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## Appendix A. Temporary Carriageway Proposals

## 1. Introduction

Jacobs (formerly CH2M) are involved in the design and planning application of the Oxford Flood Alleviation Scheme (OFAS). During consultation on the planning application National Highways (NH, formerly Highways England) raised issue with the proposal to close Old Abingdon Road and Kennington Road for up to 15 months in order to construct new bridges beneath the highway. NH were concerned that the redistribution of traffic due to these closures would detrimentally impact on the operation of Hinksey Interchange and subsequently the A34 Trunk Road. To ascertain the potential scale of any problem that might arise the Environment Agency (EA) commissioned Atkins, via Oxford County Council, to investigate the impact of the closure using an existing, calibrated VISSIM model of the local highway network. The results indicated that the impact of traffic redistribution would indeed add to existing congestion at Hinksey Interchange and on A34. This led to the appraisal of several alternative construction methodologies for the bridges and highway. The methods which offered the most suitable solutions were:

- The introduction of single lane shuttle working rather than closing the roads entirely; and
- The construction of a temporary carriageway to the south of the works area for use during the consecutive closures of Old Abingdon Road and Kennington Road.

The single lane working option was also modelled by Atkins. The results indicated that, again, impacts extended to Hinksey Interchange and the A34 and thus it is considered likely that HE would be opposed to this temporary solution.

Consequently, consideration of a temporary carriageway to the south of the works area, through Kendall Copse West, has been taken forward. The Atkins model report noted that such an option would maintain two-way flow through the area and would therefore not require any additional modelling. In turn this suggests that the impacts of providing a two-way diversionary route would be low and likely to address NH concerns.

This note is intended to offer a comparison between the existing Old Abingdon Road and Kennington Road carriageways and the proposed temporary route carriageway to be constructed and used in two phases while new bridges are constructed on Old Abingdon Road and Kennington Road.

## 2. Existing Layouts

This Chapter sets out the existing conditions of the short section of Kennington Road and Old Abingdon Road which will be closed whilst the bridges are constructed.

### 2.1 Kennington Road

Kennington Road is the principal road through the village of Kennington, it provides a link to Radley and the north eastern parts of Abingdon.

It is envisaged that only the northern most section of Kennington Road will be replaced by temporary carriageway, over a distance of approximately 40m. Along this section Kennington Road has a width of around 9.3m which increases towards its junction with Old Abingdon Road to accommodate two lanes of traffic at the give way line. Although subject to a 60 mph speed limit, vehicle speeds are restricted by the presence of the junction and an advisory cycle lane. There is a footway on its northeastern side with an approximate width of 1.8m. The carriageway is bordered by a narrow grass verge prior to a fence line delineating the area known as Kendall Copse.

### 2.2 Old Abingdon Road

Old Abingdon Road connects the A423 Southern By-Pass with the A4144 Abingdon Road, and includes a junction with Kennington Road. There are a mix of land uses on either side of the carriageway including residential dwellings; Redbridge Hollow caravan park; a P&R site; retail units; and a household waste recycling centre.

It is envisaged that a short section of the road, approximately 40m south of its junction with Redbridge Hollow continuing to the junction with Kennington Road will be replaced with temporary carriageway. Although subject to a 60 mph speed limit, vehicle speeds through this section of Old Abingdon Road are restricted by side road accesses, minor junctions, and limited forward visibility. The carriageway is approximately 7.3m wide and has a footway on its western side only, which is separated from the carriageway by a narrow grass verge. The highway is bounded by trees and verges, with a fence line on its' south east side marking Kendall Copse, and dwellings and grass land to the north west.

### 3. Temporary Carriageway Layout

It is proposed that the temporary carriageway will have a design speed of 32 kph and as such will be subject to a 20 mph speed limit. This limit is proposed to cover the length of the temporary carriageway and is planned to begin at the terminus of the 30 mph limit on Old Abingdon Road to a point south west of the tie-in between the temporary carriageway ties and Old Abingdon Road, in the vicinity of the A423. Drawings showing proposals for the temporary carriageway are included in Appendix A.

