

DAVIDSONS DEVELOPMENTS LTD AND JELSON LTD

PROPOSED RESIDENTIAL DEVELOPMENT ON LAND NORTH OF NEWTON LANE, WIGSTON

TRANSPORT APPRAISAL

ADC Infrastructure Limited Western House Western Street Nottingham NG1 3AZ

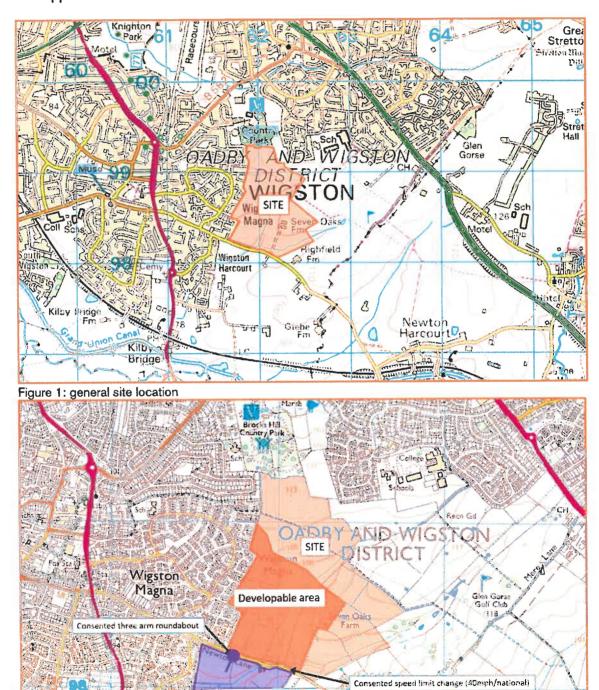
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Introduction

1. Davidsons Developments Ltd and Jelson Ltd are seeking to promote land to the north of Newton Lane, between Wigston and Oadby (Figures 1 and 2). It is considered that the land could provide around 1,000 residential dwellings in total, and a plan showing the indicative development area is in Appendix A.



Consented David Wilson Homes/Barratt Homes scheme

Figure 2: detailed site location

Wigston Harcourt



- 2. ADC Infrastructure Ltd were commissioned to provide a transport review of the site, and determine what infrastructure is required to ensure safe and suitable access by all modes. This Transport Appraisal report has therefore been prepared for use by Davidsons and Jelson.
- 3. This report examines the site location and existing opportunities for access by sustainable transport modes (walking, cycling, and bus). It presents the potential site access junction layouts to demonstrate that safe and suitable access is achievable. Finally, it forecasts the likely trip generation of 1,000 dwellings as the anticipated quantum of development, and identifies any potential highway impacts and where mitigation measures may be required.
- 4. This report assumes that all of the developable area shown in Appendix A is to be promoted, and presents potential options.
- 5. In preparing this report, the following objective from the NPPF¹ is taken into account:
 - "the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure
 - safe and suitable access to the site can be achieved for all people, and
 - improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe."

Site location, existing use and nearby development

6. The development site is to the north of Newton Lane, in Wigston, Leicestershire. It is currently primarily fields, with gated field accesses onto Newton Lane (Figure 3). The land also includes Seven Oaks Farm, with access via an informal T-junction on Newton Lane.



Figure 3: aerial photograph

¹ Paragraph 32, National Planning Policy Framework, DCLG, March 2012



7. Directly opposite the site, on the southern side of Newton Lane, David Wilson Homes (DWH) and Barratt Homes have been granted planning consent for 450 dwellings (outline planning application reference 13/00403/OUT and reserved matters application 16/00316/REM). By fronting onto Newton Lane, that development will alter the existing rural feel of Newton Lane, and will extend the start of the built-up area of Wigston Harcourt eastwards. That development will be accessed via a single three-arm roundabout on Newton Lane and the speed limit along their frontage to Newton Lane will be reduced to 40mph as part of their approved access strategy (Figures 3 and 4). This was approved by Leicestershire County Council (LCC), as the local highway authority, during the planning application consultations.

