



# A6 to Manchester Airport Relief Road Transport Assessment Main Text

October 2013

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### Notice

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**Bound Separately**

# Executive Summary

## Overview

1. The A6 to Manchester Airport (A6MARR) scheme has been identified by Central Government as one of a number of nationally important infrastructure projects, which are required to revitalise the economy and provide congestion relief to local communities.
2. The A6MARR scheme will improve surface access to Manchester Airport and provide better connectivity along the south Manchester corridor, to assist Greater Manchester and Cheshire East in meeting their aspirations for economic growth. It directly supports the Government's objective to provide major transport infrastructure that will deliver economic growth, a fact acknowledged by the announcement on prioritisation for funding in the Chancellor's Autumn Statement in November 2011. The scheme will provide congestion relief to local communities and generate wider benefits to business through improved journey time reliability on the local and strategic highway network.
3. The A6MARR scheme is an integral component of the wider South East Manchester Multi-Modal Strategy (SEMMMS), which has delivered benefits to local communities across south-east Manchester through a range of public transport and sustainable transport measures over the past ten years. It is widely recognised that the A6MARR scheme is critical to delivering the long-term objectives of the SEMMMS strategy, and to meet national objectives for growth, employment and connectivity.

## The Need for the Scheme

4. There is currently no direct transport link running east-to-west through south-east Greater Manchester and Cheshire East. The lack of this connection is contributing to congestion on major and minor roads. This means that people and goods cannot move easily, directly and efficiently.
5. The congestion being created is constraining the local economy, affecting air quality in local areas and reducing access to key destinations. These problems will become significantly worse in the future if no action is taken. The A6MARR scheme has been identified as the best solution to address this problem, as part of the overall SEMMMS Strategy.
6. The A6MARR has been developed for the following main reasons:
  - Relieve existing traffic congestion and address poor connectivity which constrains the economy through lengthening journey times. Current congestion reduces labour market catchments and business-to-business activity as well as creating delays on designated freight routes (e.g. the A6) which, in turn, generates productivity losses for businesses;
  - Address the current poor access to/ from the east to Manchester Airport which acts as a barrier for economic growth and regeneration;
  - Improve the existing poor transport links in communities throughout south Manchester in particular relating to the east-west highway network;
  - Relieve congestion on the existing roads, where average peak time vehicle speeds of less than 10mph have been recorded on many parts. Greater Manchester (including Stockport) has comparable levels of congestion to Outer London, while a comparison of journey times on key commuter links across England's ten largest urban areas over the same period identifies Greater Manchester as experiencing the greatest levels of congestion;

- Reduce existing trips using residential streets as well as passing through local centres which will in turn reduce levels of pollution, road traffic incidents and journey times;
- Relieve current congestion problems along the A6 and in local centres including Gatley, Bramhall, Heald Green, Hazel Grove, Poynton, Wilmslow, Handforth and Cheadle Hulme which currently affect accessibility and lead to delays;
- Improve existing poor environmental conditions in local communities caused by the high volumes of traffic passing through the areas to reach other destinations; and
- Relieve currently congested conditions for pedestrians and cyclists which results in non-motorised transport users facing problems of safely accessing education, employment and leisure facilities.

## About the Scheme

7. The A6MARR scheme will provide 10 kilometres of predominantly new 2-lane dual carriageway running east-to-west from the A6 near Hazel Grove (south-east Stockport), via the 4 kilometres of existing A555 to Manchester Airport and the link road to the M56 spur.
8. The A6MARR scheme bypasses heavily-congested district and local centres, including; Bramhall, Cheadle Hulme, Hazel Grove, Handforth, Poynton, Wythenshawe, Gatley and Heald Green. It will provide much-needed connectivity for key strategic routes into the North West and to Manchester Airport, including traffic from the A6, A523 and A34 – all of which are key routes for business, leisure travel and freight from Cheshire, Derbyshire, Staffordshire, Yorkshire and beyond. The A6MARR scheme incorporates seven new and four improved junctions, four railway crossings and a parallel shared cycle/ pedestrian path.

## Key Elements of the A6MARR Scheme

9. The following summarises key elements of the A6MARR scheme:
  - The scheme is a 2-lane dual carriageway;
  - From the new A6MARR/ A6 junction, travelling west, the route passes under the existing A6 Buxton Road which is taken over the new road on a new bridge for the use of buses, equestrians, cycles and pedestrians. To the south-west of the bus bridge the A6MARR will pass under the Stockport to Buxton rail line;
  - At the West Coast Mainline crossing near Poynton/ Woodford, the scheme passes over the rail lines (Stockport to Stoke) on a bridge;
  - The Poynton Bypass is not part of the A6MARR scheme. The design of the A6MARR scheme will enable the proposed Poynton Bypass to be developed by Cheshire East Council in the future and tie-in at the proposed A6MARR/ Bramhall Oil Terminal/ A5149 Chester Road Link junction, with minimum abortive work/ disruption;
  - At the A5102 Woodford Road the A6MARR ties into the existing A555. Highway improvement works are proposed at the A555/ A34 junction and further north at the A34 Stanley Green junction. The A6MARR then continues westwards from the existing junction at the A555/ B5358 Wilmslow Road junction;
  - The A6MARR will tie in to the revised layout of the junction of Ringway Road and Ringway Road West. Transport for Greater Manchester (TfGM) will construct the junction, installing traffic signal and a pedestrian crossing as part of the current Metrolink extension works;
  - The scheme would be subject to a 50mph speed limit from the A6 at Hazel Grove to the eastern end of the existing A555. The existing A555 will remain at the national speed limit.

From the western end of the existing A555 to the B5166 Styal Road junction the speed limit would be 50mph, with the remaining section to the western scheme limits being 40mph;

- The scheme includes new cycle and pedestrian routes along its length. It will be integrated with the existing local cycle and pedestrian network to maximise access to the new route and therefore the benefits associated with the scheme. A shared cycleway/ footway will be introduced adjacent to the existing A555 to provide a continuous route along the A6MARR;
- A number of Public Rights of Way (PRoW), including footpaths and bridleways, will be directly affected by the construction of the A6MARR scheme. PRoW proposals along the length of the A6MARR scheme will therefore form an integral part of the scheme;
- For sustainability and environmental reasons, scheme lighting will be restricted to junctions along the A6MARR route, the realigned section of the A6, and the mainline section of A6MARR between the B5166 Styal Road and the Ringway Road/ Ringway Road West tie-in; and
- Measures to mitigate the environmental impact of the scheme are included along the route.

## Scheme Description

10. The A6 will be realigned (over a length of approximately 1 kilometre) to the north-east of the existing A6 Buxton Road. Approximately half way along the realigned road a new signalised junction with the A6MARR would be constructed. An online junction layout is not feasible due to the proximity of the Hazel Grove to Buxton Railway Line in conjunction with the proposed A6MARR passing under the aforementioned railway. The proposed tie-in junctions are located close to Yew Tree Avenue, to the west, and Norbury Hollow Road to the east.
11. From the new A6 junction the route passes under the existing Buxton Road which is taken over the new road on a new bridge for the use of buses, equestrians, cycles and pedestrians and then goes under the Manchester to Buxton railway line.
12. After the railway the route avoids houses in Old Mill Lane to the north while minimising its impact on ancient woodland opposite. It then passes between Norbury Brook and residential property in Ashbourne Road and Darley Road.
13. The A6MARR intersects the A523 Macclesfield Road via a new at-grade signal controlled cross roads. From the A523 Macclesfield Road the A6MARR runs to the north of Norbury Brook and associated woods and south of the residential streets of Sheldon Road and Longnor Road before it crosses Norbury Brook at Mill Hill Hollow. Treatment ponds are proposed adjacent to the A6MARR for attenuating and treating surface water from the new road at this location.
14. There is no A6MARR junction proposed at Woodford Road, Poynton. The A6MARR route will pass under Woodford Road (Poynton), and over the WCML via new road bridge structures.
15. The A6MARR scheme incorporates a new at-grade signalised gyratory at Bramhall Oil Terminal, including a new link road to connect back to A5149 Chester Road and a signalised on-demand link to Bramhall Oil Terminal. There will also be a new signal controlled T-junction, to the south of the new A6MARR, to connect with a realigned A5149 Chester Road. The design of the A6MARR at this location allows for the future Poynton Bypass.
16. West of the Bramhall Oil terminal, the A6MARR route crosses Moorend Golf Course (whose time limited planning permission has lapsed) which is located immediately east of the houses fronting A5102 Woodford Road.
17. The A6MARR scheme intersects with the A5102 Woodford Road via a grade separated (half-diamond west-facing slip roads) restricted movements junction arrangement. The A6MARR would pass under a new road bridge for the A5102 Woodford Road with signalised T-junctions at the top of each slip road to facilitate traffic movements.

18. The A6MARR scheme proposals feature significant upgrades to the A555/ A34 junction to include provision of additional lanes on all approaches, additional circulatory lanes, and full signalisation of the roundabout to incorporate controlled crossing facilities.
19. To the north of the A555, the A34/ B5094 Stanley Road junction will also be improved as part of the A6MARR scheme through the provision of an all movement at-grade signalised roundabout including maintaining the existing controlled crossing facilities.
20. At Handforth, the existing A555/ B5358 half-diamond east-facing slip road grade separated 'dumb-bell' junction arrangement will be upgraded to cater for all movements through the provision of west-facing slip roads. The existing highway bridge which carries the B5358 Wilmslow Road (between the 'dumb-bell' roundabouts) was designed to permit the A6MARR mainline to pass under the B5358 within its existing width without modification.
21. Between the B5358 Wilmslow Road and the B5166 Styal Road, the A6MARR passes across Styal Golf Course and some agricultural land, before crossing the Styal rail line. Styal Golf Course will be modified in order for it to continue its operations as an 18-hole course in conjunction with the Club proprietor.
22. The A6MARR scheme intersects with the B5166 Styal Road via a new all movement at-grade signal controlled junction to be constructed over the Manchester Airport spur railway line. This will require additional structures either side of the existing bridge and also to span the existing railway.
23. From Styal Road the A6MARR route will run parallel to the Manchester Airport rail spur. The A6MARR will tie in to the revised layout of the junction of Ringway Road and Ringway Road West. There is no junction proposed with Shadowmoss Road but access to Manchester Airport for emergency services will be accommodated.
24. There is a committed Metrolink line under development at the western terminus of the A6MARR scheme. This Metrolink line to Manchester Airport is proposed to open in 2016. The Metrolink line will pass under the Ringway Road Highway Improvement Works scheme whereupon the tram route will descend to the level of the airport railway station. The interface details have been finalised by TfGM in liaison with the A6MARR design team.

