

South College Street - Phase 2



Background

The South College Street corridor is subject to an ongoing series of improvements to road capacity and active travel infrastructure to facilitate the introduction of the City Centre Masterplan. Phase 1 of the scheme was approved at Council Committee in November 2017. Construction for Phase 1 of the scheme began in 2022 with a staged opening throughout 2023.

In 2017 Elected Members also approved the principle of a traffic signal control at the Queen Elizabeth Bridge / North Esplanade West roundabout and instructed a review of the junction arrangement upon completion of the AWPR and development of the new road's hierarchy. With these both now completed, this project now progresses to Phase 2 with a primary focus on the Queen Elizabeth Bridge / North Esplanade West roundabout.

The Project

The purpose of the project is to support the City Centre Masterplan and its aim to improve the public realm within the city centre by creating new spaces and facilities for pedestrians, cyclists and bus users. To facilitate the displacement of general traffic from the city centre area, traffic capacity improvements are required through the South College Street corridor. In tandem, the project aims to enhance infrastructure for walking and cycling through South College Street and to provide safer connections for active travel with the wider network.

Phase 2 of the project aims to enhance the scheme by considering options for interventions more focused at the South College Street junction with North Esplanade West / Riverside Drive. The objectives for Phase 2 are primarily to improve pedestrian, wheeling, and cycle connectivity through the junction and ensure safe and equitable access for all. The junction itself also carries an important traffic routing function, therefore proposed changes are required to maintain public transport and freight connections as well as general traffic access to the city centre.

A detailed appraisal of the required improvements has been undertaken and several options have been developed. Within this proposed option layout, there are four alternative operational designs, each with benefits and consequences. The Options 1 to 4 designs are included in this information package and feedback on a preferred scheme can be provided via the associated questionnaire.

Current Issues

The existing network operation within the Phase 2 area includes the following operational issues:

1. Figures A and B show current uncontrolled pedestrian crossing locations on QE Bridge and South College Street
2. The lack of formal cycle crossing points through the junction creates a disconnect for cyclists routing to and from North Esplanade West. At present, cyclists are required to dismount on North Esplanade West to cross over QE Bridge, to connect to Riverside Drive - See Figure C
3. Traffic Demand- All four arms of the junction carry high traffic volumes at varying times of the day. The lack of signal control at the junction can result in an imbalance of traffic queuing and delays.
4. The junction must be able to cater for future operational demand, which is likely to include more public transport priority measures.
5. Separate to the roundabout itself, there are footway width restrictions on Riverside Drive under the Wellington Suspension Bridge (Figure D). Mitigation options to widen the footway which would allow continuous cycle under the bridge is included in this consultation pack.