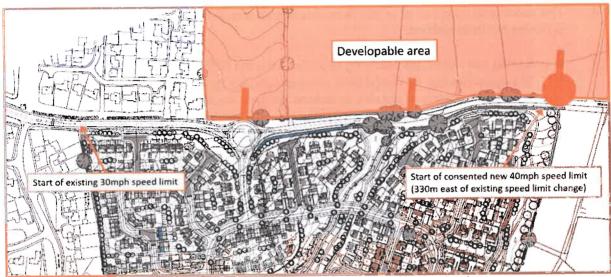


Figure 4: access roundabout to consented David Wilson Homes/Barratt Homes development

8. The granting of planning consent in this location confirms that the principle of residential development on Newton Lane is acceptable, that LCC are prepared to accept up to 450 dwellings from a single point of access, and that the speed limit can be lowered to 40mph along the site frontage.

Highway network and accident record

- 9. Newton Lane is a single carriageway road connecting Wigston to the west of the site, with villages including Newton Harcourt and Fleckney to the south-east. Along the site frontage, Newton Lane currently measures approximately 6.5 metres in width, with wide grass verges on both sides of the carriageway (which are within the extent of the adopted highway boundary). Newton Lane is subject to the national speed limit, reducing to 30mph to the west of the site. However, as detailed above, a 40mph speed limit is to be introduced along Newton Lane as part of the consented DWH/Barratt Homes development. The consented 40mph stretch is approximately 330 metres long, with the new consented speed limit change central to the Davidsons site frontage see Figure 4.
- 10. The Transport Assessment for the DWH/Barratt Homes development used traffic counts from 2013 to forecast the following background traffic flows on Newton Lane by 2018. As shown, Newton Lane is relatively busy, with approximately 13 vehicles per minute, or one every 5 seconds. The traffic flows are tidal, with approximately 60% travelling westbound in the morning peak hour and returning eastbound in the evening peak hour.

	eastbound	westbound	two-way
AM peak hour	317	470	787
PM peak hour	422	318	740



11. A number of junctions on the highway network in the vicinity of the site were assessed as part of the Transport Assessment prepared to support the planning application for the DWH/Barratt Homes development (Figure 5).

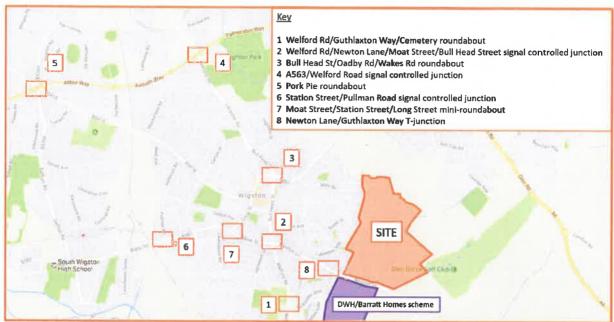


Figure 5: key junctions

- 12. The Transport Assessment and subsequent Update Transport Report assessed the operation of each junction in 2023 or 2024 without the development but with background traffic growth and committed developments, and in 2023 or 2024 with the committed development and the DWH/Barratt Homes development. It concluded that most of the junctions did not require any mitigation and could accommodate the increased traffic flows, but that several of the junctions will be overcapacity (taken as 85% for priority junctions and 90% for signal junctions). It therefore proposed mitigation measures at junctions 2, 3 and 7, and these are included in the planning conditions for that development. Elsewhere it concluded that whilst the junctions were overcapacity, the DWH/Barratts development traffic did not generate a severe impact that warranted mitigation. This suggests that some of the junctions in the vicinity of the site are sensitive to additional traffic, and require upgrading (particularly junctions 1 and 6). The need for Davidsons/Jelson development proposal to mitigate off-site junctions will depend on the whether the additional development traffic has a severe impact on the operation of the junction. This would need to be established with junction modelling.
- 13. The Crashmap database shows that there have been five slight accidents on Newton Lane along the site frontage in the five year period between 2012 and 2016. Four of these occurred at the 'S' bend along the Jelson site frontage, despite the bends being marked by road signs, slow markings and chevrons (Figure 6). Two of the accidents occurred in 2012 and two occurred in 2014, and all four are assumed to be due to driver error and excessive speeds. The provisions of the development proposal, including the lower speed limit, the new access junctions, and alterations to the S bend, would help mitigate this accident problem.