## Scheme Development

25. The genesis of SEMMMS was the referral of three schemes from the national Roads Programme, namely:
  - the A6(M) Stockport North South Bypass;
  - the A555 Manchester Airport Link Road West (MALRW); and
  - the A555/ A523 Poynton Bypass.
26. The SEMMMS Strategy recommended that the study area local authorities develop smaller and more appropriate scale road proposals along the protected alignments. It was recommended that the protected alignments in the local development plans for the MALRW, Poynton Bypass and A6(M) proposals be maintained, whilst recognising, that the reduced scale schemes may be able to use modified alignments that have a lesser environmental impact.
27. Given the funding constraints the DfT and Local Authority Officer's jointly examined the key policy drivers in the area and agreed that the A6 to Manchester Airport section was the priority scheme due to the potential economic impact on Manchester Airport (and therefore the City Region) of delaying access improvements, which in turn could constrain future economic growth.
28. The A6MARR scheme has been developed by Stockport Council working with its partners, Manchester City Council, Cheshire East Council and TfGM. Public consultation on the road scheme has taken place over two phases:



- The first phase of consultation on the A6MARR scheme ran between 22<sup>nd</sup> October 2012 and 25<sup>th</sup> January 2013. It was designed to specifically to capture opinion on the A6MARR scheme along with people's views on junction options to help determine a preferred scheme. Following analysis of the feedback from phase 1 consultation, Stockport Council, along with its partners revised their proposals to develop an emerging preferred scheme; and
  - The second phase of consultation ran from 3 June 2013 to 19 July 2013 to allow residents, businesses and road user to give their views on the emerging preferred scheme.
29. Additional negotiations with landowners affected by the A6MARR scheme have been ongoing from early 2012, and consultations are ongoing between the A6MARR Project Design Team and Vulnerable Road User Groups (VRUGs). In addition, an Environment Forum has been set up specifically for the A6MARR scheme in order to discuss and gather feedback on environmental aspects of the scheme, such as environmental impact, mitigation and landscaping.
30. Local Liaison Forums (LLFs) have been undertaken in areas most affected by the proposals. The purpose of the LLFs is to provide invited residents and businesses with the opportunity to comment on the scheme, make suggestions for improvements to the design of junctions and the overall scheme as well as direct any questions regarding the scheme to members of the project team. At the LLFs, participants have been provided with a number of plans detailing junction designs at locations in close proximity to their property, and encouraged to use post-it-notes to write down their comments and place it on the maps in the relevant positions. In conjunction with this, discussions were facilitated by a member of the consultation and project team that recorded comments and questions.
31. In line with the SEMMMS strategy recommendations, for a more appropriate scale road proposal to provide relief to local communities affected by inappropriate through traffic (but not to provide a new strategic route of regional and potentially national significance), the overall A6MARR scheme philosophy has been to provide at-grade signal controlled junctions and safe crossing facilities for Non-Motorised Users (NMUs) wherever possible.
32. The design ethos of the A6MARR scheme has been to move away from the outdated 'predict-and-provide' model for local major highway infrastructure projects, with a focus on catering for existing and 2017 opening year peak period traffic flows. There is little value in providing unnecessary surplus highway capacity when the rest of the local highway network is already operating under significant stress during peak periods, and unable to accommodate any significant increases in traffic demand.
33. This approach closely aligns with the vision of the refreshed GM Strategy 2013-2020 for *"sustainable economic growth based around a more connected, talented and greener city region where all our residents are able to contribute to and benefit from sustained prosperity"* that seeks a transformational step-change in connectivity through a more integrated approach to securing improvements to the strategic transport network; including:
- Greater Manchester Transport Fund (GMTF) investment programme, comprising a rigorously prioritised package that includes new Metrolink lines, transport interchanges, rapid bus system developments and key strategic highway schemes;
  - Local Sustainable Transport Fund (LSTF) in active travel, smarter choices and intelligent transport technologies, which aims to at least double the levels of commuter cycling in Greater Manchester and enable all commuters to make more sustainable choices in how they travel;
  - Northern Hub rail network expansion scheme;
  - Velocity 2025 programme with a target to secure at least a 300% increase in the levels of cycling across Greater Manchester by 2025, and to see the proportion of trips by bicycle increase to 10% over the next 12 years; and

- Further introduction of new smart technologies to provide payment and information systems that will better enable commuters to take ever-smarter choices across their travel options in the interests of network efficiency and environmental sustainability.
34. In planning for the future, the A6MARR scheme design has taken full account of committed (and near certain) developments and infrastructure schemes. The preferred A6MARR junction design for the Bramhall Oil Terminal junction provides a good example of how the future plans for Poynton Bypass have been taken into account as part of the A6MARR scheme design process, to avoid unnecessary and potentially costly abortive works being carried out.
  35. The design of the A6MARR mainline has been carried out in accordance with the Design Manual for Roads and Bridges (DMRB). A range of alternative road/ junction layouts have been considered along the A6MARR route. A number of junction options were produced and their suitability was considered by a Technical Working Group made up of a variety of engineering and environmental specialists from the A6MARR Project Team. The first phase of consultation asked for views on a number of junction options to help determine a preferred scheme.
  36. An independent Concise Cycle & Pedestrian Audit (COPECAT) of the A6MARR scheme has been carried out. COPECAT is a nationally recognised 'check-list' scheme that forms a part of the design process, and where appropriate the audit will inform the detailed design of the scheme.
  37. The A6MARR scheme signage strategy seeks to integrate the A6MARR into the existing road network. This will be achieved by ensuring consistency and continuity of signing across local authority boundaries. The general principles that underpin this strategy are to:
    - Provide consistency in the use of primary/ local destination name and graphic elements along the A6MARR and the surrounding existing road network in order to eliminate conflicting information. In general only those local destinations closest to the line of the proposed A6MARR will be signed, with traffic being directed along the most suitable route taking account of junction capacity, traffic management and safety needs;
    - Provide continuity of signing at 'Key Decision Points' on the traveller's journey. Continuity of route signing is considered especially important as loss of continuity is a major source of irritation to road users;
    - Improve clarity; and
    - Minimise the environmental intrusion and impact of the signing in terms of numbers/ size.
  38. The A6MARR signage strategy will also encompass integration with the pedestrian and cycle network.
  39. A Stage 1 Feasibility Road Safety Audit (RSA) was undertaken by SMBC officers in October 2013 for the A6MARR scheme. The RSA was conducted in accordance with SMBCs Road Safety Audit Procedure, adopted 1st May 2006. In particular, the Audit was based on the *Highways Agency's Design Manual for Roads and Bridges HD19/03* which supersedes the previous Standards HD19/94 and Advice Note HA42/94, and also had regard to the Institution of Highways and Transportation reference document, '*Guidelines for the Safety Audit of Highways*'.
  40. The RSA examined the road safety implications associated with the A6MARR scheme design, and the associated proposed improvement works. The Audit team considered visibility, levels, turning manoeuvres, alignment and facilities for non-motorised users as part of the audit process. The October 2013 RSA followed a previous Stage 1 Audit Review undertaken in June 2013, to reflect changes to the proposed scheme layout.

## A6MARR Traffic Model

41. A robust approach to scheme assessment has been undertaken, using a variable demand modelling framework originally developed for the Greater Manchester Transport Innovation Fund (GMTIF) work, but updated specifically for the A6MARR scheme. The modelling suite was developed jointly by the Transport for Greater Manchester, Highways Forecasting and Analytical Services (TfGM, HFAS) and MVA Consultancy. Additional modelling input and a formal reviewing role was provided by Atkins. The model has been used to inform both the A6MARR scheme design and major scheme business case.
42. The model is fully compliant with national (WebTAG) guidance and has been subject to rigorous review by the Department for Transport in relation to the major scheme business case for the scheme, which has secured programme entry approval.
43. The A6MARR model incorporates a number of committed developments and highway schemes which will be in place and operational before the modelled future years. An Uncertainty Log has been developed in accordance with WebTAG Unit 3.15.5 in order to determine the certainty of all developments and highway schemes relevant to this study.

## Scheme Operation

44. DMRB provides guidance on the appropriate carriageway standards to be considered for new road schemes based on the expected traffic flow levels. The guidance is given in Technical Advice Notes (TAs) and depends on whether the scheme is a rural or urban road. The proposed A6MARR scheme consists of a dual two lane urban all-purpose carriageway (D2UAP) from the A6 Buxton Road to Manchester Airport and adjacent Enterprise Zone. This assessment confirms that based on the forecast traffic volumes that a dual 2-lane carriageway standard is an appropriate standard of road for the A6MARR scheme.
45. DMRB TD 22/06 'Layout of Grade Separated Junctions' sets out the design requirements and methodology for the geometric design and layout of grade separated junctions on trunk roads and motorways, and is the adopted standard against which the merge, diverge and weaving section requirements for the A6MARR scheme have been assessed.
46. The introduction of lane gain and lane drop arrangements on the existing section of the A555 between the A34 and B5358 will require a Departure from Standard. The proposed layout is an over-provision compared to standard, and is reflective of the relative close proximity between existing junctions. Completion of the A6MARR scheme will introduce a section of weaving between the A34/ A555 and A6MARR/ B5358 Wilmslow Road junctions.
47. The existing A555 between the B5358 Wilmslow Road and the A5102 Woodford Road has a speed limit of 70mph with a corresponding road cross section reflecting a dual two lane Rural All Purpose Road configuration. The desirable minimum weaving length is 1km. The distance between the A34/ A555 and B5358 junctions (junction centre to junction centre) is 1300 metres of which 650 metres is defined as being part of the slip roads. This leaves a weaving length of approximately 650 metres. There will, therefore, also be a requirement to obtain a Departure from Standard for the weaving section.
48. Alternatively, to negate the need for a Departure from Standard there remains the option to reduce the existing speed limit to 50mph and reclassify and amend the cross section of this section of road to Urban. Under these circumstances the proposed dual 3-lane section of A555 between the A34 and B5358 junctions can accommodate the predicted weaving movements following completion of the A6MARR scheme.
49. The two remaining Departures from Standard are the:
  - proposed westbound taper diverge at the A34 Handforth Bypass junction. The proximity of the Spath Lane over-bridge constrains the provision of a ghost-island diverge (or parallel) at

this location. A taper diverge is deemed acceptable on the basis that the slip road arrangement, which flares to four lanes at the A555/ A34 roundabout, provides adequate queuing capacity within the confines of the slip road. The layout has been assessed to ensure that ant queuing traffic will not interfere with the mainline flows; and

- proposed westbound parallel merge at the B5358 Wilmslow Road junction. This is an over-provision compared to standard based on predicted traffic flows and reflects the outcome of consultations with local authority highway officers.
50. SATURN model outputs have been used to inform the discrete local junction modelling for each of the A6MARR at-grade scheme junctions. The local junction modelling assessment confirms that the scheme is able accommodate future year traffic forecasts in-line with the SEMMMS design philosophy.
51. It is current TfGM Urban Traffic Control (UTC) practice to install MOVA/ SCOOT at all new signal control junctions. Auto-adaptive systems such as Microprocessor Optimised Vehicle Actuation (MOVA) respond dynamically to vehicle demands to improve traffic throughput.

## Wider Scheme Impact

52. Completion of the A6MARR scheme will in general reduce future year traffic flows on many local roads in the surrounding areas, notably:
- Heald Green, Bramhall, and Hazel Grove (and to a lesser extent Gatley, Cheadle and Cheadle Hulme) to the north of the A6MARR; and
  - Styal, Wilmslow, Woodford and Poynton town centre to the south of the A6MARR.
53. In terms of the traffic using local primary routes and the strategic road network, completion of the A6MARR scheme will reduce traffic using:
- A6 between the eastern terminus of the A6MARR and M60 motorway;
  - A523 between the A6 Rising Sun and Poynton cross-roads;
  - A538 between the M56 motorway and Wilmslow and between Wilmslow and Prestbury;
  - A560 between Gatley and Cheadle;
  - A5102 between the A555 (at Woodford) and A538 (at Wilmslow);
  - M60 between junctions 1 and 2; and
  - M56 between junctions 1 and 2 (Sharston Link) and between junctions 4 and 5.
54. It is recognised, however, that some local areas will experience some increase in traffic following completion of the A6MARR scheme, notably:
- Wythenshawe (south of Simonsway) to the north of the A6MARR; and;
  - Handforth, High Lane and Disley to the south of the A6MARR;
55. Potential local routeing issues following completion of the A6MARR scheme have also been identified in connection with:
- Gillbent Road, Cheadle Hulme;
  - Torkington Road and Threaphurst Lane, Hazel Grove; and
  - Clifford Road, Poynton.

56. In terms, of the traffic using local primary routes and the strategic road network, completion of the A6MARR scheme will increase traffic using:
- A6 between through High Lane and Disley;
  - A34 between the A555 and Dean Row Road;
  - A555 between the B5358 (at Handforth) and A5102 (at Woodford/ Bramhall), the existing completed section of MAELR; and
  - M56 between junctions 5 and 7.
57. At the time of writing, discussions are ongoing between the A6MARR Project Team and Highways Agency regarding the impact of the scheme on the Strategic Road Network (SRN) and the M56 in particular. The Highways Agency has been included in all stages of consultation on the scheme development from its original conception as a Highways Agency proposed trunk road scheme, through to the current proposals. It is understood that a statement will be issued by the Highways Agency to confirm that there is no objection to the scheme proposals, and that it is compliant with the National Planning Policy Framework and latest SRN planning policy document.
58. A package of measures, known as Complementary and Mitigation Measures (CMM), has been proposed to address the predicted change in traffic flow on the local highway network following completion of the A6MARR scheme. The measures aim to ameliorate the scheme's impact on local communities where there are predicted to be traffic increases, and seek opportunities to encourage walking, cycling and support to local centres where there are predicted to be reductions in traffic flow.
59. Funding within the A6MARR scheme budget has been allocated for each Complementary and Mitigation Measure proposed. Following planning approval, the A6MARR Project Team will consult with CEC, MCC and SMBC officers regarding the implementation of mitigation measures within their respective authorities. Whilst it is anticipated that most mitigation measures will be implemented prior to the opening of the A6MARR scheme, the authority responsible for implementation of an individual measure may choose to monitor the level of impact on traffic patterns prior to deciding whether or not it is appropriate to implement the agreed mitigation measure.
60. Based on the latest traffic modelling information the following mitigation measures are proposed:
- **A6 through High Lane and Disley:** The traffic modelling predicts significant increase in traffic flow on the A6 through High Lane and Disley of between 25 to 30% with the A6MARR in place. This increase is a result of both background traffic growth and the reassignment of longer distance traffic as a result of the introduction of the A6MARR. There is also the potential risk of increased traffic flows on Windlehurst Road.

