Transport and Environment Committee

10.00am, Thursday, 27 January 2022

Kirkliston Junction Reconfiguration

Executive/routine	**Routine**
Wards	**1**
Council Commitments	

1. Recommendations

1.1 Transport and Environment Committee is asked to note the:

1.1.1 Report previously considered at this Committee on 5 December 2019 relating to the junction;

1.1.2 Historic improvements implemented at this junction in 2005 and ongoing timing improvements undertaken by Council officers; and

1.1.3 Proposed junction signals improvement works required for a nearby housing development which are expected to be completed in 2022.

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Report

Kirkliston Junction Reconfiguration

2. Executive Summary

2.1 This report provides an update on historic and proposed improvements to the Kirkliston Town Centre junction.

3. Background

3.1 In terms of history, the junction has been subject to investigation and improvements over the years to accommodate increasing traffic flows. It is understood an element of significant traffic flow can be attributed to new residential developments within Kirkliston and surrounding areas, including West Lothian.

3.2 As a result of these investigations and to address a pedestrian safety risk, the traffic signal sequence was significantly changed in February 2015. The north/south flow was split into separate stages, to remove right turning vehicle conflicts and the risk of drivers mounting the kerb to pass stationary vehicles. Additional detection equipment was also included improve junction efficiency.

3.3 On 5 December 2019 the Transport and Environment Committee considered a report relating to the 2018 Kirkliston and Queensferry Traffic and Active Travel Study. Section 4.9 of the report referred to Kirkliston Crossroads results from the origin and destination traffic survey and considered future improvements for the junction. At that time, it was considered appropriate that further analysis and design would be required to increased traffic flows or explore options for junction redesign.

3.4 Due to the restrictive physical nature of the junction and surrounding buildings, it has not been possible to expand the layout or create more road space. The system changes undertaken to date have reached the limit of junction capacity at peak times.

3.5 Short and longer-term actions were considered as part of the December 2019 report, including:

3.5.1 Short Term - Junction efficiency assessment and Section 75 investment (action for the Network and Enforcement Team (ITS));

3.5.2 Longer term - Crossroads junction reconfiguration (action for the Road Safety/Active Travel Team).

3.6 The 2018 traffic study considered alternative layouts for the junction (see Appendix 1). These proposals were offered as an alternative to the current signalised layout suggesting two revised layouts prioritising either north/south or east/west routes with zebra crossings.

3.7 Officers from ITS and Road Safety/Active Travel have recently reconsidered these proposals and, in the absence of any benefit to pedestrians, vulnerable road users, cyclists or the current road network, these options have now been discounted.

3.8 An update on the Kirkliston signal upgrade was included in the Committee Business Bulletin on 14 October 2021.

4. Main report

4.1 Further to the background described in preceding section, officers have considered peak period traffic journey delays at this location under the context of additional residential development in the immediate area.

4.2 They have considered what actions would be appropriate to mitigate the impact of trips to/through and from the Kirkliston area. The current signals infrastructure has essentially reached its technical limitations in dealing with the prospect of additional journeys through the junction.

4.3 Due to the physical limitations of the existing junction and adjacent buildings increasing the physical space for all modes of transport or pedestrians is not possible.

4.4 There are essentially two immediate ways in which junction capacity or journey times could be improved. Initial options are noted below:

4.4.1 Increase the number of lanes on approach and/or exit to the junction; or

4.4.2 Reduce the number of vehicles passing through the junction.

4.5 Unfortunately, neither of these options are practical as buildings constrain the junction on all four corners, making the introduction of additional lanes impossible. The second option would require restricting or diverting current traffic flows entering Kirkliston, which may have a detrimental effect on local traffic and public transport access to Kirkliston. Clearly, any significant changes to road capacity or priority changes would require further strategic consideration to mitigate any possible negative impacts on the environment, public transport connectivity and active travel infrastructure.