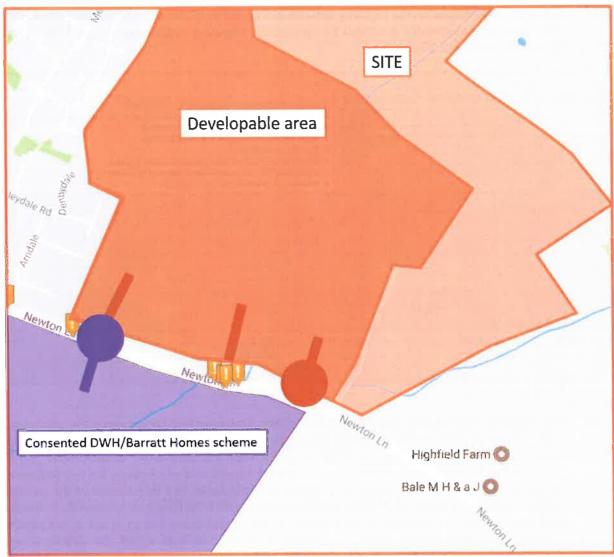


Figure 6: accident record



Opportunities for sustainable travel

14. Most of Wigston and Oadby and the associated facilities are within the acceptable 2km walking distance² of the site (Figure 7). This includes employment areas, schools, health and retail facilities.

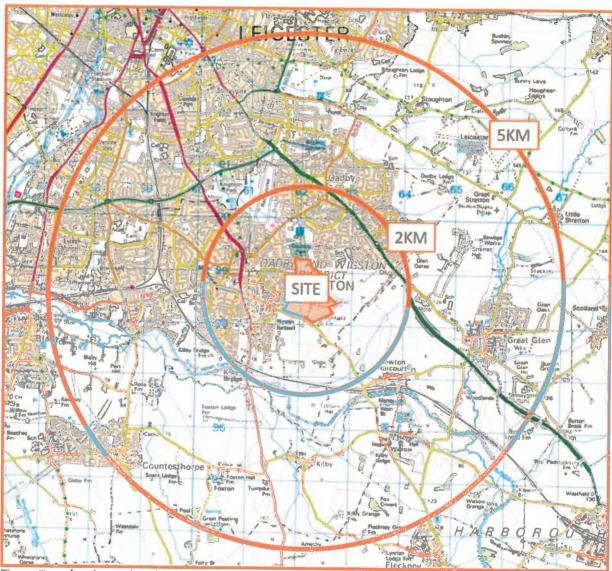


Figure 7: pedestrian and cycle catchment areas

- 15. There are opportunities for the development to provide pedestrian connections to Rosedale Road, Bransdale Road, Nidderdale Road, Westerdale Road, and Denbydale Road to the west of the site (Figure 8). There are also opportunities for a footway to be provided on Newton Lane to connect to the existing and consented DWH/Barratts infrastructure further west.
- 16. A public footpath also runs through the site, and connects to Tendring Drive, providing a convenient shortcut to the Meadow Community Primary School and the Glenmere Community Primary School to the west of the site (Figure 8). There are opportunities to improve this as part of the development proposals, with lighting and surfacing.

² Guidelines for Providing for Journeys on Foot, Institution of Highways and Transportation, 2000



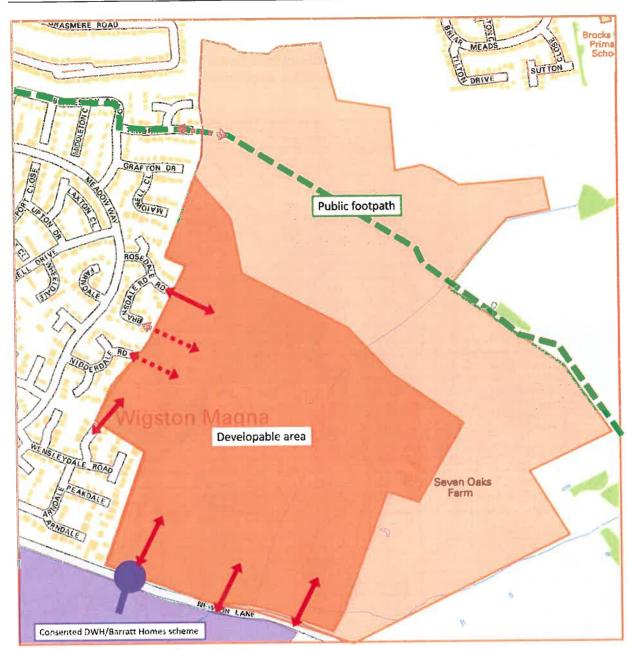


Figure 8: pedestrian connections

17. Cyclists are typically prepared to cycle up to 5km for non-leisure journeys, such as those to school or work. The 5km cycle catchment (Figure 7) includes all of Oadby, Wigston and southern parts of Leicester. The existing cycle infrastructure in the vicinity of the site (Figure 9) will be improved with the provision of the consented off-road footway/cycleway along Newton Lane to Moat Street and connecting to the existing route on Welford Road to the west, which will be provided as part of the DWH/Barratt Homes residential development. There are opportunities to connect to this, and provide a footway/cycleway along the site frontage and into the site as part of the development proposals.



