A1 in Northumberland: Morpeth to Ellingham

Scheme Number: TR010059

7.27.1 Applicant's Responses to Deadline 6 Submissions - Appendix A - Tom Lloyd Junction Comparison

Rule 8(1)(c)

Infrastructure Planning (Examination Procedure) Rules 2010

Planning Act 2008

May 2021

Infrastructure Planning

Planning Act 2008

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The A1 in Northumberland: Morpeth to Ellingham

Development Consent Order 20[xx]

Appendix A - Tom Lloyd Junction Comparison

Rule Reference:	8(1)(c)
Planning Inspectorate Scheme Reference:	TR010059
Document Reference:	7.27.1
Author:	A1 in Northumberland: Morpeth to Ellingham Project Team, Highways England

Version	Date	Status of Version
Rev 0	May 2021	Deadline 7

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1 APPENDIX A - TOM LLOYD JUNCTION COMPARISON

Factor	Fenrother Junction (Highways England Proposal)	Causey Park Junction (Tom Lloyd Proposal)	Applicant's Comment
Traffic from Amble/ Hadston etc to A1 south	Still gives way at Causey Park and narrower detrunked road for 2.4km before joining new A1	Direct access to new A1 and across detrunked A1	As set out in the Applicants Response to Further Deadline 2 Submissions [REP4-033], reference 1.2.4 (paragraph 1), the number of vehicles in each direction on Chevington Road is forecast to be around 3 vehicles per minutes. The Applicant would confirm that the number of vehicles approaching the junction from the North on the de-trunked A1 is fewer than one vehicle per minute. Given the limited traffic flows on the de-trunked A1 it is not expected that the Fenrother Junction proposal would result in any significant delays when turning southbound onto the de-trunked A1, which is demonstrated in the Junctions 9 operational model submitted as Appendix B. The de-trunked A1 is a wide single carriageway with good horizontal and vertical alignment and good forward visibility. No narrowing of the de-trunked A1 is proposed as part of the Scheme. Irrespective of whether Northumberland County Council decide to incorporate a cycle lane the de-trunked A1 will not become a narrow single carriageway and will still have good horizonal and vertical alignment and good forward visibility. The alternative junction location at Causey Park shows a crossroads at the intersection of Chevington Road and the de-trunked A1 together with a change in the priority such that Chevington Road and the new link road to a junction at Causey Park becomes the priority route with the de-trunked A1 becoming the side roads. Section 4.3e) of TD 42/95 The Geometric Design of Major/ Minor Priority Junctions states that the replacement of a rural crossroads by a staggered junction with the side roads offset from each other has been shown to reduce accidents by some 60% i.e. with a crossroads arrangement there is an increased risk of traffic on side roads going straight across the junction without reducing speed. TD 42/95 has recently been superseded by CD123 Geometric design of at-grade priority and signal-controlled junctions. Section 2.21 Note 2 of CD 123 states that staggered junctions are safer than crossroads where a significant proportion of the flow on the minor roads is a cross flow. As the alternative arrangement hasn't been modelled it is not possible to confirm if a significant proportion of the flow would be a cross flow however it is clear from standards that staggered junctions are safer. For the Fenrother junction option the present T junction arrangement would be retained, and the junction affords good visibility when turning left or right from Chevington Road in compliance with standards. The change in the priority of the junction from the present arrangement will also increase the safety risk until drivers who have regularly used the junction become accustomed to the revised arrangement. Cyclists and pedestrians travelling on the de-trunked A1 will have to give way and cross the new priority route formed by an extension of Chevington Road increasing the safety risk. The Applicant considers that given that there will be no significant delays in negotiating the junctions with the Fenrother junction option, there will be no significant difference in

