CABINET

THURSDAY, 25TH APRIL, 2019

At 7.30 pm

in the

GREY ROOM - YORK HOUSE,

SUPPLEMENTARY AGENDA

PART I

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Project:	**RBWM Framework – Maidenhead Station**	Job No:	**1000004987**
Subject:	**Traffic Operation and Objectives**		
Prepared by:	**Gordon Oliver**	Date:	**23 April 2019**
Approved by:	**Kevin Donnelly**	Date:	**23 April 2019**

1 Introduction

This technical note summarises the traffic proposals that form part of the delivery of the Maidenhead Station Forecourt Project. Its purpose is to give understanding to the measures that are being delivered and the data that supports this. This note will be considered by Cabinet on Thursday 25th April which is presented for awareness and comment.

2 Background

The scheme is intended to improve access and interchange at Maidenhead Station and to improve links between the station and the town centre. It supports the delivery of Crossrail (now rebranded as the Elizabeth Line) and the Great Western Programme.

The key issues are defined as:

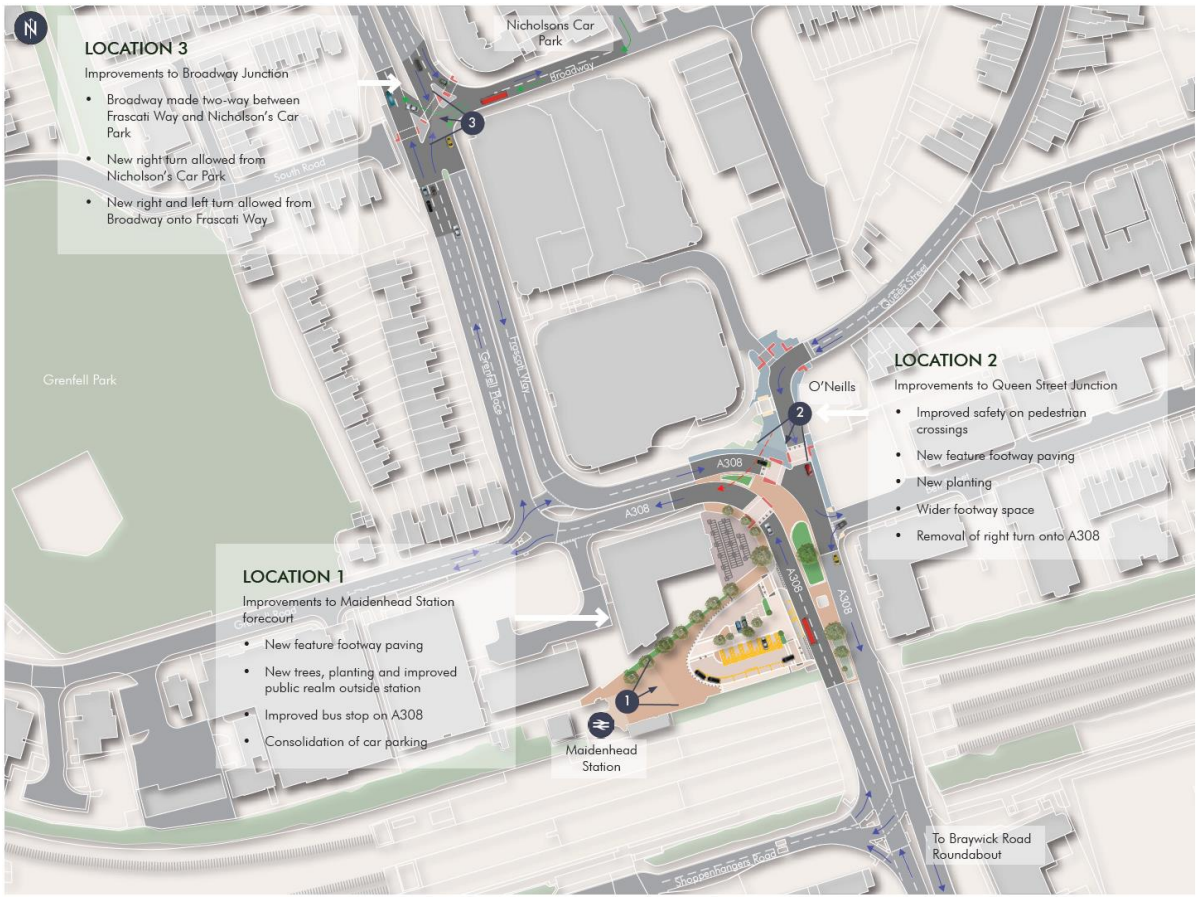
i. A need to improve access and movement between the station and the town centre, and particularly to encourage rail passengers to arrive/make onward journeys by modes of transport other than the private car;
ii. Environmental enhancements to increase space for passengers waiting to be picked up, and to provide wider and more direct footway and cycle route connections to the town centre; and
iii. The need to cope with the increase in passenger numbers associated with the Elizabeth Line.

