

## Members' Library Service Request Form

Date of Document	06/04/23
Originator	Ian Lennox; Team Manager, Asset & Regulatory, Road Services
Originator's Ref (if any)	N/A
Document Title	Junction enhancements; Spott Road / Queens Road, Dunbar

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Authorised By	Douglas Proudfoot
Designation	Executive Director, PLACE
Date	06/04/23

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**REPORT TO:** MEMBERS' LIBRARY SERVICE

**MEETING DATE:** Not applicable

**BY:** Executive Director of Place

**SUBJECT:** Junction enhancements Spott Road / Queens Road, Dunbar

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## 1 PURPOSE

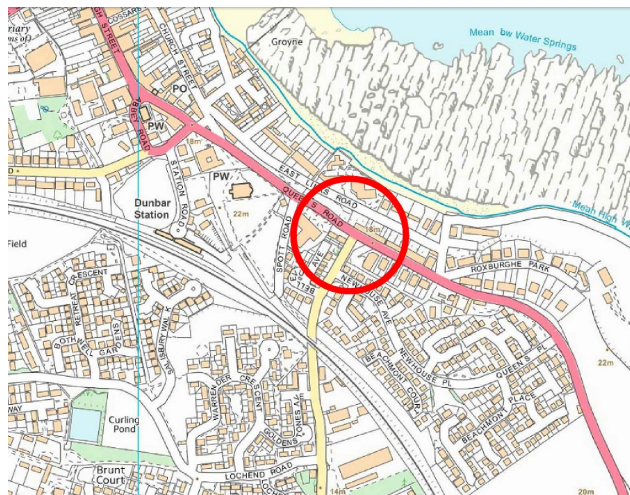
- 1.1 To advise members of the design of the new signalised junction at Spott Road / Queens Road, Dunbar.

## 2 RECOMMENDATIONS

- 2.1 That elected members note the content of this Report.

## 3 BACKGROUND

- 3.1 The T-junction of Spott Road with Queens Road in Dunbar has been identified as in need of upgrade in transport assessments associated with several new housing developments. The existing arrangement is also considered unsatisfactory by local people due to the length of traffic queues at certain times of day, and the difficulty for pedestrians crossing on this busy route to school.



*Figure 1: Spott Road/Queens Road junction, Dunbar*

- 3.2 Road Services intends to fully signalise the junction including pedestrian and cycle phases using contributions from S75 arrangements from planning permissions 15/00630/PM (Bowmont Terrace), 20/00110/PM (Hallhill North) and the Golf Course housing development (21/00997/PM), in addition to its Core Roads budget.
- 3.3 Residents who are immediately affected by the new arrangements were informed of the proposals in June 2022, resulting in several written concerns being received, and local councillors asking for further information. For this reason a full Options Appraisal was commissioned, and this forms appendix 1 of this Report.
- 3.4 Four options were considered:
  1. Full Signalisation
  2. Reassigning Priority and Realignment
  3. Mini-roundabout
  4. Signalised Pedestrian Crossing
- 3.5 These were assessed against criteria including junction performance and impact on the wider road network, impact on parking, and impact on pedestrians and cyclists.
- 3.6 Option 1 (Full Signalisation) performed considerably more strongly than the other options, and will therefore be implemented within the current year.
- 3.7 This option will improve the performance of the junction and balance delays for all users on all approaches at all times of day, reducing delays on the currently most affected arm. This option also supports and promotes the efficient movement of both pedestrians and cyclists which is considered the highest priority when appraising any new junction arrangement. The supporting of pedestrian and cycle manoeuvres is most likely to be most effective during the peak periods.
- 3.8 The layout of the preferred option is shown at appendix 2.
- 3.9 It is recognised that re-routing of traffic may occur along Newhouse Avenue / Newhouse Place / Queens Place, however the benefits this junction design affords to all users outweighs the minor detriment the increased re-routing will have on the local residents. The situation will be monitored and additional traffic calming can be implemented as necessary.
- 3.10 Whilst this option does result in a reduction parking spaces, the impact is negligible as sufficient parking is provided within close proximity of the lost spaces.
- 3.11 Local residents will have a further opportunity to make comments or raise concerns when the Traffic Regulation Order is published.

## **4 POLICY IMPLICATIONS**

4.1 These proposals will contribute towards fulfilling the East Lothian Plan 2017-2027, in particular:

- Outcome 2.1: “East Lothian has strong resilient communities where people respect and support each other” and
- action (k) “we will make our roads safer, including a focus on making journeys safer for cyclists and pedestrians of all ages and abilities

## **5 INTEGRATED IMPACT ASSESSMENT**

5.1 The subject of this report will contribute positively to the wellbeing of the community and will not have a detrimental impact on equality, the environment or economy.

## **6 RESOURCE IMPLICATIONS**

6.1 Financial – All costs involved in connection with consultation, advertising, and implementation of this update can be accommodated within agreed budgets.

6.2 Personnel - None

6.3 Other – None

<b>AUTHOR'S NAME</b>	Ian Lennox
<b>DESIGNATION</b>	Roads Asset and Regulatory Manager
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<b>DATE</b>	06/04/2023

