

Redevelopment of MOD Bicester - Graven Hill Walking and Cycling Access Strategy (v2)

1. Introduction

1.1 Background

This Technical Note is a revised version of one produced in September 2012 by AMEC Environment and Infrastructure UK Ltd (AMEC) in response to a request from Defence Infrastructure Organisation (DIO) to review the pedestrian/cycle movement strategy for the Redevelopment of MOD Bicester. AMEC produced a Transport Assessment (TA) and Travel Plan in support of a planning application which incorporated a walking and cycling strategy that included the following external connections.

- Pedestrian crossings on A41/B4100/A4421 roundabout - an improvement scheme was identified which provides a signal controlled crossing on every arm of the five arm roundabout.
- Toucan crossing on A41 - at a location some 165m to the west of the A41/B4100/A4421 roundabout, where there is evidence of an existing informal crossing point, alongside a speed reduction from 60mph to 40mph.
- Pedestrian/cycle underpass - this is accessed via a track, 270m of which is beyond the red line boundary of the application and the MOD ownership. Use of the underpass would require access rights to be established and upgrading to increase its attractiveness for use.

Figure 1 illustrates the pedestrian options and also indicates the existing pedestrian footways.

Investigation by DIO into the rights of access on the approach to the underpass on the southern side of the A41 and rights of access and land ownership on the northern side approach has been inconclusive to date. At a meeting between DIO, Oxfordshire County Council (OCC) and Cherwell District Council (CDC) in September 2012, it was identified that OCC, as highway authority, would progress the delivery of the underpass route. It was agreed that a planning condition would be developed which sets out the aim to deliver the underpass route but if that proves undeliverable, DIO will be required to implement an approved alternative. As a consequence, DIO has requested that AMEC put forward an alternative pedestrian/cycle route for review and approval by OCC.

1.2 Structure of Technical Note

The Technical Note includes the following:

- review of pedestrian and cycle strategy options; and
- makes conclusions.

2. Walking and Cycling Access Strategy

2.1 Oxfordshire County Council Response

Comments on the LINSIG junction modelling of the proposed improvement scheme at the A41/B4100/A4421 roundabout have been received from OCC. A response in the form of a Technical Note with updated junction modelling, has been provided by AMEC (September 2012, document reference 27808rr260).

Feedback from OCC has indicated that the independent Toucan Crossing on the A41 would not be favourable in the current situation, identifying that it is unlikely that the speed would be reduced to 40mph.

2.2 Review of Strategy

AMEC has undertaken a review of the walking and cycling strategy in the light of the comments by OCC, as well as the issues relating to access and use of the underpass.

2.2.1 A41/A4421/B4100/Graven Hill Roundabout Pedestrian Crossings

The proposed junction improvement scheme comprises fully signalling the junction on all five arms, and providing pedestrian crossing points on all entry and exit links which has been tested using LINSIG modelling.

For a junction of this nature, pedestrians are only ever going to cross the entry links when the circulatory carriageway is on green (to vehicular traffic) and the entry arm on red (to vehicular traffic). The LINSIG model has been set up so that the circulatory carriageway is running for longer than the time it takes to cross and clear the pedestrian crossing (around 11 or 12 seconds depending on the arm) and intergreen times either side to clear. This means that the junction will always give pedestrians enough time to cross the entry arms when the circulatory carriageway is operating.

It is also important to point out that the modelling approach assumes a worst case scenario, that pedestrians are crossing each entry arm of the junction in each cycle, and that the crossings on the exit arms are also getting green time in every cycle. This may not be the case in reality, as pedestrians may predominantly choose to cross the A41 west arm to access the town centre, and as a consequence, there would be low numbers crossing at the other arms of the junction, therefore the, crossings on these arms would be infrequently called.

The results of the modelling indicated that the junction would continue to operate with adequate capacity in what is a worst case assessment which assumes pedestrian crossings are called on all arms.

Figure 2 illustrates indicative reinstatement and improvements to the pedestrian footway provision around the junction and on the route to Bicester town centre. This shows a 3m shared use cycle/pedestrian route along the northern side of the A41 which would be an improved replacement of the existing footway, which is currently approximately 2m in width. This route runs through to the southern side of the B4100 London Road. It is also proposed to provide a new 3m section from the toucan crossing on the London Road arm of the roundabout, through to the existing provision. At this point, a pedestrian refuge is proposed for pedestrians to cross to the existing footway on the northern side. Cyclists would be expected to join the road. Whilst this is not an ideal solution, there are constraints with respect to available width alongside the residential property boundaries. Providing a pedestrian refuge at the location identified is the optimum solution as there is sufficient road width to accommodate it.