The A6 Buxton Road performs an important role for the Greater Manchester City Region carrying a mix of general and freight traffic from the Peak District and beyond into Greater Manchester. The A6 is part of the national Primary Route Network (PRN) and provides a strategic link between Greater Manchester and key towns in north Derbyshire including Buxton, Matlock and Chapel-en-le-Frith. It also serves New Mills, Whaley Bridge and a number of smaller settlements including High Lane and Disley. The A6 is also a major access route for the Peak District National Park.

Through Disley and High Lane the A6 is fronted by a mixture of open fields, wooded areas, residential and commercial properties, and numerous side-roads providing access to residential areas and onward connections to Marple and Whaley Bridge. To the west of Disley village centre, attempts have been made to reduce the width of carriageway through the introduction of central hatching and cycle lanes as the road continues towards High Lane. Within High Lane itself, the wide carriageway accommodates numerous right-turn facilities,

and occasional formalised on-street parking facilities. Elsewhere, double yellow line markings prevent on-street parking for the majority of the A6 through High Lane. A constant high level of traffic movement creates a potentially intimidating environment for vulnerable road users along the A6.

Footways are generally adequate along this corridor, although the volume of traffic and heavy goods vehicles using this route detracts from the high street environment within High Lane and Disley. Pedestrian crossing facilities are provided at the signalised junctions with Windlehurst Road and Buxton Old Road, along with occasional pedestrian refuge islands and Pelican crossings on Market Street in Disley and at two locations in High Lane.

The nature of the A6 through High Lane and Disley means that it is neither possible nor desirable to significantly increase network capacity along this corridor. The A6MARR Project Team has been sensitive to the concerns raised by the public and stakeholders alike in relation to the predicted increases in traffic through High Lane and Disley, both as a result of background traffic growth and the reassignment of longer distance traffic movements following completion of the A6MARR scheme, such that:

- a separate study is already underway to consider traffic growth and demands in the wider A6 corridor, irrespective of the A6MARR scheme coming forward. Ultimately, a multi-modal transport strategy is required to manage/ mitigate the predicted traffic growth and associated demands on the public transport networks in the corridor over the next twenty years, with an emphasis on achieving modal shift towards more sustainable modes. The A6 Corridor Group consists of representatives from Cheshire East Council, Derbyshire County Council, High Peak Borough Council, Peak District National Park Authority, Stockport Metropolitan Borough Council, and Transport for Greater Manchester; and
- following the Phase Two Consultation the promoting Authorities have resolved to implement a package of enhanced mitigation measures on the A6 tailored to limiting, as far as practicable, the impacts of the A6MARR scheme through a combination of; discrete local junction improvements, environmental enhancement measures, and speed management measures.

These enhanced mitigation measures seek a balanced approach to managing the predicted traffic on the A6 through High Lane and Disley by:

- better managing traffic flows for local residents at the A6 Buxton Road/ Windlehurst Road junction through a local junction improvement scheme;
- enhancing the local district centre environment in Disley village through the introduction of shared-space type interventions; and
- limiting the attractiveness of the A6 to longer distance traffic which would otherwise switch from other cross-county routes with the A6MARR in place. This will be achieved through a combination of gateway treatments and reduced speed limits.

These enhanced measures build upon the package of mitigation measures promoted as part of the Phase Two consultation which focussed on improvements to non-motorised user facilities, including:

- cycle lanes on sections of the A6 between Hazel Grove and New Mills Newtown where practicable;
- a new pedestrian refuge on the A6 Buxton Road at Wellington Road;
- a new Puffin crossing on the A6 Buxton Road outside the Church/ War memorial in High Lane;
- new uncontrolled pedestrian crossings with refuge islands on Windlehurst Road;

- a new pedestrian refuge on the A6 Buxton Road West outside Lyme Park to link bus stops and the park entrance; and
- a new cycle link between Disley and High Lane/ Poynton through Lyme Park.

Traffic modelling of the A6MARR scheme previously predicted an increase in traffic of up to 30% on the A6 through High Lane and Disley. The introduction of enhanced mitigation measures markedly reduces this increased traffic flow to between 11 to 16%.

Some growth on A6 through High Lane and Disley should be expected when one considers the following:

- Without the A6MARR in place traffic growth in the A6 corridor between the M60 motorway and Disley is heavily constrained, compared to other routes through Stockport, most notably through Hazel Grove and Stockport Town Centre; and
- With the A6MARR in place, the A6 through Hazel Grove and Stockport Town Centre is predicted to experience reduced traffic levels (below 2009 base year levels). As a result journey times over this section of A6 will markedly improve.

Therefore, whilst there may be some junction delay at particular locations on the A6, such as the Fountain Square junction in Disley or Windleshurst Road junction in High Lane, these delays are more than offset by reduced junction delays elsewhere along the A6.

- **Torkington Road & Threaphurst Lane, Hazel Grove:** The traffic modelling has identified a potential risk that completion of the A6MARR scheme could lead to some inappropriate routing of local traffic between the A6 south-east of the new A6MARR junction and Offerton using 'country lanes' such as the unclassified Torkington Road and Threaphurst Lane.

In order to mitigate this potential risk it is recommended that both Torkington Road and Threaphurst Lane are designated as Quiet Lanes. Quiet Lanes are minor rural roads, typically C or unclassified routes, which have been designated by the local highway authority to pay special attention to the needs of walkers, cyclists, horse riders and other vulnerable road users, and to offer protection from speeding traffic. Cars are not banned from Quiet Lanes and the use of Quiet Lanes is shared. Measures such as lower speed limits and discrete road signs aim to encourage drivers to slow down and be considerate to more vulnerable users who can in turn use and enjoy country lanes in greater safety, with less threat from speeding traffic. The final form of mitigation would be subject to consultation with Stockport Metropolitan Borough Council.

- **A627 Torkington Road/ Offerton, Hazel Grove:** The latest traffic modelling predicts that there is a potential risk that completion of the A6MARR along with enhanced mitigation measures on the A6 through High Lane and Disley could lead to a material increase in traffic on the A627 Torkington Road/ Offerton Road, Hazel Grove. It is recommended, therefore, that traffic flows on the A627 Torkington Road/ Offerton Road are monitored prior to and following completion of the A6MARR scheme. In the event that the A627 Torkington Road/ Offerton Road is shown to attract a material increase in traffic as a consequence of the scheme appropriate traffic management would be introduced to mitigate its impact. The final form of traffic management would be subject to consultation with Stockport Metropolitan Borough Council.
- **Clifford Road, Poynton:** The traffic modelling predicts a potential slight risk of increased traffic levels on Clifford Road following completion of the A6MARR scheme.

Clifford Road has the potential to act as an alternative route for through traffic between the A5149 Chester Road and the A523 London Road South (and vice versa). For this reason and to control traffic speeds, Clifford Road has already been traffic-calmed with shallow vertical deflections.

It is recommended that prior to and following completion of the A6MARR scheme that traffic flows on Clifford Road are monitored to ascertain whether or not it attracts increased through traffic between the A5149 Chester Road and the A523 London Road South.

In the event that Clifford Road is shown to attract increased through traffic appropriate traffic management would be introduced to discourage 'rat-running' and ensure as far as practicable that Clifford Road retains its function as a residential local distributor route. The final form of traffic management would be subject to consultation with Cheshire East Council.

Traffic signage will play an important role in directing strategic traffic that wishes to use the A6MARR to use the most appropriate route through Poynton.

- **Gillbent Road, Cheadle:** The traffic modelling predicts a potential risk of increased traffic levels on Gillbent Road following completion of the A6MARR scheme, or more specifically the proposed junction improvements to the A34/ B5094 Stanley Road junction.

In order to mitigate this potential risk and discourage its use it is recommended that consideration is given to the introduction of speed management measures and/ or local access improvements on Gillbent Road. The final form of mitigation would be subject to consultation with Stockport Metropolitan Borough Council.

- **Handforth:** The traffic modelling predicts increased traffic flows along the A34 Handforth bypass following completion of the A6MARR scheme. The A34 is a 2-lane dual carriageway and is a key north-south radial route linking Cheshire with Manchester.

Capacity issues along the A34 Handforth bypass are currently limiting the attractiveness of this route with some traffic from the south heading to/ from Manchester Airport predicted instead to route through Handforth town centre on the B5358 Wilmslow Road. It is intended that the A34 - A555 route should be used for longer-distance journeys, with the B5358 Wilmslow Road/ A6MARR junction reserved for use by more locally Handforth-based traffic.

In order to discourage inappropriate routeing through Handforth town centre, whilst retaining the proposed west-facing slip roads at the B5358 Wilmslow Road/ A6MARR junction, it is recommended that district centre traffic management and traffic calming along the B5358 Station Road/ Dean Road is introduced. The final form of traffic management would be subject to consultation with Cheshire East Council.

- **Wythenshawe (south of Simonsway):** The traffic modelling predicts that the changes to Shadowmoss Road/ Ringway Road junction which are necessary to facilitate the A6MARR scheme could increase the risk of inappropriate routeing of traffic through the Wythenshawe area south of Simonsway, traffic which without the A6MARR Scheme would use the Ringway Road/ B5166 Styal Road junction.

Simonsway is a local distributor road which provides an important east-west route within Wythenshawe both for vehicular traffic and pedestrians and cyclists. The route provides access to residential areas, Wythenshawe town centre, and the Atlas Business Park, as well as providing a strategic link to the motorway network via north-facing slip roads on to the M56 at Junction 4. Portway and Cornishway provide single carriageway access routes to residential properties, occasional retail units and other uses. Traffic is free-flowing throughout the day and both routes are lightly traffic calmed in the form of coloured carriageway surfacing and shallow speed cushions.

To manage this potential risk it is recommended that further local traffic management measures are introduced on residential routes to the south of Simonsway to discourage, as far as practicable, strategic traffic routeing through the Wythenshawe area, but at the same time retaining local accessibility to Manchester Airport for Wythenshawe residents. The final form of traffic management would be subject to consultation with Manchester City Council.



Although Simonsway is predicted to experience some increase in traffic flow with the A6MARR plus mitigation in place this is not matched by any noticeable increase in junction delay. It is considered therefore that given the current role of Simonsway as a local distributor road, in providing access to Wythenshawe town centre and the Atlas Business Park, such traffic flow increases would not materially alter the prevailing character of the road.

Traffic signage will play an important role in directing strategic traffic wishing to access Manchester Airport to use the most appropriate routes through the area, notably Simonsway, Styal Road and the western section of the A6MARR.

61. Based on the latest traffic modelling information the following complementary measures are proposed:

- **Interface of the A6MARR with the Existing Pedestrian/ Cycle Network:** The A6MARR scheme includes provision of a shared pedestrian and cycle route adjacent to the new road and existing length of the A555, providing a new orbital link for the strategic cycle/ pedestrian network. It is essential that this new orbital link is fully integrated with the existing local cycle and pedestrian network to maximise access to the new route and therefore maximise the benefits associated with the A6MARR scheme.

Further to consultation with landowners a series of upgrades to the existing PRow network will be promoted as being complementary to the A6MARR scheme having taken account of public benefits and the in-principle support from landowners in terms of delivery.

- **A6 through Hazel Grove:** The traffic modelling predicts that completion of the A6MARR will significantly reduce traffic flows on the A6 north of the new A6MARR junction.

The A6 through Hazel Grove currently carries high volumes of traffic, including a large proportion of heavy goods vehicles and high frequency bus services. The pedestrian/ cycle environment along the A6 through Hazel Grove is currently poor, and is an accident 'hot-spot' for pedestrian road injury accidents. All of these factors, coupled with the impact of congestion on noise, severance, vibration, and poor air quality, are adversely affecting the vitality of the District Centre.