**APPENDIX 1: OPTIONS APPRAISAL (attached in separate appendix 1)**

**APPENDIX 2: JUNCTION LAYOUT (attached in separate appendix 2)**





# Spott Road / Queens Road Dunbar Junction Appraisal

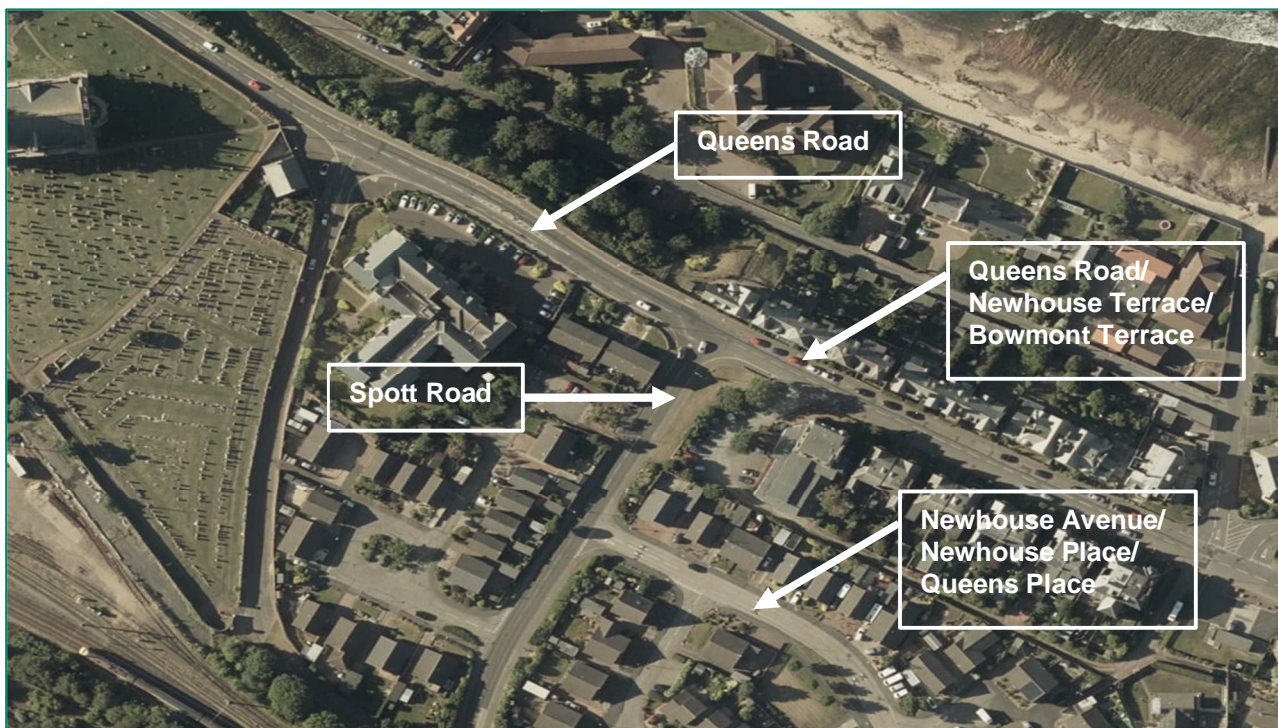
<b>Client name</b> East Lothian Council	<b>Discipline</b> Transportation	<b>Project name</b> Spott Road	<b>Date</b> 01 December 2022
<b>Prepared by</b> Charlie Fuller	<b>Approved by</b> David Dewar	<b>Checked by</b> Iain Hamilton	<b>Verified by</b> Stephen Moss

## Revision History

Revision	Revision date	Details	Authorised	Name	Position
1	2 December 2022	Client Comments	IH	Iain Hamilton	Principal Consultant
2	5 December 2022	Client Comments	IH	Iain Hamilton	Principal Consultant
3	5 December 2022	Client Comments	IH	Iain Hamilton	Principal Consultant

## Introduction

East Lothian Council has commissioned AECOM to conduct an appraisal of the T-junction of Spott Road and Queens Road in Dunbar, Scotland.



**Figure 1: Spott Road / Queens Road**

Transport Assessments which were carried out in association with the building of several residential developments within the Dunbar area highlighted performance issues with the T-junction of Spott Road and Queens Road. Outcomes of the Transport Assessment aligned with the concerns of local users that the existing junction arrangement has resulted in significant traffic queues at peak times and difficulties in crossing the junction for pedestrians.

This note provides an overview of existing conditions, description of junction options under consideration, outline of anticipated benefits and impacts of each junction option and will conclude with a recommended junction design based upon the appraisal. The review concludes with a recommendation for the installation of a fully traffic signalised junction

as while there are minor implications displacing a small amount of on street parking a short distance from the junction, this is the best option to manage traffic flows during the network peaks and the interpeak and is the safest way to accommodate the pedestrian and cyclist movements across the junction. It is acknowledged that there is potential for displacing some traffic along Newhouse Avenue and it is recommended that this be monitored and additional traffic calming measures be installed if necessary to discourage this manoeuvre.

### Existing Junction Problems

Majority of traffic routing through the junction is either turning right into Spott Road from Queens Road or turning left out of Spott Road onto Queens Road. Throughout the day, particularly during peak periods, traffic has been observed to cause congestion at both those approaches of the junction causing delays for all road users. Traffic going westbound along Queens Road does not experience the same delays and queuing.

The junction's performance is constrained by residential parking which occurs in both directions on Spott Road and Queens Road, most significantly on the eastbound carriageway of Queens Road. Parking is permitted along Newhouse Terrace, which is situated on Queens Road, directly opposite the Spott Road junction. Although Queens Road is generous in width, the presence of parked cars, especially across from Spott Road, reduces the available turning space for vehicles turning into and out of Spott Road.

No pedestrian crossing infrastructure is present on the junction or within close proximity of the junction. An island crossing facility is present on Queens Road, approximately 70 meters west of the junction.

