

REPORT TO:	Planning Policy Committee, 8 June 2023
SUBJECT:	A27 Ford Road Scheme
LEAD OFFICER:	Kevin Owen, Planning Policy & Conservation Manager
LEAD MEMBER:	Chair of Planning Policy Committee
WARDS:	All
CORPORATE PRIORITY / POLICY CONTEXT / CORPORATE VISION:	
<p>The recommendations supports:-</p> <ul style="list-style-type: none"> • Improve the Wellbeing of Arun; • Delivering the right homes in the right places; • Supporting our environment to support us; • Fulfilling Arun’s economic potential. 	
DIRECTORATE POLICY CONTEXT:	
<p>Supporting the delivery of infrastructure helping to promote active healthy lifestyles, housing and other needs while enhancing the quality of heritage and the natural and built environments and promoting economic growth, in a sustainable manner.</p>	
FINANCIAL SUMMARY:	
<p>There are currently no financial implications as this completed technical design scheme document produced by West Sussex County Council as Highway Authority on behalf of National Highways.</p>	

1. PURPOSE OF REPORT

- 1.1. This report updates provides an update on the A27 Ford Road Junction Feasibility Study prepared by West Sussex County Council. The purpose of the study was to provide evidence to inform future discussions on the design of A27 Arundel Bypass, future Local Plan reviews and funding applications. The study was commissioned following requests from stakeholders.
- 1.2. The A27 Ford Road Junction Feasibility Study is proposed to form part of the evidence base for plan making purposes.

2. RECOMMENDATIONS

- 2.1. Planning Policy Committee resolves: -

That the A27 Ford Road Junction Feasibility Scheme be noted and added to the council’s evidence web pages.

3. EXECUTIVE SUMMARY

- 3.1. Consultant WSP were commissioned by West Sussex County Council (WSCC) to assess the potential to incorporate a new junction between Ford Road and the proposed A27 Arundel Bypass led by National Highways.
- 3.2. The preferred route for the A27 Arundel bypass which runs east west - intersects Ford Road (near Tortington) which runs north south and connects the A27 to the A259 at Climping. The current design proposes that the bypass will be built on a raised viaduct that will pass over Ford Road. However, WSCC consider it appropriate to assess the feasibility of a future junction connection (which would be a material change to the design), before the scheme advances to planning permission and statutory authority stages when it would be too late to accommodate a change.
- 3.3. The Ford Road Junction Feasibility Study has now been published by WSP/WSCC explaining the transport assessment methodology and economic case for the proposed junction.

4. DETAIL

- 4.1. The Ford Road Junction Feasibility Study (Background Paper 1) sets out:-
 - The modelling approach;
 - Scenarios Appraisal;
 - Modelling Outputs;
 - Scheme economic benefits.
- 4.2. The methodology adopted a version of the A27 Bypass SATURN model approved by National Highways but with more recent development validation for Arun District. The output forecast scenarios for 'do something' (with a junction) and 'do nothing' (without a junction) included the am and pm peak with a base year of 2015 looking to 2026 (opening year), 2041 and 2051.
- 4.3. Figure 1-1 (Background Paper 1) shows the feasibility stage, layout of the proposed Ford Road / A27 bypass junction. This has been selected for assessment because it is the option that is considered most likely to be viable.
- 4.4. The scheme accommodates access from the proposed A27 Arundel Bypass east and west-bound carriageways onto Ford Road but with restrictive reservations only providing access to travel south.
- 4.5. Whereas access from Ford Road onto the A27 Bypass slips eastbound and westbound is only available to traffic travelling northbound on Ford Road turning left onto the bypass
- 4.6. The economic assessment shows that the scheme produces a Build Cost Ratio (BCR) of 5.67. This represents very high value for money. Although, some caution should be applied because of unexpectedly the high level of external traffic modelled in the scheme (up to 50%). This may overstate the benefits in this assessment.

4.7. The reasons for high external traffic component could be because the transport model may not fully reflect delays in the close vicinity of the scheme which would make it less attractive. Excluding this component is expected to substantially reduce the economic benefit from the scheme. Therefore, a further sensitivity assessment is needed to quantify this impact.

Further Work

4.8. It is suggested that the next stage to tackle the limitations with the A27 Arundel Bypass model would be to commission further work to increase the resolution of the model in the area south of the Arundel Bypass for future assessment.