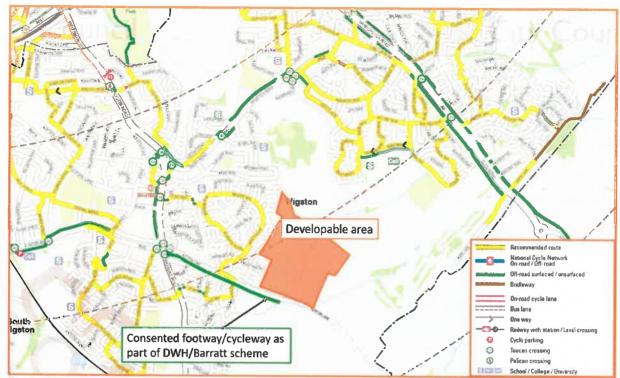


Figure 9: cycle infrastructure

- 18. The existing bus stops closest to the site are on Meadow Way to the west of the site. The bus stops comprise a flag and pole with raised kerbs, and provide access to Arriva Midlands daytime Service 49, and evening Services 47A and 48A (Figure 10).
- Service 49 currently runs between Leicester and Wigston Magna every 15 minutes, and extends to Wigston Harcourt, Kilby and Fleckney every 30 minutes from Monday to Friday, and every 20 minutes on Saturdays.
- 20. In the evenings, Services 47A and 48A run along Meadow Way between Leicester and South Wigston every 30 minutes. Service 47A runs anti-clockwise (northbound) along Meadow Way, whilst Service 48A runs clockwise (southbound).
- 21. There are therefore two bus services per hour along Meadow Way during the day-time, and four per hour in the evenings. However, much of the development would be beyond the recommended 400-800 metres walking distance of these bus stops, and a bus service would therefore need to extended through the site in a loop arrangement. This could be achieved subject to the suitable design of the development layout, and discussions with Arriva.



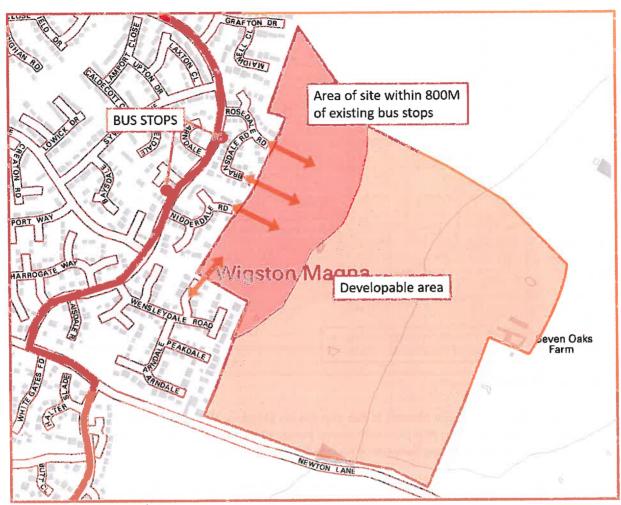


Figure 10: bus route and stop

22. Overall, the development site is in a sustainable location, accessible by all modes of transport, and close to facilities and amenities of all types. Improvement measures would be required, but are achievable, to further facilitate sustainable travel.

Development proposals

- 23. Taking into account the size of the available land and the developable areas, it is envisaged that the site could provide around 1,000 dwellings. An illustrative layout showing the developable areas is in **Appendix A**.
- 24. The car parking provision would need to accord with the 6Cs Design Guide to ensure sufficient supply, and include a mix of driveway spaces and garages. The layout would need to be designed to adoptable standard and have adequate provisions for servicing, refuse, and emergency services.

Vehicular access

25. Table DG1 of the 6C's Design Guide states that a "major residential access road" can serve 1,000 dwellings, provided that the carriageway width is 6.75m, and that there are at least two points of access to the highway network. No more than 400 dwellings can be served from a single point of access (albeit the DWH/Barratt Homes scheme agreed 450 from a single access).



