus Station, St Augustine's Gyratory, a network of Park & Ride facilities, St Stephens and Chapel Field North and various Bus Rapid Transit (BRT) improvements. It also includes the recently completed Postwick hub and the Northern Distributor Road which is due for completion late 2017.

4. The implementation plan for the Norwich Area Transportation Strategy (NATSIP) was agreed by Norfolk County Council in April 2010 and updated in November 2013 (see link for updated implementation plan http://www.norfolk.gov.uk/view/NCC158241) . The plan sets out the range of transport measures, together with their general intended phasing, for delivery over the short to medium term.

5. The plan has now been updated to take account of what has been delivered since 2010, and to reflect the latest position on future scheme delivery, given progress with implementation, and now that the growth plans for the area are more clear (see joint core strategy document: http://www.greaternorwichgrowth.org.uk/dmsdocument/1953).

Scheme Objectives and Benefits

6. Dereham Road is identified in NATS as one of six Bus Rapid Transit BRT corridors. Improvements on this route will build on those implemented under the Western Corridor Quality Bus Partnership which was introduced in 1998 and delivered 2km of bus lanes, new shelters, raised kerb lines to serve low floor buses, public transport information systems (PTIS) and selective vehicle detection (SVD) to give priority at junctions.

7. Dereham Road is currently a high frequency bus corridor with in excess of 20 buses per hour during peak periods. The bus corridor serves growth and employment areas at Longwater, Lodge Farm, West Costessey (Queens Hills)

and Bowthorpe. An improvement at the Dereham Road junction with the Outer Ring Road is one of the improvement measures identified for bus services on this corridor.

8. The overall objectives are those of Transport for Norwich; within TfN is the desire to create a BRT route, a high quality route for buses, along the Dereham Road corridor to the city centre. Within that context, the objectives of Dereham Road/Outer Ring Road junction improvement is to determine a deliverable new junction form that operates more efficiently for all modes and provides improvements in reliability and journey time for both inbound and outbound bus services on Dereham Road.

Background

9. The need for this project has been identified through two linked spatial planning documents that have been jointly produced by the City and County Councils under the auspices of the Greater Norwich Development Partnership:

   Norwich Area Transportation Strategy Implementation Plan – now 'Transport for Norwich' (TfN) (adopted in March 2010, with 2013 update that was adopted in November 2013)
   http://www.norwich.gov.uk/CommitteeMeetings/Norwich%20highways%20agency/Document%20Library/71/REPNHAC09NATSImplementationPlan20130919.pdf

   Joint Core Strategy for Broadland, Norwich and South Norfolk (adopted in March 2011, and amended by the Broadland Part of the Norwich Policy Area: Local Plan, adopted in January 2014)
   http://www.greaternorwichgrowth.org.uk

10. The TfN public consultation in October 2009 introduced the principles of a Bus Rapid Transit (BRT) network. Since then, staged implementation of BRT has started, beginning with its roll-out on the Dereham Road corridor. For example, improvements have already been made at the junction with Old Palace Road, and at the Dereham Road junction with Grapes Hill and on Grapes Hill itself. There have also been improvements in the city centre such as those introduced in 2015 on Chapel Field North, and those currently underway at St Stephens and Red Lion Street.

11. The objectives of the brief are enshrined within those of TfN, to create a high quality bus route along the Dereham Road corridor to the city centre.

Existing Situation

12. The existing roundabout junction forms part of Norwich's strategic orbital and radial movement network which provides a link to the A47 trunk road and Norwich city centre to/from Norwich Outer Ring Road.

13. Considering its importance on the highway network, the roundabout is of a relatively small diameter, at 38 metres. There are a number of areas where the current roundabout geometry deviates from the national standards. This means that the entries and exits are close together, which does limit the traffic throughput of the junction and means that the junction experiences congestion as certain times of the day.