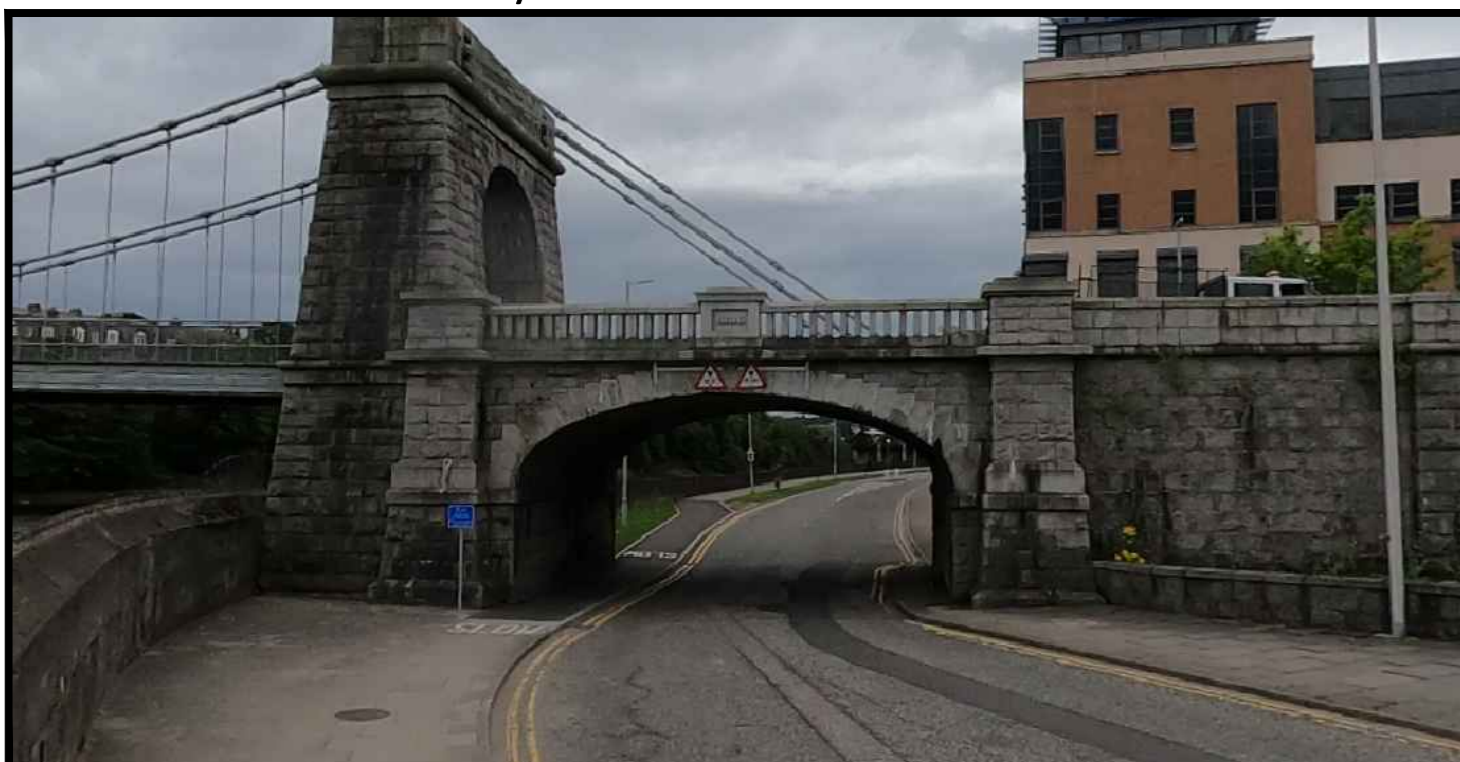
A - Uncontrolled Crossing at South College Street



