



# Item 6A - LPTIP - A647 Corridor Design – Pickering Street and Armley Park Road – Package Board Note

<b>DATE:</b>	15 July 2020	<b>CONFIDENTIALITY:</b>	Restricted
<b>SUBJECT:</b>	LPTIP - A647 Corridor Design Note –Pickering Street and Armley Park Road		
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## BACKGROUND

A report was presented to the March 2020 LPTIP Bus Infrastructure Package Board regarding recommended design changes at Pickering Street, Armley. The driver behind these changes was to respond to stakeholder concerns from businesses on Pickering Street and residents in the Aviary's housing area to the north of Canal Road. The stakeholder concerns related to:

- Restrictions on on-street parking and loading on Pickering Street affecting local businesses
- Safety on Pickering Street due to increased traffic movements
- Difficulties in egressing the Aviary's residential estate safely with the closure of Armley Park Road

While the scheme had gone through two stages of full public consultation, the second being in Nov/Dec 2018, the design around Pickering Street was evolving through these stages. In addition, while businesses on Pickering Street and residents in the Aviary's were leafleted at the time, a number claimed not to be made aware of the proposals until December 2019 when an update letter was distributed in the local area. Local businesses suggested they would seek legal advice and challenge any Traffic Regulation Orders proposed. Given the concerns raised, the scheme was paused and re-evaluated as outlined in this note. A number of changes have been made to try to overcome the concerns raised with meetings held with Ward Members and local businesses.

The proposed change recommended in March 2020 was to implement one-way operation on Pickering Street. Due to programme constraints at the time, the recommendations were based on output from two local junction models using LinSig, where one model covered Pickering Street and the other the A647 / Ledgard Way junction. These models were built to provide input to a more complex Vissim microsimulation model covering a length of 3.4km along the A647 from the Stanningley Bypass to Armley Prison. The LinSig models, while providing a reasonable indication of option performance, are limited in how they replicate merge sections and downstream constraints, both of which are critical to highway performance in this area.

The output from the LinSig models in March did indicate significant queuing on Ledgard Way / Canal Road on the approach to the A647 / Ledgard Way junction. However, it was considered that this would be acceptable given the existing long queues on this approach and that significant improvements were still being shown on the A647 east-west movements.

Again, due to programme constraints the decision to proceed with the design process in parallel with the more detailed modelling was agreed.

A series of updates to the Vissim model have now been undertaken, including the modelling of Option 9 and several variants around it. The headline results are that the interaction between the junctions and impacts of the two lanes to one lane merge east of the A647 / Ledgard Way junction and new toucan crossing are causing significant congestion and delay on ALL approaches in both the AM and PM peak

periods. Benefits are shown as significantly eroded, with some performance indicators not just worse than the previous FBC Do Something (Option 7a), but worse than existing.

## RECOMMENDATIONS

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The proposal to allow more parking and loading on Pickering Street as represented in Option 9 is considered unviable due to the serious negative impacts on general traffic and on north/southbound buses. Based on the updated modelling and re-evaluation of previous scheme options, it is considered that there is strong, justifiable evidence to support reverting back to the original Option 7a in order to deliver the significant scheme benefits and this is the recommended way forward. However, the concerns raised by stakeholders have been taken into account and it is proposed to make the following minor changes to Option 7a in order to mitigate some of the localised impacts:

- Opening up of Armley Park Road for egress movements only – i.e. turning out of Armley Park Road onto Canal Road – this should address the majority of the concerns raised by residents in the Aviary's
- Review of parking and loading on affected roads to implement only those restrictions considered essential for safety reasons. This would include a reduction in the restrictions proposed on Pickering Street, Pickering Mount and Canal Road.

This new Option (Opt10), has been tested in the Vissim model (with the results summarised in Table 3 and in full in Appendix A).

## OPTIONEERING

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The previous optioneering work had included consideration of eight main options and variants around these. Options 9 and 10 are new options generated post FBC submission responding to stakeholder concerns. Table 1 below summarises the following options.