14. The A140 southbound arm (Sweet Briar Road) had two inbound lanes, the nearside lane being left and ahead with the offside lane being marked as right only. The A1074 Dereham Road westbound entry to the roundabout is marked likewise. The A140 northbound entry of Guardian Road is marked as ahead and left in the nearside lane, and ahead and right in the offside lane. The A1074 Dereham Road eastbound entry to the roundabout has three entry lanes, these being marked as left, ahead and right – the left turn lane is relatively short at some 28 metres long.

15. On the Dereham Road eastbound arm, there is a bus lane which terminates approximately 43 metres from the roundabout.

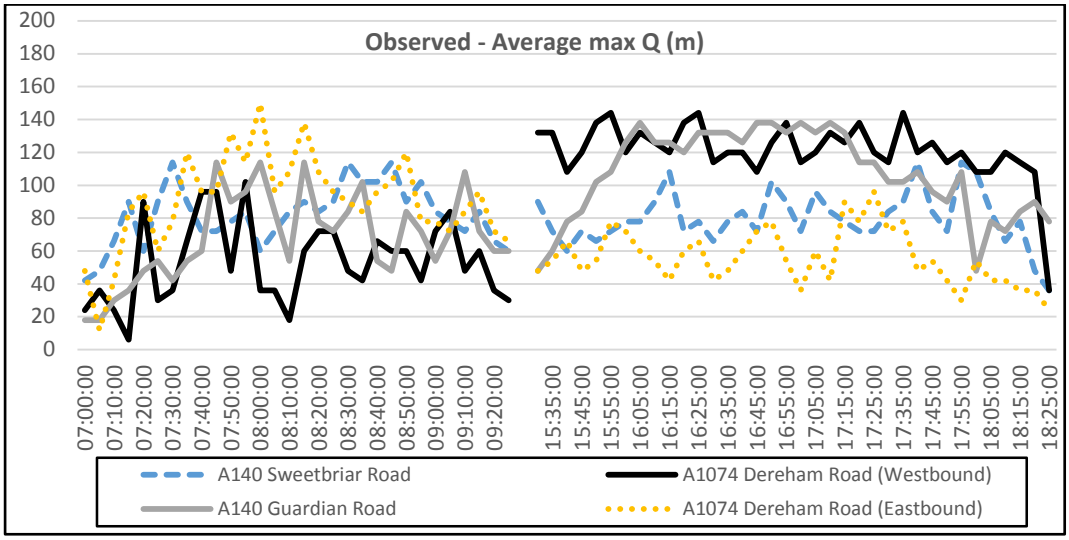
16. The current layout for pedestrians and cyclists consists of a mixture of shared use and segregated pedestrian and cyclist facilities, with uncontrolled crossing points via splitter islands on the direct entry/exit point to the junction. There are no controlled crossing points for non-motorised users within the vicinity of the junction.

17. A traffic survey carried out on Tuesday 11th February 2014 recorded 38,958 motorised vehicles and 177 cyclists passing through the junction between 0700-1900hrs. The following table shows how much traffic uses each arm:

Vehicles **Cyclists**	Total from arm	as % of total	Total to arm	as % of total	Two-way flow	as % of total
A140 Sweet Briar Road	11150 **11**	29% **6%**	12867 **20**	33% **11%**	24017 **31**	31% **9%**
A1074 Dereham Road (westbound)	5637 **43**	14% **24%**	7282 **101**	19% **57%**	12919 **144**	17% **41%**
A140 Guardian Road	11917 **20**	31% **11%**	9628 **8**	25% **5%**	21545 **28**	28% **8%**
A1074 Dereham Road (eastbound)	10254 **103**	26% **58%**	9181 **48**	24% **27%**	19435 **151**	25% **43%**
Total	**38958** **177**	**100%** **100%**	**38958** **177**	**100%** **100%**	**77916** **354**	**100%** **100%**

18. The busiest AM peak hour occurred between 07:30 and 08:30 with over 3,700 vehicles (motorised and bicycles) travelling through the junction. The busiest PM peak hour occurred between 16:00 and 17:00 with over 3,600 vehicles (motorised and bicycles) travelling through the junction.