- 26. Table DG1 of the 6Cs Design Guide also states that a lower classification 5.5m wide "residential access road" can serve a total of 400 dwellings, with no more than 150 dwellings from a single point of access.
- 27. With this context, the development site could be accessed via a new fourth arm on the roundabout that was consented as part of the DWH/Barratt Homes scheme, as shown in Drawing ADC1681/001 P2. The fourth arm can be achieved in accordance with design standards and would be able to accommodate the swept path of the largest vehicles (e.g. refuse vehicles and buses). Alone, this access could serve up to 400 dwellings.
- 28. In addition, the development site could be accessed via a new three-arm roundabout on Newton Lane further east. The roundabout layout would need to replicate the consented DWH/Barratt Homes roundabout further west. The roundabout can be designed in accordance with relevant design standards, as shown in **Drawings ADC1681/001 P2.** Again, this junction alone could serve up to 400 dwellings.
- 29. To serve 1000 dwellings, the two roundabouts should be connected via an internal loop road, and the carriageway should measure 6.75 metres. This way, the full development can be served, and the road width would be suitable to accommodate a bus service through the development.
- 30. If the two accesses were not linked, it would restrict the number of dwellings that can be accessed (each can only serve up to 400 dwellings), and it would restrict future bus access, potentially making the site unsustainable.
- 31. As part of the new roundabout design, the consented 40mph speed limit would need to be extended 120 metres further east from the consented speed change location, to coincide with the new start of the built development and to ensure that the required forward visibility of 120 metres to the roundabout is achievable. There should be no issues with this given that LCC agreed to the 40mph speed limit as part of the DWH/Barratt Homes scheme.
- 32. The location of the new three-arm roundabout is dictated by the developable area within the site frontage of the eastern portion of the site, and by the horizontal and vertical alignment of Newton Lane along the site frontage. The roundabout is located central to the developable area within the eastern area, and the location has been designed to ensure that the required 120 metres forward visibility (for the 40mph speed limit) to the roundabout is achievable through the S bend to the west. The roundabout can be designed solely within Davidsons land and the extent of the adopted highway boundary, but the proposed 3m footway/cycleway on the northern side of the carriageway would require Jelson land.
- 33. In addition to the two roundabouts on Newton Lane (or instead of the fourth arm on the committed DWH/Barratt Homes roundabout), a priority-controlled T-junction with ghost island right turn lane could be provided along the Jelson land site frontage, as shown in **Drawing ADC1681/001 P2** and **ADC1681/002 P2.** The junction can be designed in accordance with the requirements of DMRB TD42/95, and achieve the required 2.4x54 metres visibility splays. This junction can be achieved solely within the Jelson land and the extent of the adopted highway. Again, an internal loop road would need to be provided to connect this T-junction to the roundabout(s), to serve the full development and to facilitate bus access.
- 34. The proposed T-junction would need to be located centrally between the two roundabouts, and along the western part of Jelsons site frontage. It could be located slightly further east, but has been designed to avoid the watercourse and limit the impact on the existing trees. The required road widening to accommodate the right turn lane would straighten the existing S bend, and no further straightening should be required. This should help mitigate the existing accident problem on the S bend.



- 35. Furthermore, the presence of the new roundabout and the new T-junction, together with frontage development, would help act as a speed reduction feature to enforce the 40mph speed limit. This would further help to mitigate the existing accident problem on the S bend along the site frontage.
- 36. Additional speed control measures could also be provided along the Newton Lane carriageway between the proposed roundabout and the consented roundabout further west. For example, **Drawing ADC1681/002 P2** shows central islands at the T-junction to help facilitate pedestrian movements and to reduce vehicle speeds.
- 37. Drawing ADC1681/002 SPa P2 shows that the swept path of a large refuse vehicle can be accommodated within the T-junction design. Drawing ADC1681/002 SPb P2 shows that the swept path of an articulated vehicle (the design vehicle) can be accommodated at the roundabout. Therefore, the junctions are deliverable and would be sufficient to serve the development.
- 38. To assist with connectivity and deliverability (including phasing), secondary points of vehicular access into the site could also be provided via extensions to Denbydale and Rosedale Road through the residential estate to the west of the site, as shown in **Drawing ADC1681/003 P1**. These roads both measure 5.5 metres in width, and could therefore serve some additional dwellings. In accordance with the 6Cs Design Guide, 5.5m wide roads can serve up to 400 dwellings. Denbydale currently serves 7 dwellings, whilst Rosedale Road currently serves 38 dwellings, and thus there is potential to access additional dwellings from both of these roads, provided that the main point of access is via the new junctions on Newton Lane.
- 39. Overall, suitable accesses can be designed to the relevant standards and would be safe and suitable for the development. The two roundabouts would satisfactorily serve the development, without the T-junction. However, the T-junction could be promoted instead of the new fourth arm on the consented DWH/Barratt Homes roundabout if interest in that land is not secured.

