

**Decision Session - Executive Member for
Transport and Planning**

22 June 2017

Report of the Corporate Director of Economy and Place

Traffic Signal Asset Renewal (TSAR) – Junction Alterations

Summary

1. Alterations to the following junctions are required to allow replacement of life-expired signalling assets:
 - Tadcaster Road / St Helens Road
 - Heworth Road / Melrosegate
 - Rougier Street / Tanner Row

A decision is required to approve the proposed alterations.

Recommendations

2. The Executive Member is asked to:

- 1) Tadcaster Road / St Helens Road:

Option 1 – Approve the recommended design for this junction

Reason: The recommended design offers the best solution to allow replacement of the asset in line with current design standards, whilst improving pedestrian facilities without significantly impacting vehicular traffic. It includes a minor improvement to safety.

- 2) Heworth Road / Melrosegate:

Option 1 – Approve the recommended design for this junction

Reason: The recommended design offers the best solution to allow replacement of the asset in line with current design standards, whilst

minimising the impact on pedestrians and vehicular traffic. It includes a minor improvement to safety.

3) Rougier Street / Tanner Row:

Option 1 – Approve the recommended design (Design Option A) for this junction

Reason: Design Option A offers the best solution to allow replacement of the asset in line with current design standards, whilst minimising the impact on pedestrians, vehicular traffic and air quality. It includes a minor improvement to safety.

Background

3. A report was brought to the Executive Member for Transport and Planning on 12th November 2015 to seek approval to undertake the 5-year 'TSAR' (Traffic Signal Asset Renewal) project.
4. This project entails a replacement of life expired traffic signal assets around York. The focus is on replacing equipment that is liable to imminent failure, rather than seeking to improve congestion or achieve a similar transport improvement goal. However, where 'easy wins' can be achieved at the same time as replacing obsolete equipment, these will be taken advantage of.
5. To date, 9 sets of signals have been refurbished and a further 9 are programmed in for the 17/18 financial year.
6. Modern design standards have on occasion dictated that some pre-existing junction layouts have to be modified for safety reasons. In many occasions, these changes are minor and can be approved at an officer level.
7. This report highlights 3 junctions being treated as part of the TSAR project, where modern design standards dictate a significant change to the operation of the junction is required. Approval is sought for the proposed layout changes.

Consultation

8. The TSAR project uses a 3-level consultation strategy, the details of which can be found in Annex A.
9. Tadcaster Road / St Helens Road
Level 2 consultation is complete for the current design stage (Preliminary Design).
The recommended design incorporates feedback from internal stakeholders. Local Ward Councillors have been consulted and responses were received from Cllrs Reid and Fenton. These responses reflected a positive response to the proposed design from residents and are recorded in Annex E.
10. Heworth Road / Melrosegate
Level 2 consultation is complete for the current design stage (Preliminary Design) – The recommended design incorporates feedback from internal stakeholders. Local Ward Councillors have been consulted, no responses were received within the 2 week consultation period or in the 4 weeks since.
11. Rougier Street / Tanner Row
Level 2 consultation is complete for the current design stage (Feasibility) and an internal decision session has been held to narrow down the options to the those two that are presented in this report.
Local Ward Councillors have been consulted and the following response was received back from Councillor Hayes:
“I have had a good look and would favour option 1 [Design Option A - CW]. This is because it saves £40,000 and the benefits of B seem marginal to me.”

Options

12. The following options are available:
 - 1) Tadcaster Road / St Helens Road
Option 1 – Approve the proposed junction design
Option 2 – Do not approve the proposed junction design
 - 2) Heworth Road / Melrosegate
Option 1 – Approve the proposed junction design
Option 2 – Do not approve the proposed junction design

3) Rougier Street / Tanner Row

Option 1 – Approve Design Option A junction design

Option 2 – Approve Design Option B junction design

Option 3 – Do not approve either proposed junction design

Analysis

Tadcaster Road / St Helens Road

13. *Description of changes*

– Refer to Annex B for a drawing comparing the existing layout to the proposed layout.

- Existing staggered pedestrian island to be replaced with wider, straight across pedestrian crossing. ‘Puffin’ technology to be introduced.

- Addition of pedestrian crossing on north side of junction

- The budgetary estimate for carrying out these works is £120,000

- There is currently no planned date to carry out these works

14. *Reasoning*

15. The replacement of the existing island has been proposed because the island is too narrow. It falls below minimum design guidance in terms of its overall width and the distance of its guard rails from the carriageway.