19. A queue length survey was carried out on Tuesday 11th February 2014 between 0700-09:30 and 15:30-18:30hrs. The following table shows the observed maximum queue length at each approach:



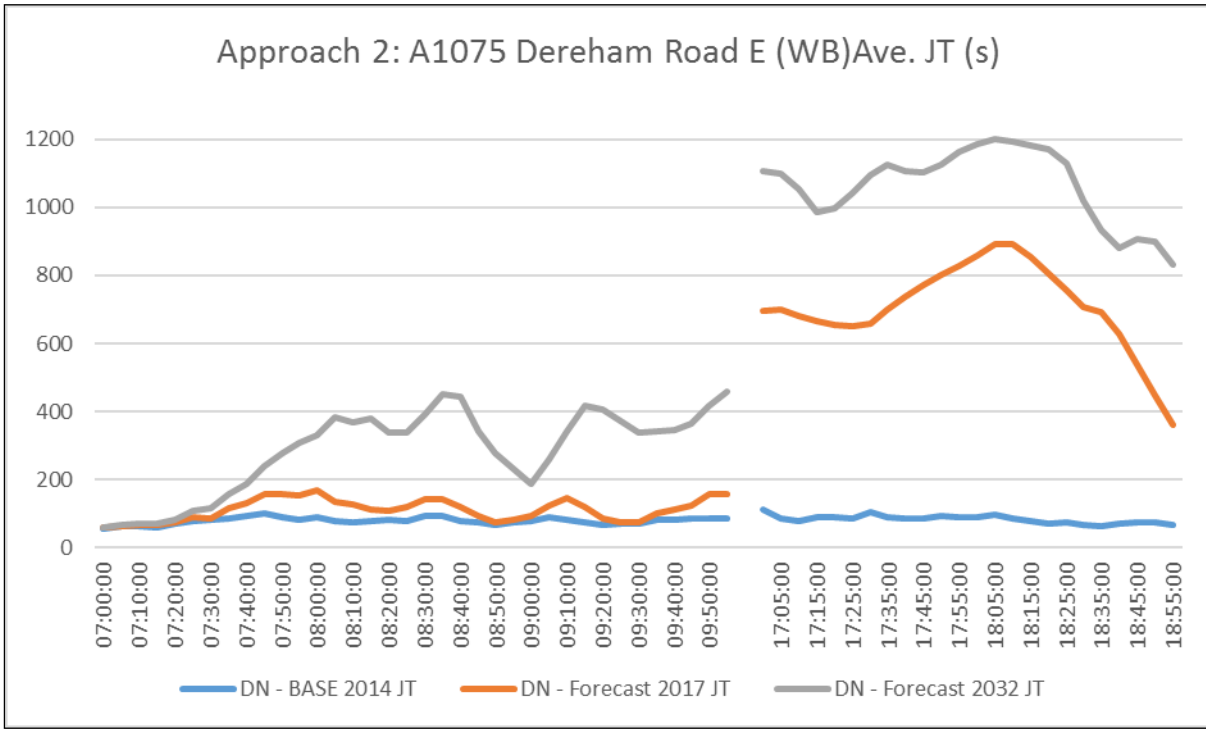
20. The existing junction has been tested using three scenarios; the observed (2014) scenario, and two forecast scenarios of traffic level for years 2017 and 2032. The Norwich area strategic traffic model has been used to inform likely changes to traffic patterns at the junction following implementation of the current Transport for Norwich (NATS) Strategy which includes the NDR and city centre measures.

21. A microsimulation traffic model was used to calculate queue lengths and journey times. Journey times were recorded for routes on each approach to the junction with queue lengths recorded back from each stopline or give-way point.