The scheme consists of:

i. An enhanced public realm to deliver much wider walkways and new public spaces, along with a more direct crossing route between the town centre and station and a new bus stop within the forecourt;
ii. A new bus stop being created in a layby alongside the northbound carriageway of the A308 in front of the station;
iii. The right turn from Queen Street to A308 being removed to accommodate wider and simpler crossings for pedestrian and cyclists;
iv. Broadway being made two-way for the western section, allowing traffic from Nicholson's Car Park to exit onto Frascati Way; and

v. The removal of long-stay parking in the forecourt, with replacement parking provided at the nearby Stafferton Way multi-storey car park.

Figure 1: Station master plan



3 Data

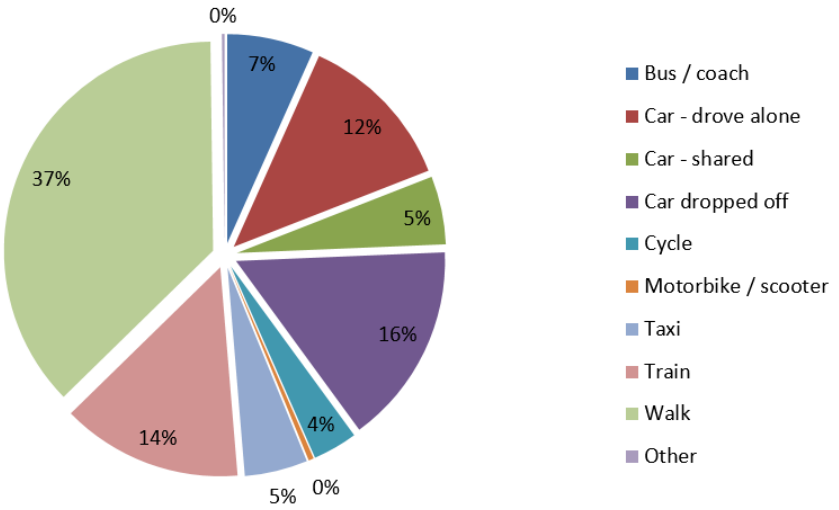
Rail Users

External studies (Crossrail), identify an average growth rate of 2.57% per annum. 2016 station net access/egress annual trips are recorded as 4,480,000 and station demand is forecast as approximately 5,536,000 passenger trips by 2020, and to reach 8,030,000 by 2039. This is in excess of 14,000 movements a day and an increase of over 3,000 trips (23%).

Pedestrians and Cyclists

Figure 2 shows how passengers currently arrive at Maidenhead Station, and has been derived from passenger interviews. This shows that walking and cycling together account for just over 40% of trips to the station.

Figure 2: Current passenger arrivals by mode of transport



As part of the scheme, there will be significant improvements to the station forecourt, with an enlarged space for passengers in front of the ticket hall and widened pedestrian routes along the sides. Together with removal of long-stay parking and paving and landscaping improvements, this will create a greatly enhanced gateway to the town centre.

The scheme will also deliver additional cycle parking. Current cycle storage provision is 170 spaces. Crossrail works will result in the loss of 50 spaces in Shoppenhangers Road and 70 spaces to the rear of the ticket office. As part of the RBWM scheme the 50 spaces on the forecourt will be replaced by 300 spaces in the area adjacent to the pedestrian crossing. This would be a net increase of 250 secure cycle spaces, allowing for an additional 250 journeys by bike each day.