- Option 7a – as per the preliminary and detailed design and submitted FBC. This opens up Pickering Street to full two-way operation with restrictions to parking and loading. The north end of Pickering Street would be signalised with a point closure of Armley Park Road.
- Option 9 – a new option considering a one-way operation on Pickering Street from south to north and retention of an egress on Armley Park Road. This allows for retention of significantly more parking and loading on Pickering Street.
- Option 10 – a new option substantively the same as Option 7a but amended to allow egress from Armley Park Road and reduced parking and loading restrictions

It should be noted that the focus of this work has not been to reduce scheme direct costs, but instead to reduce / remove scheme risks associated with objections to the TRO process.

## PICKERING STREET LOADING AND PARKING

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The main objections to the original Option 7a from businesses on Pickering Street relate to the proposed loading and parking restrictions. Businesses are varied and include office type companies, a gym, a Scuba diving shop, a dance studio, a courier company, electrical engineers, and others. All units have off-street parking provision, but overspill does occur onto Pickering Street. There are also observations of people using Pickering Street as an informal park and ride site into the city centre. Loading and parking is currently unrestricted over most of Pickering Street (some restrictions at either end). Parking occurs on both sides of Pickering Street, obstructing the footway on the western side, and limiting capacity for through movements.

Pickering Street is currently two-way over 95% of its length and has a 'one-way plug' at the southern end. The Option 10 proposals would remove this one-way plug and open it up to two-way traffic along its full length. The scheme would not affect traffic movements north to south but would generate a significant increase in through movements south to north of approx 190 in the AM peak hour and 300 in the PM peak hour. To accommodate this level of traffic safely would require parking and loading restrictions.

### **LOADING**

As part of the Option 7a, 9 & 10 proposals, it would be necessary to restrict loading on Pickering Street, particularly on the western side during peak periods. Site observations show that currently loading options are often limited due the presence of long stay parking. The scheme has the potential to create more loading options, particularly in off-peak periods.

### **PARKING**

The image below shows a 2016 Street View capture, which highlights the extent of parking of Pickering Street (noting that on the western side there is significant obstruction of the footway) to facilitate this level of parking.



To divert traffic onto Pickering Street, some parking must be restricted to ensure queues do not stretch back to Armley Road, but more importantly on safety grounds. This is particularly the case in the downhill direction, the western side of Pickering Street, in which flows would increase.

Two days of parking surveys were undertaken in March 2019 on Pickering Street, Armley Park Road and Canal Road. Table 1 summarises the existing and proposed parking position on Pickering Street. Vehicles waiting for under three minutes have been excluded as it is considered these drop-off / pick up movements would not be prevented by the restrictions proposed. The latest proposals would not impact on parking on Pickering Mount (a change from the previously consulted scheme). The restrictions on Canal Road on approach to the proposed traffic signals are also being reviewed.

## 6A - LPTIP - A647 Corridor Position – 15 July 2020

Table 1 – Parking Summary

	Pickering St East	Pickering St West	TOTAL
Existing capacity parked cars (approx) - Unrestricted	11	13 (mostly obstructing the footway)	24
Survey peak occupancy	11	9	20 (13:30 to 14:30)
Daily use (all parking over 3mins stay 05:00-24:00)	38	25	63

The Option 7a & 10 proposals on Pickering Street would restrict all parking during peak hours, but provide eight spaces for visitors and customer short stay parking in off-peak periods (it is noted that a further 3-4 spaces would be available should vehicles parked across dropped kerbs). The parking surveys indicate that around two-thirds of parking on Pickering Street is less than two hours in duration.

The survey results also showed that the displaced parking could be accommodated on nearby streets such as Armley Park Road. Armley Park Road has no direct residential frontages (gable ends only), although it is accepted that vehicles would have to drive along residential streets to park on Armley Park Road. Businesses on Pickering Street also have the option to introduce controls on off-street parking to prioritise visitors, customers and other short stay users.

On Pickering Street, Option 9 offers only 11 extra spaces in the peak and 4 spaces in the off-peak over Option 7a. Option 10 represents a loss of 24 spaces in the peak and 16 in the off-peak compared to existing. Table 2 below summarises the key restrictions proposed as part of each scheme Option. Those differences between Opt7a and Opt10 are highlighted in bold. Appendix B contains a plan of the proposed Opt 10 restrictions.