The scheme proposals provide an appropriate and acceptable pedestrian and cycle link to the following locations:

- Bicester town centre and Bicester town centre railway station via London Road (Bicester town centre is approximately 1.44km or about 20 minutes, taking into account waiting for crossing opportunities) from the beginning of the track off Graven Hill Road);
- the employment areas to the north via the A4421; and
- the residential areas between London Road and the A4421.

Conclusion

It is considered that the scheme proposals provide an appropriate and acceptable pedestrian and cycle link to and from the site to the locations identified above for the following reasons:

- the links across the roundabout are near to the main hub of the development proposal - the location for the supermarket, offices, hotel/pub/restaurant, the schools and the community hall;
- the crossings provide direct links to the A4421 and the residential and employment areas located off the A4421;
- pedestrians and cyclists are able to cross safely during full signalised crossing time; and
- the route to the town centre is roadside and is overlooked and therefore doesn't have security issues.

There are opportunities to improve the link further by providing a 3m width shared use footway/cycleway on the southern side of London Road up to an existing provision, thereby completing a connection to the north side of the A41. This would mean that pedestrians/cyclists to Bicester town centre would need to cross the A41 arm only at the roundabout.

2.2.2 Toucan crossing on A41

The pedestrian and cycle link proposal is provide an at-grade pedestrian/cycle crossing on the A41 in the form of a Toucan crossing. The crossing would be accessed from the site along a 220m section of the route that leads to Langford Park Farm which is within the ownership of the MOD. The crossing would provide a connection to an existing footway across the highway authority land to a footway along the southern side of London Road which also leads to a bus stop.

This scheme would require:

- a speed limit reduction on the A41 to at least 40mph;
- speed management measures; and
- appropriate signing to warn drivers of the pedestrian crossing location.

The scheme proposals would provide a pedestrian and cycle link to the following locations:

- Bicester town centre and Bicester town centre railway station via London Road.

Conclusion

It is considered that the scheme proposal would not provide the most appropriate crossing point of the A41 for the following reasons:

- OCC has indicated that it is not in favour of a reduction in speed limit to 40mph along this stretch of the A41 which is part of its primary network, and has concerns regarding the safety implications of the crossing location;
- the 220m section of route on the southern side of the A41 is not overlooked and is also the vehicular access to the farm, and therefore there may be security and safety issues; and
- current traffic levels along the A41 are high and therefore the crossing would be not conducive to pedestrian/cyclist amenity and may be intimidating to use.

This crossing scheme should be reconsidered in the event of the construction of potential A41 perimeter road through the southern section of the Graven Hill site as this would have the following implications which would address the current issues with the crossing location:

- traffic volumes would be significantly reduced as the strategic A41 traffic would use the perimeter road; and
- the section of A41 up to the A41/A4421/B4100/Graven Hill roundabout could be downgraded, enabling a change in characteristic of the route, incorporating speed reduction and pedestrian and cycle links between the site, Bicester Business Park, the Kingsmere development and Bicester Village.

It is understood that OCC has been reviewing the implications of the perimeter road on the existing highway network through undertaking SATURN traffic model runs, and it may be possible to obtain this data to reappraise the feasibility of the Toucan crossing.

2.2.3 Pedestrian/cycle underpass

The existing pedestrian underpass is accessed from the north-west of the Graven Hill E Site via a 500m track that leads to and is used by Langford Park Farm, therefore the route is not exclusive to pedestrian and cyclist use. In addition, the section of route within the MOD boundary would not be overlooked by development as this land is allocated to future development, and the remaining section to the underpass would also not be overlooked as this is farmland. Furthermore, the route is bounded by hedgerow on its northern side and is not overlooked by the A41, indicating potential safety and security issues with regards to the southern side connection to the underpass.

The underpass leads to a footpath on the northern side of the A41 which runs along an area of waste land on the western side and becomes an access road to four properties off the eastern side which are located off London Road. Therefore, again, the route is not exclusive to pedestrian and cyclist use, and there are potential safety and security issues with regards to the northern side connection to the underpass.

With regards to the underpass itself, its condition is good and it is wide enough to accommodate pedestrians and cyclists, however, the appearance and perceived safety of the route would need to be improved.

The proposals for the underpass link included improved ground surfacing, entrance spaces, vehicle access restraints, wall and ceiling finishes and lighting.

The scheme proposals would provide a pedestrian and cycle link to the following locations:

- Bicester town centre and Bicester town centre railway station via London Road (Bicester town centre is approximately 1.54km, or about 18 minutes journey time, from the beginning of the track off Graven Hill Road).