### Developer Contributions

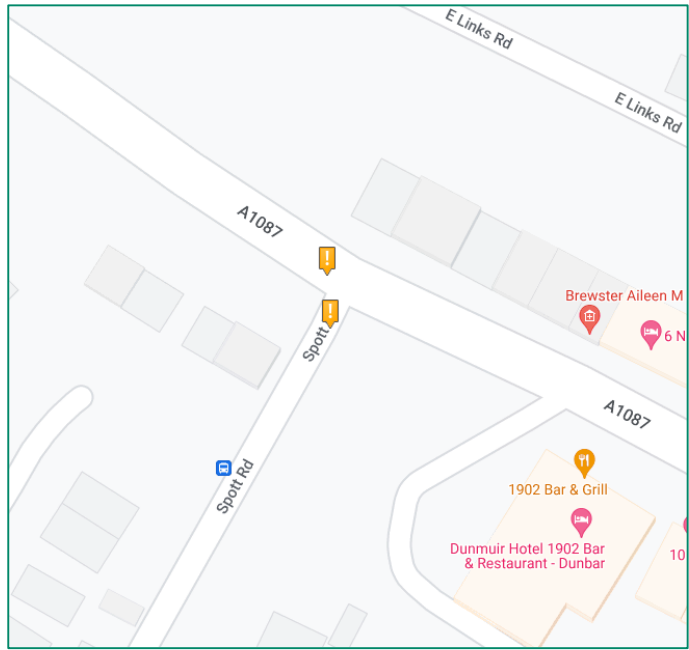
The following developer contributions have been committed towards junction enhancements.

Development Name	Application Number	Contribution
Bowmont Terrace	15/00630/PM	£45,498
Hallhill North	20/00110/PM	£17,200
<b>Total Amount Committed:</b>		<b>£62,697</b>

A further development contribution from the Golf Course Housing Development (application number 21/00997/PM) is currently being sought by East Lothian Council.

### Accident History

Consultation with the Crashmap database has been undertaken to review the accident history at the junction. Over the last 10 year period, two accidents have occurred at the Spott Road / Queen Street Junction, both accidents involved two vehicles and resulted in one casualty obtaining slight injuries. The exact accident location is shown in Figure 1 below. This frequency of accidents over the time period would not be sufficient to suggest that a pattern where causation could be implied to be as a result of the junction.



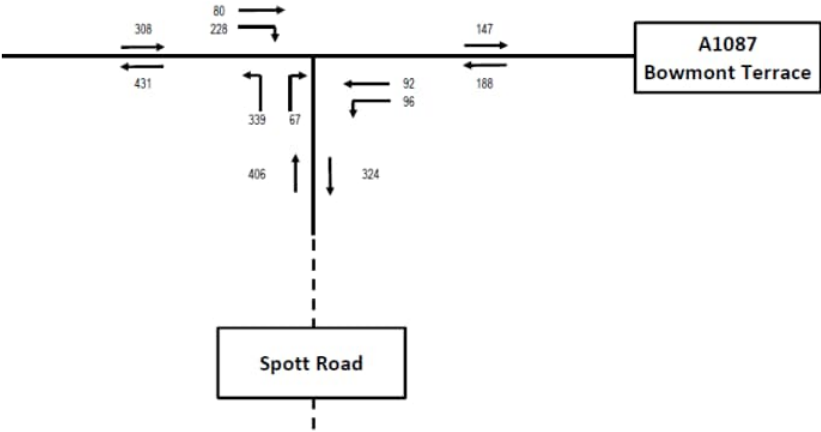
**Figure 2: Spott Road / Queens Road Accident History**

**Pedestrian and Traffic Flows**

*Traffic Flows*

As part of the planning application for the Hallhill North development, junction traffic analysis and profiling were carried out. To replicate 2021 traffic data, 2019 PCU data has been factored to take into consideration general yearly settlement growth and additional growth caused by the construction of Hallhill North and the other related developments.

AM Peak and PM peak traffic flows at the Spott Road / Queens Road junction are presented below, sourced from the supporting Transport Assessment.



**Figure 3: Traffic Flows AM**



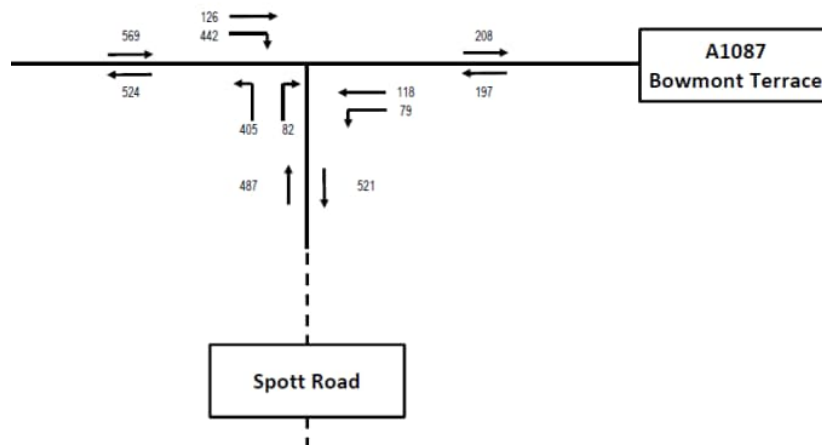


Figure 4: Traffic Flows PM

As shown in both figures above, the majority of eastbound traffic travelling along the Queens Road turns right onto Spott Road. Traffic travelling westbound on Queens Road in the AM has a relatively even split between carrying straight on through the junction and turning left to Spott Road, whilst in the PM there is more traffic staying on Queens Road. In both the AM and PM, most traffic travelling from Spott Road onto Queens Road turns left to travel westbound.

#### Pedestrian Flows

Pedestrian trip generators and attractors are located in all directions to the junction, resulting in a significant number of pedestrian movements across each of the three junction approaches. As highlighted in Figure 4 below, the main pedestrian movement at the junction is across Spott Road. The pedestrian desire line across Spott Road is shown via the red arrow.

