

Wokingham Major Highways Programme - South Wokingham Distributor Road (SWDR) - Western Gateway Phase 2 (WG2)

Revised layout following planning approval and
comparison of shared use routes with LTN 1/20

Wokingham Borough Council

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Contents

1.	Introduction	1
2.	Alternative Options considered	1
2.1.	Dutch-style roundabout	1
2.2.	Options to remove proposed Departure from Standards at east footway	1
3.	Revised Layout	2
3.2.	LTN 1/20 recommendations	2
3.3.	Comparison of proposed layout to LTN 1/20	4

1. Introduction

Wokingham Borough Council (WBC) has requested this technical note to set out the changes to the proposed Western Gateway 2 scheme layout since planning approval was granted, and the alternative options considered during the change process.

Changes to the layout are at the south arm of the new normal roundabout where this now has a reduced carriageway width of 6.2m (two 3.1m lanes) to match and extend the existing width further south along Finchampstead Road up to the entry flaring at the start of the roundabout.

This reduced width has enabled the off-carriageway facilities for non-motorised users (NMU), pedestrians and cyclists, to be improved. These improvements are outlined below.

This technical note also compares the revised layout against policy document LTN 1/20.

2. Alternative Options Considered

2.1. Dutch-style roundabout

Following planning approval WBC requested a Dutch-style roundabout be considered. Geometry for this was obtained from the CROW-Fietsberaad guidance document and is intended to reduce vehicle entry speed and improve visibility between vulnerable users including pedestrians and cyclists, and motorised vehicles. The Dutch-style roundabout also typically provides a separated cycle track around the perimeter of the roundabout with single lane motor vehicle lanes on entry and exit. As a result of this geometry, these junctions tend to require more space than normal roundabouts while key components to operational performance such as circulatory width, entry radii and entry width are all reduced.

Upon review it was not possible to implement a Dutch-style roundabout entirely, due to existing constraints such as private drives, and only one of the three arms was able to meet the requirements for crossing width and length. This would not offer any significant benefits over the approved layout.

The Dutch-style roundabout was also assessed for operational capacity which resulted in significant and unacceptable queue length and delay for motor vehicles that would not support the proposed South Wokingham Distributor Road purpose.

2.2. Options to remove proposed Departure from Standards at east footway

The planning approved layout included an application for a Departure from Standards (DfS) to convert the existing east pedestrian only footway to a shared use unsegregated path for pedestrians and cycles. The DfS was raised due to the existing footway width being less than the absolute minimum requirement. The application was not accepted therefore six alternative options were prepared that eliminated the DfS as follows:

- Option 1A – Widen east footway to minimum 2.5m
- Option 1B – Widen east footway to minimum 2.5m (alternative to Option 1A)
- Option 2A – Widen east footway to minimum 3.0m
- Option 2B – Widen east footway to minimum 3.0m (alternative to Option 2A)

- Option 3A – Widen east footway to minimum 2.5m and widen west footway to 2.5m
- Option 3B – Widen east footway to minimum 3.0m and widen west footway to 2.5m

These options were considered by WBC which resulted in a request to undertake traffic modelling for Option 3B with a 2-lane entry as proposed, and an alternative single lane entry. The modelling for the single lane entry performed unacceptably and was therefore discounted.

WBC confirmed that option 3B was their preferred option and is to be implemented as a change to the planning approved layout and these changes are set out in section 3.

3. Revised Layout

The revised layout is shown in comparison to the planning layout on sketch WMHP-TG-WG2-SK-HI-0210-P01 (Appendix A).

East side of Finchampstead Road.

The existing east side has a 2.5m to 3m wide footway from 100 Finchampstead Road south to Tangley Drive. From 100 Finchampstead Road north the footway narrows to under 2m in the existing situation. This section will be widened to 3m up to the proposed signal-controlled crossing immediately south of the existing railway bridge in the revised layout.

West side of Finchampstead Road.

The existing east side has a 1.2m to 1.5m wide footway from Tangley Drive north to the proposed roundabout. The proposed layout will gradually widen the footway from Tangley Drive to the boundary between 91 and 93 Finchampstead Road until the footway is 2.5m wide, staying at this width up to the boundary of 87 and 89 Finchampstead Road where it widens to 3m around the roundabout to match the approved layout.