Table 2 – Parking Summary

	<b>Opt 7a (Dec 2019 consultation) – two way working</b>	<b>Opt 9 (April 2020 consultation) one-way working</b>	<b>Opt 10 (July 2020 consultation) – two way working</b>
Canal Road west parking	All parking restricted – 24 hours	All parking restricted – 24 hours	All parking restricted – 24 hours
Canal Road west loading	All loading restricted - 24 hours	All loading restricted - 24 hours	<b><u>No loading restrictions</u></b>
Canal Road east parking	Short length of parking restrictions – 24 hours	All parking restricted – 24 hours	All parking restricted – 24 hours
Canal Road east loading	Short length of loading restrictions – 24 hours	All loading restricted - 24 hours	<b><u>Peak period loading restrictions</u></b>
Pickering Mount	20m 24-hour parking and loading restrictions on both sides of road	Kerb radii restrictions only (no reduction in parking)	<b><u>Kerb radii restrictions only (no reduction in parking)</u></b>
Pickering St west parking	All parking restricted – 24 hours	All parking restricted – 24 hours	All parking restricted – 24 hours

Pickering St west loading	All loading restricted - 24 hours	No loading restrictions	<b><u>Peak period loading restrictions</u></b>
Pickering St east parking	Peak period parking restrictions	6x limited stay bays, approx 55m unrestricted parking (mostly over extended drop kerbs)	<b><u>8x limited stay bays, approx 35m off peak parking (mostly over extended drop kerbs)</u></b>
Pickering St east loading	Peak period loading restrictions	No loading restrictions	<b><u>No loading restrictions</u></b>

## SCHEME SAFETY

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Stakeholders on Pickering Street have raised concerns relating to highway safety. A Stage 1 Road Safety Audit has been undertaken which also highlighted some of these areas of concern, but the design has responded to the issues and the Audit does not recommend reverting back to the existing arrangement. A Stage 2 Road Safety Audit is to be undertaken of the scheme proposals. The perceived safety concerns are:

- Gradient – Pickering Street has a steep gradient over its middle section of approx 15%. It levels on approach to the junctions at each end. The road currently operates two-way with significant obstructions. The key scheme mitigations against the gradient are the proposed restrictions in parking/loading and complete resurfacing improving skid resistance. A 20mph speed limit is already in place on Pickering Street.
- Right turn from Armley Road into Pickering Street – a number of business do support this as it allows better access to Pickering Street, however concerns have been raised regarding the accident history pre 2002 when the road was fully open. The scheme design is different to the pre-2002 layout in that a dedicated right turn waiting area is to be provided on Armley Road.
- Interaction between through traffic and side roads / private access points on Pickering Street – this is an existing issue and will be mitigated by the proposed parking restrictions.
- Concerns raised by residents in the Aviary’s regarding ratrunning and speeding through the estate – this is an existing issue caused by queuing on the approach to the Mike’s Carpets junction. The scheme proposals would reduce queuing at this junction and are therefore likely to have an effect of reducing ratrunning. In addition, vehicles would not be able to turn into Armley Park Road which is the start of the ratrunning route.

## SCHEME BENEFITS

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Table 2 provides a summary of the risk, benefits and disbenefits of Option 7a and 9 compared to the existing position. This highlights the high level of benefits for Option 7a and significant worsening for Option 9. A summary of the modelling output is provided in Appendix A.