16. The substandard width results in difficulty for pedestrians in using the facility, especially those with prams and wheelchairs.

17. The substandard distance of the guardrail to the carriageway has resulted in vehicle strikes which in turn creates a maintenance liability.

18. There is therefore a risk of liability to the Authority if an asset replacement scheme were forwarded at this location without bringing the facility up to current standards.

19. The addition of a third pedestrian crossing on the north arm of the junction constitutes as ‘easy win’, in that it provides a desirable pedestrian facility without any significant detriment to the functioning of

the junction.

20. *Effect on vehicular traffic*

21. LINSIG modelling has been undertaken on the proposed design and it is noted that there is no significant change to vehicular delays, queues, Practical Reserve Capacity or congestion.

22. *Effect on pedestrians*

23. Introduction of an additional pedestrian crossing on the north arm of the junction is a significant improvement for pedestrians as it serves a desire line accessing the inbound bus stop and Cross Keys public house.

24. Replacement of the 2-stage island layout with a single straight across ped crossing will be an improvement for some users, and a disadvantage for others. Overall it is considered a net improvement for pedestrians.

25. Users most likely to find an improvement are those who would wait for a green man signal to cross, for example elderly persons, young persons, and those with mobility issues. It is an improvement for these individuals because they would only have one crossing to wait for, rather than two. Additionally, the removal of the narrow pinch-point is an improvement for all users.

26. Those users most likely to be disadvantaged by the new layout are those that do not wait for a green man and instead cross 'in gaps', using the island as a refuge.

27. The longer crossing distance is not considered a disadvantage as on-crossing technology will be used that will ensure an adequate and comfortable crossing period for users of all mobility.

28. *Safety Considerations*

29. Refurbishment of the signals includes the introduction of 'Puffin' nearside pedestrian facilities, which are now a standard across York. National research shows that Puffin crossings are safer than the traditional 'pelican' crossings.

30. An independent review of the current design has been carried out to determine whether a full Road Safety Audit is required. This review has advised that no such audit is required at this stage. A full Road Safety

Audit will be carried out before construction and if the outcome results in any key alterations to the fundamental design then the scheme will return for another decision. It is not envisaged that this will be necessary.

Heworth Road / Melrosegate

31. *Description of changes*

- Refer to Annex C for a drawing comparing the existing layout to the proposed layout.
- Two kerb build outs are to be constructed to narrow the carriageway over the Heworth Village arm.
- Pedestrian crossings to be widened and tactile paving adjusted, 'Puffin' technology to be introduced.
- Existing islands to be removed.
- The budgetary estimate for carrying out these works is £131,000.
- These works are currently scheduled for July 2017.

32. *Reasoning*

33. Building out the kerbs as shown enables the crossing length to be reduced. At present the crossing length is beyond guidance limits. There are also safety and efficiency benefits associated with reducing the crossing width to within guidance limits.
34. Widening pedestrian crossings and adjusting tactile paving is again related to bringing the junction up to current standards. Wider pedestrian crossings are also safer and easier to use for pedestrians.
35. The existing islands were originally installed for a variety of reasons, such as housing traffic signal poles, as pedestrian refuges and legacy islands from when the junction was an unsignalled priority junction.
36. All legacy islands are proposed to be removed as they no longer serve a purpose as junction navigation is not deemed to be an issue.
37. Installing signal poles on small islands within a junction is considered poor practice at present because it represents a maintenance liability. It

is difficult and often dangerous for a maintenance engineer to climb ladders to get up to a signal head on a small island in the middle of a live junction. For this reason, no signals are to be located on such islands and the islands lose this purpose.