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			journey times in travelling to and from Chevington Road from the A1 with either junction option.
Traffic from A1 South to Amble/ Hadston etc.	Gives way to southbound Amble/Hadston traffic at new junction then 2.4km narrower road to give way again at Causey Park to much less traffic	Direct access/ right of way off new A1 and across detrunked A1	Northbound vehicles leaving the A1 at the Fenrother Junction will have to turn right at a T junction to travel further north and east via the de-trunked A1. The number of vehicles turning right at this T junction is forecast to be 73 in the morning peak hour and 71 in the evening peak hour. Given the limited number of vehicles turning right and the limited number of vehicles heading to join the A1 southbound at Fenrother there will be no significant delays at this T junction. This T Junction will be designed to current standards in terms of visibility etc. and the design will be subject to Stage 2, 3 and 4 Road Safety Audits to ensure that it does not present a risk to safety. Given the design and the limited number of vehicles using the T junction there will not be a significant collision risk for vehicles using this T Junction and the situation is no different to the T junction shown on the alternative proposals for a junction at Causey Park. The alternative proposal for the junction at Causey Park shows that northbound traffic leaving the A1 at the Junction and heading east would have priority over southbound traffic leaving the A1 with a T junction on the loop road. This arrangement results in a relatively short queuing length for southbound traffic leaving the A1. While the number of southbound vehicles leaving the A1 at the junction is expected to be relatively low in normal circumstances if there was an increase in traffic leaving the A1 due to a particular peak such as attending an event it could lead to the queue for the T junction extending back onto the A1 southbound diverge or onto the A1 carriageway itself with the consequent safety risks.
A1 S Traffic to/from Longhorsley etc.	Delay through Fenrother village would cancel any time saved on new A1 so would stay on A697 & unlikely to use this route	Delay through Paxton Dene/Fieldhead single track roads would exceed time saved on new A1 so would stay on A697 and v. unlikely to use this route	The Applicant has not modelled the alternative junction arrangement so can't comment quantitatively on the impact on traffic travelling to and from Longhorsely. From a qualitative review the Applicant would agree that traffic travelling to and from Longhorsely will continue to utilise the A697 and so the location of the junction at either Fenrother of Causey Park wouldn't be a factor in travel choices to or from Longhorsely.
A1 Event Traffic to/from Burgham Park/ Bockenfield Airfield/Eshott Hall	c.7km to nearest A1 junction at Fenrother whether due N or S	c.3km to nearest A1 junction at Fenrother whether due N or S	Traffic travelling to and from Burgham Park golf course would utilise the A697 regardless of whether a junction was located at Fenrother or Causey Park. The western connection to the A697 from Fenrother Junction is more direct (2.4km compared to 4.4km), less sinuous (straighter) and of a higher standard (generally wider permitting two-way traffic) than the connection from a junction at Causey Park. Traffic travelling to and from Bockenfield Airfield or Eshott Hall from the North would utilise the new link road from West Moor Junction which ties into the de-trunked section of the A1 at Bockenfield and so there would be no difference with either junction location. Traffic travelling to and from Bockenfield Airfield or Eshott Hall from the South could also utilise this new link road from West Moor Junction or could the junction at Fenrother or the alternative proposed junction at Causey Park. Utilising the junction at Fenrother would result in a slight increase in journey times in turning right at the T junction at

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			Fenrother when heading north in comparison to a junction at Causey Park. Utilising a junction at Causey Park would result in a slight increase in journey times in turning right at the junction with Chevington Road when heading south. Based on the foregoing the applicant does not consider that there is any significant difference between the two junction locations.
E-W Traffic crossing A1	Slight delay at Fenrother/ improved at Causey Park	Slight delay at Causey Park / improved at Fenrother	The east to west connecting road to the A697 which passes through Fenrother Junction is more direct (2.4km compared to 4.4km), less sinuous (straighter) and of a higher standard (generally wider permitting two-way traffic) than the east to west connecting road to the A697 from a junction at Causey Park. The increased east-west traffic volumes generated by the junctions can therefore be more readily accommodated by the road network leading to a junction at Fenrother and the resulting traffic delays will therefore be less with the junction at this location.
A1 N Traffic to/from Heighley Gate/ Espley Hall etc	Delay through Fenrother village would make Highlaws junction far preferable	Delay through Paxton Dene would make Highlaws junction far preferable	If heading North from Espley Hall, then the junction at Fenrother may prove more attractive than travelling south and then east to join the A1 at Highlaws junction. However, the Applicant accepts that the choice of junction between Fenrother and Causey Park would not make a significant difference in travelling to and from these locations
Non-motorised N-S traffic on detrunked A1	2.4km of cycleway sharing carriageway with c. 2,500 vehicles/day of 60mph traffic (based on Fig.36.2 of Document 1 above)	2.4km of cycleway sharing carriageway with c.200 vehicles/day of 60mph traffic (based on Fig.36.2 of Document 1 above)	The A1 is not presently an identified cycle route. The opportunity to improve/increase cycle and pedestrian provision on the de-trunked section of the A1 was clarified by the Applicant to be outside the scope of the Scheme. There is an existing footpath on the east side of the existing A1 from Causey Park to Tritlington School. Current users of this footpath do so in conjunction with the 20,000 vehicles per day which currently use the A1. Following completion of the Scheme with the junction at Fenrother the number of vehicles using the de-trunked A1 will reduce to around 3 per minute in each direction. This represents a significant reduction in vehicle movements for users of the existing footpath. Should NCC choose to provide a cycleway on the de-trunked section of the A1 then the cycleway will be segregated from the carriageway and the number of vehicles using the de-trunked A1 will be largely irrelevant. The alternative proposals for a junction at Causey Park require a change to the priorities at the junction of the de-trunked A1 with Chevington Road. Cyclists and pedestrians travelling on the de-trunked A1 or a new cycleway provided by NCC will have to give way and cross the new priority route formed by the extension of Chevington Road creating a conflict between vehicles and pedestrians and increasing the safety risk. While the Applicant accepts that a junction at Causey Park will reduce the number of vehicle movements on the de-trunked A1 it is not accepted that this will represent a significant safety benefit for use of the road by cyclists.