Conclusion

It is considered that the underpass does not provide the most appropriate crossing point of the A41 and link to Bicester town centre from the site for the following reasons:

- the routes to the underpass on both the northern and southern side are not entirely traffic free as they are also vehicular accesses, and would therefore require either provision of a separate pedestrian/cycleway, or appropriate shared use surfacing and road signs.
- the routes to the underpass on both the northern and southern side are not overlooked, bound by hedgerows on the southern side and present safety and security issues, particularly at night; in the case of the southern route, this is a distance of 500m (approximately a 6 minute walk at a speed of 5km/h); and
- compared to the at-grade crossing at the roundabout, the underpass route is marginally longer by 100m.

The underpass route could be reconsidered as an acceptable pedestrian and cycle link to the town centre in the event of construction on the future development land, although would still have security issues with the remaining southern section of the route and the northern connection. If, at some point in the future, development growth were to expand further into these areas, this link could constitute one of the main pedestrian and cycle routes, although alongside the crossings at the roundabout.



3. Conclusion and Recommendations

3.1 Conclusion

The main conclusion is that the pedestrian and cycle link to Bicester town centre, and eastern areas of Bicester via the proposed crossing on all arms of the A41/A4421/B4100/Graven Hill roundabout is an appropriate solution in the absence of the availability of the pedestrian underpass route. This provides a route which is comparable in journey time and distance.

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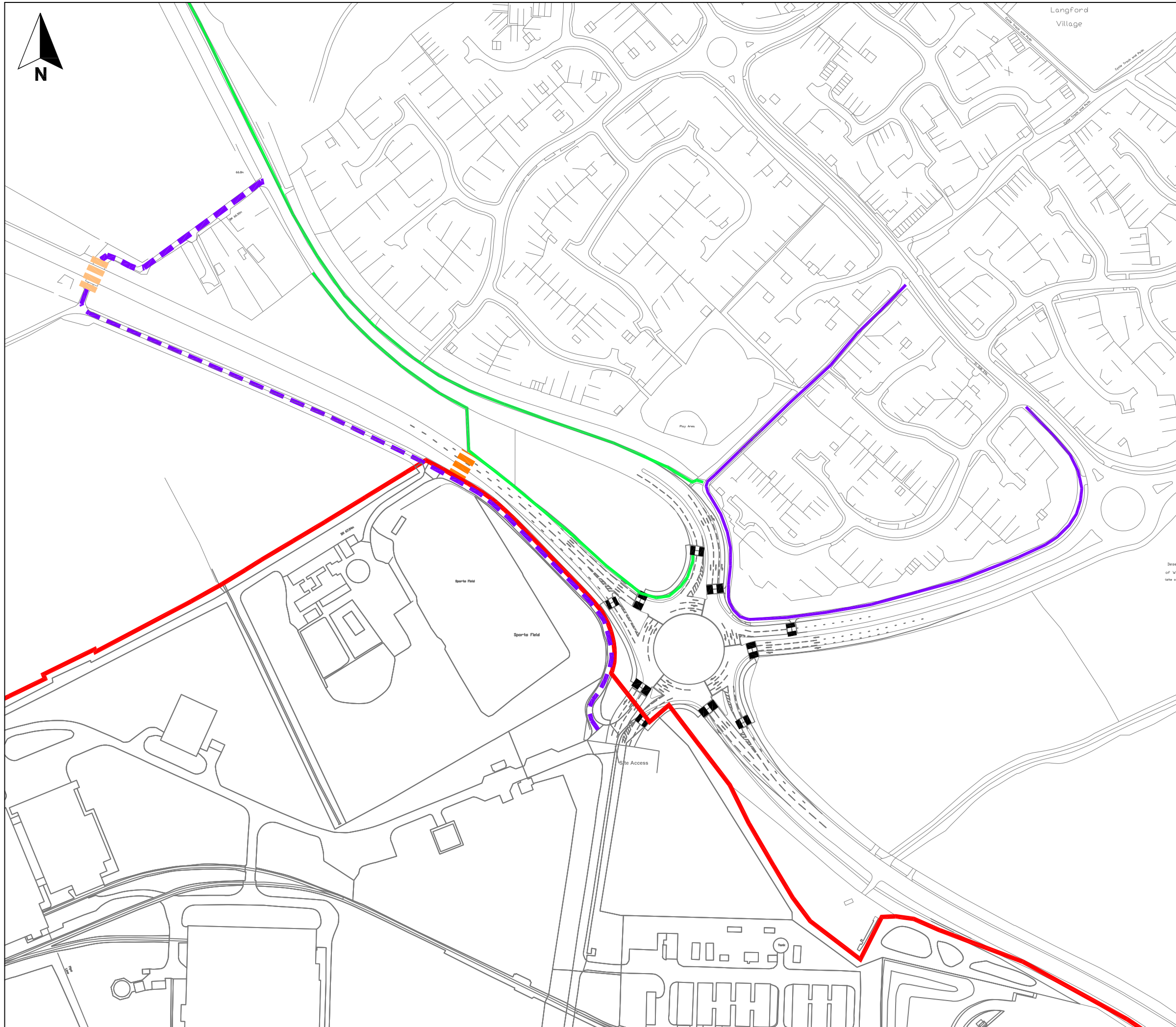
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Key