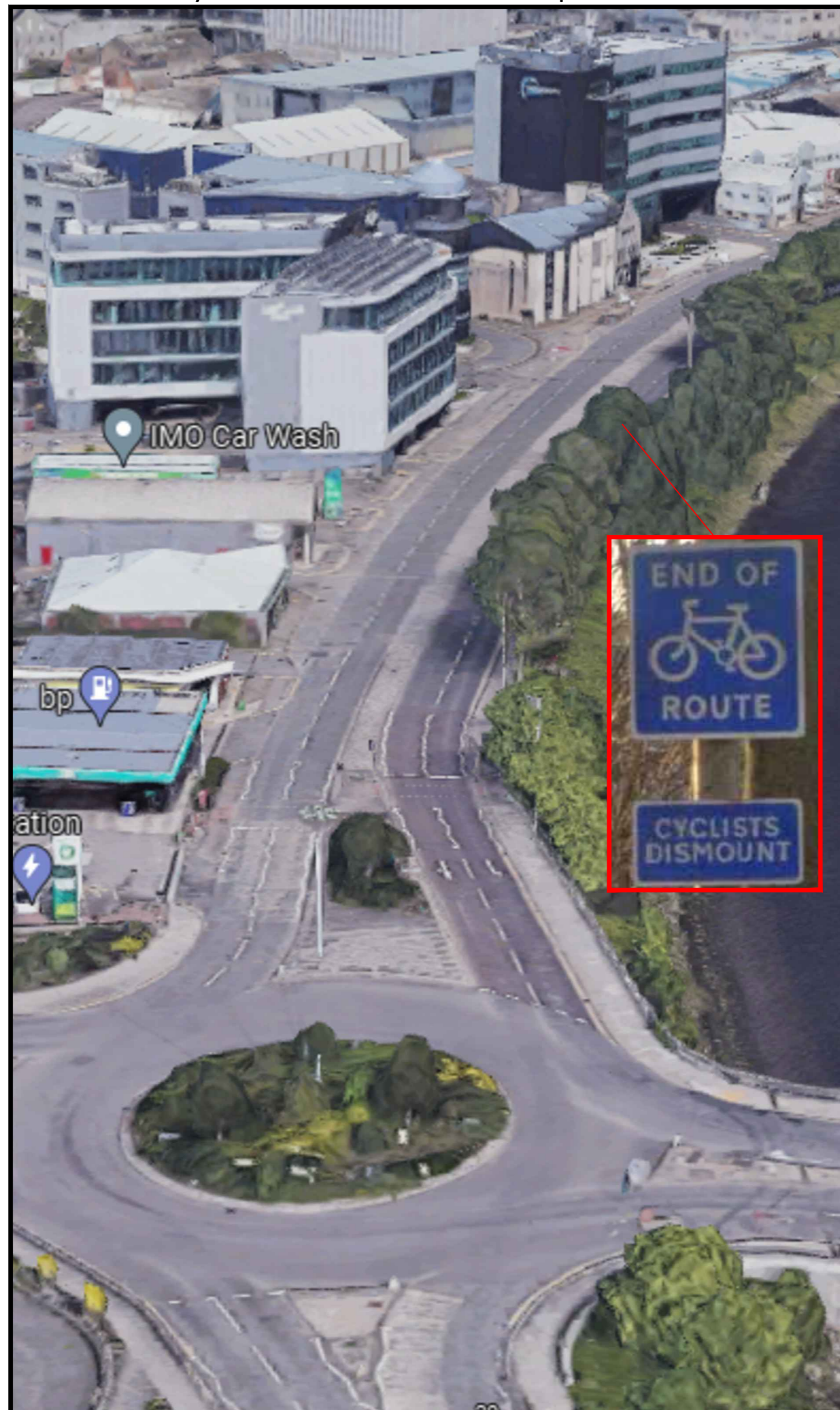
B - Uncontrolled Crossing over QEII Bridge