22. Strategic changes in traffic at each approach are summarised in the table below and have been applied to the traffic survey (2014):

Strategic model % change (AADT)	2012 to 2017	2012 to 2032
Scenario	2017 FORECAST	2032 FORECAST
Sweet Briar Road	+4%	+17%
Dereham East (Westbound)	+13%	+7%
Guardian Road	+4%	+17%
Dereham West (Eastbound)	0%	-3%

23. As traffic demand increases over the coming years, the existing junction may begin to fail with extended queues and delay throughout the AM and PM periods. Of all approaches, Dereham Road East (westbound) approach arm is most affected. The table below shows the performance of the junction assuming for the three scenarios in a 'Do Nothing' (DN) option:



24. In the forecast for 2017, Dereham Road East queues could build up in the PM and reach beyond the traffic signal junction with Bowthorpe Road (900m+) at 18:10hrs (Journey times reach a peak of 15 mins). Guardian Road queues reach half a kilometre at 17:25hrs (Journey times reach a peak of 5 mins 15s).

25. In the forecast for 2032, Sweet Briar Road queues are shown to reach half a kilometre at 08:50hrs (Journey times reach a peak of 4 minutes). Dereham Road East (westbound arm) queues reach beyond the traffic signal junction with Bowthorpe Road (900m+) 16:45-19:00hrs (journey times reach a peak of 20 minutes). Guardian Road queues beyond the extent of the model (800m+) from 17:00-18:30hrs (Journey times reach a peak of 6.5 minutes).

26. Dereham Road West (eastbound arm) queues build up in the AM and reach 260m at 08:00hrs (journey time of 2mins 40s).

27. The is no bus lane on the Dereham Road East arm of the junction, so buses are held in the queue on the general traffic lane.

Appraisal of Design Options

28. A pre-feasibility study carried out in 2013 suggested two layouts to be taken forward for further development. These layouts were for a signal controlled junction option, and for a roundabout option. Both these proposals have been developed further and re-assessed using the 2014 traffic survey. For the roundabout option, a further option including a segregated left turn lane from Dereham Road (eastbound) to Sweetbriar Road has been considered.

Signal Controlled Junction Option

29. The signalised junction option that was considered provided significant reduction in journey times and queues in both forecast scenarios both the AM and PM peak. Guardian Road showed a reduction to journey times and queues

in all scenarios, PM peak only.

30. It would be possible to implement a form of bus priority in the traffic signals to enable late buses to get through the junction quicker. A Norfolk County Council study suggests this could save 1 minute per junction, for a bus arriving at the end of the green time (during a 120 second cycle time). However, if bus priority were utilised it is likely to have an impact on the Norwich Outer Ring Road in terms of increased delay. The eastbound bus lane on Dereham Road would be shortened although the inbound general traffic lanes would be extended to the benefit of all traffic.

31. Both pedestrian and cycle crossing facilities could be provided as part of a signalised junction across Guardian Road and Dereham Road West approaches, and as a separate facility across Dereham Road at junction with Hellesdon Road. However, the crossings would have long wait times at peak times and would be staggered (two separate crossings).

32. During periods of low traffic demand outside of peak hours, traffic signals would introduce a level of delay on all approaches that is worse than the existing situation. In the PM peak, Sweet Briar Road would experience a significant increase to journey times and queues in both the forecast scenarios. In the PM peak, Dereham Road West (eastbound) would experience an increase to queues in both scenarios.

33. The introduction of traffic signals would result in a junction that does not provide benefits for all road users due to competing demand of conflicting movements. In order to provide a traffic signal layout which performs better than the existing roundabout, grade separation would be required, which would not be feasible for motorised vehicles in this location.

34. Reduction in journey time at one approach is made possible by increasing journey time at another, and so this option could provide benefits for outbound journey times on Dereham Road (which would benefit buses) however journey times on Sweetbriar Road and Dereham West (inbound) would increase.

35. The signal option would require land outside of the current highway boundary to be acquired on both sides the Guardian Road arm – these areas are mostly residential, with a business at the southwest side of the junction. This option would also require land outside of the highway boundary on the northwest side, with a lesser impact on the northeast side; both these areas are currently designated as allotment land.