Pedestrians and cyclists will experience time savings arising from the improved Queen Street pedestrian crossing facilities. The removal of the right turn on Queen Street saves pedestrians over 8 seconds in crossing time. There are 4,756 pedestrian / cyclist movements a day, which is equal to approximately 10.8 hours a day.

The new layout will also deliver significant additional capacity on the crossing and its approaches. On the station side, the path is currently around 2m wide and at peak times there is insufficient space for people to wait, encouraging them to cross off-line between queuing vehicles.

On the town side, there is a pinch point outside the '3' building where the path is around 1m wide, which is not wide enough for two people to pass. Also, the island in the middle of the Queen Street exit is too small to cope with current peak hour flows and people waiting for the crossing are spilling onto the carriageway.

The new layout will result in a much wider area that will be able to cope with the anticipated growth in pedestrians. The new paving will help to create an improved gateway to The Landing and will be consistent with paving improvements being delivered as part of other schemes across the town centre, contributing to an

improved sense of place.

Buses

Bus users will benefit from a new bus stop on the station forecourt, which will reduce the walking distance by 145 meters to the main entrance via the forecourt. Currently, 7% of all rail users use the bus, saving an average of 75 seconds walk time per passenger. The bus stop will be off-carriageway and will therefore not affect traffic on the A308. The stop will have a shelter with seating, lighting and real-time passenger information. The existing bus stop will be retained to provide

Services calling at the station include:

- 4/4A: Maidenhead – Paley Street – White Waltham – Shurlock Row – Waltham St Lawrence – Hare Hatch – Knowl Hill
- 5: Maidenhead – Farmers Way
- 7: Maidenhead - Woodlands Park
- 8: Boulters Local - Maidenhead Town Centre - St Marks Hospital – Halifax Road
- 53: Bracknell – Moneyrow Green - Maidenhead – Taplow – Burnham - Wexham Park Hospital
- 127: Maidenhead – Twyford – Sonning – Reading (Saturday only)
- 238: Maidenhead – BCA – Hurley – Bisham – Cookham Dean (Tuesday and Thursday only)
- 239: Maidenhead – BCA – Hurley – Henley-on-Thames (Monday, Wednesday, Friday and Saturday only)

Buses that exit the town centre via Queen Street will be required to perform a U-turn at the Stafferton Way roundabout. Although this adds a small amount to the outbound journey time, this is off-set by the journey time saving for the inbound trip when the terminus stop is moved from Frascati Way to Broadway, since buses will turn right from Frascati Way into Broadway rather than performing a U-turn at the Castile Hill roundabout.