D - Footway restrictions on Riverside Drive



C - Cycle Restrictions on North Esplanade West



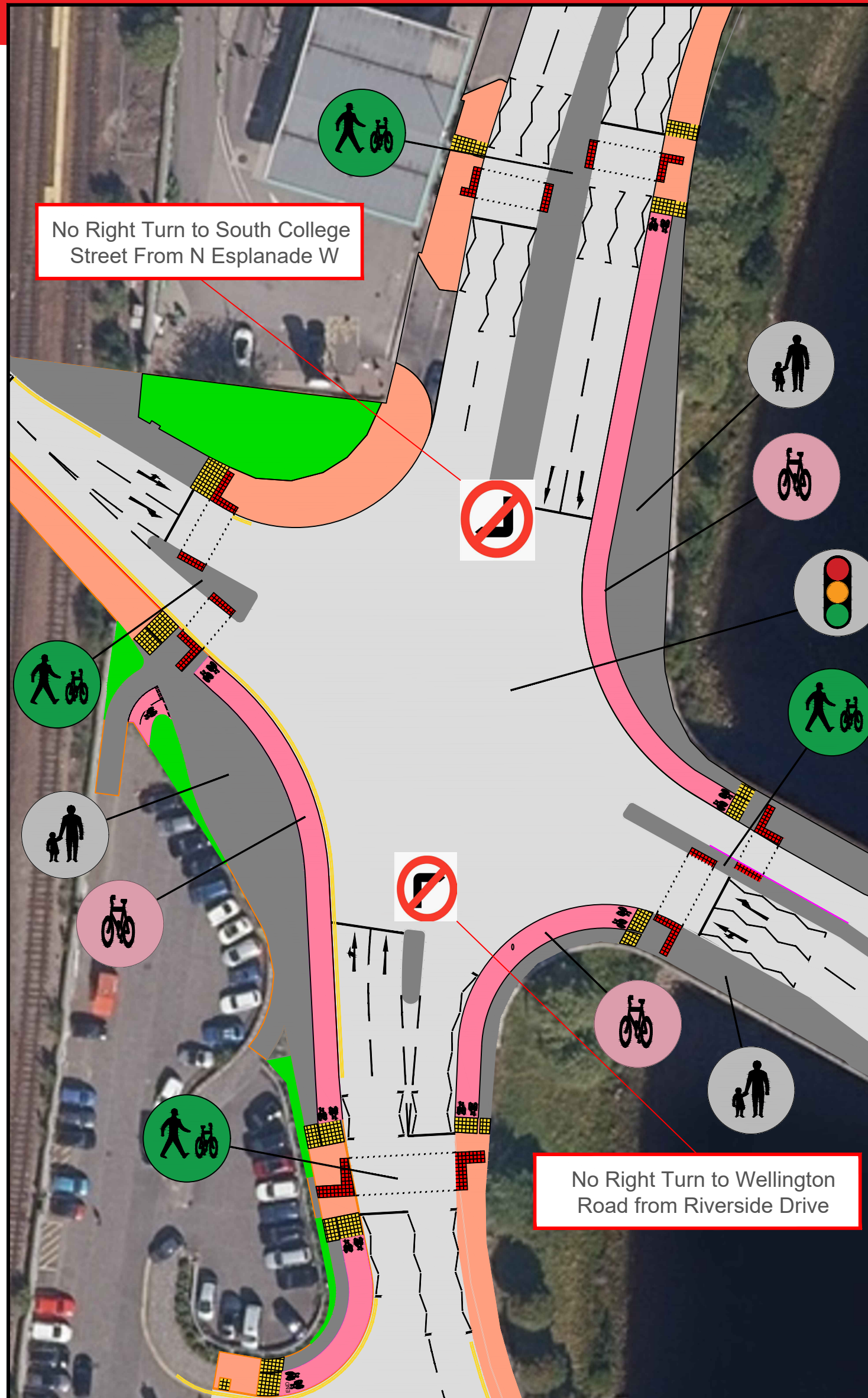