38. Finally, some islands also serve as pedestrian refuges to allow users to cross the junction against a green man. For able bodied pedestrians this is considered normal behaviour, however the width of the refuges is below guidance and it is not possible, for example, to fit a pram on the refuge without significantly extending out into the carriageway. This represents a safety concern, even though it is noted that there is no record of injuries due to this type of usage.
39. The design team consider that removal of all islands is the best option for the above reasons, and to reduce liability to the Authority, as it relates to the existing pedestrian refuges.
40. *Effect on vehicular traffic*
41. Operation of the junction is anticipated to be similar to existing. Introduction of newer technology, and the reduction of the pedestrian crossing length should result in a minor increase in efficiency and capacity, however this is not predicted to be significant.
42. *Effect on pedestrians*
43. The reduced length of the north-eastern crossing will result in a slight advantage to pedestrians, as will the slight increase of width at all crossings.
44. The removal of existing islands which have been used as pedestrian refuges will be deemed a disadvantage to some users. This is accepted, however the design team consider that the safety implications and reduced liability are worth the change.
45. The existing junction incorporates a key-operated panel that allows the school crossing patrol to take control of the junction and extend the crossing periods as they desire. This facility will be retained in the proposed design.

46. *Safety Considerations*

47. An independent review of the design has been carried out to determine whether a full Road Safety Audit is required. This review has advised that no such audit is required at this stage. A full Road Safety Audit will be carried out before construction and if the outcome results in any key alterations to the fundamental design then the scheme will return for another decision. It is not envisaged that this will be necessary.
48. Refurbishment of the signals includes the introduction of 'Puffin' nearside pedestrian facilities, which are now a standard across York. National research shows that Puffin crossings are safer than the traditional 'pelican' crossings

Rougier Street / Tanner Row – 2 Design Options

49. *Description of changes*

50. – Refer to Annex D for a drawing comparing the existing layout to the proposed design options.

51. *Design Option A changes:*

- Road markings altered to remove right turn lane into Tanner Row and extend zig-zag markings
- Small build out on corner of Rougier Street / Tanner Row
- Introduction of 'no left turn' restriction on Tanner Row
- The budgetary estimate for carrying out this design is £48,000
- Roadspace has been booked to carry out this work in September 2017

52. *Design Option B changes:*

- Standalone pedestrian crossing replaced with fully signalled junction, all 4 arms signalled.
- Introduction of additional controlled pedestrian crossing on Tanner Row.
- Introduction of ASL's on two approaches.

- Road marking changes to comply with junction layout, including a reduction in width of the bus stop near the junction.
- The budgetary estimate for these works is ~£88,000
- There is currently no time period scheduled in to carry out these works.

53. *Reasoning (Design Option A)*

54. This design option represents the 'do minimum' option to allow the replacement of the existing life-expired signalling asset. Even so, some changes are required to enable the crossing to meet current standards.
55. Guidance does not recommend a pedestrian crossing to be in such close vicinity to a junction mouth. Moving the crossing away from the junction is not feasible as it takes pedestrians off their design line and due to the existing structures present in the footway, eg basement access.
56. This in turn raises a requirement to prevent vehicles turning left out of Tanner Row due to the resultant road alignment. Fortunately, traffic surveys show that this left turn movement is extremely light (39 vehicles between 07:00 and 19:00 on the day surveyed), and there are alternative diversion routes for the small number of vehicles that wish to make this movement. No enforcement measures are deemed necessary as the physical layout of the build out will cause the restriction to be self-enforcing.
57. The existing right turn ghost island markings are not permitted under legislation to be marked within the controlled zig-zag area of the crossing. As such, the existing markings are proposed to be changed as illustrated.

58. *Reasoning (Design Option B)*

59. An alternative to the 'do minimum' approach is to convert the junction into a fully signalised junction. This removes the need for a build out and associated movement restriction, whilst also allowing some other benefits to be realised. There are however other significant drawbacks associated with this option.
60. Whilst the addition of a pedestrian crossing on Tanner Row West is easily incorporated into a full signalised junction without problem, this is

not the case for introducing pedestrian crossings on the Rougier Street arm. A pedestrian crossing on the northern arm of the junction would require significant reduction in bus stop capacity on both sides of Rougier Street and would impact upon the implementation of the shelter renovation. It was therefore omitted for this reason.

- 61. *Effect on vehicular traffic (Design Option A)*
- 62. The only impact on vehicular traffic results from the turning restriction on Tanner Row. Surveys show this movement is extremely light and alternative diversion routes are available.
- 63. *Effect on vehicular traffic (Design Option B)*
- 64. Signalising the junction would allow a significantly improved cycle facility at the junction. Existing uncontrolled movements would become controlled, giving cyclists priority.
- 65. The existing police vehicle bay on Tanner Row would have to be removed. The feedback from the Police is that it is desirable to retain this bay.
- 66. Modelling shows a significant increase in delays at this location for all users.