Access by sustainable modes

- 40. To facilitate trips by sustainable modes:
 - 2m wide footways should be provided beside the internal roads.
 - pedestrian connections should be made through to the residential estate roads to the west, including Rosedale Road, Bransdale Road, Nidderdale Road and Denbydale.
 - contributions towards improvements should be made to the public footpath across the site, including surfacing and lighting as necessary.
 - a new footway/cycleway should be provided along the northern side of Newton Lane, to link to the consented provisions further west (Drawings ADC1681/001 P2 and ADC1681/002 P2).
 - space for cycle parking in garages and sheds should be provided within the curtilage of each dwelling.
 - a regular bus service should be diverted in a loop arrangement through the site. For example, the Service 49 could be extended so that the 15 minute frequency service runs through the site, rather than stopping at Church Nook in Wigston Magna. This would provide a wider benefit to existing residents in the eastern and southern parts of Wigston Magna and along Meadow Way where the service currently runs only at a 30-minute frequency.
 - new bus stops should be provided within the site to ensure all dwellings are within 400-800
 metres walking distance. These should include the provision of shelters with seating, and
 raised kerbs to facilitate access subject to land availability.
- 41. A 3m wide footway/cycleway can be provided along the northern side of Newton Lane between the proposed roundabout and the consented roundabout, if the overall site is promoted. The



- splitter island on Newton Lane to the west of the consented roundabout would then be widened to accommodate pedestrians and cyclists crossing to the consented footway/cycleway on the southern side of the carriageway, as shown in **Drawing ADC1681/001 P2**.
- 42. However, in the event that land at the south-western edge, directly west of Jelson's boundary, is not brought forward, there would be insufficient space to provide the footway/cycleway on the northern side of Newton Lane on the stretch west of the proposed T-junction. Therefore, directly to the west of the proposed T-junction, a crossing would need to be provided to a new footway/cycleway on the southern side of Newton Lane, which would then need to connect to the consented DWH/Barratts infrastructure further west, as shown in **Drawing ADC1681/002** P2. The footway/cycleway cannot be continued on the northern side of the carriageway due to third party land. Nevertheless, this provision should still be acceptable to LCC.
- 43. With regards to the bus service, this could route in a loop arrangement through the site entering via the new fourth arm or the T-junction and exiting via the new roundabout on Newton Lane (or vice versa) (Figure 11). The internal loop road would need to include a 6.75m wide carriageway to accommodate the future provision of a bus service through the site.
- 44. Alternatively, the bus service could route from Meadow Way and into the site via Rosedale Road, before exiting onto Newton Lane and continuing the onward route (Figure 11). The exit on to Newton Lane could be via the roundabout or the T-junction. However, the existing Rosedale Road carriageway is 5.5 metres wide, and therefore below the minimum required 6m carriageway width. Discussions would therefore need to be undertaken to determine the acceptability of this route.

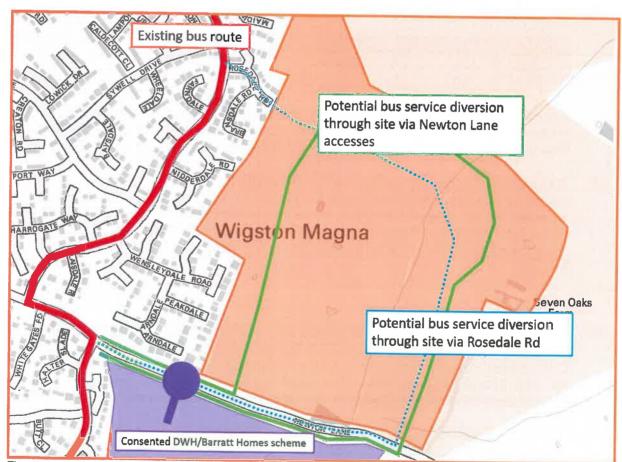


Figure 11: potential bus diversions

45. Overall, suitable safe and suitable access can be provided by all modes of transport.



Traffic generation

46. Residential developments typically generate the peak hour trip rates shown in the table below. The resultant traffic generation of 1000 dwellings, as a worst case, is also shown to illustrate the likely increases in traffic as a result of the development.