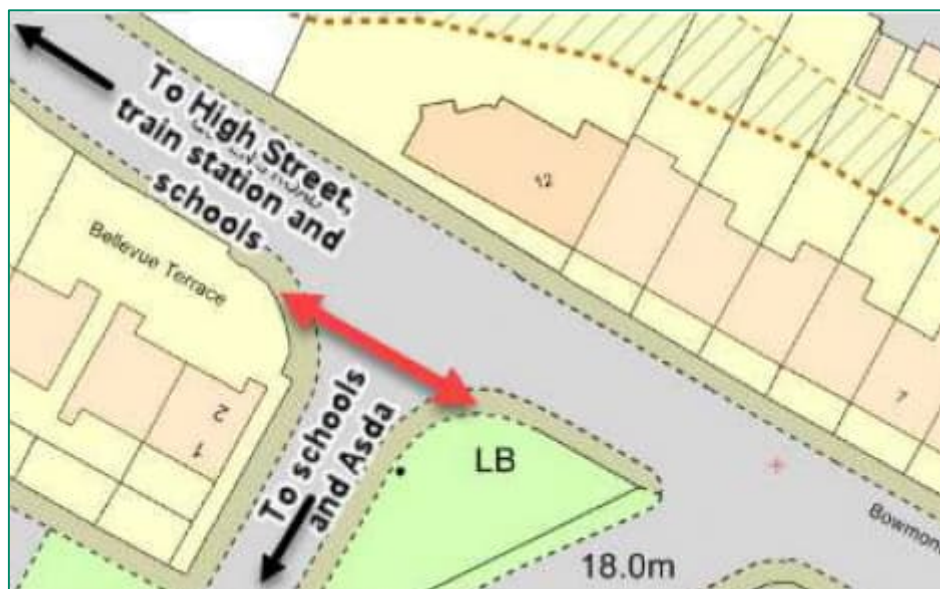


Figure 5: Pedestrian Flows and Desire Line

#### Junction Options

Four options have been considered as potential improvements to this junction, each option will form part of the appraisal. A description for each of the four options are outlined below.

### Option 1 - Signalisation

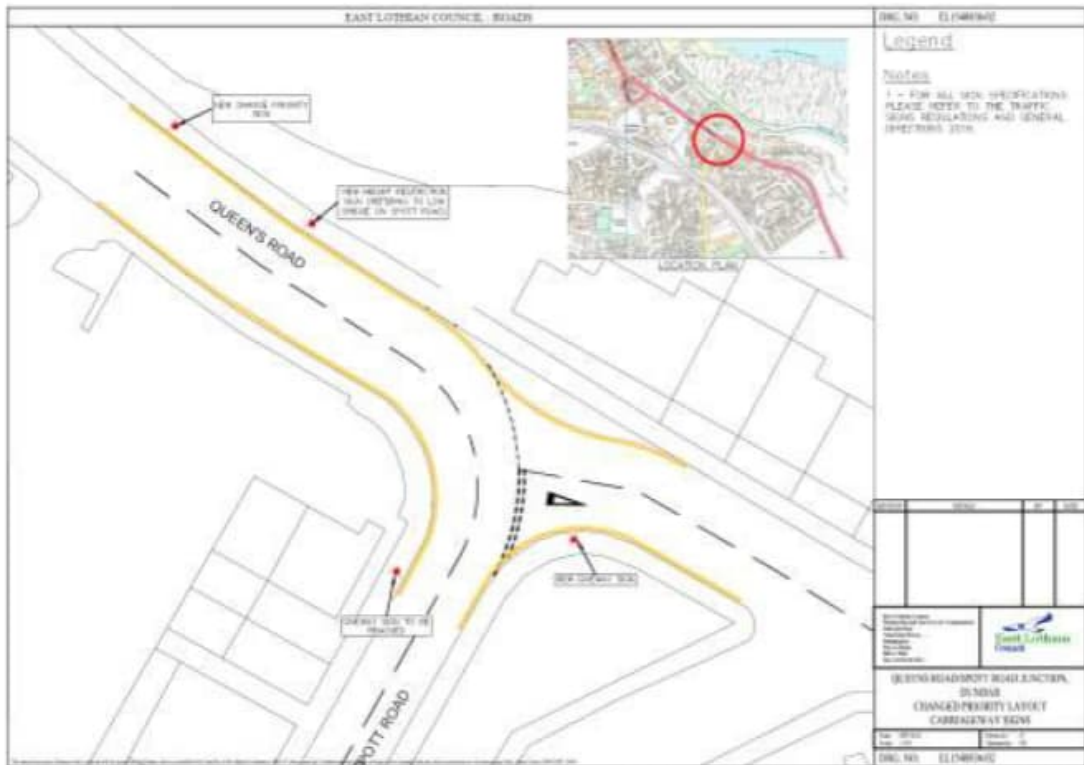
This option proposes full signalisation of the junction. A right-turn only lane will be added to the eastbound carriageway on Queens Road, the current width of road can accommodate this arrangement and therefore no changes to road width will be required on Queens Road. A dedicated left-turn only and right-turn only lanes will be added to the northbound approach on Spott Road. Widening of the existing Spott Road carriageway will be required, this additional land will be taken from the grassed area adjacent to the southbound lane, this land is already owned by East Lothian Council. An outline of this option is shown in Figure 5. Pedestrian crossings will be provided as part of the junction on the southern and western arms. To allow traffic signals to be introduced to the junction there would be a requirement to extend the existing double yellow parking restriction on the north side of Queens Road by approximately 50m. Signalisation of the junction has been modelled and shows that a maximum queue of 6 vehicles would form on the east arm of Queens Road. To accommodate this queuing, double yellow line parking restrictions would have to be introduced on the south side of Queens Road for approximately 20m. This would allow two way traffic and parking on the north side of Queens Road to be maintained.