4.6 At this time, the desirable option is to improve the efficiency of the junction by implementing a higher level of signal monitoring and control. The system considered appropriate is called Microprocessor Optimised Vehicle Actuation (MOVA).

4.7 MOVA is an operation method developed to overcome some of the problems associated with the current Vehicle Actuation (VA) control system. MOVA is an intelligent system which is more responsive to traffic conditions and likely to

improve junction capacity. By reacting to changes in traffic flows quicker this system can improve junction capacity on the lead up to and after over-capacity periods.

4.8 The implementation of a MOVA traffic control system requires extensive additional infrastructure to provide additional vehicle detection required to feed real-time information to the controller.

4.9 As part of the planning approval for application 17/04571/PPP for the development at the northeast of Wellflats Road, there is a requirement for the developer to complete a full upgrade of the traffic signals at the Crossroads and to provide MOVA control as part of the upgrade. At the time of preparing this report, officers expect the developer to provide design information in January/February 2022, with installation, subject to the appropriate technical approval, expected by Summer 2022. The planning condition suggests the installation should be complete by the 30th residential unit.

4.10 Officers are also currently investigating bus priority measures on principal route corridors approaching the city as part of the Transport Scotland funded Bus Partnership Fund. In addition to these planned improvements, any reduction in journey times through Kirkliston would be of benefit to the three existing public transport services serving the town.

4.11 In line with the approved Transport Hierarchy it is recognised that several modes of transport should be considered and prioritised before private cars. Improvements to the traffic signals should reduce journey times, improve reliability for public transport services and reduce wait times for pedestrians.

5. Next Steps

5.1 As described in the previous section officers will consider the detailed design provided by the Developer's consultant when received. Should the technical and controller design be deemed acceptable installation of the new traffic signals system is expected to commence in Spring 2022.

5.2 Prior to the installation of the proposed MOVA signals system, officers will undertake journey time assessments at AM and PM peak periods. On completion a validation assessment will take place to optimise signals operation, monitor traffic flows, queue lengths and journey times.

5.3 In broader network and transport mobility terms it may be appropriate to consider the strategic context of routes and transport options in the Kirkliston and wider area in the future. Any further studies or mobility planning in the area would clearly need to consider the West Edinburgh Transport Improvements Programme (WETIP) and form part of the 2030 City Plan, City Mobility Plan, Net Zero Carbon policies in the context of a Climate ready Authority.

6. Financial impact

6.1 The installation cost of the proposed junction improvements is to be met by the developer of the 17/04571/PPP consent.

6.2 Staff costs associated with the assessment, commissioning and validation of the new signals system will be met by the Transport Revenue budget.

7. Stakeholder/Community Impact

7.1 Although it is understood there will be some disruption during the installation of the proposed MOVA traffic control system it is expected the local community will benefit from reduced journey times and delays through this particular junction.

8. Background reading/external references

8.1 The West Edinburgh Transport Improvements Programme (WETIP) has a remit to progress delivery of the public transport and active travel measures along the A8/A89 corridor which were identified in the West Edinburgh Transport Appraisal Refresh study.

8.2 The 2018 Kirkliston and Queensferry Traffic and Active Travel Study was considered at the Transport and Environment Committee on 5th December 2019, section 4.9 specifically related to the Kirkliston Crossroads. The study was centred around a comprehensive origin and destination survey and actions that may be appropriate in the area.