		arrive	depart	two-way
	AM peak hour	0.2	0.5	0.7
trip rates (per dwelling)	PM peak hour	0.5	0.2	0.7
	AM peak hour	200	500	700
vehicle trips (1000 dwellings)	PM peak hour	500	200	700

47. Should a planning application subsequently be submitted, a Transport Assessment would need to be prepared and this would use trip rates extracted from the TRICS database in accordance with guidance. A Travel Plan would also need to be prepared as part of any planning application, in order to promote sustainable travel and reduce the number of car trips generated. The Travel Plan would seek to reduce the number of peak hour car trips by 10-15%.

Modal split and person trips

48. The proportion and number of trips likely to be generated in an average peak hour by each mode of transport was calculated using the 2011 National Census *Method of travel to Work* data (dataset QS701EW) for the area (Oadby and Wigston 007 MSOA). This is reasonable as the new residents would display similar travel patterns to existing residents in the area. The resultant modal split and person trip generation is summarised below.

on foot	bicycle	bus	train	motorcycle	car driver	passenger	taxi
6.9%	2.8%	7.5%	0.6%	0.5%	75.7%	5.7%	0.2%
64	26	69	6	5	700	53	2

- 49. The paragraphs above explain the existing accessibility of the site and the sustainable travel infrastructure that should be provided as part of the development. The existing and proposed infrastructure would accommodate the 64 pedestrian trips, 26 cycle trips and 69 bus trips.
- 50. With pedestrian connections through to the residential estate to the west, the school to the north, and along Newton Lane to the south, the pedestrian trips would disperse. The proposed footway/cycleway along Newton Lane, connecting to the consented infrastructure provided as part of the DWH/Barratt Homes scheme would accommodate the cycle trips. The provision of a bus service through the site, at a 15 minute frequency, would mean an additional 18 passengers per bus.

Highway impact

- 51. With 1,000 dwellings, the proposed development would generate in the region of 700 two-way traffic movements in the peak hours. The Transport Assessment prepared in support of the DWH/Barratt Homes scheme forecast the approximately 85% of trips would route to and from the west through Wigston, whilst 15% would route to and from the east. This equates to approximately 595 trips to and from the west, and 105 to and from the east in the peak hours.
- 52. As part of any subsequent Transport Assessment, it will be necessary to forecast the development traffic generation using the TRICS database, and distribute it to the local highway network using 2011 Census journey to work data. It will also be necessary to assess the impact of the additional development traffic at any junction likely to experience an increase of 30 or more two-way trips in the peak hours.