	Site boundary
	Pedestrian crossings
	Pedestrian / cycle route
	Underpass
	Toucan crossing
	Existing footway
	Existing pedestrian / cycle route

0 m 150 m
 Scale 1:2500 @ A3



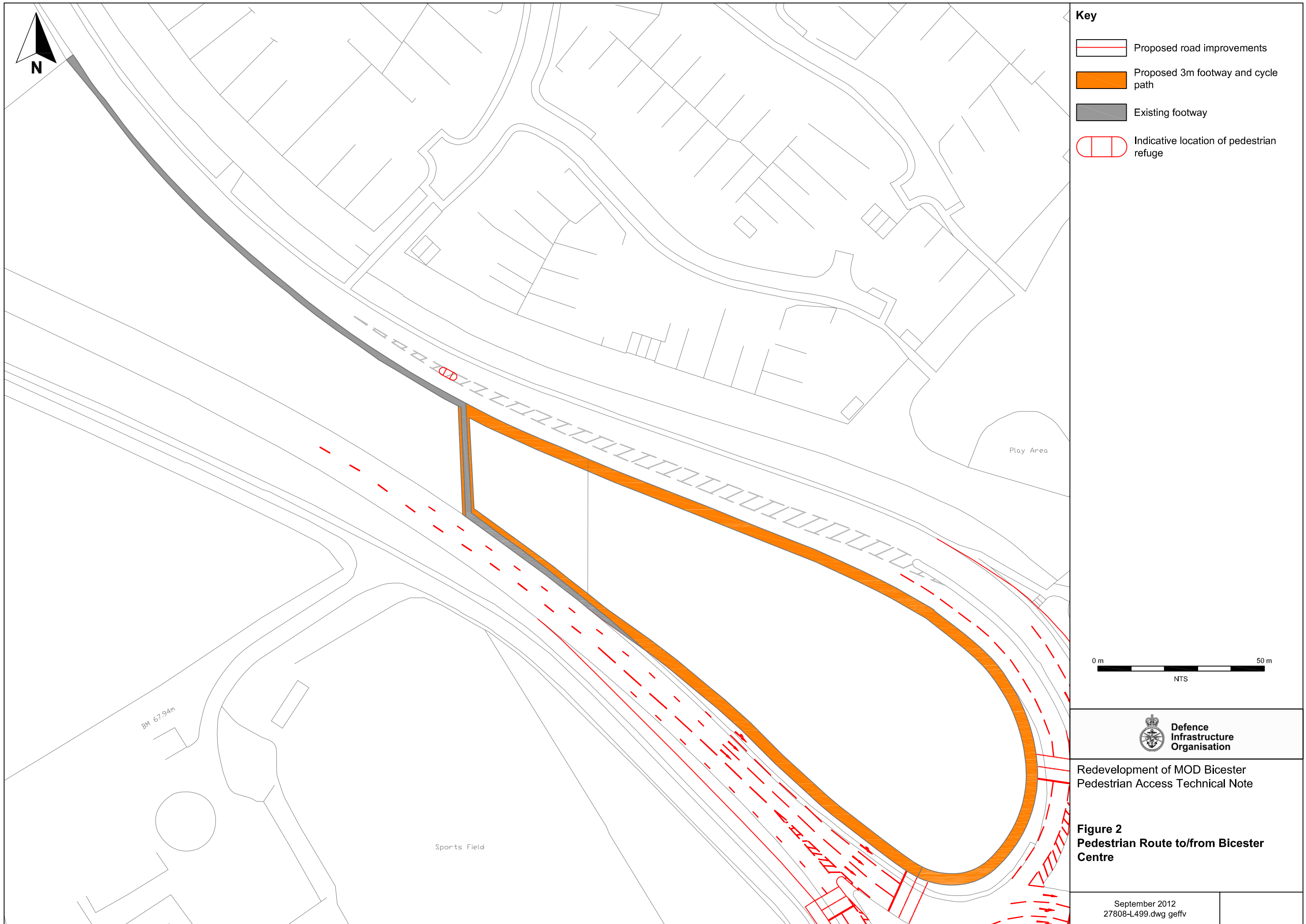
Redevelopment of MOD Bicester
 Pedestrian Access Technical Note





Figure 1
Pedestrian Access Options


September 2012
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- Key**
-  Proposed road improvements
 -  Proposed 3m footway and cycle path
 -  Existing footway
 -  Indicative location of pedestrian refuge

0 m  50 m
NTS



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Pedestrian Access Technical Note

Figure 2
Pedestrian Route to/from Bicester Centre

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