Existing traffic levels and the width of available carriageway within the District Centre create further problems in respect of on-street parking and servicing/ deliveries to the numerous retail and commercial properties that line the A6. Delivery vehicles frequently block one of the two available lanes for through traffic leading to delays not only during but also outside of peak periods. Parking restrictions prevent on-street parking through the District Centre, leading to a lack of parking overall for visitors to shops and properties.

Greater Manchester Combined Authority, Manchester City Council and Stockport Metropolitan Borough Council have made a bus quality partnership scheme (QPS) for the A6 between Manchester City Centre, Stockport and Hazel Grove. The A6 is a key bus corridor into Manchester city centre, operates with the most frequent single bus service in Greater Manchester (the 192) carrying almost 10 million passengers every year, and plays a critical role in supporting sustainable economic growth and accessibility in Greater Manchester. The QPS will ensure high standards of service for the passengers along this route and a commitment to the provision of quality infrastructure for bus operators. This includes bus lanes, upgraded bus stops and traffic management measures.

The predicted reduction in traffic through Hazel Grove presents the opportunity to reallocate road space in a more sustainable manner by, for example, the introduction of bus lanes where space permits, and/ or by reducing the number of lanes to a single lane in each direction with a shared third lane for right-turning provision and pedestrian refuges.

- **Bramhall:** The traffic modelling predicts a reduction in traffic flows through Bramhall following completion of the A6MARR scheme.

The Ack Lane East/ Bramhall Lane South junction is located at the heart of the vibrant Bramhall District Centre. The junction is a three-arm mini-roundabout with uncontrolled crossing facilities located on each arm of the roundabout. The Ack Lane East/ Moss Lane three-arm priority junction lies to the immediate west of the mini-roundabout. The junctions currently experience peak period congestion due to the high volume of traffic passing through the District Centre and the close proximity of the two junctions, as well as catering for high pedestrian movements. With high traffic flows, and uncontrolled pedestrian crossing provision at the mini-roundabout intersection of key routes, the District Centre lacks adequate pedestrian crossing facilities on key desire lines (although signalised pedestrian crossings exist to the immediate north of the mini-roundabout).

Completion of the A6MARR therefore represents a potential opportunity for an environmental and traffic scheme to be introduced in Bramhall that improves the pedestrian and traffic environment within the local district centre.

- **Finney Lane, Heald Green:** The traffic modelling predicts that Finney Lane will experience a significant reduction in traffic flow as a result of completion of the A6MARR scheme.

Heald Green is a thriving Local Centre with a wide variety of retail outlets, shops and services and is therefore a focus for pedestrian activity. Due to its location and close proximity to Manchester Airport and motorway system, Heald Green shopping area serves the needs of the local Heald Green community as well as regular commuters who travel to and from Manchester Airport and Cheadle Royal Business & Retail Park.

Notwithstanding recent public realm improvements, completion of the A6MARR and the associated reduction in airport traffic flows will present a potential opportunity for further district centre environmental improvements/ public realm aimed at enhancing facilities for pedestrians and cyclists.

- **Styal Road, Styal:** The traffic modelling predicts that the B5166 Styal Road will experience a reduction in traffic flow as a result of completion of the A6MARR scheme.

The B5166 Styal Road currently provides a popular route to Manchester Airport from Handforth, Wilmslow and further afield. Whilst it would be desirable in-principle to see this traffic using the A34, the scope and effectiveness of traffic calming along the length of the B5166 Styal Road would be limited, particularly for local residents.

Completion of the A6MARR does, however, present a potential opportunity for speed management measures to be introduced on the B5166 Styal Road on the approach to the new A6MARR junction.

Traffic signage will play an important role in directing strategic traffic wishing to access Manchester Airport to use the most appropriate routes through the area. For example, traffic from Macclesfield should be signed via Monks Heath and the Alderley Edge bypass to the A34 - currently the only signing for Manchester Airport from Macclesfield is via the B5358 Bonis Hall Lane.

## Managing Impacts of Construction

62. Construction of the A6MARR scheme is programmed to take place from late 2014 to mid 2017. A Code of Construction Practice (the Code) has been developed to protect the interests of local residents, businesses and the general public in the immediate vicinity of the construction works. The Code will seek to minimise impacts, such as noise, vibration and traffic, during the period of construction. The Code is submitted as part of the Planning Application for the A6MARR scheme. It will be the responsibility of the appointed Contractor to comply with the Code.

63. The Code will include:

- **Contractor Parking:** The Contractor is to agree any areas of parking for their employees that fall outside the boundary of the site compound with the relevant local authority prior to the commencement of the works. The Contractor shall ensure that any disruption caused to local residents is kept to a minimum;
- **Temporary Signing:** The use of temporary signing to restrict vehicle types/ sizes and sign agreed construction traffic routes. The requirement to access the site via these routes will be communicated to suppliers of the Contractor;
- **Traffic Sensitive Routes:** Certain roads are 'traffic sensitive' routes and as such works affecting the carriageway are restricted to between 9.30am and 3.30pm on weekdays unless otherwise agreed with the relevant councils' traffic managers and local Police;
- **Noise Limits for Work Site:** Agreements will be in place with local authorities on noise limits for work sites and other relevant issues before the works are due to commence on site. Measures to reduce noise during construction include:
  - Site compounds to be surrounded by fencing or other barriers, where appropriate
  - Use of electrical items of plant instead of diesel or petrol plant in especially sensitive locations
  - Exhaust silencing and plant muffling equipment to be maintained in good working order
- **Construction Working Hours:** The hours of working for the construction works are likely to be limited to between 8.00am and 6.30pm Monday to Friday and between 8.00am and 1.00pm on a Saturday unless the Contractor proposes additional or alternative working hours for construction reasons or the contractor is required to undertake certain works outside these hours. It is anticipated that some works on the rail crossings will be undertaken at night times and weekends. In instances where the Contractor proposes a change to the working hours, prior approval will be sought;
- **Vibration:** The Contractor will ensure that all reasonable measures are taken to protect local residents from nuisance and physical damage that may be caused by vibration;
- **Dust:** The Contractor will take all necessary measures to avoid creating a dust nuisance; and
- **Complaints Procedure:** A complaints procedure will be in place whereby members of the public can, if necessary, make contact by telephone direct with a "hot line" facility. Details of the named contacts to whom all written complaints, including emails, should be addressed will be available.

64. In addition to the Code, the contractor will adopt the recommendations of the Considerate Constructor Scheme which aims to ensure good construction practice on the part of the contractor.

## Conclusions

65. This application represents a key component of the programme of works recommended by the SEMMS study, with the over-arching objective of delivering:

- The promotion of environmentally sustainable economic growth;
- The promotion of urban regeneration;
- The improvement on amenity, safety and health;
- The enhancement of the Regional Centre, town centres, local and village centres and Manchester Airport; and

- The encouragement of the community and cultural life of neighbourhoods, and encouragement of social inclusion.
66. The 20-year Strategy comprises a series of work packages that could be delivered in the short, medium and longer term. Over the last ten years since the completion of the SEMMS study, approximately £63 million has been spent on SEMMS projects including; Quality Bus Corridors and Integrated Transport Corridors on a number of route; accessibility improvements to bus stops and transport interchanges; creation of on-street cycle facilities and improvements to the pedestrian network; traffic speed management schemes; and a range of behaviour change and urban regeneration interventions.
67. Scheme development has been the subject of detailed planning and consultation, in line with the SEMMS strategy recommendations for a more appropriate scale road proposal to provide relief to local communities affected by inappropriate through traffic, but not to provide a new strategic route of regional and potentially national significance.
68. By improving access to south-east Manchester and Cheshire East, the A6MARR will benefit communities and the local economy, in terms of:
- Economic growth generating additional economic output for the region of up to £2.5 billion and contributing towards the creation of up to 5,450 new jobs;
  - Better access to Manchester Airport and other key destinations for employment, education, health, leisure and retail;
  - Less traffic on local roads - reducing congestion on local roads in surrounding areas;
  - Shorter journey times for cyclists, public transport users, car drivers and freight;
  - Improved road safety, particularly for pedestrians and cyclists by reducing the volume of traffic passing through residential areas; and
  - Increased investment encouraged in Manchester Airport and Airport City Enterprise Zone as well as areas of Stockport, Cheshire East and Manchester.
69. A package of complementary and mitigation measure has been proposed to address the predicted change in traffic flow on the local highway network following completion of the A6MARR scheme. The measures aim to ameliorate the scheme's impact on local communities where there are predicted to be traffic increases, and seek opportunities to encourage walking, cycling and support to local centres where there are predicted to be reductions in traffic flow.
70. The scheme's importance is highlighted in the refreshed Greater Manchester Strategy 2013-2020, which places connectivity and transport investment at the heart of its economic strategy to focus investment on the city-region's strategic transport network to enhance local, national and international connectivity. This investment strengthens and widens GM's labour market which is critical to its future success. Indeed, the Manchester Independent Economic Review highlighted that: *"improvements to transport networks within the Manchester City Region would provide the largest economic pay-off"*.
71. Confirmation of government funding to improve access to Manchester International Airport and the adjacent enterprise zone was announced on 1 October 2013. Setting the importance of the scheme in context, Lord Deighton, chair of the HS2 Growth Taskforce and Commercial Secretary, said:
- "This is another example of the government's willingness to unlock the key transport infrastructure vital to the regeneration of the economy.*
- Making this funding available for new road links around Manchester Airport reflects this government's commitment to drive growth in the economy and reduce congestion on our roads.*

*Manchester International Airport is the 4th largest airport in the UK and of crucial economic importance to the future prosperity of the north of England.*

*The scheme will significantly improve access from the east not only to the airport but also the airport city enterprise zone. It will also relieve congestion in the south of the conurbation and support growth in the wider south Manchester corridor.*

*A parallel shared cycle and pedestrian path and a package of complementary measures, which could include the widening of pavements and new bus lanes, will maximise the scope of potential benefits by making the most efficient use of road space in the areas where there are forecast reductions in car traffic.”*

72. The government’s announcement grants what is known as programme entry approval to the scheme, an important milestone which precedes detailed design and the obtaining of the necessary statutory permissions. The government’s announcement follows the decision of the Greater Manchester Combined Authority to approve the funding package this summer.

# 1. Introduction

## Purpose of this Document

- 1.1 This document presents the Transport Assessment for the A6 to Manchester Airport Relief Road (A6MARR) scheme. The A6MARR scheme has been identified by Central Government as one of a number of nationally important infrastructure projects, which are required to revitalise the economy and provide congestion relief to local communities.

## Scheme Overview

- 1.2 The A6MARR scheme will improve surface access to Manchester Airport and provide better connectivity along the south Manchester corridor, to assist Greater Manchester and Cheshire East in meeting their aspirations for economic growth. It directly supports the Government's objective to provide major transport infrastructure that will deliver economic growth, a fact acknowledged by the announcement on prioritisation for funding in the Chancellor's Autumn Statement in November 2011. The scheme will provide congestion relief to local communities and generate wider benefits to business through improved journey time reliability on the local and strategic highway network.
- 1.3 The scheme is an integral component of the wider South East Manchester Multi-Modal Strategy (SEMMS), which has delivered benefits to local communities across south-east Manchester through a range of public transport and sustainable transport measures over the past ten years. It is widely recognised that the A6MARR scheme is critical to delivering the long-term objectives of the SEMMS strategy, and to meet national objectives for growth, employment and connectivity.

## The Need for the Scheme

There is currently no direct transport link running east-to-west through south-east Greater Manchester and Cheshire East. The lack of this connection is contributing to congestion on major and minor roads. This means that people and goods cannot move easily, directly and efficiently.

The congestion being created is constraining the local economy, affecting air quality in local areas and reducing access to key destinations. These problems will become significantly worse in the future if no action is taken. The A6MARR scheme has been identified as the best solution to address this problem, as part of the overall SEMMS Strategy.

The A6MARR has been developed for the following main reasons:

- Relieve existing traffic congestion and address poor connectivity which constrains the economy through lengthening journey times. Current congestion reduces labour market catchments and business-to-business activity as well as creating delays on designated freight routes (e.g. the A6) which, in turn, generates productivity losses for businesses;
- Address the current poor access to/ from the east to Manchester Airport which acts as a barrier for economic growth and regeneration;
- Improve the existing poor transport links in communities throughout south Manchester in particular relating to the east-west highway network;
- Relieve congestion on the existing roads, where average peak time vehicle speeds of less than 10mph have been recorded on many parts. Greater Manchester (including Stockport) has comparable levels of congestion to Outer London, while a comparison of journey times on key commuter links across England's ten largest urban areas over the same period identifies Greater Manchester as experiencing the greatest levels of congestion;
- Reduce existing trips using residential streets as well as passing through local centres which will in turn reduce levels of pollution, road traffic incidents and journey times;

- Relieve current congestion problems along the A6 and in local centres including Gatley, Bramhall, Heald Green, Hazel Grove, Poynton, Wilmslow, Handforth and Cheadle Hulme which currently affect accessibility and lead to delays;
- Improve existing poor environmental conditions in local communities caused by the high volumes of traffic passing through the areas to reach other destinations; and
- Relieve currently congested conditions for pedestrians and cyclists which results in non-motorised transport users facing problems of safely accessing education, employment and leisure facilities.