36. Given the above issues, a signalled controlled junction was not considered to be practical in this location as it did not meet all of the scheme objectives and would result in a high impact on the local environment. For these reasons, it was decided not to take this option forward for consultation.

Roundabout Option

37. Although the existing junction is a roundabout, it is of a compact design that is of an inadequate size to cope with either the existing or forecast traffic at certain times, resulting in congestion. A larger roundabout has been considered, with changes to the roundabout arms to bring it into line with

national guidance with regards the geometry.

38. The option considered consists of a four arm roundabout with an Inscribed Circle Diameter (ICD) of 48 metres, compared to the existing ICD of some 38 metres. For comparison, the existing roundabout at the Newmarket Road/Daniels Road junction has an ICD of 57 metres while the Grapes Hill/Chapel Field roundabout has an ICD of 70 metres.

39. All entries to the roundabout would consist of two lanes, merging on exit, which allows each straight ahead movement to occur in two lanes on approach and within the circulatory sections of the junction.

40. The location of the proposed roundabout has been designed so that it does not require any land outside of the current highway from the properties on the south side of the junction. The enlarged roundabout will however, require land at both the northwest and northeast corners, currently designated as allotment land.

41. In the proposed layout, Sweet Briar Road would have significant decrease in queues in all scenarios in both AM and PM peaks. Dereham Road East (westbound) would also experience significant reduction to both journey times and queues in forecast scenarios in AM and PM peaks.

42. On Guardian Road, there would be a significant reduction to journey times and queues in all scenarios in the PM peak. Dereham Road West (eastbound) would experience a significant reduction to queues in the 2032 scenario in the AM peak.

43. In this layout, new signal controlled crossings would be provided straight across Guardian Road, with a staggered crossing on Dereham Road, immediately east of the junction with Hellesdon Road. There would be relatively short waiting times for pedestrians at all times of the day.

44. The eastbound bus lane on Dereham Road would be shortened by 59 metres although the inbound general traffic lanes would be extended to the benefit of all traffic.

45. Signal controlled crossings at Guardian Road and Dereham Road West may not be on desire line for some users (north/south, east/west movement). However, uncontrolled crossing points would still be provided at the roundabout splitter islands similar to the existing situation.

46. This option performs significantly better than the existing layout within all scenarios despite the new instances of delay incurred by controlled crossings on two of the four approaches.

47. A segregated left turn lane was considered on the Dereham Road eastbound approach to Sweet Briar Road in the original pre-feasibility study. However, the 2014 traffic counts suggest demand for the left turn does not justify the requirements for a segregated left turn. Modelling this option, which would require additional allotment land from the northwest side, suggests there would be no additional benefit by providing a segregated left turn lane in the existing and forecast scenarios and is therefore not part of the roundabout option.

Recommended Option

48. The junction study investigated into the impact of introducing proposals to reduce congestion and delay at the junction of Dereham Road, Sweetbriar Road and Guardian Road. The study has developed a traffic model using recent traffic count data to build a picture of the existing conditions at the junction, and then to test different improvement proposals.

49. In terms of queues and journey times, the option study identified the following impacts:

    - The traffic signal option performed worst with some dis-benefits when compared with the existing layout. Outside of peak hours when traffic demand is low, signals would introduce a level of delay for vehicles (including buses) that could be worse than the existing situation. Limited priority (in terms of time savings) for buses could be provided but this would be to the detriment of traffic on the ring road.

    - The roundabout option performed well in terms of providing junction capacity improvements and benefits for all road users.

50. Considering non-motorised users:

    - The traffic signal option provides new controlled facilities across three of the four approaches, all but the Sweet Briar arm while the roundabout option provides for controlled facilities on the Guardian Road and Dereham Road West arm.