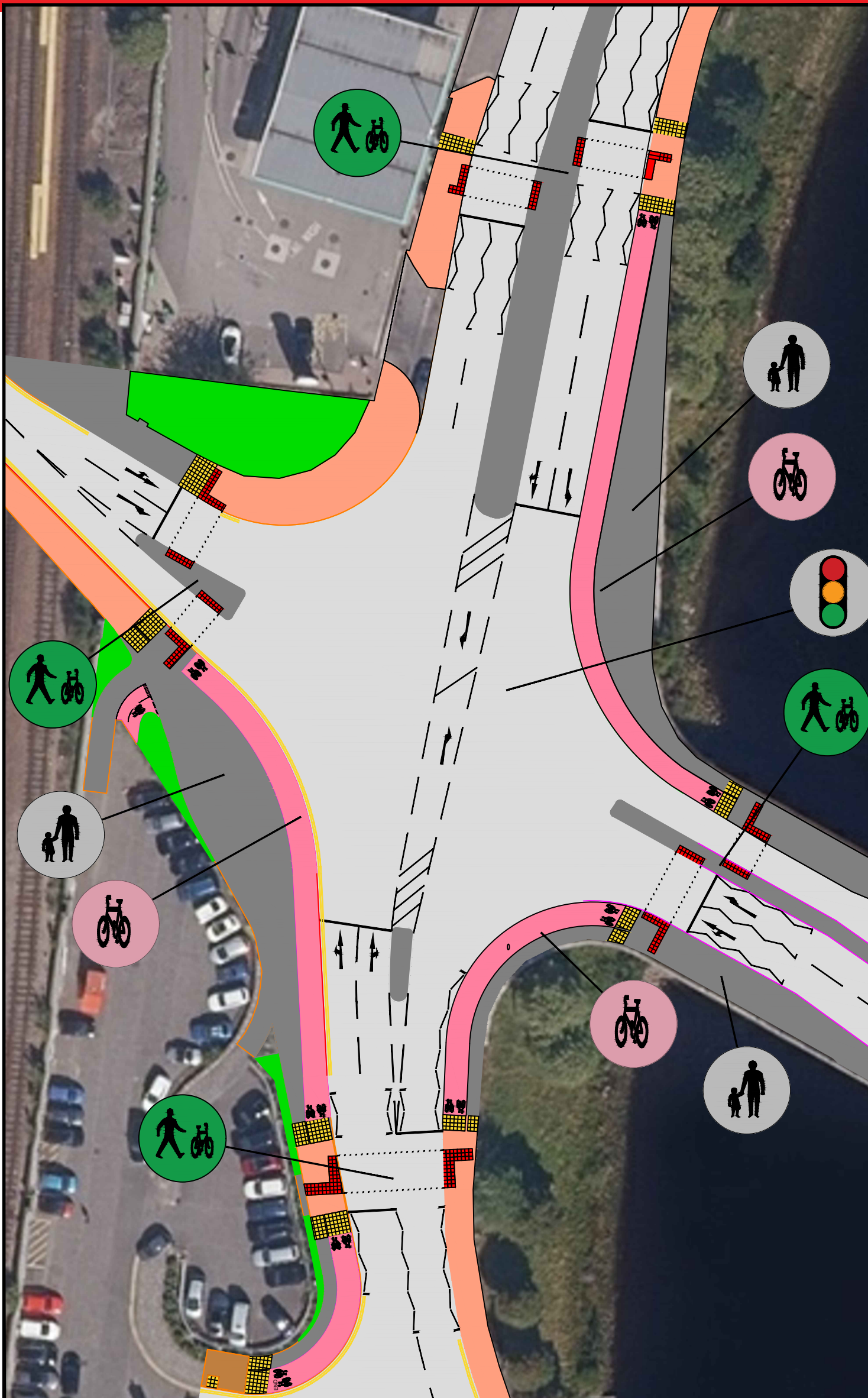
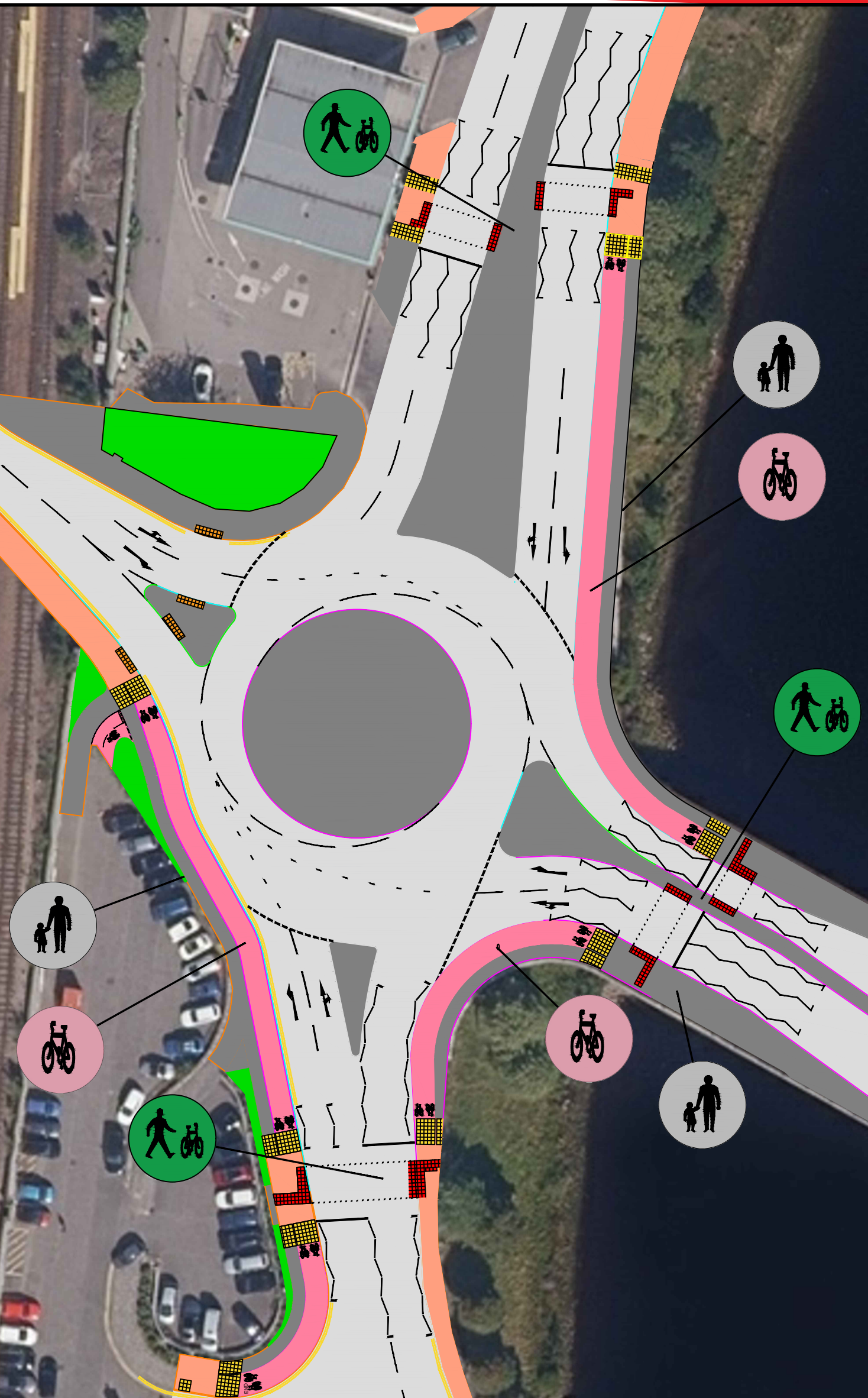
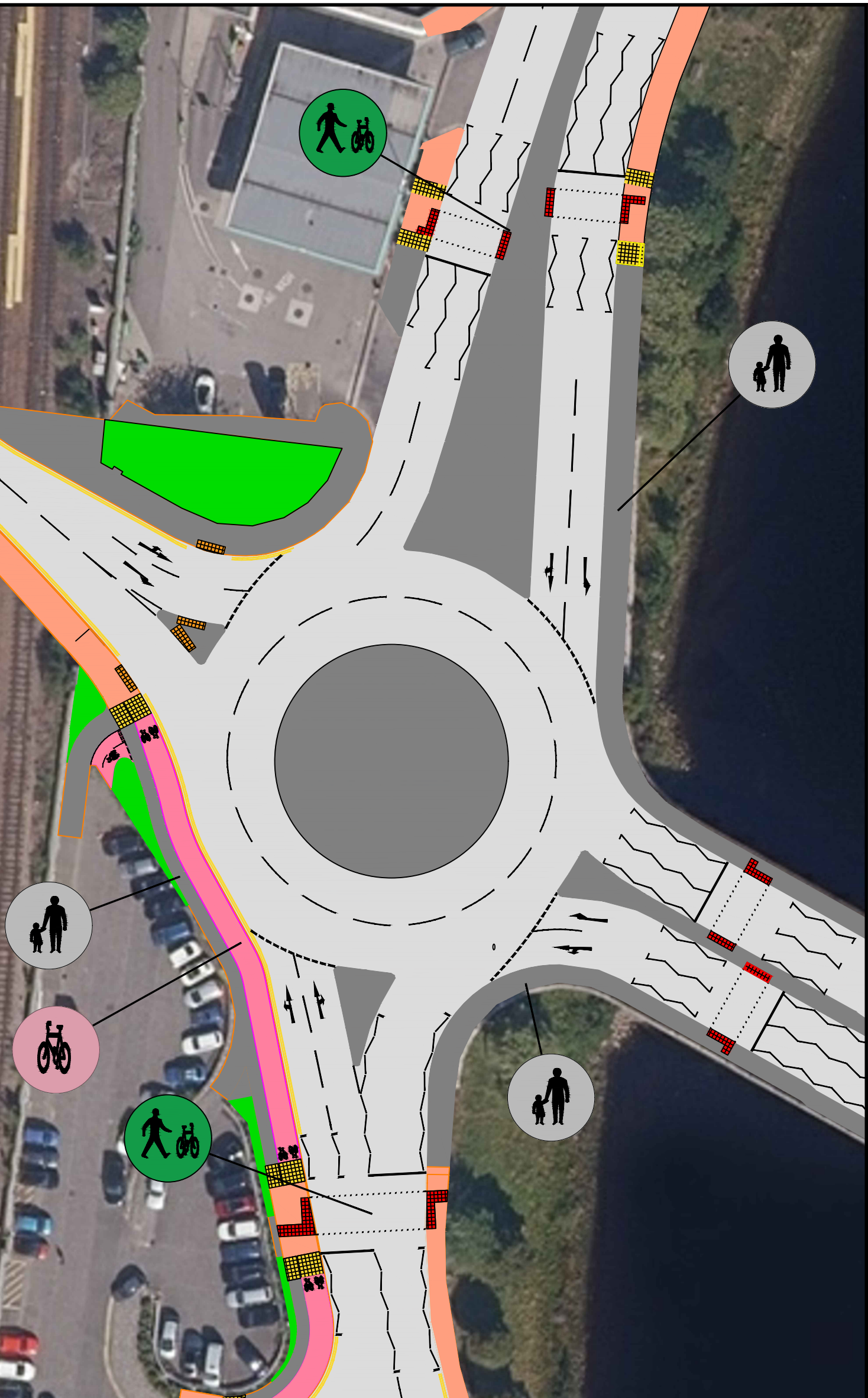
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Option 1: Enhanced Roundabout
(Additional Pedestrian Crossing on QE Bridge)