Figure 6: Option 1 Signalisation

*Option 2 - Reassigning Priority and Realignment*

Option 2 proposes to alter the priority of the junction such that the Queens Road to Spott Road becomes the major movements, with the eastern arm of the junction becoming the minor arm. Physical alterations to the alignment of the road to make a continuous bend from Queens Road to Spott Road with the T-junction moving to the eastern extent of Queens Road would be required. This change in alignment reflects the most commonly used traffic flow route as presented in the Pedestrian and Traffic Flows Section above. Widening of the footpath outside of Bowmont Terrace would be required to implement the bend in alignment.



**Figure 7: Option 2 Reassigning Priority and Realignment**

### *Option 3 - Mini-Roundabout*

This option proposes to alter the existing junction arrangement into a mini-roundabout. Equal priority will be provided to all three approaches of the roundabout. Re-alignment of the existing road boundary is likely to be required and land within the existing green space to the south east of the junction would likely be required in order to accommodate the geometries. A full design exercise would be required in order to establish the extent of additional land required and any deviations from standard that would be required.

### *Option 4 - Signalised Pedestrian Crossing*

This option proposes to implement a signal controlled pedestrian crossing on the western extent of Queens Road. No changes to the current T-junction arrangement are proposed in this option.

## **Parking Impact**

Each of the four options outlined above would require removal of some on-street parking along Queens Road and calculations have been carried out for each option to determine the approximate impact on on-street parking. The exact number of parking spaces required to be removed is yet to be determined. At a minimum the parking spaces directly outside of house numbers 11 and 12 Newhouse Terrace will need to be removed for all options. Displaced vehicles will only need to move 20-30m east along Queens Road where sufficient parking is present on both the eastbound and westbound carriageways of Queens Road.

It is anticipated that the introduction of traffic signals (option 1) would remove approximately 50m of on-street car parking, (approximately 9 spaces) on the north side of Queens Road through the junction and onto the eastern arm. Although Spott Road is not regularly used for parking, approximately 20m of carriageway space on both sides of Spott Road would be lost equating to approximately a further 6 spaces in total. To determine the impact on the residential parking on Queens Road surveys of the existing parking were undertaken. These surveys determined that, at peak times, there would be 31 vehicles parked on Queens Rd. This would leave available space for 13 vehicles. With the signals proposals removing space for 12 vehicles and there only being the space for 13 vehicles at peak periods available, this would then mean that the residential parking on Queens Road would become constrained.

In association with the re-prioritisation of the junction (option 2) approximately 25m of on street parking would be lost equating to approximately 4 car parking spaces.

The introduction of a mini-roundabout (option 3) would result in a loss of on street parking approximately the same order as that of signalisation.

Installation of a signal controlled crossing point (option 4) on the western arm of the junction would make no difference to on street parking as double yellow line restrictions are already in place.

## **Potential Impact on Junction Performance and Vehicle Delays**

### *Option 1 – Signalisation*

Signalisation of the junction will alter the balance of flow and provide additional opportunities for vehicles to emerge from the minor arm (Spott Road) compared to the current situation. It is likely that the queuing and delay on the eastern and southern arms would reduce but traffic on the western arm would experience delay which it currently does not. A dynamic system of signalisation would seek to minimise delays and queuing.

Overall it is anticipated that the junction will operate more efficiently with signalisation than in its current form, particularly within peak periods. Outwith peak periods, particularly overnight and in periods of very low traffic flows, the junction may operate less efficiently than at present.

### *Option 2 – Reassigning Priority and Realignment*

Reassignment of the priority of the junction to reflect the most-used traffic flow will reduce delays on the eastbound approach of Queens Road and northbound approach on Spott Road, however, delays will be incurred on the now minor approach of Queens Road westbound as traffic will be halted while vehicles give way to those on the major arm. As a result, overall delay should be reduced compared to the current arrangement. In the peak periods the minor arm will experience higher delay and potential queuing than it does at present. These vehicles will be reliant on seeking a gap in

the traffic to emerge into the junction and will experience delay and queuing while doing so. It is possible that in the peak periods this arrangement will operate less efficiently than the signalised arrangement overall.

Forward visibility on the major arms of the junction will be affected by the realignment as vehicles moving through the major arm will have a 90 degree bend to manoeuvre as they move through the junction, affecting forward visibility and the potential ability to view conflicting vehicle movements and pedestrians waiting to cross the carriageway.

The bend in the road reduces the visibility of vehicles travelling around the bend, this has a safety implication on pedestrians waiting to cross the road as there is greater difficulty in accurately identifying if the vehicles are a safe enough distance away to cross the road. Equally, pedestrians will be unsighted by drivers as they wait to cross the road.

#### *Option 3 – Mini-roundabout*

This option is anticipated to have a positive impact on junction performance and vehicle delay during interpeak periods as the roundabout should have a relatively low volume of vehicles on each approach. However, during peak periods the imbalance in traffic on the roundabout could cause delay and queuing on any approach and particularly the westbound approach from Queens Road, as Option 2. The unbalanced and heavier flow from the west to Spott Road will make emerging from the eastern arm difficult, potentially resulting in little benefit to overall vehicle delay and performance of the junction. The inability to enter the roundabout could cause a build-up of vehicles along Queens Road.

The constrained site provides significant challenges with providing a roundabout with the adequate geometrical requirements. The constrained footprint will have an adverse impact on larger vehicles and HGV's ability to turn around the roundabout which may lead to incidents that can result in lengthy delays and closure of the junction. Large vehicles would move very slowly through this arrangement.

This option provides additional concerns in regard to the speed at which traffic will enter the roundabout. Mini-roundabouts are a favourable solution in urban areas where traffic speeds are very low, however, the width and straight alignment of the feeder roads at this junction do permit for traffic to exceed the speed limit and therefore the potential for collisions between users is considered to be high.