    - No dedicated cycle facilities are provided under either option as the preference is to provide wider shared paths rather than segregated narrower facilities, so cyclists are required to mix with either pedestrians or on carriageway with vehicles in both options. Although a traffic signal controlled junction would provide more potential for specific facilities such as Advanced Stop Lines for cyclists, this type of junction would be to the detriment of general traffic. The roundabout option and associated shared paths would provide an improvement that balances the needs of all users.

51. In the roundabout option, the junction capacity is improved despite accommodating signalised pedestrian / cyclist crossing facilities across two arms. Significant reductions to delay and queues at peak times on the Outer Ring Road and Dereham Road East (westbound) approach arms. Considering all approaches, junction performance in terms of queues and delay could be similar in the forecast 2032 scenario to that of the existing situation.

52. For the roundabout option, the PM peak westbound bus service on Dereham Road would benefit significantly from reduced journey times on approach to the junction.

53. It is considered that the roundabout option as described will meet all of the scheme objectives, these being to:

    - *Create a* high *quality BRT (bus rapid transit) route along the*

Dereham Road corridor to the city centre - improved journey time for outbound buses on Dereham Road, particularly in the PM peak is key in providing a better bus network at this location;

- *Determine a* new *junction form that operates more efficiently for all modes;*

- *Allow* priority *for both inbound and outbound bus services.*

54. Given the benefits of the roundabout option over the signal controlled junction alternative, it is recommended that the roundabout option is taken forward for consultation and detailed design.

Traffic Regulation Orders/Notices

55. The following Traffic Regulation Orders/Notices would be required to implement the roundabout scheme as proposed:

    In relation to bus lanes:

    - The modification of the existing Norwich bound 24-hour, 7-days a week bus lane on Dereham Road by reducing its length on the approach to the junction by approximately 59 metres.

    In relation to pedestrian crossings:

    - The provision of a signal controlled pedestrian crossing on Dereham Road, immediately to the east of the junction with Hellesdon Road;

    - The provision of a signal controlled pedestrian crossing on Guardian Road, approximately 42 metres south of the roundabout.

Accident reduction

56. Accident records show that in the past 5 years there have been 32 accidents at the roundabout or on the approaches. Of these, 31 were classed as ‘slight’ severity while one was classed as ‘serious’ severity, although this one was at the junction of Waterworks Road with Dereham Road which is at some distance from the junction.

Environmental Impact

57. An Environmental Impact Assessment (EIA) screening has been carried out for this scheme. The screening has identified that Sweet Briar Road Meadow is a Site of Special Scientific Interest (SSSI) located approximately 200m from the junction and there are a number of Priority habitats associated with the River Wensum Valley. The Broads Area surrounding the River Wensum is an Environmentally Sensitive Area.

58. Implementation of the scheme as proposed is likely to result in the removal of a small area of trees and shrubs. The affected areas should be subject to an appropriate ecological survey, and the recommendations of that report, including any landscape mitigation will be taken into account in the detailed design and implemented as part of the scheme. The landscape assessment

will consider the location of any park and recreation spaces and their intervisibility with the site. The site will also be subject to an appropriate visual assessment.

Allotment Land

59. The enlarged roundabout will require land to the north side of Dereham Road, currently outside of the highway – this will be required in order to incorporate the new carriageway alignment and the modified road embankment. These areas are currently under the ownership of Norwich City Council and are designated as statutory allotment land, namely the Bellacre and Woodland allotments. The effect of the scheme will not be significant provided that the appropriate guidelines, procedures and statutory criteria relating to the disposal of allotment land are adhered to and action taken to mitigate those plots lost or partially lost at the sites.

60. At the Bellacre allotment to the northwest side of the junction, there are currently 44 plots. Based on the preliminary layout, it is estimated that seven plots would be permanently affected by the scheme. The preliminary proposals indicates that the main loss will be to the parking area – this will need to be relocated elsewhere on the site. The access to the allotments would need to be modified to suit the revised embankment, and the gate to the allotments would need to be moved northwards to suit the modified highway/allotment boundary.