3.2. LTN 1/20 recommendations

LTN 1/20 provides advice on geometric design of shared use facilities. Paragraph 5.5.3 of LTN 1/20 states:

Where a route is also used by pedestrians, separate facilities should be provided for pedestrian and cycle movements. However, away from the highway, and alongside busy interurban roads with few pedestrians or building frontages, shared use might be adequate (see Chapters 6 and 8). Such facilities should be designed to meet the needs of cycle traffic, however – including its width, alignment and treatment at side roads and other junctions. Conversion of existing footways to shared use should only be considered when options that reuse carriageway or other (e.g. verge) space have been rejected as unworkable.

LTN 1/20 also states, in paragraph 6.5.6 that:

Shared use may be appropriate in some situations, if well-designed and implemented. Some are listed below:

- *Alongside interurban and arterial roads where there are few pedestrians;*
- *At and around junctions where cyclists are generally moving at a slow speed (see Figure 6.27), including in association with Toucan facilities;*

- *In situations where a length of shared use may be acceptable to achieve continuity of a cycle route; and*
- *In situations where high cycle and high pedestrian flows occur at different times (also see Figure 6.27).*

As paragraph 5.5.3 states facilities should be designed to meet the needs of cycle traffic therefore based on the low demand an absolute minimum width of 2m for two-way track is acceptable as stated in LTN 1/20 table 5-2 below

Table 5-2: Cycle lane and track widths

Cycle Route Type	Direction	Peak hour cycle flow (either one way or two-way depending on cycle route type)	Desirable minimum width* (m)	Absolute minimum at constraints (m)
Protected space for cycling (including light segregation, stepped cycle track, kerbed cycle track)	1 way	<200	2.0	1.5
		200-800	2.2	2.0
		>800	2.5	2.0
	2 way	<300	3.0	2.0
		>300-1000	3.0	2.5
		>1000	4.0	3.0
Cycle lane	1 way	All – cyclists able to use carriageway to overtake	2.0	1.5

*based on a saturation flow of 1 cyclist per second per metre of space. For user comfort a lower density is generally desirable.

In addition to the track width, clearance is required to vertical objects such as kerbs, walls and fences. The maximum additional width required is up to 0.5m for objects over 600mm high, where objects are lower this clearance can be reduced. See LTN 1/20 Table 5-3 below.

Table 5-3: Additional width at fixed objects

Type of edge constraint	Additional width required to maintain effective width of cycle track (mm)
Flush or near-flush surface including low and splayed kerbs up to 60mm high	No additional width needed
Kerbs 61mm to 150mm high	200
Vertical feature from 151mm to 600 mm high	250
Vertical feature above 600 mm high	500

LTN 1/20 Table 6-1 provides minimum recommended horizontal separation between carriageway and cycle tracks. The absolute minimum for this location which has a speed limit of 30mph is 0m.

Table 6-1: Minimum recommended horizontal separation between carriageway and cycle tracks*

Speed limit (mph)	Desirable minimum horizontal separation (m)	Absolute minimum horizontal separation (m)
30	0.5	0
40	1.0	0.5
50	2.0	1.5
60	2.5	2.0
70	3.5	3.0

*Separation strip should be at least 0.5m alongside kerbside parking and 1.5m where wheelchair access is required.

3.3. Comparison of proposed layout to LTN 1/20

The design approach for the proposed layout is in keeping with both paragraphs 5.5.3 and 6.5.6 and Table 5-2 which is supported by the observed pedestrian and cycle count data that recorded very low numbers (<300 combined) even at peak times. Furthermore, WBC's Local Cycling and Walking Infrastructure Plan (LCWIP) dated March 2023 modelled scenarios to predict demand which even in the best-case scenario "Go Dutch" is only likely to result in 100-250 cycle movements along Finchampstead Road south where the proposals are located. The LCWIP paragraph 4.2.3 states:

Scenarios were modelled in the study area for this LCWIP: "Government Target (Near Market)" and "Go Dutch". The latter scenario looks at the distances between homes and workplaces and applies Dutch willingness to cycle to these, imagining how many additional trips could be cycled if there was Dutch-style cycle infrastructure in the UK and Dutch levels of willingness to cycle.

Given the constraints along the Finchampstead Road corridor it is unlikely that equivalent Dutch-style infrastructure can be implemented and without this the predicted demand is unlikely to be realised.