#### *Option 4 – Signalised Pedestrian Crossing*

This arrangement has the potential to interrupt the flow of traffic on the eastern arm of the junction when the pedestrian movement is called. This will force vehicles to stop, and may consequently create gaps in the traffic flow allowing vehicles to exit from the minor arm (Spott Road) of the existing priority junction. Without modelling it cannot be determined how effective this would be and it is reliant on the volume of pedestrians wishing to cross the western arm of the junction. This may not be sufficient to have a material difference on the performance of the junction.

### **Impact on Traffic Rerouting**

#### *Option 1, 2 and 3*

It is possible that some vehicle traffic travelling westbound along Queens Road and turning left down Spott Road and in the reverse way will reroute along Newhouse Avenue / Newhouse Place / Queens Place to avoid potential delays whilst entering onto the junction. However, this will be limited to the relatively small number of vehicles travelling to and from the west of the junction and to peak hour periods.

Newhouse Avenue / Newhouse Place / Queens Place is relatively wide and is adequate to accommodate additional vehicle movements and traffic calming is in place which will impact driver choices and dissuade them from using this route. However, if modifications are made to the junction it is recommended that monitoring of traffic flows on Newhouse Avenue / Newhouse Place / Queens Place take place and additional measures may need to be considered to dissuade traffic from this route. Particular care would require to be taken at the most sensitive area on the route, the children's playpark. Additional traffic calming measures may include build outs along the route reducing the carriageway to a single lane and requiring vehicles to give way to each other, as well as raised table crossing points with zebra crossings at the playpark.

#### *Option 4 – Signalised Pedestrian Crossing*

It is anticipated that there would be no re-routing if the signalised pedestrian crossing arrangement was implemented.

## **Potential Impact on Pedestrians and Cyclists**

### *Option 1 – Signalisation*

This junction option will deliver a significant positive impact for both pedestrians and cyclists. Signalised junctions afford pedestrians with a dedicated time to cross. Furthermore, the pedestrian crossing over Spott Road would be at the location that most pedestrians want to cross Spott Road at (as explained in the Pedestrian Flows section). The location of a crossing at this point will have a positive benefit to these pedestrians, where there is no controlled crossing at present.

Signalisation of this junction will have a positive impact on cyclists. Controlled movements also afford a greater degree of awareness of cyclists by all road users. Signalisation also allows cyclists to dismount and use the pedestrian phase if they wish. These benefits lead to increased safety for cyclists when using the junction which may encourage a greater uptake in cycling, providing a series of long-term benefits for local individuals and the local area.

The benefits that signalised junctions provide to cyclists can be further experienced through the implementation of early release green lights which allow cyclists to set off ahead of vehicles and get up to speed and through the junction before vehicles can set off.

### *Option 2 – Reassigning Priority and Realignment*

This option does not include any dedicated pedestrian crossing facilities. This option could adversely impact pedestrians as the bend in the road will require pedestrians to walk down Spott Road to find a safe and suitable location to cross the road. As a result, pedestrians will have to increase the distance of their journey and not be able to cross Spott Road on the desire line identified earlier in the note. Crossing Spott Road will be more difficult because, as this becomes the main flow, vehicles may be travelling faster and the number of opportunities to cross the road will be reduced.

Realignment of the junction will benefit cyclists who want to turn left onto Queens Road from Spott Road and also turn right onto Spott Road from Queens Road, which are the predominant overall vehicle flows. Cyclists can stay on the major arm and follow the new alignment to without having to negotiate a right turn movement. Cyclists travelling west – east along Queens Road will also not be negatively impacted by the implementation of this option as they have left-turn priority into the minor road. There are important safety implications for cyclists wanting to make both right and left turns from the minor Queens Road (eastern arm) onto the major road. This manoeuvre will become more difficult for cyclists than at present.

### *Option 3 – Mini-roundabout*

Similarly to option 2 above, this option does not provide pedestrians or cyclists with any dedicated infrastructure. Pedestrians crossing Spott Road will not be able to cross on the pedestrian desire line as it will be located in too close proximity to the roundabout. Pedestrians will be required to move further down Spott Road to a safe crossing location, adding additional distance and disturbance to their journey. Furthermore, safety concerns and risk of collision are still present at this junction for pedestrians as they are still required to cross the road whilst vehicles are travelling along it.

It is worth noting that zebra crossings are sometimes implemented across each approach of a mini-roundabout. However, in this setting the width and straight alignment of the feeder approaches are likely to result in vehicles approaching the roundabout at speeds which are not appropriate for a roundabout of this size and constrained geometry. It is noted that a similar junction arrangement with a mini-roundabout and zebra crossing exists on the High Street in Dunbar, however the High Street is a town centre environment with large numbers of pedestrians and very slow moving vehicles. Spott Road is likely to have a higher overall vehicular speed and is a suburban rather than town centre environment.

Roundabouts are considered to be less appropriate for safe cycle movements. The close proximity of vehicles and subsequent risk of collision discourages cyclists from using roundabouts.

### *Option 4 – Signalised Pedestrian Crossing*

This option would have a significant positive impact on pedestrians as it affords safe crossing over Queens Road. However, as highlighted in the Pedestrian Flows section, the pedestrian desire line is across Spott Road and not Queens



Road and therefore this option would still require pedestrians to cross Spott Road without any dedicated pedestrian infrastructure.

No benefits are provided to cyclists, and rather cyclists are adversely impacted by having to stop at the lights and then restart again which will slow down their journey.

*Summary Table*

The following table summarises the potential positive and negative impacts of the four junction options.