## Report Structure

1.4 Following this introduction, the Transport Assessment is structured as follows:

- **Chapter 2** provides a description of the A6MARR scheme, identifying the location and individual components of the scheme;
- **Chapter 3** demonstrates how the scheme objectives align with wider policy objectives at the local, sub-regional, regional and national levels;
- **Chapter 4** provides an overview of the SEMMS study;
- **Chapter 5** provides a description of existing conditions within the area of influence of the scheme;
- **Chapter 6** summarises the A6MARR scheme development process;
- **Chapter 7** provides an overview of the A6MARR traffic model and underpinning assumptions;
- **Chapter 8** presents an operational assessment of the A6MARR scheme;
- **Chapter 9** presents the wider impact of the A6MARR scheme;
- **Chapter 10** describes how the impact of construction will be managed; and
- **Section 11** presents the conclusions and recommendations of the Transport Assessment.

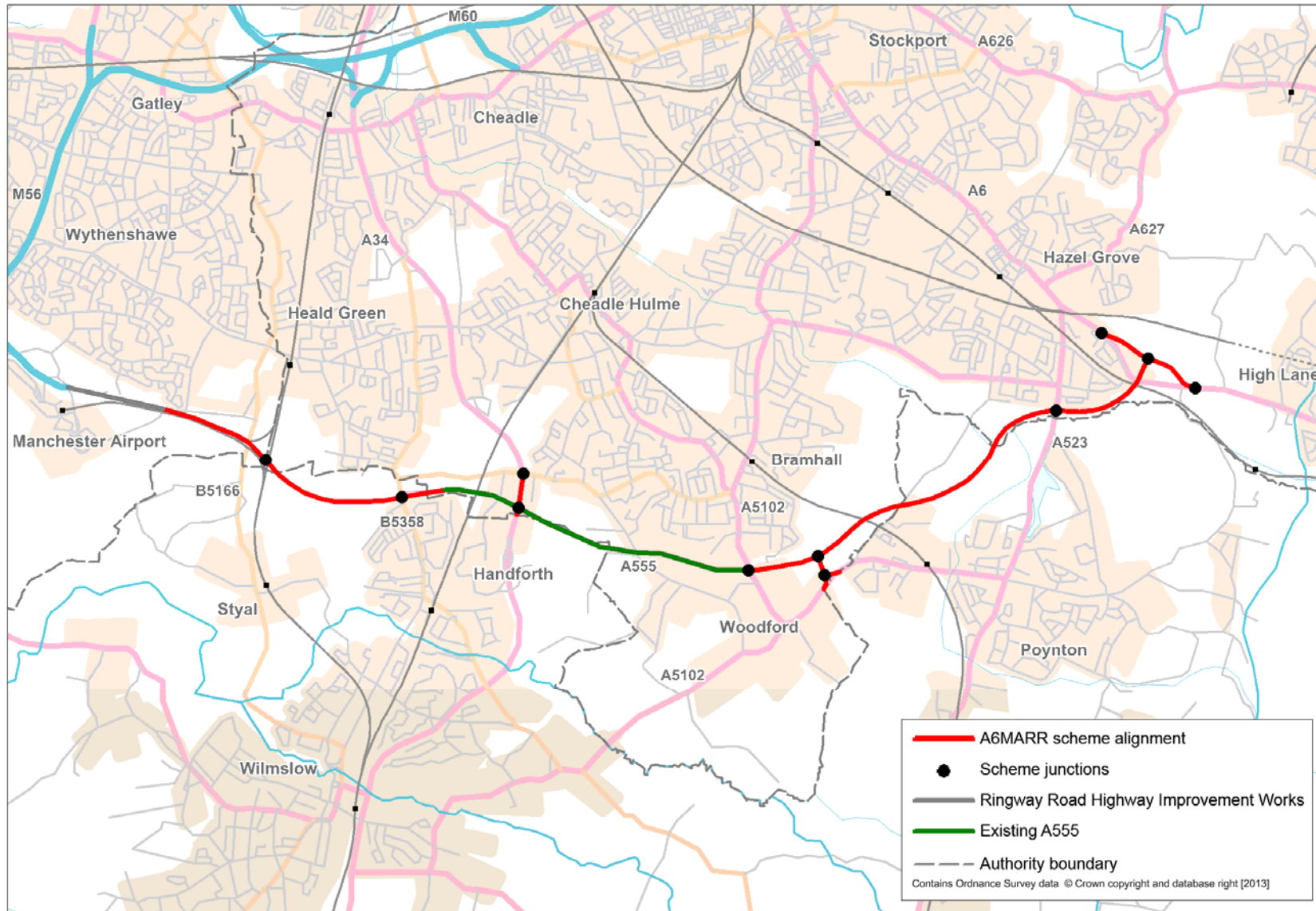
## 2. Scheme Description

### About the Scheme

- 2.1 The A6MARR scheme will provide 10 kilometres of predominantly new 2-lane dual carriageway running east-to-west from the A6 near Hazel Grove (south-east Stockport), via the 4 kilometres of existing A555 to Manchester Airport and the link road to the M56.
- 2.2 The scheme bypasses heavily-congested district and local centres, including; Bramhall, Cheadle Hulme, Hazel Grove, Handforth, Poynton, Wythenshawe, Gatley and Heald Green. It will provide much-needed connectivity for key strategic routes into the North West and to Manchester Airport, including traffic from the A6, A523 and A34 – all of which are key routes for business, leisure travel and freight from Cheshire, Derbyshire, Staffordshire, Yorkshire and beyond. The scheme incorporates seven new and four improved junctions, four railway crossings and a parallel shared cycleway/ footway.
- 2.3 The A6MARR scheme has been developed by Stockport Council working with its partners, Manchester City Council, Cheshire East Council and Transport for Greater Manchester (TfGM). Public consultation on the road scheme has taken place over two phases (<http://www.semmms.info/a6/consultation/>):
- The first phase of consultation on the A6MARR scheme ran between 22<sup>nd</sup> October 2012 and 25<sup>th</sup> January 2013. It was designed to specifically to capture opinion on the A6MARR scheme along with people's views on junction options to help determine a preferred scheme. Following analysis of the feedback from phase 1 consultation, Stockport Council, along with its partners revised their proposals to develop an emerging preferred scheme; and
  - The second phase of consultation ran from 3<sup>rd</sup> June 2013 to 19<sup>th</sup> July 2013 to allow residents, businesses and road user to give their views on the emerging preferred scheme.
- 2.4 Additional negotiations with landowners affected by the A6MARR scheme have been ongoing from early 2012.
- 2.5 The location of the A6MARR scheme is shown in **Figure 2.1**.



Figure 2.1 - Location of the A6MARR Scheme



## Key Elements of the A6MARR Scheme

2.6 The following summarises key elements of the A6MARR scheme:

- The scheme is a 2-lane dual carriageway;
- From the new A6MARR/ A6 junction, travelling west, the route will pass under the existing A6 Buxton Road which is taken over the new road on a new bridge for the use of buses, equestrians, cycles and pedestrians. To the south-west of the bus bridge the A6MARR will pass under the Stockport to Buxton rail line;
- At the West Coast Mainline crossing near Poynton/ Woodford, the scheme passes over the rail lines (Stockport to Stoke) on a bridge;
- The Poynton Bypass is not part of the A6MARR scheme. The design of the A6MARR scheme will enable the proposed Poynton Bypass to be developed by Cheshire East Council in the future and tie-in at the proposed A6MARR/ Bramhall Oil Terminal/ A5149 Chester Road Link junction, with minimum abortive work/ disruption;
- At the A5102 Woodford Road the A6MARR ties into the existing A555. Highway improvement works are proposed at the junction of the A555 and A34 junction and further north on the A34. The A6MARR then continues from the existing junction at the A555/ B5358 Wilmslow Road junction;
- The A6MARR will tie in to the revised layout of the junction of Ringway Road and Ringway Road West. Transport for Greater Manchester (TfGM) will construct the junction, installing traffic signals and a pedestrian crossing as part of the current Metrolink extension works;
- The scheme would be subject to a 50mph speed limit from the A6 at Hazel Grove to the eastern end of the existing A555. The existing A555 will remain at the national speed limit. From the western end of the existing A555 to the B5166 Styal Road junction the speed limit would be 50mph, with the remaining section to the western scheme limits being 40mph;
- The scheme includes new cycle and pedestrian routes along its length. It will be integrated with the existing local cycle and pedestrian network to maximise access to the new route and therefore the benefits associated with the scheme. A shared cycleway/ footway will be introduced adjacent to the existing A555 to provide a continuous route along the A6MARR;
- A number of Public Rights of Way (PRoW), including footpaths and bridleways, will be directly affected by the construction of the A6MARR scheme. PRoW proposals along the length of the A6MARR scheme will therefore form an integral part of the scheme;
- For sustainability and environmental reasons, scheme lighting will be restricted to junctions along the A6MARR route, the realigned section of the A6, and the mainline section of A6MARR between the B5166 Styal Road and the Ringway Road/ Ringway Road West tie-in; and
- Measures to mitigate the environmental impact of the scheme are included along the route.

2.7 The A6MARR scheme highway alignment and block plans are contained in **Appendix A**<sup>1</sup>.

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<sup>1</sup> The drawings contained in **Appendix A** are reproduced at A3 paper size. Full scale drawings form part of the application documents.

## The Proposed A6MARR Scheme

### Hazel Grove east (A6 Buxton Road)

#### *Existing Situation*

- 2.8 The A6 Buxton Road is a single lane carriageway which runs through High Lane, Disley, Hazel Grove, Stockport town centre and beyond. The land to the north of the A6 at this location comprises a mix of agricultural uses, Hazel Grove Golf Club, and a covered reservoir, owned and maintained by United Utilities Plc. There are properties on both sides of the A6 Buxton Road at this location and also small business units.
- 2.9 The Manchester to Buxton rail line runs north-west to south-east parallel to the A6. Network Rail has advised that there is no intention currently to electrify the line and that this assumption can be considered for development of the A6MARR highway alignment.
- 2.10 There is a Toucan crossing facility of the A6 Buxton Road, north of Yew Tree Avenue. There are no other controlled crossings or online facilities for Non-Motorised User (NMUs) along this section of A6 Buxton Road.

#### *Proposed A6MARR Scheme*

- 2.11 The A6 will be realigned (over a length of approximately 1 kilometre) to the north-east of the existing A6 Buxton Road. Approximately half way along the realigned road a new signalised junction with the A6MARR would be constructed. The signalised junction would accommodate a single through-lane for traffic on the realigned A6, along with dedicated turning lanes for traffic turning towards the A6MARR. Dedicated right and left-turning lanes will be provided on the A6MARR approach to the realigned A6. An online junction layout with the existing A6 alignment is not feasible due to the proximity of the Hazel Grove to Buxton Railway Line in conjunction with the proposed A6MARR passing under the aforementioned railway.
- 2.12 From the new A6 junction the A6MARR route extends westwards within a cutting across the existing alignment of Buxton Road. A new single lane bridge with associated footway/ cycleway will be provided to carry a realigned Buxton Road over the A6MARR. Use of the bridge will be restricted to buses, pedestrians, cyclists and equestrians. Buxton Road will be maintained as a local access route to residential properties and businesses, and to maintain a through-route for bus services.
- 2.13 The parallel footway/ cycleway running alongside the A6MARR alignment will terminate on approach to the new junction with the realigned A6. The route will connect with a new footway/ cycleway provided on Buxton Road via a ramp access.
- 2.14 The construction of the A6MARR across the former alignment of the A6 requires some land-take from the former Simpson sausage factory. Forecourt access to existing commercial premises to the immediate west of the new bridge will be remodelled with a single vehicular access point and formalised car parking area.
- 2.15 The proposed tie-in junctions are located close to Yew Tree Avenue, to the west, and Norbury Hollow Road, to the east. The existing Toucan crossing facility of A6 Buxton Road (north of Yew Tree Avenue) will be relocated eastwards as part of the A6MARR scheme proposals.
- 2.16 The western tie-in point of the realigned A6 is to be constructed west of Yew Tree Avenue. Access to the realigned A6 from Yew Tree Avenue and Occupiers Lane will be via priority T-junctions. Each priority junction will have protected right turn lanes with illuminated refuge islands. Between the priority junctions, a new Toucan crossing will be provided to replace the existing facility. Access to Yew Tree Avenue and Occupiers Lane would be for local residents, visitors to Hazel Grove Golf Club, and service vehicles. Occupiers Lane will also link the relocated Toucan crossing with Footpath 65. Local bus services would turn right, at the Yew Tree Avenue junction,

and continue to use the existing eastbound A6 via the new bridge structure over the proposed A6MARR.