4.9. However, WSCC have also provided an A27 Arundel Bypass / Ford Rd Junction Feasibility Study Stakeholder Briefing Note May 2023 (Appendix 1). This sets out further analysis and data components forming part of the study and provides information on design options, environmental constraints, land take and scheme costs and benefits, including discussions with National Highways. In particular, this considers the feasibility of the potential design options:-

- Option 1: Full Grade Separated Junction
- Option 2: Compact Grade Separated Junction
- Option 3: Compact Grade Separated Junction (Minimum Horizontal Values)

4.10. This concluded that none of the above design options is feasible or viable because of safety, environmental and engineering constraints. The findings from this feasibility study and technical work by National Highways were presented at a roundtable meeting with Elected Representatives on 20 February 2023.

5. CONCLUSION

5.1. The Ford Road Junction Feasibility Study shows that there is considerable merit in considering the feasibility of a junction connection onto Ford Road from the A27 Arundel Bypass. The business case demonstrates value for money based largely on transport user benefits although this is based on the assumptions about scheme cost and planned development, with a high likelihood that this would reduce at later stages of the project due to increases in cost to benefits. The economic benefits would need to be further sensitivity tested.

5.2. However, the further work discussed above suggests that there are insurmountable cost and engineering constraints such that none of the junction design options being considered will be taken forward.

5.3. When the full impacts of the A27 Arundel Bypass on the local highway network and communities is set out in a Transport Assessment and Environmental Statement, there may be scope to look at other potential solutions in the affected areas.

6. OPTIONS/ALTERNATIVES CONSIDERED

- 6.1. The council can choose not to note the report. However, this would risk that relevant evidence material to plan making and decision making is omitted and increase the risk of subsequent objection and appeal.

7. CONSULTATION

- 7.1. The findings from this feasibility study and technical work by National Highways were presented at a roundtable meeting with Elected Representatives on 20 February 2023.

8. COMMENTS BY THE GROUP HEAD OF CORPORATE SUPPORT/SECTION 151 OFFICER

- 8.1. There are no immediate implications arising from the outcomes of the A27 Ford Road Junction Feasibility Study and accompanying WSCC Briefing Note.

9. RISK ASSESSMENT CONSIDERATIONS

- 9.1. There are no risk assessment considerations with this document.

10. COMMENTS OF THE GROUP HEAD OF LAW AND GOVERNANCE & MONITORING OFFICER

- 10.1. This report is for noting and there are no Governance or legal implications.

11. HUMAN RESOURCES IMPACT

- 11.1. There are no implications arising for Human Resources.

12. HEALTH & SAFETY IMPACT

- 12.1. There are no direct implications for Health & Safety.

13. PROPERTY & ESTATES IMPACT

- 13.1. There are no direct implications for Council property.

14. EQUALITIES IMPACT ASSESSMENT (EIA) / SOCIAL VALUE

- 14.1. There are no direct adverse implications for Equalities/Social Value.

15. CLIMATE CHANGE & ENVIRONMENTAL IMPACT/SOCIAL VALUE

- 15.1. There are no direct adverse implications for Climate Change however, in future, junction solutions associated with the A27 Arundel Bypass may make significant contributions either towards mitigation or increased adverse effects of climate change and will need careful consideration, especially in areas such as air quality, pollution and emissions production from transportation. It should be noted that this is only in reference to this junction and not the entire A27 bypass rework.

16. CRIME AND DISORDER REDUCTION IMPACT

16.1. There are no direct adverse implications for Crime and Disorder.

17. HUMAN RIGHTS IMPACT

17.1. There are no direct adverse implications for Human Rights.

18. FREEDOM OF INFORMATION / DATA PROTECTION CONSIDERATIONS

18.1. There are no implications for FOI/Data Protection.

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BACKGROUND DOCUMENTS:

[Background Paper 1: The Ford Road Junction Feasibility Study Transport Modelling and Economic Report March 2023](#)

Appendix 1: A27 Arundel Bypass / Ford Rd Junction Feasibility Study Stakeholder Briefing Note May 2023

Introduction

1. West Sussex County Council (WSSCC) and Arun District Council (ADC) have recently completed a study to assess the feasibility of a junction between the A27 Arundel Bypass and Ford Road. The purpose of the study was to provide evidence to inform future discussions on the design of A27 Arundel Bypass, future Local Plan reviews and funding applications. The study was commissioned following requests from stakeholders, notably including elected representatives.
2. This briefing note presents the key findings from the study.