Junction Option	Benefits	Disbenefits
1. Signalisation	<ul style="list-style-type: none"> <li>✓ Signals reflect the most heavily used vehicle flow movements through the junction by providing longer or shorter green times, this will improve junction performance and reduce vehicle delays. Potential to include dynamic signal timings.</li> <li>✓ Two-lane approach on Queens Road and Spott Road will improve the flow of vehicles and cyclists through the junction.</li> <li>✓ Dedicated pedestrian infrastructure providing crossing facilities over each of the junction approaches which includes on pedestrian desire line over Spott Road.</li> <li>✓ Signalised junction provides potential benefits for cyclists.</li> <li>✓ Delays on Spott Road are reduced and rebalanced across all arms.</li> </ul>	<ul style="list-style-type: none"> <li>- Minor delays are expected when users are waiting at the red light.</li> <li>- Some vehicles may reroute along Newhouse Avenue / Newhouse Place / Queens Place.</li> </ul>
2. Reassigning Priority and Realignment	<ul style="list-style-type: none"> <li>✓ Road alignment reflects the most heavily used vehicle flow movements (i.e left-turn from Spott Road onto Queens Road and right-turn from Queens Road onto Spott Road) which will improve the flow of traffic and reduce delays.</li> </ul>	<ul style="list-style-type: none"> <li>- The westbound approach from Queens Road will experience higher delays. In peak periods the benefits may be reduced as the junction will still experience delays and poor performance.</li> <li>- Some vehicles may reroute along Newhouse Avenue / Newhouse Place / Queens Place.</li> <li>- Increased difficulty in crossing Spott Road at all times of the day as this is now the major arm of the junction.</li> <li>- No dedicated crossing facility provides no improvement to the existing arrangement for pedestrians. Pedestrians will be forced to cross further down Spott Road away from desire line.</li> </ul>
3. Mini-Roundabout	<ul style="list-style-type: none"> <li>✓ Potentially improved junction performance and reduce vehicle delays during inter-peak times when there is a reduced volume of vehicles on all approaches.</li> </ul>	<ul style="list-style-type: none"> <li>- Potential delays and queuing along the westbound approach from Queens Road during peak times compared to the existing arrangement as vehicles at this approach will be unable to enter onto the roundabout due to vehicles from the western arm of the junction.</li> <li>- Constrained site provides geometrical challenges. A smaller-sized roundabout can cause turning issues for larger vehicles and HGVs.</li> <li>- Some vehicles may reroute along Newhouse Avenue / Newhouse Place / Queens Place.</li> <li>- No dedicated crossing facility provides no improvement to the existing arrangement for pedestrians. Pedestrians will be forced to cross further down Spott Road away from desire line, potentially increasing delays for pedestrians.</li> </ul>

<p>4. Signalised Pedestrian Crossing</p>	<ul style="list-style-type: none"> <li>✓ No rerouting of traffic to other roads within the area.</li> <li>✓ Dedicated crossing facilities over Queens Road improves safety of pedestrians as they will not have to contend with oncoming vehicles.</li> <li>✓ No loss of parking spaces.</li> </ul>	<ul style="list-style-type: none"> <li>- Potentially limited and inconsistent benefit to the performance of the junction as it would be dependent on the number of times the pedestrian phase is called.</li> <li>- No benefit to cyclists compared to the existing arrangement.</li> <li>- No benefit to pedestrians crossing Spott Road.</li> </ul>
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## Appraisal

Each option has been appraised on -3 to +3 scale with negative scores having a negative impact, positive scores having a positive impact and 0 having a neutral impact. The outcomes of the appraisal are summarised in the table below, with the overall score also be established on the -3 to +3 scale.

Option	Junction Performance	Cycling	Pedestrians	Wider Road Network	Parking	Overall Score
1. Signalisation	2	2	3	-1	-2	2
2. Reassigning Priority and Realignment	1	0	-1	-1	-1	-1
3. Mini-roundabout	1	-3	-1	-1	-2	-2
4. Signalised Pedestrian Crossing	-2	-1	1	0	0	-1

### Junction Performance

Options 2 and 3 score a minor positive for improving junction performance. Both options are likely successful in reducing congestion and increasing flow through the junction on the eastbound approach of Queens Road and on the northbound approach of Spott Road, particularly during inter-peak times, however the westbound approach is negatively impacted. As a result, both of these options do not provide a comprehensive improvement for all users of this junction.

Option 4 performs negatively for junction performance as its effectiveness is dependent on pedestrians calling the pedestrian phase.

Option 1 scores positively for junction performance. Signalisation of the junction will provide benefits to all users on each approach as the signals will permit consistent and proportionate release of vehicles into the junction, improving the efficiency for all users to get through the junction at both peak and inter-peak times.

### Cycling and Pedestrians

Options 2 and 3 score an overall negative impact for both pedestrians and cyclists. In particular, option 3, scored a significant negative impact as roundabouts do not generally support effective use by cyclists. Both options 2 and 3 provide a minor negative for pedestrians as they do not contain any infrastructure to help the crossing of Spott Road or Queens Road and rather force pedestrians to cross further down Spott Road away from the pedestrian desire line .

Option 4 provides a safe pedestrian crossing over Queens Road, however, it is scored down due to the crossing not being over Spott Road which is the route the majority of pedestrians crossing over this junction seek to make.

Option 1 scores very highly for positive impacts for both pedestrians and cyclists. This option provides dedicated pedestrian infrastructure and phases to allow pedestrians to cross the main approaches of the junction without any concern of vehicles. The signalised junction enables cyclists to manage their manoeuvres through the junction more effectively and with more visibility of and from other road users, while also providing a pedestrian phase where they can dismount and cross the road.

### Wider Road Network

Option 4 scored a neutral impact on the wider network. This option provides no significant change to the existing condition of the junction for road users and therefore no increase in rerouting will be caused. Option 1,2 and 3 all scored a minor negative as each option may potentially cause rerouting along Newhouse Avenue / Newhouse Place / Queens Place and thus impacting on the local residents situated along this route. However further measures could be introduced on this route to discourage this.