- 2.17 The eastern tie-in point of the realigned A6 will be via a signalised junction located to the west of Wellington Road. There will be no provision for NMUs at this junction. Access to Norbury Hollow Road from the former alignment of the A6 will be provided via a priority T-junction to the south of the eastern tie-in signal controlled junction.
- 2.18 To the west of the former alignment of the A6, the scheme passes under the Hazel Grove to Buxton railway line. After the railway the A6MARR route avoids houses in Old Mill Lane to the north while minimising its impact on ancient woodland opposite. It then passes between Norbury Brook and residential property on Ashbourne Road and Darley Road.
- 2.19 Footpath 109 would be diverted immediately south of Old Mill Lane to accommodate construction of the A6MARR scheme. Continued access to footpath 109 along the wood-enclosed Norbury Brook south of the dual carriageway from Old Mill Lane would be provided by a new section of path following the top of the cutting slope above the dual carriageway. The new section of path would be bridged over the dual carriageway before linking back into the existing Footpath 109 alignment. A further footbridge over Norbury Brook will provide a connection to Footpath 62.

Figure 2.2 – Proposed Highway Route: Hazel Grove east (A6 Buxton Road) – A6MARR/ Realigned A6 Junction

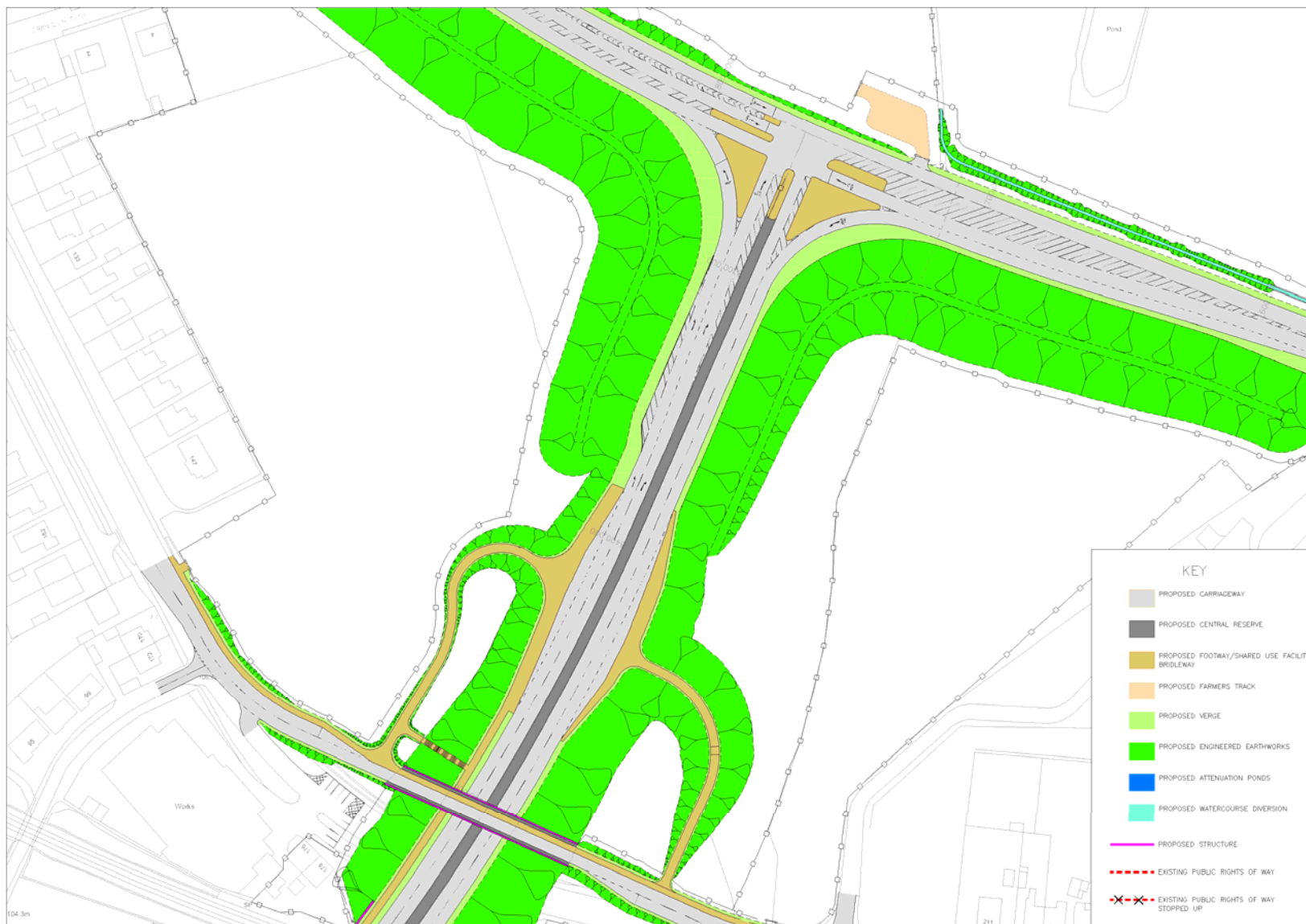


Figure 2.3 – Proposed Highway Route: Hazel Grove east (A6 Buxton Road) – Realigned A6/ Buxton Road (Western Tie-in Junction)

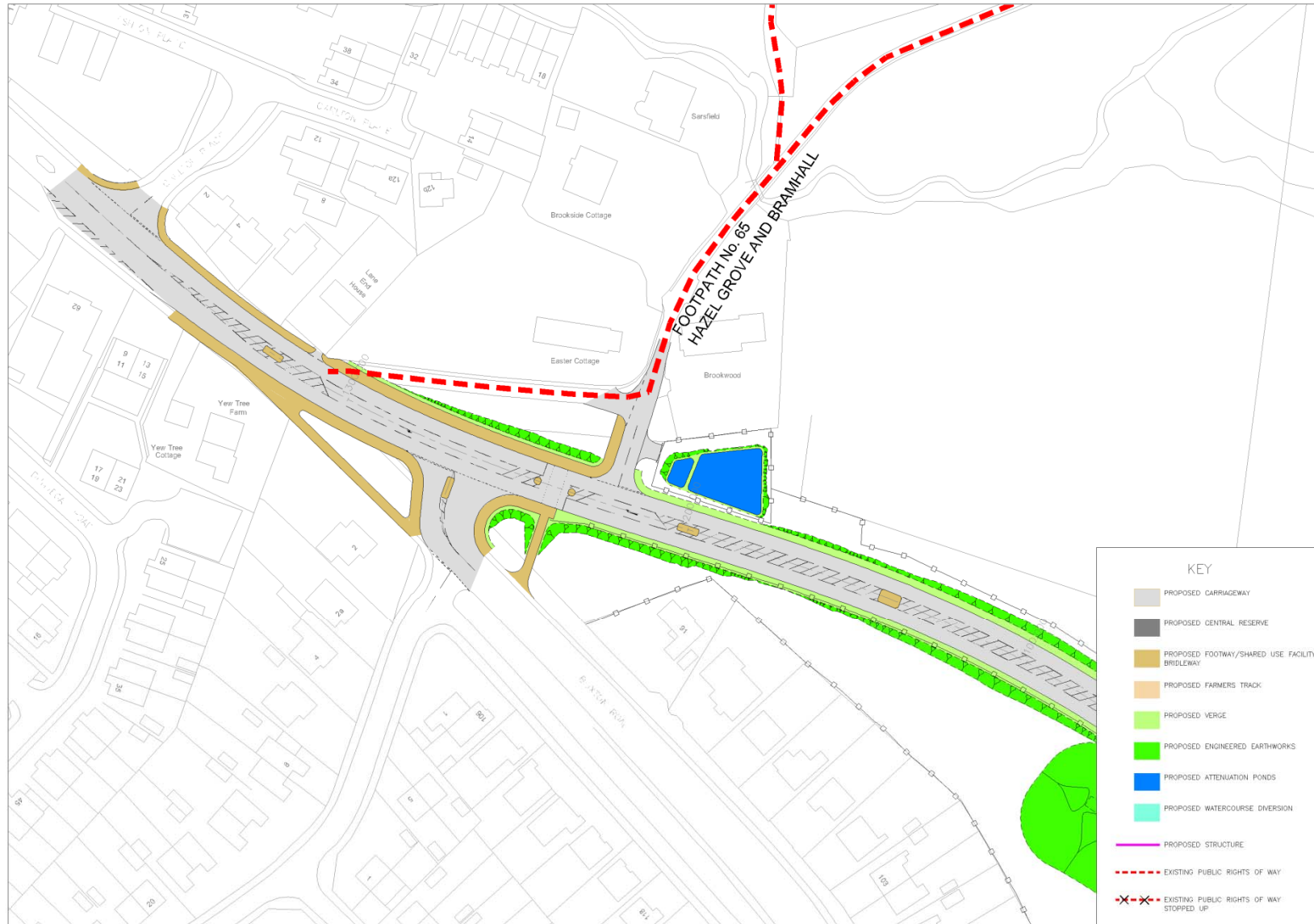


Figure 2.4 – Proposed Highway Route: Hazel Grove east (A6 Buxton Road) – Realigned A6/ Buxton Road (Eastern Tie-in Junction)