Environmental Constraints

3. As part of the feasibility study, a series of environmental features have been identified. There are a range of environmental features in the area of the proposed Ford Road junction, some of which will act as constraints. For any scheme to come forward, its impacts on the environment would need to be fully assessed and taken into account in the design and all relevant statutory processes.
4. Key environmental features to be aware of are:
 - a) There are Habitats of Principal Importance (HPI) of note to arboriculture, specifically deciduous woodland and traditional orchard that are likely to be inhabited by protected species (it is known from other studies that bats have been observed in the study area).
 - b) There is at least one veteran tree.
 - c) The River Arun is located to the east of the study area.
 - d) The majority of the study area is located in Flood Zone 1. Flood Zones 2 and 3 are located in the far east (associated with the River Arun) and west of the study area.
 - e) There are a number of unnamed ordinary water courses within the study area.
 - f) The study area comprises arable and horticultural land, improved grassland suburban areas and broadleaved mixed and yew woodland areas.
 - g) There are two designated assets within the study area: the Tortington priory scheduled monument and the Grade II* listed Tortington Priory Barn, both of very high heritage significance.
 - h) There is a moderate to high potential for archaeological remains given the proximity to the Tortington Priory scheduled monument.
 - i) Four Public Rights of Way (PRoW) pass through the study area, with one passing directly through the proposed scheme.
 - j) The study area contains the residential settlement of Tortington, individual properties, commercial buildings/small businesses and farms. Residential properties are predominantly noted to the south in Tortington.

Options

5. Three design options were initially developed; the main constraint considered for all three options in terms of highway geometry was the location of the proposed expansion joint on the viaduct. Each option included features at the junctions between Ford Road and the slip roads that would restrict use of the junction to traffic travelling to/from the south of the proposed junction. This was to minimise the potential impact on Ford Road in Arundel which is physically constrained. The three options were:
 - Option 1: Full Grade Separated Junction (Dwg: 70094749-WSP-GEN-WHL-DR-CH-301001)
 - Option 2: Compact Grade Separated Junction (Dwg: 70094749-WSP-GEN-WHL-DR-CH-301002)
 - Option 3: Compact Grade Separated Junction (Minimum Horizontal Values) (Dwg: 70094749-WSP-GEN-WHL-DR-CH-301003)
6. An initial sift was conducted to narrow down the options for the purpose of further assessment. This sift concluded that Option 2 would be the most likely to be feasible taking account of the likely usage, environmental constraints and compatibility with the A27 Arundel Bypass scheme.
7. Option 1 was discounted from further assessment because it is fundamentally incompatible with the Tortington Lane Overbridge structure proposed as part of the A27 Arundel Bypass scheme.
8. Option 3 was discounted from further assessment because it would not be suitable for the level of traffic seeking to access/egress the A27 and would be likely to result in highway safety issues.

Traffic Impacts

9. Option 2 was assessed using the A27 Arundel PCF Stage 2 traffic model developed by National Highways and used to support the identification of a preferred route for the A27 Arundel Bypass scheme. This is a fixed demand highway model that is capable of assessing changes in traffic routing in the AM, Inter Peak (IP) and PM peak periods. This was the most up-to-date model available for use at the time of the assessment. The impacts of a Ford Road junction were assessed by comparing a 'Do Minimum' scenario that includes committed highway schemes (including A27 Arundel Bypass) against a 'Do Something' scenario that includes committed highway schemes plus a Ford Road junction.
10. The area that is shown to benefit most from a Ford Road junction is Littlehampton (particularly A259 and A284) and to a lesser extent Yapton Lane. These areas would see a reduction in traffic as users alter their routes to minimise journey times.
11. The assessment also demonstrates that a Ford Road junction would increase the amount of traffic that uses Ford Road south of the proposed junction as all traffic that uses the junction is expected to travel to/from the south.

12. The biggest differences in traffic flows appear in the PM peak when it appears the junction would be most beneficial. In 2026, the modelled usage is 624 vehicles in the AM peak hour compared to 929 vehicles in the PM peak hour.
13. A significant proportion of trips using the junction start/end in the Bognor Regis area as using the junction would provide a faster alternative than travelling to Crossbush via A284.
14. Traffic travelling to/from the east are the greatest users of the junction (usage in the hundreds during peak hours). The model for 2026 indicates that the combined usage of the westbound off-slip and eastbound on-slip is 9,444 Annual Average Daily Traffic (AADT) compared to a combined usage of the westbound on-slip and eastbound off-slip of 1,396 AADT.
15. Traffic travelling from the west is significantly higher in the PM peak than at other times when other routes (e.g. via A259) are shown to be faster. In 2026, the modelled usage of the eastbound off-slip is 177 vehicles in the PM peak hour and 40 vehicles in the AM peak hour.