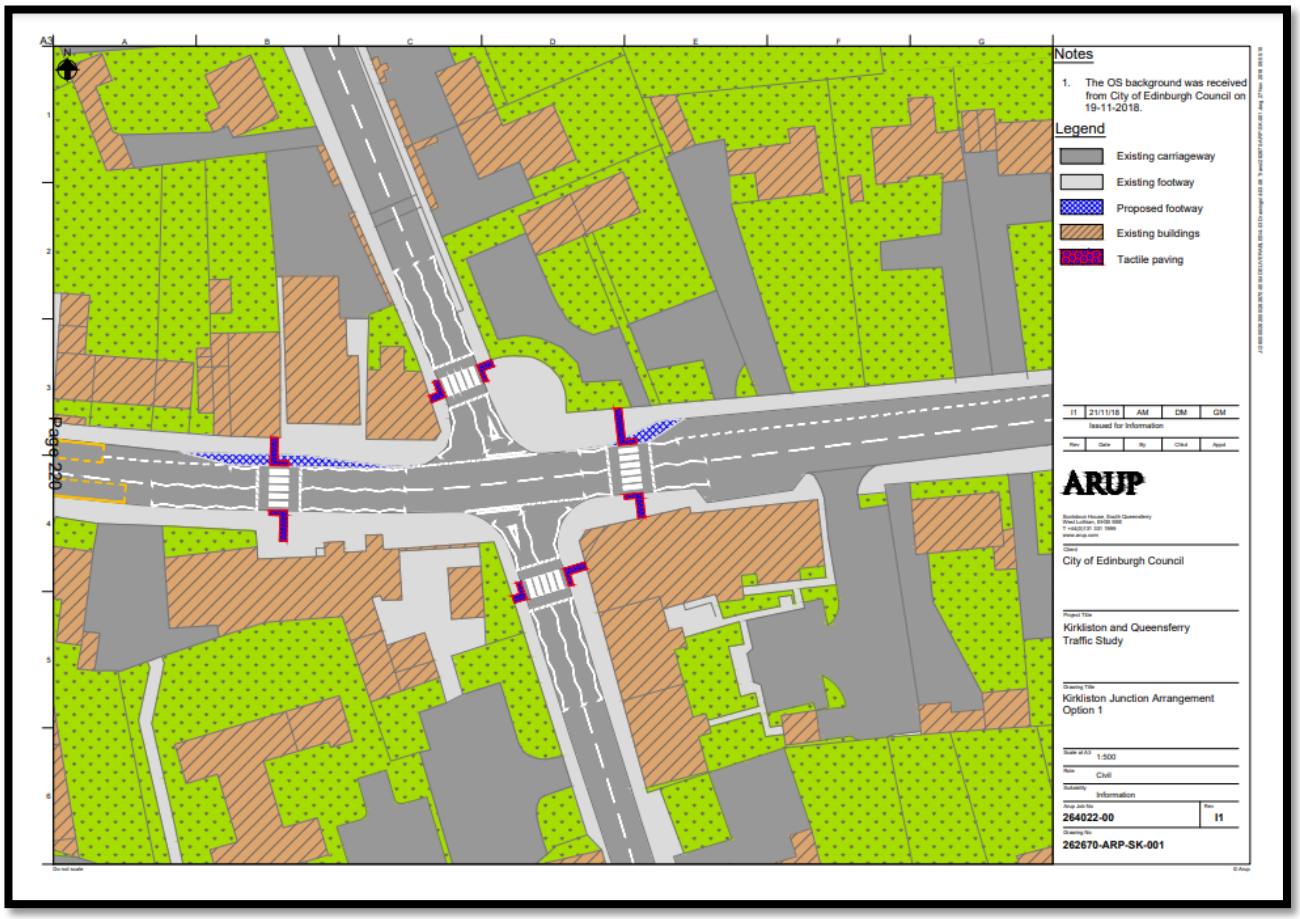
8.3 At the meeting of this Committee on 5th December 2019 it was considered appropriate that further analysis and design would be required to consider if increased traffic flows or a complete redesign would be necessary to improve the environment for local residents.