## Hazel Grove west (A523 Macclesfield Road)

### *Existing Situation*

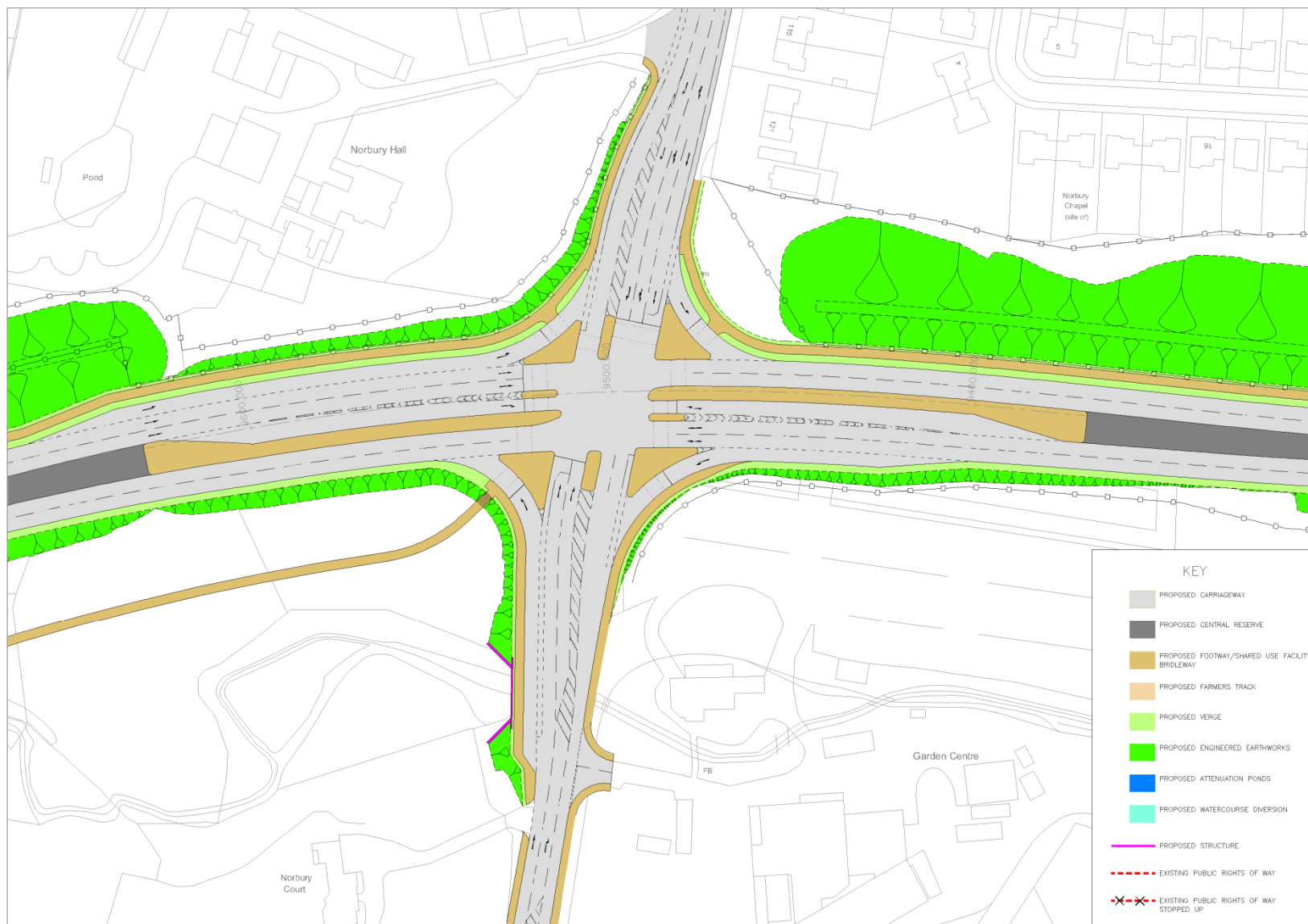
- 2.20 The A523 Macclesfield Road is a single carriageway road which connects Hazel Grove, to the north, with Poynton, to the south. North of the proposed A6MARR junction location, the A523 Macclesfield Road has a signal controlled cross-roads junction arrangement with Dean Lane and Mill Lane where there are signal controlled crossing facilities for NMUs.
- 2.21 To the south of the proposed A6MARR junction location, the A523 becomes London Road North. There are currently no crossing facilities for NMUs. Also just south of the proposed A6MARR junction location is Norbury Brook which runs approximately parallel to the A6MARR mainline. The A523 Macclesfield Road is carried over the Norbury Brook via a highway bridge.
- 2.22 There is currently a narrow footway on the eastern side of the carriageway on the A523 Macclesfield Road. No existing footway provision is present on the western side in the vicinity of the proposed A6MARR junction. Norbury Hall, which is a locally listed structure, is located to the north-west. The property is used as a business which includes farming. To the north-east are residential properties. To the south-east is Brookside Garden Centre which also contains a large surface car park. To the south-west there is a private property set back from the A523 Macclesfield Road. Vehicle access to Norbury Hall and Brookside Garden Centre is directly from the A523 Macclesfield Road.

### *Proposed A6MARR Scheme*

- 2.23 It is proposed that the A6MARR scheme intersects with A523 Macclesfield Road via an at-grade all movement signalised cross-roads junction arrangement. This junction will be constructed within a restrictive area bounded by residential and business properties. The A523 Macclesfield Road will be widened where it crosses Norbury Brook on the southern approach to the new signalised cross-roads junction.
- 2.24 The existing footway on the eastern side of the A523 Macclesfield Road between Hazel Grove and Poynton and the Brookfield Garden Centre is heavily utilised. This footway would be maintained via the proposed signal controlled crossing facilities provided at the junction. A new section of footway on the western side of the A523 Macclesfield Road in the vicinity of the A6MARR junction will connect with the existing footway to the north of Norbury Hall, and provide access to the footpath/ cycleway running parallel to the northern carriageway edge of the new road, and a new footpath running westwards parallel to Norbury Brook. A pedestrian refuge island is also proposed to facilitate crossing the A523 Macclesfield Road north of Towers Road.
- 2.25 From the A523 Macclesfield Road the A6MARR route runs to the north of Norbury Brook and associated woods and south of the residential streets of Sheldon Road and Longnor Road before it crosses Norbury Brook at Mill Hill Hollow. Treatment ponds are proposed adjacent to the road for attenuating and treating surface water from the new road at this location.
- 2.26 A short section of Footpath 3 and the Lady Brook Interest Trail will require diversion at the end of Mill Hill Hollow. Continued access will be provided by a new footpath descending to Norbury Brook, passing under the A6MARR along the river bank and ascending on the opposite side of the road.



Figure 2.5 – Proposed Highway Route: Hazel Grove west (A523 Macclesfield Road)



## Hazel Grove to Poynton

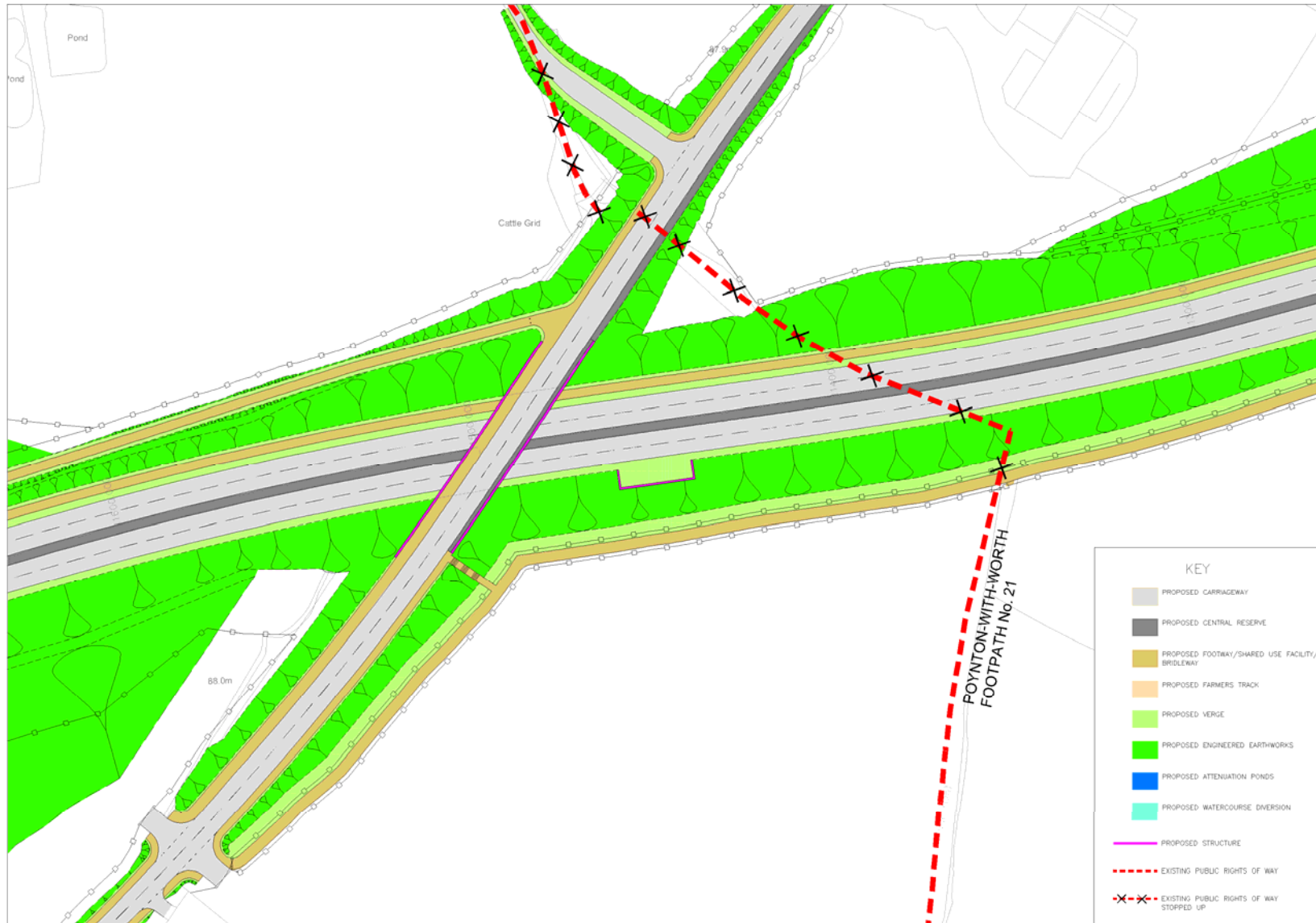
### *Existing Situation*

- 2.27 Woodford Road is a single lane carriageway and is unclassified. The road travels between the south of Hazel Grove and the west of Poynton. There are various priority junctions off Woodford Road to residential cul-de-sacs, however, there are no major junctions in the vicinity of the proposed A6MARR scheme alignment. The area is surrounded by agricultural farm land with a small number of residential properties to the north and south of the scheme alignment, the nearest being Hill Green Farm approximately 150m north east of the intersection point.
- 2.28 There are no footways on either side of Woodford Road although soft verges are present. There are no controlled crossing facilities for NMUs.
- 2.29 Woodford Road is carried over the West Coast Mainline Line (WCML), Stockport to Stoke rail line, via a rail bridge approximately 300m south-west of the A6MARR scheme alignment.
- 2.30 Footpaths 37, 31 and 21 all cross the alignment of the proposed A6MARR scheme between Norbury Brook and Woodford Road.

### *Proposed A6MARR Scheme*

- 2.31 There is no A6MARR junction proposed at Woodford Road, Poynton. The A6MARR route will pass under Woodford Road (Poynton), and over the WCML via new road bridge structures.
- 2.32 Footpaths 31 and 37 would be diverted via an elevated step-free crossing (known as 'Hill Green accommodation bridge') and associated bridleway closely following the alignment of the stopped up section of Footpath 31.
- 2.33 Footpath 21 would be diverted via a parallel footway provided as part of the new bridge construction to carry Woodford Road (Poynton) over the A6MARR. Ramped and stepped access will connect the Woodford Road footway with the segregated footway/ cycleway running parallel to the A6MARR. The resultant diversion will increase walking distances for existing users by some 140m.
- 2.34 The proposed footpath and cycle path parallel to the A6MARR road will connect the severed PRowS and provide opportunities for traffic free circular walks.

Figure 2.6 – Proposed Highway Route: Hazel Grove to Poynton



## Poynton to Bramhall (Bramhall Oil Terminal and A5149 Chester Road Link Junctions)

### *Existing Situation*

- 2.35 The A5149 Chester Road is a single lane carriageway which connects Poynton and Woodford, and Hazel Grove via Woodford Road. The A5149 Chester Road/ Woodford junction is a priority control T-junction with a ghost island right turn facility.
- 2.36 The A6MARR junction proposals are located within the green belt and surrounding pasture land. There are residential properties, adjacent to Bramhall Oil Terminal<sup>2</sup>, on the northern boundary, with A5149 Chester Road forming the southern boundary. The A6MARR route runs east-west across the site.