It is for these reasons that the provision within the revised layout of a minimum 2m wide effective track width (Table 5-2) with additional width of up to 0.5m for clearance where vertical objects are present (Table 5-3) and 0m to 0.5m horizontal separation (Table 6-1) resulting in a paved width of 2.5m to 3m is as per the minimum recommended values in LTN 1/20 for a shared use facility of this nature in this location with the predicted demand.

The proposed shared use NMU facilities are illustrated in Figure 1 below in green with the respective widths and commentary included for reference.

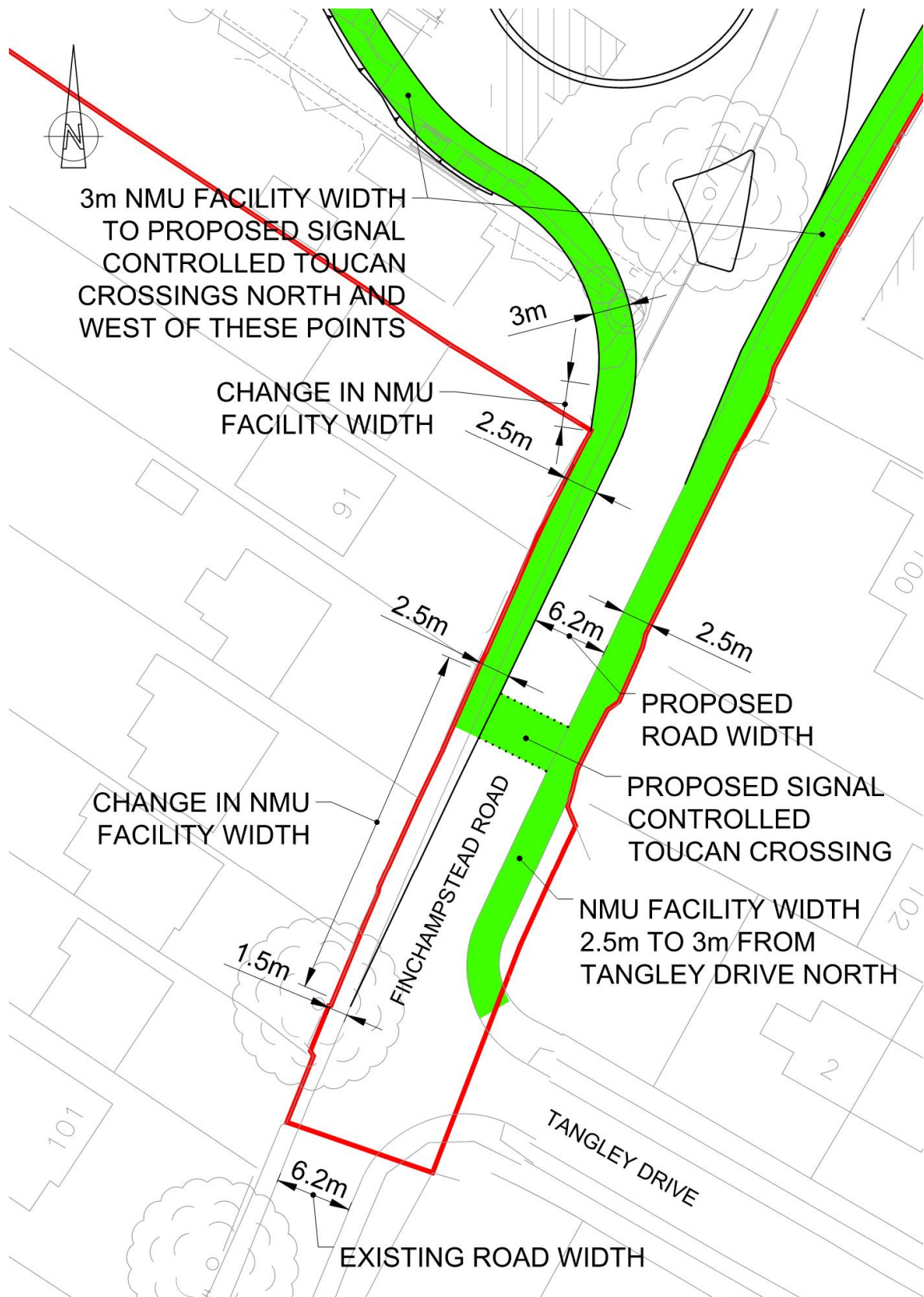
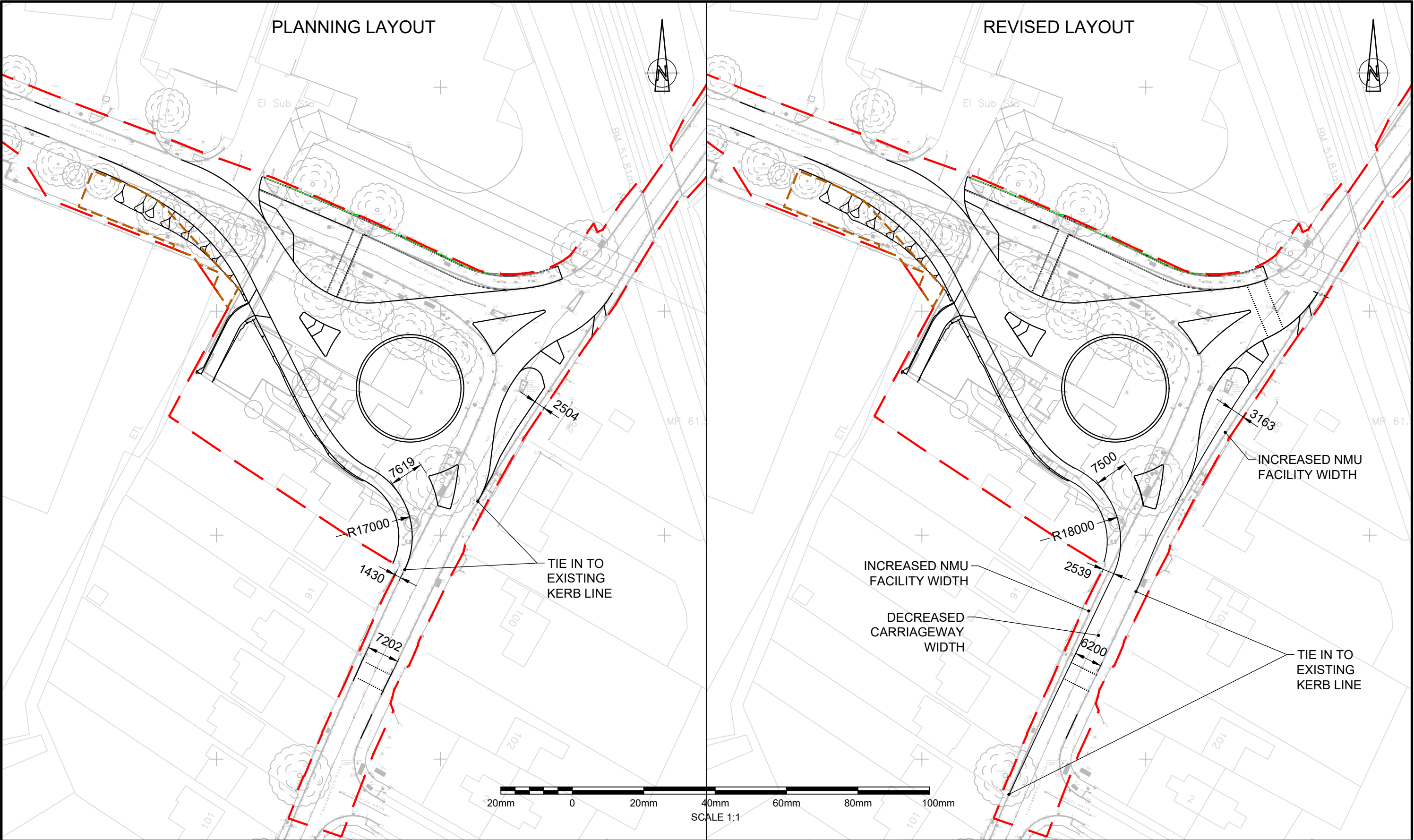


Figure 1 – Proposed shared use NMU routes in green and respective widths.

APPENDIX A

WMHP-TG-WG2-SK-HI-0210



PROJECT TITLE
WOKINGHAM MAJOR HIGHWAYS
PROGRAMME - WESTERN GATEWAY 2

SKETCH TITLE
REVISED LAYOUT COMPARISON

REV.	P01			
BY	DJF			
CHK'D	JC			
APP'D	JC			
DATE	24.04.24			
SKETCH. No. WMHP-TG-WG2-SK-HI-0210				

DO NOT SCALE
FROM THIS SKETCH

DRAWN DJF	REVISION P01
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