Option 2: Spiral Roundabout
(Additional Toucan Crossing on QE Bridge)

Option 3: Signalised Junction
(All Turning Movements Permitted)

Option 4: Signalised Junction
(Restricted Turning Movements)



Option 1
Operation:

- Retention of roundabout operation with additional Pedestrian crossing on QE Bridge

Pros:

- Traffic movements permitted in all directions
- More efficient traffic movement through the junction than signalisation
- Minimised construction intervention

Cons:

- Does not enhance the cycle network - gaps still exist on QE Bridge and North Esplanade West
- Pedestrian crossing on QE Bridge requires to be set back from the junction, increasing walk-distance)
- Uncontrolled crossing remains on South College Street
- Does not provide control of junction queuing via signal control

Option 2
Operation:

- Retention of roundabout operation with additional Toucan crossing on QE Bridge
- Spiral Roundabout operation to allow geometry to fit cycle provisions between Riverside Drive to North Esplanade West via new QE Bridge Toucan crossing

Pros:

- Traffic movements permitted in all directions
- More efficient traffic movement through the junction than signalisation
- Enhanced Cycle provision across QE Bridge

Cons:

- Gaps still exist in the cycle network - across South College Street
- Pedestrian crossing on QE Bridge is away from the desire line (back from the junction)
- Uncontrolled crossing remains on South College Street
- Does not provide control of junction queuing via signal control

Option 3
Operation:

- Signalised junction - all turning movements permitted
- Walk-with staggered Toucan Crossing on QE Bridge and South College St
- Remote Toucan Crossings on Riverside Drive & North Esplanade West
- 4 stage signal phasing

Pros:

- Traffic movements permitted in all directions
- Provides controlled crossings on all arms of the junction
- Provides connected cycle routes through the junction via Toucan Crossings, segregated cycle lanes, and shared cycle / footway paths
- Provides controlled traffic movement through the junction, allowing:
 - Queue management
 - Hurry call for emergency services
 - Easier freight movement through the junction
 - Future bus priority measures
 - Improved network resilience

Cons:

- 4 stage signal phasing - Least efficient option for traffic
- Slightly longer journey times compared to option 1, 2 and 4

Option 4
Operation:

- Signalised junction - banned right-turn on North Esplanade West & Riverside Drive
- Right Turn from North Esplanade West is cater for through the new Palmerston Road link
- Walk-with staggered Toucan Crossing on QE Bridge and South College St
- Remote Toucan Crossings on Riverside Drive & North Esplanade West
- 3 stage signal phasing

Pros:

- 3 Stage signal Phasing - more efficient operation than option 3 allowing slightly higher traffic flow through the junction than Option 3, reducing delays
- Provides controlled crossings on all arms of the junction
- Provides connected cycle routes through the junction via Toucan Crossings, segregated cycle lanes, and shared cycle / footway paths
- Provides controlled traffic movement through the junction, allowing:
 - Queue management
 - Hurry call for emergency services
 - Easier freight movement through the junction
 - Future bus priority measures
 - Improved network resilience

Cons:

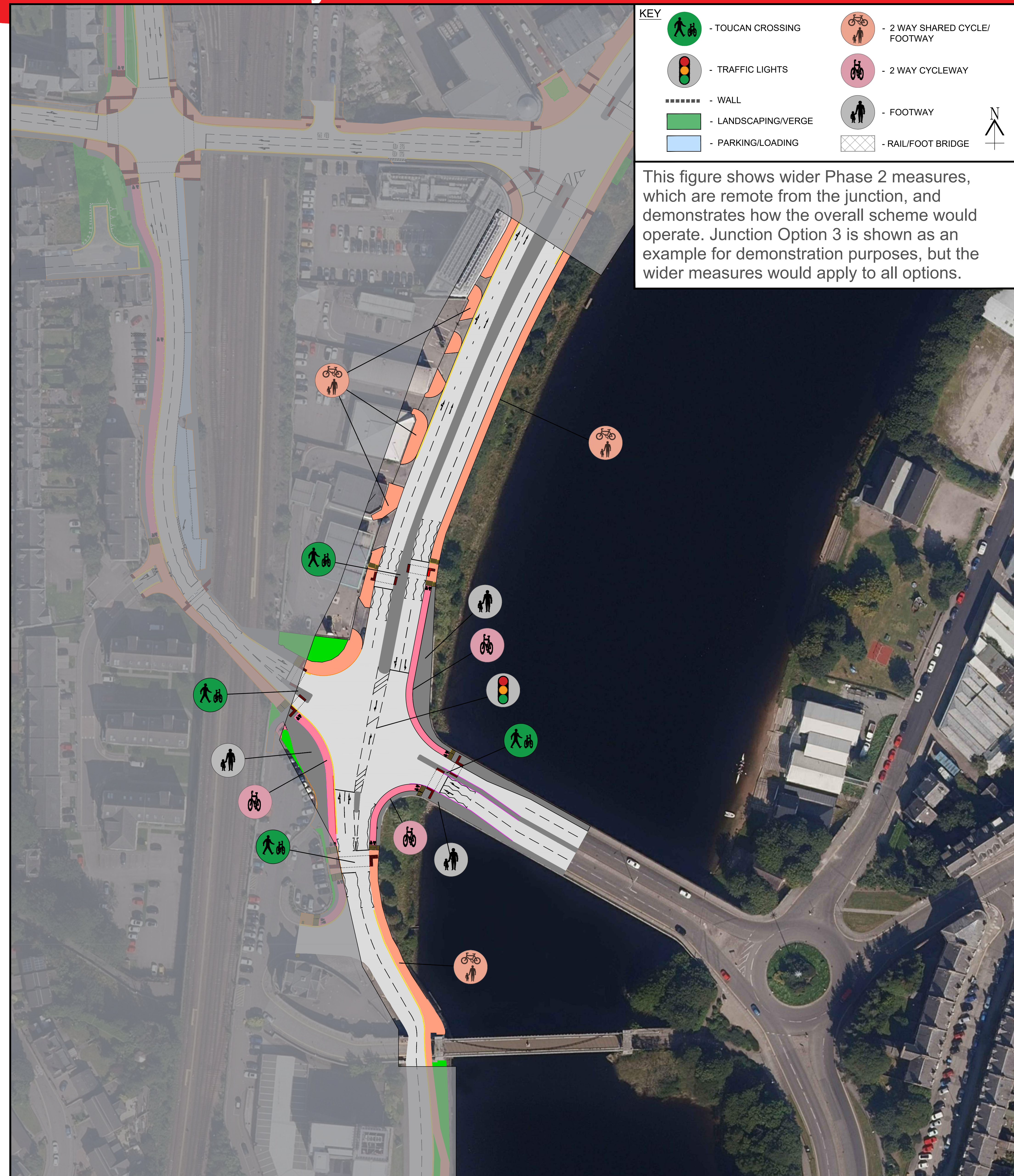
- Signalised Junction is less efficient for traffic demand than the roundabout options
- Access Implications - Riverside Drive to Torry routing traffic will require to re-route via King George VI Bridge, West Tullos Road and Abbotswell Road
- Potential for traffic to re-route via minor routes in the network hierarchy

	- TOUCAN CROSSING		- 2 WAY SHARED CYCLE/ FOOTWAY		- FOOTWAY		- WALL
	- TRAFFIC LIGHTS		- 2 WAY CYCLEWAY		- RAIL/FOOT BRIDGE		- LANDSCAPING/VERGE
					- PARKING/LOADING		



South College Street

Phase 2 Wider Layout



This figure shows wider Phase 2 measures, which are remote from the junction, and demonstrates how the overall scheme would operate. Junction Option 3 is shown as an example for demonstration purposes, but the wider measures would apply to all options.

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