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Table 3 – Option Assessment

Option	Description	Commentary	Benefits / Disbenefits
Option 9	<p><b>Change to Pickering St operation</b></p> <ul style="list-style-type: none"> <li>- Pickering St one-way northbound</li> <li>- Allow egress from Armley Park Road onto Canal Road, within new traffic signal designs</li> </ul>	<p>Stakeholders: Pickering St businesses supportive of this scheme thus far, but all stakeholders likely to be unhappy with congestion</p> <p>Risk: Still some risk from TRO process Risk: That a negative or unacceptably low BCR is generated at FBC+ and WYCA unwilling to sign off the scheme</p> <p>Shows significant disbenefits when modelled in the Armley Vissim model</p> <p>Detailed design complete</p>	<p><b>Benefits:</b> Still some bus benefits but reduced in comparison to Option 7a. <u>All general traffic benefits eliminated and worse than existing position for average delays</u></p> <p><b>Delay across total modelled area (indication of overall network performance)</b> Average delay for all vehicles 6.5 mins in AM peak compared to 3.9 mins existing Average delay for all vehicles 3.2 mins in PM peak compared to 2.6 mins existing</p> <p><b>Buses:</b> - 5 minutes AM peak eastbound saving compared to existing - over 6 minutes PM peak westbound saving compared to existing</p> <p><b>General traffic:</b> - just over 1 minute AM peak <u>increase</u> eastbound compared to existing - just under 6 minutes PM peak westbound saving compared to existing</p> <p><u>Very large increases</u> on journey times for N-S and S-N movements through Mike's Carpets junction for both buses and general traffic with journey times of up to <u>13 minutes</u></p> <p><b>Pedestrians and cyclists</b> - Reduced benefits at Mike's Carpet junction as all resilience and spare capacity removed – pedestrian and cycle green times would be minimised compared to Opt 7a - Pickering Street one-way operation restricts cycle movements</p>
Option 10	<p><b>Design substantively as per FBC submission</b></p> <ul style="list-style-type: none"> <li>- Pickering St two-way operation</li> </ul> <p><b>With amendment to open Armley Park Road egress only and reduce parking &amp; loading restrictions</b></p>	<p>Stakeholders: Pickering St issues remain but Aviary's resident issue resolved.</p> <p>Risk: Delays due to TRO process and possible challenges Risk: Loss of parking and loading provision on Pickering St and Canal Road</p> <p>Detailed design 90% complete</p>	<p><b>Benefits:</b> Expected to be broadly similar to the original scheme assessed at FBC with a high Benefit Cost Ratio of 6:1</p> <p><b>Delay across total modelled area (indication of overall network performance)</b> Average delay for all vehicles 3.3 mins in AM peak compared to 3.9 mins existing Average delay for all vehicles 1.2 mins in PM peak compared to 2.6 mins existing</p> <p><b>Buses:</b> - over 6 minutes AM peak eastbound saving compared to existing - over 6 minutes PM peak westbound saving compared to existing</p> <p><b>General traffic:</b> - just under 2 minutes AM peak eastbound saving compared to existing - just under 6 minutes PM peak westbound saving compared to existing</p> <p>Variations on journey times for N-S and S-N movements through Mike's Carpets junction for both buses and general traffic with some increases and some decreases</p> <p><b>Pedestrians and cyclists</b> - Full benefits of scheme - Cyclists can use Pickering Street in both directions</p>

## FURTHER COMMENTARY

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In addition, to the comparisons outlined in the table above, the additional points listed below should be noted:

- The case for Option 10 has been strengthened by the design pause, amendment to allow egress from Armley Park Road, additional optioneering, consultation and modelling. A more robust and defensible case can be made for the loss and designation to short stay of parking spaces on Pickering Street.
- The Option 10 scheme balances as best possible the needs of local users and through movements including buses against those of local businesses (who would also benefit from journey time savings). Option 10 generates significant benefits, with an expected BCR at FBC stage of 6:1, and unquantified benefits for pedestrians and cyclists, for the loss / relocation of a small number of parking spaces. Any option leading to greater use of Pickering Street would require some parking and loading restrictions.
- Business and residents in the areas will benefit significantly from the reduced congestion in the area and improvements to bus services and cycle facilities.

There are two potential 'fallback' options to avoid the use of Pickering Street:

1. Leave the Mike's Carpets junction largely in its current form
  - a. This significantly erodes the pedestrian and cycle benefits of the scheme, along with the general traffic journey time savings. While the latter is not a key objective of the scheme, it has been important in securing the widespread support for the proposals. It would also impact on buses with queues back into the single lane section alongside Armley Park.
2. Utilise Canal Road as the diversion route
  - a. This was considered early in the optioneering process but discounted due to safety concerns and negative impacts on the Cycle Superhighway. A further review is taking place to see if an amended scheme at this location could be developed as a fallback solution

Neither of the above fallback options is desirable in the context of the scheme objectives, safety, or benefits outlined to users and other stakeholders.