Figure 3: Station bus stop detail

Car users

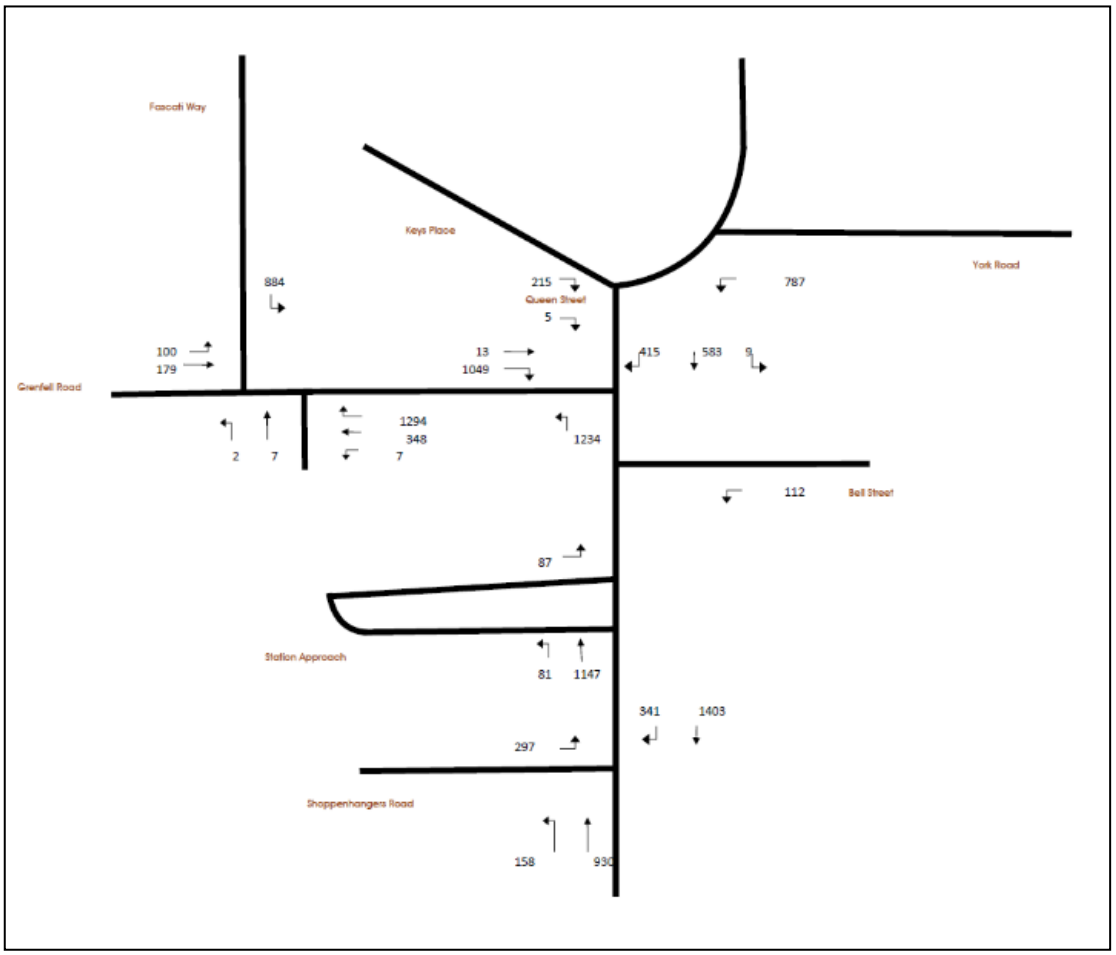
A review of the location shows that serious injuries are predominantly associated with the right turn from Queen Street, as are four of the fourteen slight injuries in the five year period to 2016. Given that the revised scheme removes this right turn movement, a 25% reduction in slight injuries and 75% reduction in serious injuries for this scheme is anticipated.

The impact on traffic of the scheme has been modelled using LINSIG. Figure 3 shows the current PM peak vehicle movements. The model confirms that there are on average 415 right turn movements in the PM peak from Queen Street onto the A308 which need to be accommodated elsewhere on the network. The options of two-way working on Broadway, and Broadway remaining one-way have been reviewed in parallel to determine the benefit of both. It is anticipated that over 300 (75%) of these movements will be removed from Queen Street as a result of vehicles exiting westbound on Broadway or northbound via High Street and Forlease Road (Queen Street movements reducing from 787 vehicles to 463).

A linked Microprocessor Optimised Vehicle Actuation (MOVA) signal system is proposed in order to maximise the operational efficiency of the junctions between Shoppenhangers Road and Broadway. When the network is congested MOVA operates in capacity maximising mode. This assesses which approaches are

overloaded and how efficiently the green is being used and seeks to determine a set of signal timings which will maximise the throughput of the junction under the current conditions.

Figure 4: Diagram of current PM Peak traffic movements:



There were 3 options that were modelled for the network:

