

## Illustrative Masterplan – Transport Considerations

1. This note is prepared to highlight the implications of the illustrative masterplan (ref: 333.P.3.9 Rev E) from a transport perspective should the Inspector be minded to include a condition requiring the future reserved matters to be broadly in accordance with that drawing.
2. The Highway Authority has not expressed comments previously on the horizontal alignment of the proposed streets due to the layout being indicative of a possible layout only and nothing more certain than that. By conditioning the illustrative layout, the flexibility required to enable any future reserved matters proposal to comply with any local design guides, design codes and applicable national guidance has been very significantly reduced.
3. The Highway Authority does not consider that the layout allows the Appellant to achieve the required design standard with particular reference to being able to achieve a 20mph design speed. This design speed is a required in:

- Manual for Gloucestershire Streets

“Informal Street” “20mph achieved through measures such as Junction Treatment, surface changes, visual narrowing, central reservations, sensitive parking provision and green infrastructure.”

- Manual for Streets section 7.4

7.4.1 Conflict among various user groups can be minimised or avoided by reducing the speed and flow of motor vehicles. Ideally, designers should aim to create streets that control vehicle speeds naturally rather than having to rely on unsympathetic traffic-calming measures (Fig. 7.14). In general, providing a separate pedestrian and/or cycle route away from motor traffic should only be considered as a last resort (see the hierarchy of provision in Chapter 4).

7.4.2 For residential streets, a maximum design speed of 20 mph should normally be an objective. The severity of injuries and the likelihood of death resulting from a collision at 20 mph are considerably less than can be expected at 30 mph. In addition, vehicle noise and the intimidation of pedestrians and cyclists are likely to be significantly lower.

7.4.3 Evidence from traffic-calming schemes suggests that speed-controlling features are required at intervals of no more than 70 m in order to achieve speeds of 20 mph or less. Straight and uninterrupted links should therefore be limited to around 70 m to help ensure that the arrangement has a natural traffic-calming effect.

Section 7.4.4 provides some tools that could be used to address the design speed.

4. The illustrative layout includes long straight lengths and sweeping bends which provide little deflection. Some straight lengths/sweeping bends are not restrained and show lengths of circa 260m which clearly exceeds the 70m MfS suggests. This situation is compounded by the significant gradient which will also result in increased speed downhill within the site. An

extract has been marked up to indicate the straight lengths at the end of this note. This should be read alongside appendix 12 of Mr Eves Transport Evidence.

5. The layout of the streets appears to follow the contour of the land, presumably reducing the need for excessive cut and fill, and therefore tries to follow the flattest line. This has resulted in the straight lengths being excessive. With one exception the bends are sweeping and unlikely to encourage a reduction of vehicle speed.
6. The tools available to address the required design speed are limited in this instance as the layout does not lend itself to more intensive built form and building lines are set back. Therefore, the only effective options are “bolt on measures” such as speed tables or buildouts.
7. The ‘Local Transport Note 1/07 – Traffic Calming’ provides a comprehensive review of the advantages and disadvantages of various features, and this note does not seek to replicate that detailed appraisal. However, by way of summary there are adverse environmental implications that the Inspector should be aware of that would result from the options.
8. Buildout features (for example chicanes or pinch points) require balanced traffic flow to be effective. Given the sole use is residential, the traffic flow patterns will be tidal (i.e. mostly outbound in the morning and inbound in the evening) and as such there would be little opposing flow to make buildout features effective. Therefore, the only effective feature available would be vertical deflection. This can take several forms of tables, cushions and rollovers, but they all have similar adverse impacts, these can be summarised as:
  - Noise
  - Vibration
  - Vehicles Emissions and air quality
  - Visual Impact
  - Discomfort to Vehicle Occupants
  - Damage to Vehicles
9. Manual for Gloucestershire Streets does not list vertical deflection in the street categories as tools to manage speeds for these reasons. It is however recognised that LTN 1/20 “cycle infrastructure design” does look to use vertical deflection to achieve priority crossings for active travel users, and it can be seen to be a helpful tool to address localised conflict points.
10. Therefore, if the layout is conditioned to be as per the illustrative masterplan the streets would be positioned in a manner where they would be unable to achieve the natural traffic calming benefits that would be expected which would be expected, to the detriment of encouraging active travel. The imposition of features to address this may reduce speeds but would have adverse environmental impacts which wouldn’t otherwise occur. This should weigh against the proposal.
11. Additionally, the indicated side roads do not benefit from turning heads, and whilst this could be rectified the indicative plot positions would conflict with this.

## Conclusion

12. The layout does not appear to conform with Manual for Gloucestershire Streets and Manual for Streets. It would be expected that any layout would be considered as part of a wider design team of urban designers, arboriculture officers and the Highway Authority to ensure that the layout was suitable, at this stage there are obvious tensions in the layout and the ability to deliver a safe and suitable layout, in highway terms. The layout should therefore be seen as conflicting with SD4 of the Adopted Joint Core Strategy, NPPF para 110 and 112, and PD0.4 of the Local Transport Plan.

Extract of the Illustrative Masterplan

Approximate Straight Lengths Highlighted