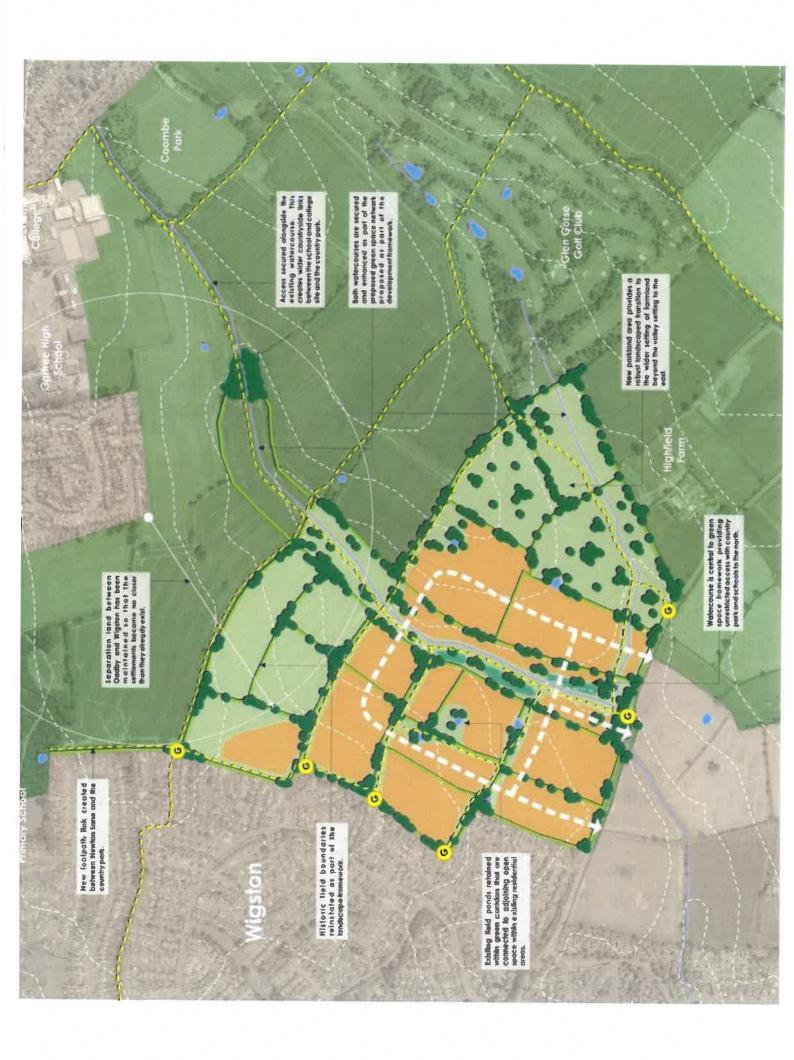
- 53. As detailed in Section 13, some of the key junctions within Wigston are operating at or above capacity. Therefore, mitigation measures would need to be identified and implemented as part of the proposed development to address any severe impacts. Such highway mitigation measures would take into account the sustainable transport improvements that would be provided as part of the development (new footway/cycleway, new bus service through the site), as well as the measures and targets within the Travel Plan to reduce the number of car trips.
- 54. It would not be necessary for the development to fully mitigate a junction so that it operates within capacity. Instead, mitigation is needed only to address severe impacts. Therefore, whilst junctions 1 and 6 (for example) are overcapacity, unless the development traffic results in a severe impact, mitigation measures would not be justified. The location and type of any mitigation cannot be identified at this stage.
- 55. Overall, the proposed development would accord with the aims of the NPPF, which requires sustainable transport measures to be promoted, and requires improvements to be undertaken to the highway infrastructure that cost effectively limits the significant impacts of the development.

Summary and conclusions

- 56. Davidsons Developments Ltd and Jelson Ltd are seeking to promote land to the north of Newton Lane, between Wigston and Oadby, in the Local Plan. It is understood that the land could provide around 1,000 residential dwellings in total.
- 57. ADC Infrastructure Ltd were commissioned to provide a transport review of the site, and determine what infrastructure is required to ensure safe and suitable access by all modes is achievable. This Transport and Access Advice Report has therefore been prepared for use by Davidsons and Jelson Ltd.
- 58. This report examines the site location and opportunities for access by sustainable transport modes (walking, cycling, and bus). It concludes that the site is in a sustainable location, with good opportunities for travel by sustainable modes. As part of the development, new pedestrian connections would need to be made to the residential estate to the west, the public footpath would need to be improved, a new footway/cycleway would need to be provided along Newton Lane, and a bus service would need to be diverted through the site.
- 59. This report presents the potential site access junction layouts to demonstrate that safe and suitable access is achievable. It proposes a three-arm roundabout on Newton Lane, which can be designed to standards and replicates the consented roundabout further west. A second point of access can be achieved via a new fourth arm on the consented DWH/Barratt Homes roundabout and/or via a new T-junction with ghost island right turn lane located centrally between the two roundabouts. It also suggests that vehicular connections could be made to the residential estate to the west, via Denbydale and Rosedale Road.
- 60. Finally, this report forecasts the likely trip generation of 1000 dwellings as the likely maximum quantum of development. The development could generate approximately 700 vehicle movements, 64 pedestrian trips, 26 cycle trips and 69 bus passenger trips in a peak hour. The additional trips would need to be assessed, and mitigation proposed where the development traffic would have severe impacts.
- 61. Overall, the report demonstrates that: the aims of the NPPF are satisfied; safe and suitable access is achievable; the development would be deliverable; and that there are no transport grounds to prevent the allocation of the development in the Oadby and Wigston Local Plan.



APPENDIX A ILLUSTRATIVE DEVELOPMENT LAYOUT





APPENDIX B **ACCESS DESIGN DRAWINGS** ADC1681/001 P2 ADC1681/002 P2 ADC1681/002SPA AND SPB ADC1681/003

