

Why underpasses?

The case for safe, attractive and convenient
underpass crossings of Horsham's A264
Northern Bypass



Horsham District Cycling Forum

Background

The plans released for the Land North of Horsham show a series of large, signal-controlled roundabouts.

These roundabouts are either considerable expansions of existing roundabouts - Rusper Road, Great Daux, and Moorhead - or are entirely new.

The proposed crossings for people walking and cycling at these roundabouts involve a series of toucan crossings, at-grade - i.e., at the same level as motor traffic. The plans show one further crossing - a single bridge between the Rusper Road and Moorhead roundabout.

These plans will result in walking and cycling across the A264 being less attractive than driving, particularly due to the delay involved in crossing these roundabouts. Whereas people driving will only have to wait at one signal to cross, those on foot or on bike will have to wait at up to four separate crossings.

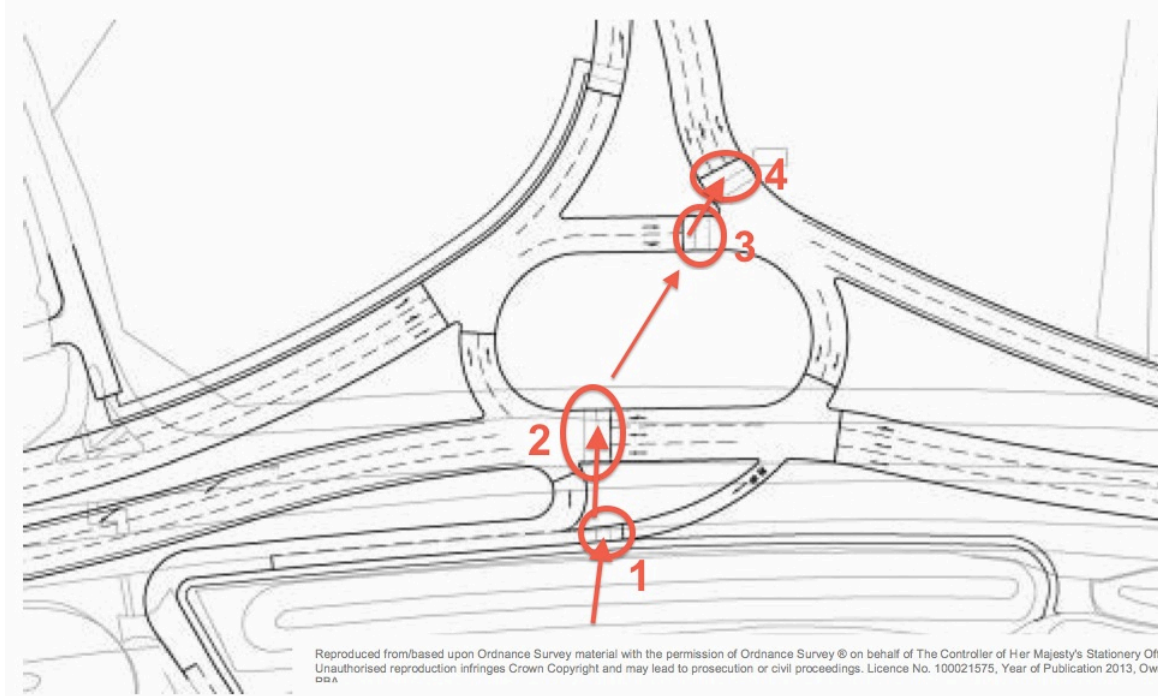
For this reason - and for a number of others, set out below - we think it is an urgent requirement that underpasses are built-in to the changes being made to the northern bypass. Once these roads have been changed, it will be too expensive - and too late - to add underpasses afterwards.

Why underpasses?

Underpasses are **more convenient**.

There is no delay - no waiting for signals to change. By contrast, the proposed roundabout designs on the A264 may require up to four separate crossings, with waits at each, just to cross the road. This is an unacceptable amount of delay.

Figure 2.6: Example of At Grade Signalised Crossings Integrated into Potential A264 Junction



Underpasses are **safe**.

There are no interactions with motor traffic, at all - no chance of people being hit attempting to cross the road instead of waiting for a green signal to cross, for instance.



Underpasses are **more direct**.