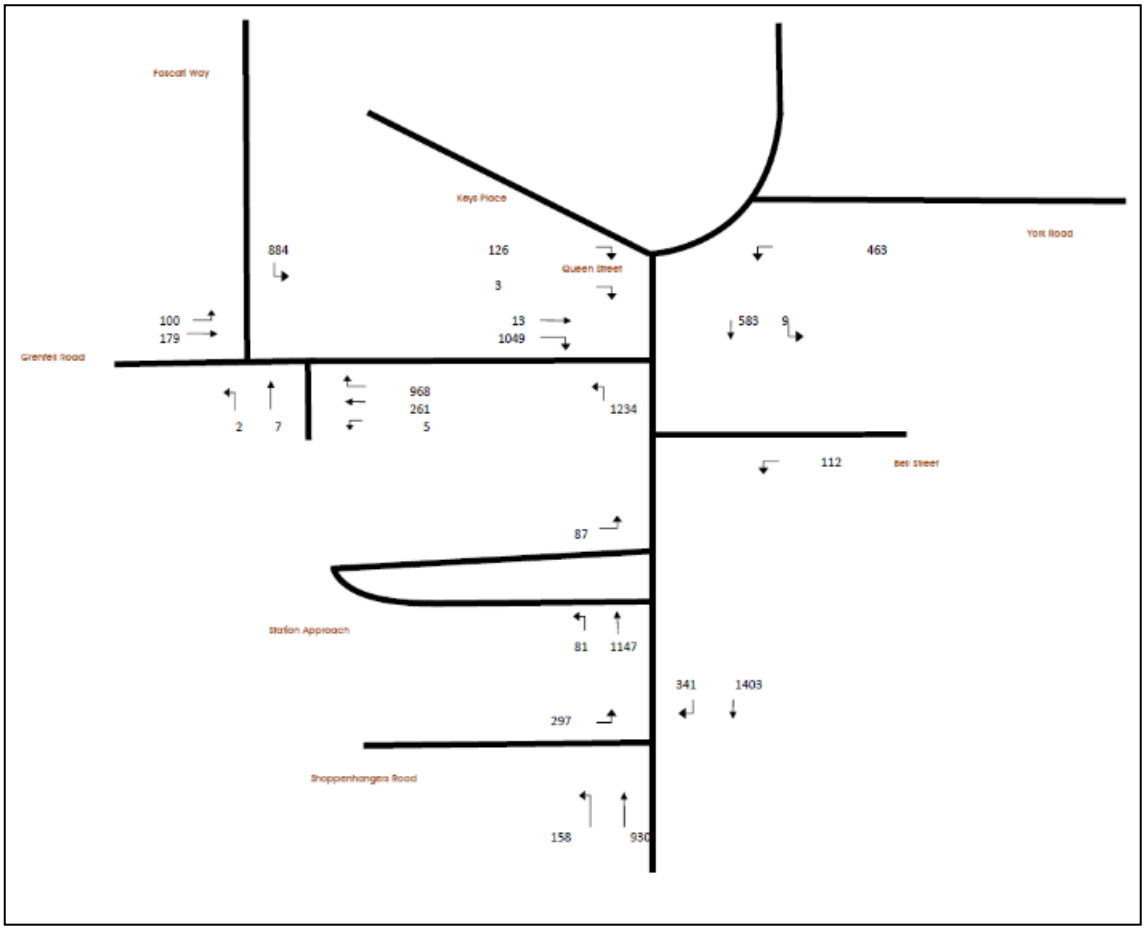
1. Removal of right turn from Queen Street to A308;
2. Removal of right turn from Queen Street to A308 with two-way working on Broadway; and
3. Queen Street amended to join A308 at new junction.

The MOVA system effectively increases the green time when there is a queue of traffic to enable it to move. This means that the more queuing there is, the longer the signal cycle time needs to be. Allowing two-way working on Broadway reduces the green time needed to clear the junction. With the two-way working on Broadway a cycle time of 96 seconds in the morning peak and 72 seconds in the evening peak allows for all approaches to operate well below the 90% saturation point and keep the traffic moving.

Keeping Broadway as one-way can be accommodated with all approaches operating below the 90% saturation point but results in an extension of the signal cycle time during both morning and evening peak and significantly a 16 second increase in

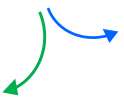
the evening peak. The modelling also confirmed that a new layout is not practical and would cause significant queuing on A308 approach lanes, and on Queen Street.

Figure 5: Diagram of PM peak traffic movements for the Station improvements:



It should be noted that for vehicles who wish to go northbound on the A308 that can no longer turn right at Queen Street, the signals at Keys Place and Shoppenhangers Road will be linked. However, there are no signals currently in place on the Stafferton Way roundabout, so the queues here cannot currently be managed in the same way.