61. At the Woodland allotments to the northeast side of the junction, there are currently 62 plots. Based on the current scheme layout it is estimated that there are nine plots permanently affected by the proposals. The access is to the eastern side of the allotments and will be largely unaffected by the proposals.

62. As the design of the scheme is refined, the precise impact on the allotments will be confirmed. The final footprint of the scheme will be determined by the extent of the road widening and the gradient/profile of the embankment, and this will determine the precise embankment height. The embankment profile will be finalised during the detailed design phase, following further investigate including the makeup of the underlying soil.

63. There would be a need for temporary access at the bottom of the new embankment for construction purposes on both the Bellacre and Woodland sites. Any allotment plots affected as part of the temporary works would be reinstated as allotment plots, during the construction phase, once works in those areas are completed. The precise requirement for the temporary access areas will be identified as part of the detailed design.

Underground Services

64. There are a number of existing utility apparatus in the area, some of which will be affected by the proposals. Discussions are currently underway with the relevant utility companies in order to determine the precise impact of the scheme on their assets. It is possible that some of the diversions could be carried out prior to the main highway works being started.

Public Consultation

65. Extensive public consultation was carried out for the NATS Implementation Plan (now called Transport for Norwich) in autumn 2009 which resulted in adoption of the proposals in 2010.

66. It is suggested that a 4-week public consultation on these specific roundabout proposals to improve the junction should be carried out and that the results of that consultation are brought to a future meeting. It is planned that information detailing the proposals would be made available on both the Norfolk County Council and Norwich City Council websites. The precise details of the consultation will be advertised within the local press and radio.

Timescales

67. If approval to consult on the scheme is given, the consultation could start as early as October 2016. The results of the consultation would be reported back to NHAC, potentially to the January 2017 meeting depending on the extent and nature of the feedback received.

68. Providing the scheme is approved, construction of the highway works could start as early as September 2017, and be completed within a year. It is possible that some utility diversions required to implement the scheme could be carried out prior to the main highway works; this will be discussed with affected utility companies.

Stakeholder views

69. Stakeholders will be fully engaged during the consultation to make sure their views are taken into account as the scheme details are developed.

Conclusions

70. The project is rooted in strategy documents that have been adopted by Norwich City and Norfolk County Councils and the proposals to improve the junction will provide benefits both to buses on the Dereham Road corridor, and to general traffic using the junction both on Dereham Road and on the Outer Ring Road.

71. If NHAC approves the required Traffic Regulation Orders, construction of this next stage in delivering transport improvements on the Dereham Road corridor for buses could begin in the second half of 2017, and be completed within a year.

Resource Implications

72. Finance: The TfN programme forms an integral part of strategic infrastructure as set out in the Joint Core Strategy. The delivery of this work is funded through a number of sources including additional government grants e.g. Community Infrastructure Levy, and mainstream capital funding LTP and allocated funding from the Local Enterprise Partnership (LEP). The overall funding of the programme has been agreed through the Greater Norwich Growth Board.

73. Staff: The project will be delivered through joint team working involving both County Council and City Council officers.

74. Property: The proposals can be provided within the existing highway boundary.

75. IT: None.

Other implications

76. Legal Implications: None.

77. Human Rights: None.

78. Equality Impact Assessment (EqIA): An EqIA has been completed for the NATS Implementation Plan (TfN). An Equality Impact Assessment for this scheme will be carried out as part of the detailed development, after discussions with the appropriate groups.

79. Communications: None.

Section 17 - Crime and Disorder Act

80. The scheme will be designed to ensure it has a positive effect on crime and disorder where possible. Care will be taken during construction to minimise opportunities for crime and disorder, for instance the secure storage of construction equipment and materials.

Risk Implications/Assessment

81. A risk assessment has been undertaken for development of the NATS Implementation Plan (TfN). The key risks for delivering this are around funding, timescales and planning. These risks are being managed through active project management and ongoing engagement with stakeholders.

82. A risk register is being maintained as part of the technical design and construction delivery processes.

Preliminary junction proposals