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Road Safety	In Document 2, HE claims "*local traffic will join and leave the new A1 in a safe and efficient manner in the Scheme as the old A1 will be subject to a detailed design Road Safety Audit*". Surely this audit should be undertaken now as part of the design, with so many unnecessary traffic conflicts.	Avoids 2,500 vehicles/day traffic conflict at Fenrother T junction Reduces 2.4km of traffic alongside N-S cycle route on detrunked A1 from 2,500 to 200 vehicles/day	The number of vehicles turning right at the Fenrother T junction is expected to be one every 50 seconds following opening of the Scheme. The number of vehicles joining the southbound A1 at the Fenrother junction will be approximately 3 per minute. The proposed T junction will readily accommodate these traffic movements without any significant delays or safety risks. The alternative junction at Causey Park has a T junction for southbound traffic exiting the A1 at the junction. Given that traffic flows on the loop road through the junction are likely to be similar at either junction the performance of both junctions in terms of delays and safety is likely to be similar. As set out in the response to the first point above the alternative junction location at Causey Park shows a crossroads at the intersection of Chevington Road and the de-trunked A1 together with a change in the priority of this junction. Design standards confirm that a crossroads is less safe that a staggered junction in that there is a risk of traffic on the minor road going straight across a crossroads without giving way or slowing down sufficiently. The crossroads will also be less safe than the present T junction arrangement. The change in the priority of the junction from the present arrangement will also increase the safety risk until drivers who have regularly used the junction become accustomed to the revised arrangement. The Scheme has already been subject to a Stage 1 Road Safety Audit in accordance with the Design Manual for Roads and Bridges which did not identify any hazards to road users. The Scheme will also be subject to a Stage 2 Road Safety Audit prior to the completion of the detailed design stage and a Stage 3 Road Safety Audit will be undertaken prior to the new junctions and road network becoming operational.
Junction Spacing along new A1	Highlaws - 2.5km – Fenrother - 7km – West Moor	Highlaws - 5.5km – Causey Park - 4km – West Moor ie better spacing for driver reaction time/ network resilience	The spacing between junctions is primarily determined by the required location of each junction in terms of the connection with existing side roads and onward journeys. The 2.5km spacing between Highlaws and Fenrother junctions exceeds the minimum spacing from a traffic safety perspective and is more than is required for the advanced signing of the respective junctions in terms of drivers' reaction times. The provision of a junction at Fenrother as opposed to Causey Park provides for greater resilience in that it would enable a greater length of the de-trunked A1 to be used as a diversion route for the new A1. This would apply particularly to southbound traffic where there would be no junctions between West Moor and Fenrother. Using the de-trunked A1 as a southbound diversion route with a junction at Causey Park would reduce the length of de-trunked A1 which could be utilised and there would be a right turn required at the Chevington Road Junction. The Applicant does not therefore accept that an alternative junction at Causey Park would be beneficial in terms of spacing or resilience.