Approach	Average Delay Per PCU (or ped) (s/pcu (or ped))			
	AM Peak Existing	AM Peak Signal Option	PM Peak Existing	PM Peak Signal Option
George Hudson Street	8.1	22.8	8.4	24.4
Rougier Street	8.9	35.3	8.4	24.5
Pedestrian crossing GHS	17.7	24.3	17.7	24.3

- 67. The increased congestion would have a knock on effect on air quality in the area, further negatively impacting the existing AQM zone.

68. *Effect on pedestrians (Design Option A)*
69. There would be no discernable difference to the current operation other than that which arises from the introduction of Puffin technology.
70. *Effect on pedestrians (Design Option B)*
71. The inclusion of a further pedestrian crossing across Tanner Row represents an improvement to the pedestrian utility at this location. However, the pedestrian delay over George Hudson Street would increase. The design is also future-proofed to allow easy installation of an additional crossing over Rougier St if this is pursued as part of other projects.
72. *Safety Considerations (Design Option A)*
73. A safety review indicated that banning the left turn would force vehicles to turn right across the junction which would increase conflict. This is technically accurate, however the flow is extremely low and right turning across a junction is not as itself dangerous or unusual.
74. Overall it is considered that this Option represents an improvement in safety due to compliance with current standards and the introduction of modern crossing technology.
75. *Safety Considerations (Design Option B)*
76. A safety review indicated some concerns with this design, related to intervisibility especially at night with vehicles entering from Tanner Row and the potential for pedestrian over spill into the road from the nearby night clubs.
77. *Design Option Analysis*
78. The recommended design option is Design Option A. This is because it is the design option that achieves the project aims with the minimum spend.
79. Furthermore, whilst Design Option B offers significant advantages to cyclists, it only manages to do so with significant negative impacts upon vehicle and pedestrian delay, and air quality.

80. As such, the changes proposed in Design Option B do not consist 'easy wins' and are therefore not in line with the agreed project business case.

Council Plan

81. Replacing life-expired traffic signalling assets allows the Authority to continue to manage the traffic on it's highway network, minimising congestion and ensuring user safety. Therefore carrying out these works fulfils the 'A focus on frontline services' priority of the Council Plan.

Implications

82. **Financial**

The TSAR project is funded from the Transport Capital Programme and sufficient funds have already been assigned and approved.

83. **Human Resources**

There are no HR implications

84. **One Planet Council / Equalities**

All junctions are designed with equalities in mind. The recommended designs follow the most up to date guidance with respect to disability access. The technology included in all designs includes aids to persons with visual and mobility impairment.

85. **Legal**

There are no legal implications

86. **Crime and Disorder**

There are no Crime and Disorder Implications

87. **Information Technology**

The Information Technology implications of constructing the proposed designs has been considered and are included in the Project Plan. No issues are envisaged.

88. **Property**

There are no Property implications

89. **Other**

Disruption during construction – Constructing the TSAR schemes inevitably means a certain level of work on the Highway, with an associated level of delay and disruption to pedestrians and vehicular

traffic. Such works will be scheduled and planned to minimise this disruption, and sufficient information and notice will be given to affected parties.

Risk Management

89. There are no known significant risks associated with any option presented in this report.

Project Risks are recorded in the Project Risk Register and are handled by the Project Team and monitored by the Transport Board.

Contact Details

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Neil Ferris
Corporate Director of Economy and Place

Report **Date** 12/06/17
Approved

Wards Affected: List wards or tick box to indicate all

All

Heworth
Micklegate
Dringhouses and Woodthorpe

For further information please contact the author of the report

Background Papers:

Cabinet Report - 'Traffic Systems Asset Renewals and Detection Equipment Plan' – 12 November 2015

Annexes

Annex A – TSAR Consultation Strategy
Annex B – Tadcaster Road / St Helens Road Layout Comparison
Annex C – Melrosegate / Heworth Road Layout Comparison
Annex D – Tanner Row / Rougier St Layout Comparison

Annex E – Local Ward Councillor Consultation Details – Tadcaster Road St Helens

List of Abbreviations Used in this Report

TSAR – Traffic Signal Asset Renewal

ASL – Advanced StopLine – A ‘cycle box’ at the stopline of traffic signals

AQM – Air Quality Management