### *Parking Impact*

Options 1, 2 and 3 score negatively for parking impact as they each remove parking along both Queens Road and Spott Road. A smaller number of parking spaces are lost for option 2 (4 spaces) compared to both options 1 and 3 (12 spaces) and therefore option 2 receives a less negative score. Option 4 has no impact on parking spaces and as such has a neutral score.

### **Recommendation**

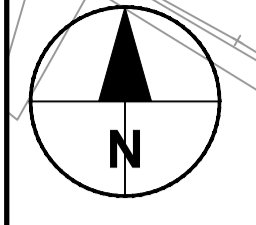
Following the completion of the option appraisal, option 1 signalisation, performs considerably more strongly than the other options, and it is therefore recommended that option 1, signalisation, be implemented.

This option will improve the performance of the junction and balance delays for all users on all approaches in both the inter-peak and peak periods of the day, reducing delays on the currently most affected arm. This option also supports and promotes the efficient movement of both pedestrians and cyclists which is considered the highest priority when appraising any new junction arrangement. The supporting of pedestrian and cycle manoeuvres is most likely to be most effective during the peak periods.

Rerouting of traffic may occur along Newhouse Avenue / Newhouse Place / Queens Place, however the benefits this junction design affords to all users outweighs the minor detriment the increased rerouting will have on the local residents.. Whilst this option does result in a reduction parking spaces, the impact is negligible as sufficient parking is provided within close proximity of the lost spaces.



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 Project Management Initials: Designer: JC Checked: GB Approved: PL ISO A1 841mm x 841mm



**PROJECT**  
 DUNBAR, EAST LoTHIAN  
 QUEENS RD / SPOTT RD  
 SIGNALISED JUNCTION

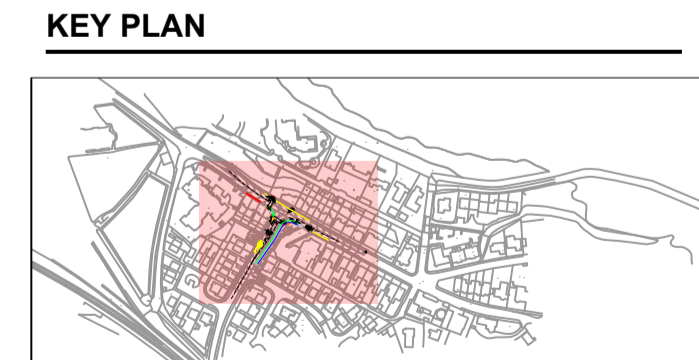


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- NOTES**
1. ALL WORKS TO BE EXECUTED IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS - THE MANUAL OF CONTRACT DOCUMENTS FOR HIGHWAY WORKS, DESIGN MANUAL FOR ROADS AND BRIDGES, TRAFFIC SIGNS MANUAL AND LOCAL COUNCIL GUIDELINES.
  2. ALL DIMENSIONS ARE IN METRES UNLESS STATED OTHERWISE. ALL LEVELS ARE IN METRES AND RELATE TO ORDNANCE DATUM.
  3. DO NOT SCALE FROM ANY DRAWING. WORK TO FIGURED DIMENSIONS ONLY. ANY DISCREPANCIES IN DIMENSION ARE TO BE REFERRED TO THE DESIGNER BEFORE WORK IS PUT TO HAND.
  4. ALL DIMENSIONS AND LEVELS ARE TO BE CHECKED ON SITE BY THE CONTRACTOR PRIOR TO PREPARING ANY WORKING DRAWINGS OR COMMENCING ON SITE.
  5. ALL WORKS BY THE CONTRACTOR MUST BE CARRIED OUT IN SUCH A WAY THAT ALL REQUIREMENTS UNDER THE HEALTH AND SAFETY AT WORK ACT ARE SATISFIED.
  6. ALL WORK IS TO BE CARRIED OUT IN COMPLIANCE WITH THE REQUIREMENTS OF THE STATUTORY AUTHORITIES AND CONSTRUCTION DESIGN AND MANAGEMENT REGULATIONS.
  7. DRAWING BASE RECEIVED FROM OTHERS. SURVEY CARRIED OUT BY OTHERS. AECOM CANNOT GUARANTEE THEIR ACCURACY. CONTRACTOR TO SATISFY THEMSELVES AS TO THE ACCURACY OF SUCH INFORMATION.
  8. SERVICE INFORMATION IS INTERPOLATED FROM INFORMATION RECEIVED FROM THE UTILITY PROVIDERS, AND AS SUCH NO GUARANTEE OF THEIR ACCURACY CAN BE GIVEN. CONTRACTOR TO SATISFY THEMSELVES AS TO THE ACCURACY OF SUCH INFORMATION.

**ISSUE/REVISION**

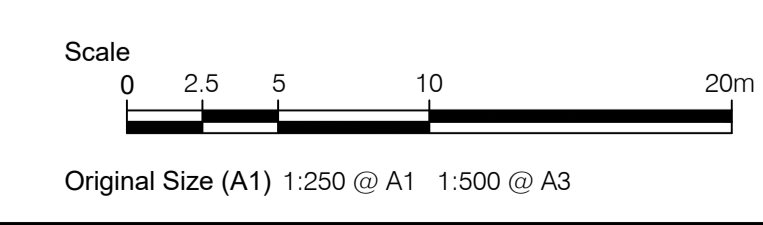
I/R	DATE	DESCRIPTION
C1	13/09/2022	REVISED MARKINGS
CO	20/07/2022	FIRST ISSUE



**PROJECT NUMBER**  
 60685677

**SHEET TITLE**  
 A1087 Queens Rd / Spott Rd  
 Signalised Junction  
 General Layout

**SHEET NUMBER**  
 60685677-SHT-C1-0001



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