Figures 6 and 7 show the changes at the A308 / Broadway and A308 / Queen Street junctions. A benefit of the new layout is the potential for reduced delay for vehicles travelling north past the station, particularly in the off-peak period. The removal of the right turn out of Queen Street means that a red signal for northbound traffic on the A308 will only be triggered by pedestrians pressing the button at the crossing.
Figure6: Proposed changes to A308 / Broadway



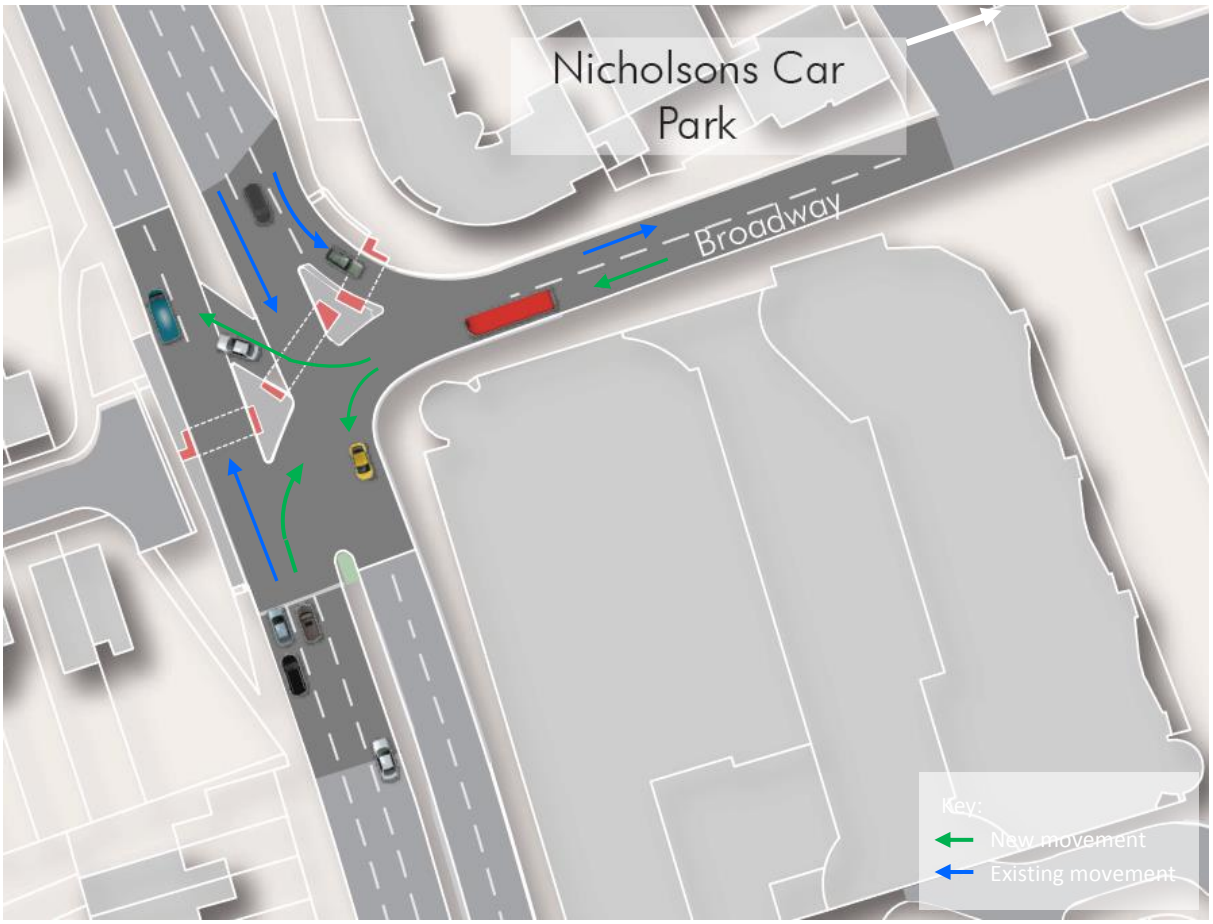
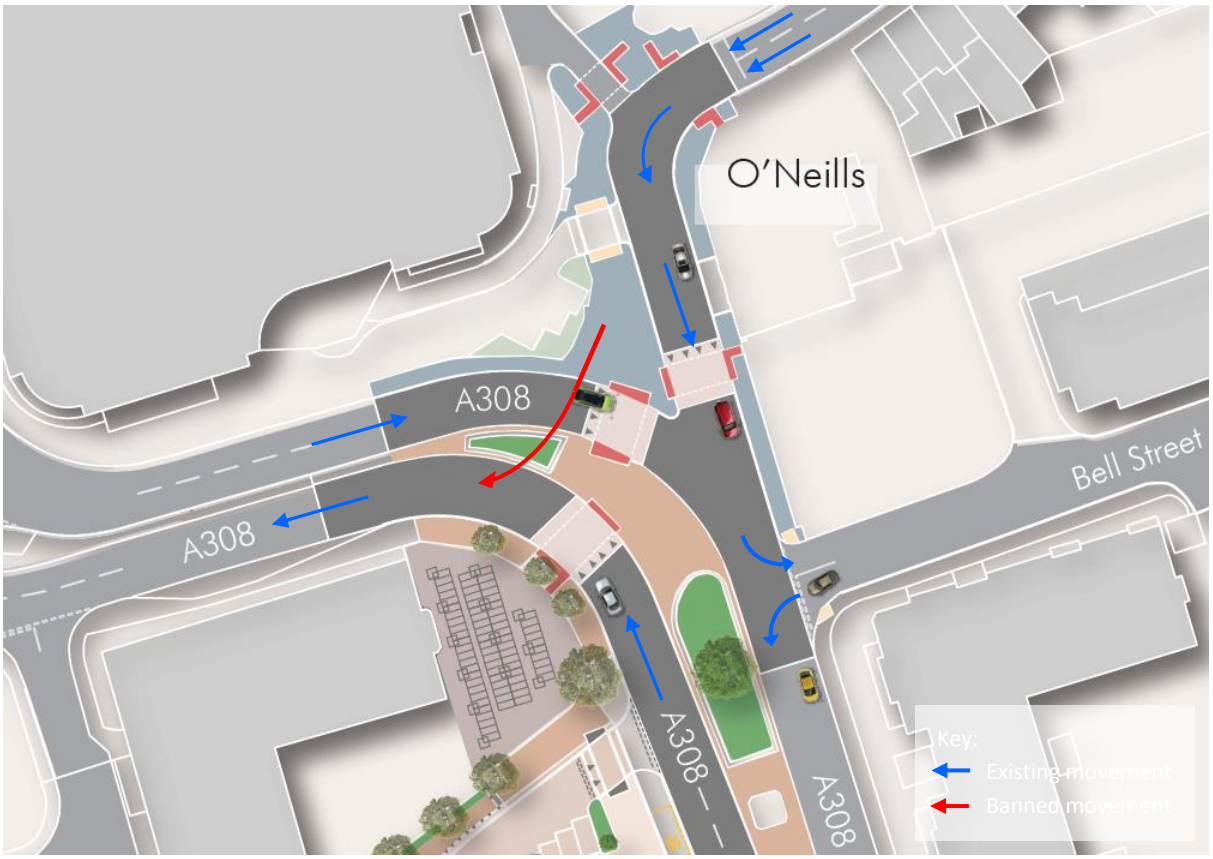


Figure 7: Proposed changes to A308 / Queen Street



4. Conclusions and Recommendations

For people accessing and egressing the station by any mode there will be significant benefits generated by improvements to the station environment.

The data presented demonstrates that there are significant benefits for pedestrians and sustainable modes of transport for the proposed scheme. There are dis-benefits to motorists in the form of increased journey times for the removal of the right turn on Queen Street, however, the introduction of a MOVA signal system allows for this to me actively managed and minimised. The current scheme with two-way working on Broadway represents the best solution for motorists that still includes all of the pedestrian benefits. The scheme proposed therefore represents the best overall solution. These benefits have been monetised as part of the Business Case for the scheme and a benefit equal to more than twice the value of investment is recognised.

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