## 4. Comparison

Tables 4.1 and 4.2 below provide a comparison of Kennington Road and Old Abingdon Road with the proposed temporary carriageway.

Table 4.1 Comparison of Kennington Road and the proposed temporary carriageway

Feature	Kennington Road	Temporary carriageway
Speed limit	60 mph	20 mph
Vehicle speed	~20 mph	~20 mph
Carriageway width	9.3m	7.0m
Length	40m	200m
Footway provision	One side, 1.8m	One side 1.8m

Table 4.1 demonstrates that although the speed limits of the two sections of carriageway vary, the speeds that vehicles travel is unlikely to change, due to existing road geometry, junction layout and forward visibility. The section of Kennington Road which is being replaced is directly adjacent to its junction with Old Abingdon Road and thus vehicles will either be slowing to give way or accelerating from a lower speed when departing the junction. In addition, the narrower width of the temporary carriageway will assist in controlling vehicle speeds to 20 mph without the need for enforcement, thus enhancing the safety of the route. The proposed diversion via the temporary carriageway will be 160m longer than the section to be closed and, with the change in priority created by the closure of a section of Kennington Road, will allow for unopposed movement along the remainder of its length, significantly reducing the likelihood of stationary vehicles waiting to make this movement and also reduce the potential for queues to extend back towards A423.

Table 4.2 Comparison of Old Abingdon Road and the proposed temporary carriageway

Feature	Old Abingdon Road	Temporary carriageway
Speed limit	60 mph	20 mph
Vehicle speed	~ 30 mph	~20 mph
Carriageway width	7.3m	7.0m
Length	115m	175m
Footway provision	One side, 1.8m	One side 1.8m

Table 4.2 demonstrates several similarities in the two carriageways, with the exception of the designated speed limits and carriageway lengths. However, whilst this section of Old Abingdon Road is subject to a 60 mph speed limit vehicles rarely reach this speed, due to the tight radii of the turns on/off the A423 and the short distance to the 30 mph section of Old Abingdon Road (approximately 300m north). Furthermore, the limited forward visibility and junction locations will act to further limit vehicle speeds.

On considering the length of the carriageways, Table 4.2 shows that the proposed carriageway is approximately 60m longer than the permanent route along Old Abingdon Road. Whilst this will provide a small increase in the overall distance travelled, given that there will be no change in vehicle speeds, traffic restrictions or queue generation, it is not considered to have a material impact on the overall carriageway operation and journey time.

## 5. Conclusion

This note sets out a comparison between the existing sections of Kennington Road/Old Abingdon Road and the temporary carriageway which would be put in place during the works to facilitate construction of the OFAS scheme. The note demonstrates that the temporary carriageway will not exacerbate conditions currently experienced along Kennington Road/Old Abingdon Road, with no risk of creating increased delay, journey time or the potential for additional queuing.

Given the data presented it is the professional opinion of the Jacobs team that the temporary carriageway will operate in a similar manner to the existing sections that it will replace. The temporary carriageway will maintain a free flow of traffic away from the A423 and thus the A34 and will consequently not create any scenarios which will result in unacceptable additional queuing and mainline delay. In addition, during the closure of Kennington Road, the temporary carriageway will remove the existing conflict between traffic turning from Old Abingdon Road into Kennington Road thus preventing stationary traffic blocking back onto the A423 which could possibly occur in the existing arrangement.

Following consideration of potential schemes to alleviate traffic pressures during construction of the OFAS scheme, and prevent any queuing blocking back along Old Abingdon Road to A423, or further to A34, it is concluded that the construction of a temporary carriageway, running adjacent to the existing roads (as shown on the drawing in Appendix A) would provide the most effective solution.

## Appendix A. Temporary Carriageway Proposals