Key Design Issues

16. The proposed scheme would require third party land outside the current boundary of the A27 Arundel Bypass scheme. In order for the proposed scheme to come forward, this land would need to be acquired, ideally through negotiation but if not, this may require use of compulsory land acquisition powers. No investigations have taken place into land ownership as part of the feasibility study so if the scheme proceeds, sufficient time and resource should be allowed in the project plan for land acquisition.
17. Compliance with relevant design standards was considered as part of the feasibility study. Design standards are used to ensure the Strategic Road Network performs safely and applies a consistent approach to design. Following completion of the traffic modelling, National Highways expressed concern about the suitability of the proposed design due to the forecast traffic flows on the A27 main line and the slip roads. This is because the design criteria in the Design Manual for Roads and Bridges (DMRB) (CD122) states that compact grade separated junctions should not be used on dual and single carriageway roads when mainline flows are above 30,000 AADT. The traffic model indicates that the mainline flow on this section of A27 Arundel Bypass is expected to be above this level.
18. It may be possible to make a junction acceptable in design and safety terms, subject to a justification and safety risk assessment and support from National Highways. However, as part of the feasibility study National Highways SES Safer Roads Team indicated that they would not support a compact grade separated junction design.

Economic Appraisal

19. An initial economic appraisal was undertaken using information from the base year (2015), design year (2041), future year (2051) forecasts from the traffic model.

20. The economic appraisal used planning assumptions provided by ADC in late 2021 which takes account of recently permitted developments in the Yapton, Ford and Clymping area. The planning assumptions for this study assume a significantly higher level of development in the area than assumed by National Highways. The main reasons for the differences are the timing of the assessments (planning permissions have been granted since the National Highways assessment) and the method for applying DfT growth forecasts. For the purpose of this study, a higher level of future growth was assumed in the area because this more closely aligns with the adopted Arun Local Plan.
21. The initial cost estimate for the scheme used in the economic appraisal is £10.3m. However, it should be noted that this is an initial feasibility stage cost estimate which is based on desktop information only and would be likely to increase once further detailed investigations are undertaken. National Highways have indicated based on their site investigations that ground conditions in this location would require significant strengthening/stabilisation works that have not been included in the initial cost estimate.
22. The initial Benefit Cost Ratio is 5.67 which represents very high value for money. However, it should be noted that if the cost of the scheme increased, this would be likely to reduce the BCR and could even negate the benefits unless additional benefits can be identified.

Conclusions

23. A business case that demonstrates that a Ford Road junction could provide value for money based largely on transport user benefits does appear to be possible. This is based on the assumptions about scheme cost and planned development that have been used as part of the economic appraisal. There is a high likelihood that this would reduce at later stages of the project due to increases in cost that are unlikely to be matched by commensurate increases in the scheme benefits.
24. Fundamental concerns with the proposed compact grade separated junction (Option 2) design have been identified through the feasibility study because the proposed design does not comply with aspects of the Design Manual for Roads and Bridges (CD122). Discussions took place between WSCC, National Highways and the designer to explore whether there are potentially ways to change the design to make the design acceptable. However, it has been concluded that based on the information available about likely traffic flow on A27 Arundel Bypass, a compact grade separated junction in this location is not feasible.
25. Following the discussions with National Highways, consideration was given to revisiting Option 1 (full grade separated junction) as part of the feasibility study. However, this would conflict with the Tortington Lane overbridge that is proposed as part of the A27 Arundel Bypass. This structure is needed to maintain access to local properties and provide habitat connectivity in an area of activity for protected species, notably bats. It is not considered feasible to remove the Tortington Lane Overbridge from the A27 Arundel Bypass design as this is critical to mitigating the impacts of the Bypass on

bats. Initial investigations indicate that it would be prohibitively costly (£50-80m) to build a Tortington Lane Overbridge that is large enough to span a full grade separated junction. For these reasons, Option 1 is not feasible.

26. As it has been concluded that the options identified are not feasible, none of the options are expected to be taken forward.
27. The findings from this feasibility study and technical work by National Highways were presented at a roundtable meeting with Elected Representatives on 20 February 2023.
28. The impacts of the A27 Arundel Bypass on the local highway network and communities are expected to be set out in a Transport Assessment and Environmental Statement. This information is expected to show how the Bypass is forecast to affect the distribution and volume of traffic in the future. This information should be reviewed to explore whether there are other potential ways to mitigate the impacts of the Bypass on the local highway network and affected communities in the absence of a junction with Ford Road.

West Sussex County Council
Arun District Council