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Visual / Noise/Pollution Impact within 600m of junction	Primary school and 5 residential properties affected	Recycling plant and 4 residential properties affected	The Applicant is unable to substantiate that four residential properties and a recycling plant would be within 600m of the Causey Park Junction with the information provided. The operational road traffic noise assessment is initially based on the predicted change in noise levels at receptors. Noise levels have been predicted based on the horizontal and vertical alignment of the Scheme as a whole not just the proposed junctions. The presence of a receptor within 600m of a junction does not necessarily mean that an adverse effect would be predicted at that receptor and therefore it is impossible to draw firm conclusions from a count of receptors within 600m of alternative junction locations.
Public Rights of Way	PROW 423/001 diverted to Fenrother junction overbridge PROW 423/013 diverted to Causey Park overbridge	PROW 423/001 diverted to Fenrother overbridge PROW 423/013 diverted to Causey Park junction overbridge HE claims a junction at Causey Park would encroach onto "*a Public Right of Way (PRoW)*" but only 423/013 is shown on their plans submitted or on OS maps so why have they raised this as an issue ?	The present arrangement with the junction at Fenrother and an overbridge at Causey Park has the re-aligned PROW joining a footpath on the south side of Causey Park Road and crossing the Causey Park Overbridge. There is therefore no requirement for non-motorised users to cross the carriageway. The proposed arrangement with the junction at Causey Park shows that the re-aligned PROW has to cross over the link road from the proposed Causey Park Junction to Chevington Road/ the de-trunked A1. This conflict between vehicles and non-motorised users of the PROW creates a safety risk. The Applicant therefore considers that a junction at Fenrother better accommodates the re-alignment of the PROW.
Mine Workings	Unknown encroachment on mine entry locations ?	HE claims a junction at Causey Park would encroach onto " *mine entry locations (which could have the potential for impacts associated with ground instability and release of hazardous mine gas)*"	No coal mining risks have been identified in relation to the proposed site of the Fenrother Junction. The proposed site of the Fenrother junction does not lie within or in close proximity to a Coal Authority Development High Risk Area (DHRA) ([APP-117] Section 6.5 of the Environmental Statement, Figure 11.5 Coal Mining Hazards Part A). An area to the immediate north and north west of the proposed Causey Park Overbridge has been identified to be a Coal Authority DHRA ([APP-117] Section 6.5 of the Environmental Statement, Figure 11.5 Coal Mining Hazards Part A). A Coal Mining Risk Assessment (CMRA) prepared for Part A of the Scheme ([APP-264] Section 6.7 of the Environmental Statement, Appendix 11.4 Coal Mining Risk Assessment) identifies three historical mine shafts located to the north of the proposed site of the Causey Park Overbridge. It is currently unclear as to where the proposed Causey Park junction would be situated in relation to the historical mineshafts. A historical backfilled quarry and a risk of shallow coal workings in this area have also been identified. The presence of known mineshafts and potential shallow mine workings in this area present a potential for ground instability. The Applicant notes that the existing proposed location of Causey Park Overbridge is located to the south of the Coal Authority DHRA. In summary, there are greater ground instability risks associated with locating a junction at Causey Park rather than Fenrother given the coal mining legacy in the area of Causey Park, whilst ground instability risks associated with historical coal mining have not been identified at Fenrother.

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X15 Bus Route (Hourly Arriva service along A1 serving Tritlington/CauseyPark/Eshott etc)	No mention of what happens to X15 hourly bus service – I suggest either of :- • Bus stop laybys are located on dual carriageway near new bridges with footpath links at Causey Park and Burgham Park, and at Fenrother junction for Tritlington school • Detrunked A1 continued north to West Moor for bus to use from Fenrother to West Moor, and add new laybys just north of Fenrother junction	I suggest either of :- • Bus stop laybys are located on dual carriageway near new bridges with footpath links at Fenrother and Burgham Park, and at Causey Park junction for Oak Inn etc • Detrunked A1 continued north to West Moor for bus to use from Causey Park to West Moor, and add bus stop laybys with footpaths near Fenrother overbridge	The Applicant confirms that with the junction at Fenrother the bus route could continue to use the de-trunked A1 to access Tritlington/ Causey Park and Eshott after leaving the A1 at Fenrother junction. With the alternative proposed junction at Causey Park the de-trunked A1 south of the Chevington Road junction would effectively become a cul de sac unless a new overbridge is provided at Fenrother. If a new overbridge were provided at Fenrother then the bus route would need to utilise the A697 to access Tritlington. The Applicant therefore considers that a junction at Fenrother better accommodates the continuation of this existing bus route.
Agricultural Land Quality	Agricultural land within the Order Limits at the Fenrother junction is "*predominantly of a lower grade (Grade 4)*"	Agricultural land within the Order Limits at Causey Park is "*predominantly Grade 3b with a lesser proportion of Grade 3a, BMV and Grade 4*".	The Applicant agrees that the Fenrother Junction would be a better option than the Causey Park Junction in terms of minimising the impact on agricultural land use.
Heritage Assets	Unknown non-designated heritage assets ?	HE claim a junction at Causey Park would encroach onto "potentially two non-designated heritage assets" but no further information is offered.	There are two non-designated heritage assets identified at Causey Park which could be potentially affected during construction, comprising: • "Site of Brick and Tile Yard at Causey Park Lodge" shown on an Ordnance Survey Map of 1866 (Historic Environment Record Reference 17100) • "Causey Park Hag rectilinear enclosure", recorded as a cropmark (Historic Environment Record Reference 11367). There are no known cultural heritage assets at the Fenrother Junction that would be affected by construction.

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