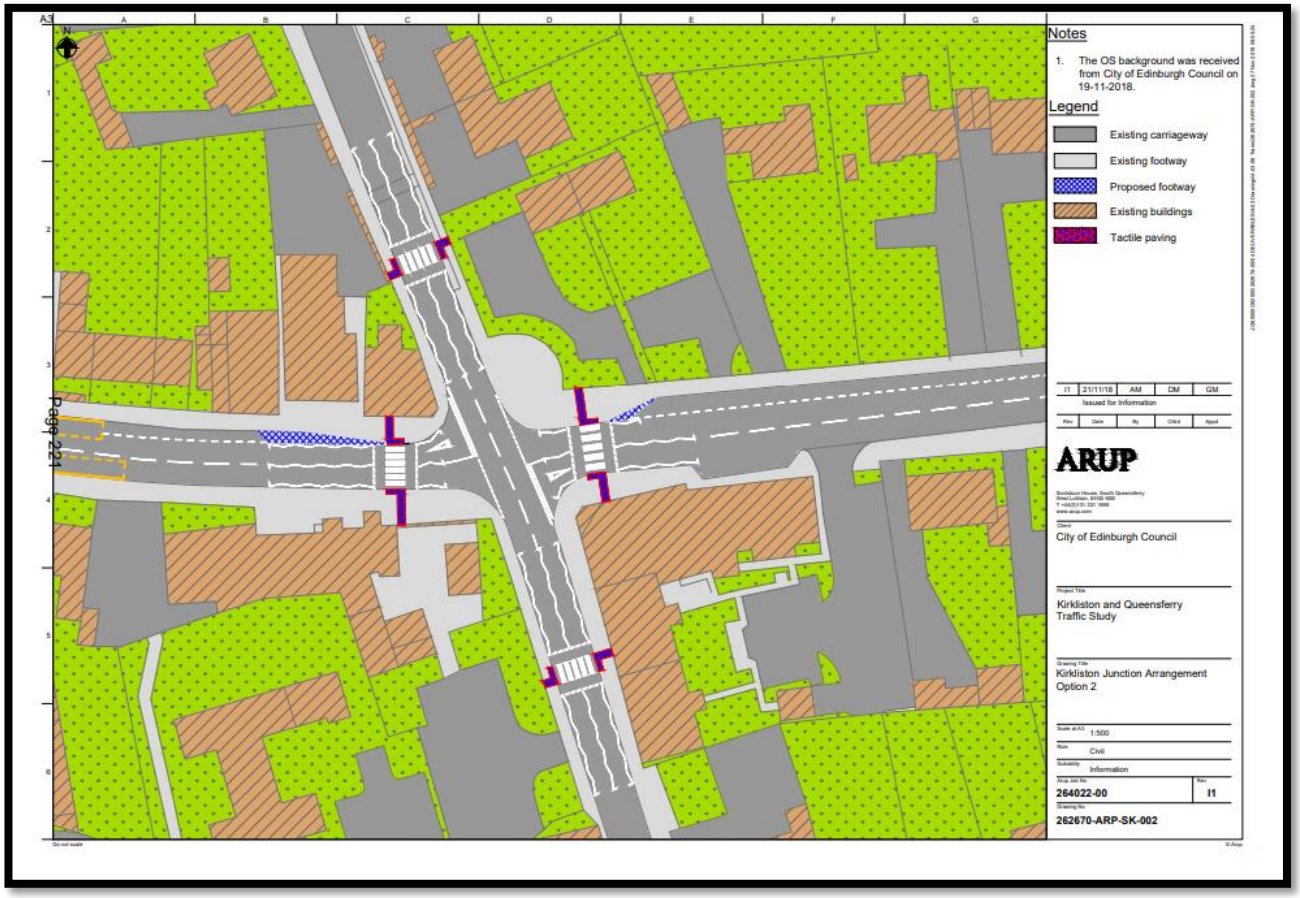
9. Appendices

9.1 Appendix 1 – Sketches from the 2018 Kirkliston and Queensferry Traffic Study.
9.2 Appendix 2 – Plan of existing traffic signals junction.

Appendix 1

Suggested revised junction layouts (2018 Traffic Study)





Appendix 2

Kirkliston Town Centre Junction – Existing Signals Layout