BAM are expected to finalise target costs for the A647 scheme in the w/c 21 July based on the Option 9 scheme – this process will not be stopped. The cost of the Option 10 civils works is expected to be very similar to Option 9. There will be some redesign costs, however this will be minimised as Opt 7a was taken to 90% completion and went through Technical Assurance – Option 10 combines Option 7a with Option 9. The most significant implication to costs is the risk of programme extension due to delay in approving the TROs and / or any subsequent challenge to those TROs. This risk exists with any scheme in this area. Pickering Street is not on the programme critical path, but quickly becomes so if construction is delayed. Discussions are ongoing in regard to minimising this risk and potential impact on scheme costs.

## STAKEHOLDER VIEWS

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Local businesses and residents have not yet been engaged in regard to the Option 10 proposals. Based on previous feedback it is considered that the main concerns of residents in the Aviary's have been dealt with. Businesses on Pickering Street are likely to object to the proposals at the formal TRO stage.

The project team has provided briefings in the last two weeks to the:

- Executive Board Member for Climate Change, Transport and Sustainable Development

- Armley Ward Members (two of the three)

The Members understood the concerns raised by local stakeholders but agreed that the significant scheme benefits both locally and on a corridor basis outweighed these issues. The Members appreciated the efforts made over the last six months to overcome stakeholder concerns.

Subsequent to Package Board approval it is proposed to provide an update to businesses on Pickering Street regarding the change providing a narrative and reasoning behind this.

## **SUMMARY**

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Given the issues with Option 9 it is now recommended that the scheme design is changed to the Option 10 proposals – this is the Option 7a layout, i.e. two-way operation on Pickering Street, with the design modified to allow egress from Armley Park Road and reduced parking and loading restrictions.

This recommendation is based on detailed modelling outputs and review of alternative options and is considered to provide the biggest benefits for minimal impacts. A step change in bus journey times and reliability locked in through physical infrastructure, along with cycle and pedestrian benefits against a small number of on-street parking spaces where alternative provision is available

It is recognised that for a small number of local stakeholders this approach will not be supported. Objections to the traffic regulation orders required to make the scheme work will almost certainly be received, with the potential for further challenge should the Council proceed with the scheme. The LPTIP team will update stakeholders to explain the process undertaken and scheme benefits in advance of the formal TRO consultation, however this is unlikely to placate those directly affected. The project team have responded to stakeholder concerns through a pause in scheme development, including a delay to the construction start date, changes to allow egress from Armley Park Road and reducing the extent of proposed parking restrictions on Pickering Street, Pickering Mount and Canal Road.

## APPENDIX A – VISSIM SUMMARY COMPARISON (OPT 7A, 9 & 10)

AM Peak Hour	Route	Journey Time (s)						
		Base	Option 7a	Option 9	Option 10	Diff Base - Option 10	Diff Option 7a - Option 10	Diff Option 9 - Option 10
General Traffic	A647 EB	1082	876	1155	895	-186	20	-260
	A647 WB	248	208	212	219	-29	11	7
	Canal Road / Ledgard Way NB	144	369	703	372	227	2	-332
	Canal Road / Ledgard Way SB	81	84	771	97	16	13	-674
Buses	A647 EB	1172	789	867	790	-382	1	-76
	A647 WB	400	380	381	381	-20	1	0
	Canal Road / Ledgard Way NB	228	610	803	612	384	3	-191
	Canal Road / Ledgard Way SB	112	119	849	126	14	7	-723

PM Peak Hour	Route	Journey Time (s)						
		Base	Option 7a	Option 9	Option 10	Diff Base - Option 10	Diff Option 7a - Option 10	Diff Option 9 - Option 10
General Traffic	A647 EB	583	454	522	456	-127	2	-66
	A647 WB	601	244	248	243	-358	-1	-5
	Canal Road / Ledgard Way NB	82	76	426	91	8	15	-335
	Canal Road / Ledgard Way SB	226	91	468	98	-128	7	-370
Buses	A647 EB	770	612	735	607	-163	-5	-128
	A647 WB	765	397	399	400	-365	4	1
	Canal Road / Ledgard Way NB	141	164	412	170	29	6	-242
	Canal Road / Ledgard Way SB	228	124	318	125	-103	1	-193

## APPENDIX B – OPTION 10 PROPOSED TROS