They can run under roads in the exact direction they are required. Surface crossings, on the other hand, tend to be placed in inconvenient locations for walking and cycling - usually at the stop lines for motor traffic - requiring lengthy diversions.

Aren't underpasses unattractive?

The Transport, Infrastructure and Flood Risk Report for the land north of Horsham claims:

'At grade' crossings are generally more attractive to pedestrians and cyclists due to reduced distances and the avoidance of ramps or stairs, so are the preferred solution.

However, this is apparently based on the assumption that underpasses cannot be designed well. Good underpasses will be direct, they will have shallow ramps (or no ramps at all), and certainly no steps. As already stated, there is no need to wait to cross the road with an underpass. Underpasses should be open, and wide, with clear sightlines.



Why underpasses instead of bridges?

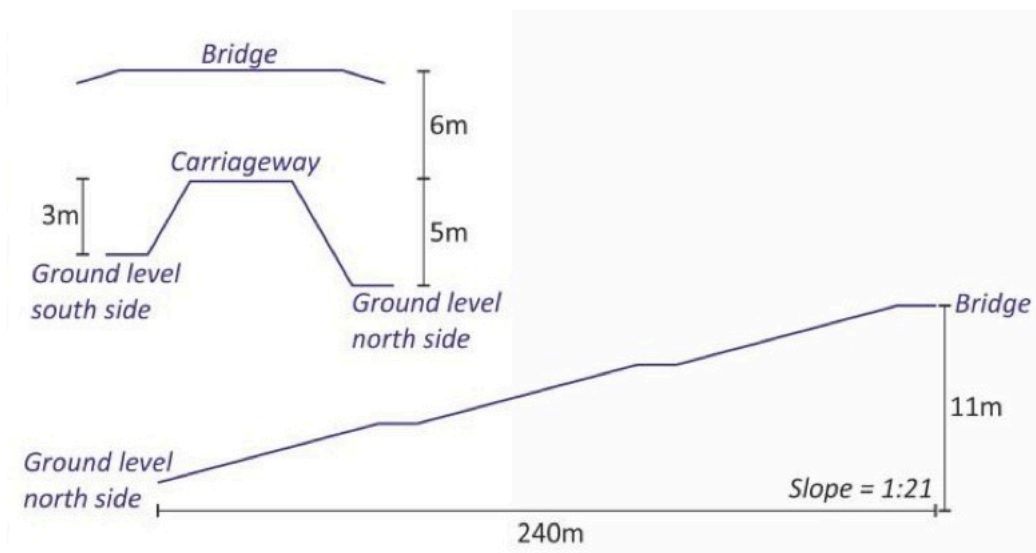
The plans for the North of Horsham development show a single bridge crossing point. Bridges are generally inferior to underpasses, for the following reasons:

- It makes much more sense to place paths for human beings under motor traffic, than placing them above motor traffic, because human beings are much shorter than motor traffic. An underpass only has to accommodate the height of a human being, while a bridge has to accommodate the height of large lorries (plus safe margin). Bridges over roads will therefore require more height gain and loss than an underpass, and consequently more effort for people walking and cycling.
- The speed gained cycling down into an underpass can be transferred into the slope up the other side, making it more manageable. This advantage is not present with a bridge.

This is especially true for crossings of the A264 northern bypass, which is built on an embankment, already 3-5 metres higher than the surrounding ground.

A bridge crossing of this road will require considerable height gain; an underpass crossing would be virtually flat.

This is revealed in the Transport Assessment Report:



The bridge has to scale 5m of embankment, plus a further 6m to a safe height above the bypass itself - a total height gain of 11m, meaning a 240m long approach ramp at around 5% slope (the absolute maximum recommended by international guidance). By contrast, paths could pass through the northern bypass virtually on the flat, at ground level.

Summary

Underpasses may be more expensive than toucan crossings (and more expensive than bridges), but if this development is to be genuinely 'sustainable', then they are an absolute necessity. They would make walking and cycling to and from the new development safe, easy and convenient, away from the noise and danger of the bypass itself.

Allowing people to choose walking and cycling for short trips instead of driving would also reduce congestion on the road network, particularly as roads into and out of Horsham onto the bypass are already heavily congested at peak times, and will only get worse with this new development.

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