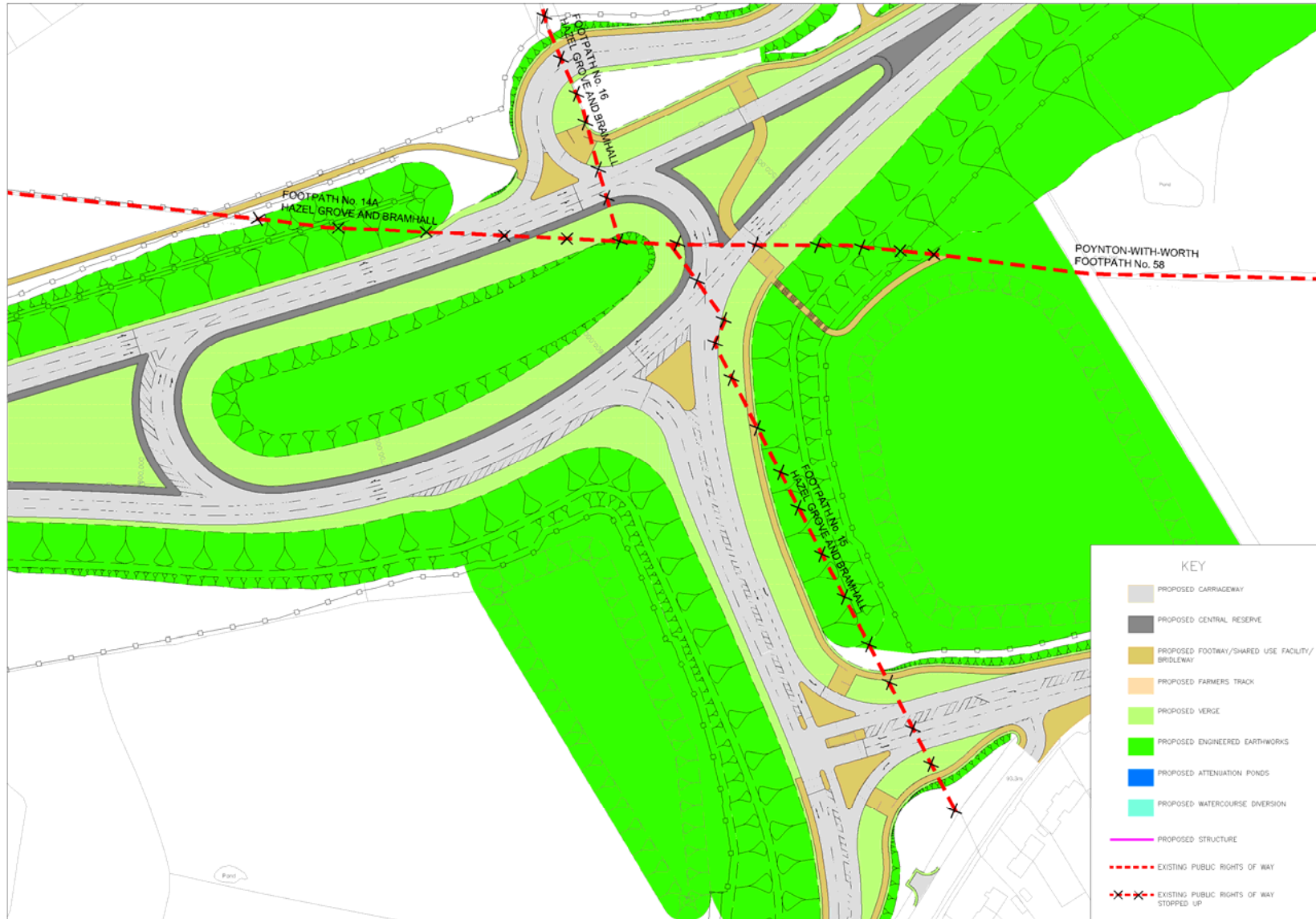
### *Proposed A6MARR Scheme*

- 2.37 The A6MARR scheme incorporates a new at-grade signalised gyratory at Bramhall Oil Terminal, including a new link road to connect back to A5149 Chester Road and a signalised on-demand link to Bramhall Oil Terminal. There will also be a new signal controlled T-junction, to the south of the new A6MARR, to connect with a realigned A5149 Chester Road. Both new signal controlled junctions will have crossing facilities for NMUs.
- 2.38 The realignment of the A5149 Chester Road will impact on existing access arrangements to a small number of residential properties. Realignment of the western section of Chester Road to meet with the A6MARR and create a new signalised junction with the eastern section of Chester Road will create a short section of cul-de-sac along the former alignment in front of the residential properties. Access to Bramhall Oil Terminal will be provided from the new A555 gyratory, replacing the previous access from the B5159.
- 2.39 Footpath 19 crosses the A6MARR road alignment to the east of the new junction. A section of the footpath that currently crosses the A6MARR alignment would be closed and rerouted running parallel with the A6MARR at the bottom of the northern embankment slope before crossing, via an underpass, adjacent to the WCML and back to the former alignment of Footpath 19 along the bottom of the southern embankment slope.
- 2.40 Footpaths 14a, 15, 16 and 58 currently cross the proposed site of the new junction. Each footpath would be diverted to use crossing facilities provided at the new gyratory junction. Access from Woodford Road and Poynton to the southern fringe of Bramhall would be maintained via a new footpath and cycle path running alongside the new spur connecting Chester Road to the main alignment.
- 2.41 A toucan crossing would be provided for NMUs to cross the new junction and footpaths on the Bramhall side of the A6MARR.
- 2.42 The design of the A6MARR scheme at this location allows for the future accommodation of Poynton Bypass.
- 2.43 West of the Bramhall Oil terminal, the A6MARR route crosses Moored Golf Course (whose time limited planning permission has lapsed) which is located immediately east of the houses fronting A5102 Woodford Road.

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<sup>2</sup> The Bramhall Oil Terminal site is currently operating as a Petroleum & Middle Distillate Facility employing local people in a number of roles. The current facility acts a receiving and distributing unit for the Petroleum Industry and is located behind a 'semi rural' setting.

Figure 2.7 – Proposed Highway Route: Poynton to Bramhall



## Bramhall (A5102 Woodford Road)

### *Existing Situation*

- 2.44 The A5102 Woodford Road is a single lane carriageway road which connects Bramhall and Woodford. An at-grade roundabout provides a connection to the existing A555 dual carriageway.
- 2.45 There are footways on both sides of A5102 Woodford Road, albeit these are less than standard width in places. There are no NMU facilities adjacent to the existing A555 although there are uncontrolled crossing facilities present around the roundabout (tactile paving and dropped kerbs).
- 2.46 To the east and west of the A5102 Woodford Road and to the north and south of the A555, there are residential properties which are accessed via Woodford Road and/ or Jenny Lane. To the south there is farmland and a small number of industrial units. To the north-west of the proposed A6MARR junction there is a recreation ground managed and owned by Stockport Council. To the east of the existing junction there is land and property owned by the Highways Agency in preparation for the previously proposed trunk road scheme.

### *Proposed A6MARR Scheme*

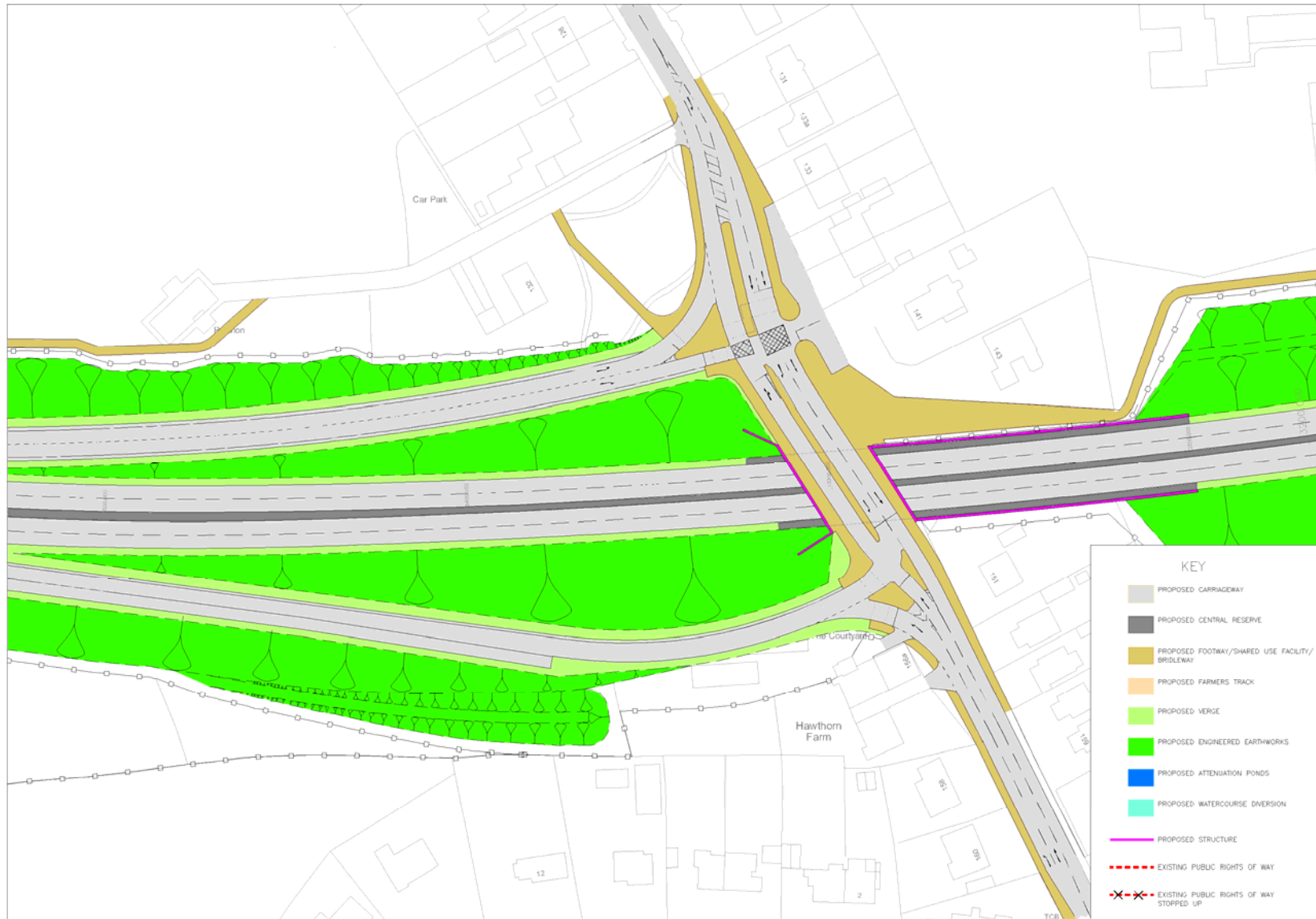
- 2.47 It is proposed that the A6MARR scheme intersects with the A5102 Woodford Road via a grade separated (half-diamond west-facing slip roads) restricted movements junction arrangement. The A6MARR would pass under a new road bridge for the A5102 Woodford Road with signalised T-junctions at the top of each slip road to facilitate traffic movements. The provision of the westbound on-slip requires the demolition of 'The Courtyard' 156a Woodford Road and the associated steel portal structure to the rear.
- 2.48 Access to residential properties 135 – 143 Woodford Road will be remodelled with a short section of cul-de-sac on the former alignment of Woodford Road used to access the properties. The cul-de-sac will be accessed from the new signalised junction of the A5102 Woodford Road and A555 eastbound off-slip road, with a dedicated on-demand signal stage incorporated for residential traffic. Properties to the south of the A555 alignment will retain their present accesses directly from the A5102.

## Bramhall to Handforth (Existing A555)

### *Existing Situation*

- 2.49 To the west of the A5102 Woodford Road, the A6MARR route is the existing A555; a dual two lane carriageway, also known as the Manchester Airport Eastern Link Road (MAELR), which was completed in 1995. The typical cross section comprises two standard width lanes and 700mm hard strips on each side. The central reserve is typically 4.5m wide and contains steel safety barriers and street lighting columns.
- 2.50 The existing A555 runs east-west from its junction with A5102 Woodford Road at Woodford/ Bramhall, before crossing the A34 Handforth bypass which is accessed via a grade separated roundabout, to end at a double headed 'dumb-bell' roundabout with the B5358 Wilmslow Road at Handforth.

Figure 2.8 – Proposed Highway Route: Bramhall (A5102 Woodford Road)



## Cheadle (A555/ A34 and A34/ B5094 Stanley Road junctions)

### *Existing Situation*

- 2.51 The A34 is dual 2-lane carriageway and is a key north-south radial route linking Cheshire with Manchester. The typical cross section comprises two standard width lanes with 700mm wide hard strips on each side. The central reserve varies at this location and contains steel safety barrier and street lighting columns.
- 2.52 The existing A555/ A34 junction is grade separated with a roundabout at the lower level and the mainline for the A555 crossing over on two highway bridges. The western highway bridge currently spans two lanes of circulatory traffic and the eastern bridge spans three lanes. The western highway bridge has sufficient space available to facilitate an additional third lane. The A555 including the west-facing slip roads cross Earl Road on a third highway bridge.
- 2.53 There are no NMU facilities adjacent to the existing A555. There are uncontrolled pedestrian crossing facilities at the bottom of both east-facing slip roads, connected by a footway running parallel to the eastern side of the roundabout junction with the A34. An uncontrolled crossing facility is also provided across the northern A34 approach to the roundabout.
- 2.54 The B5094 Stanley Road is a single carriageway which running east-west connects Bramhall, Cheadle Hulme and Heald Green. The A34/ B5094 Stanley Road junction is a roundabout with two circulatory lanes and traffic movements controlled by spiral road markings. Toucan crossings are provided on both the A34 northern and southern arms of the junction. The B5094 Stanley Road contains a combination of standard and non-standard width footways and also segregated footway/ cycleways.

### *Proposed A6MARR Scheme*

- 2.55 The A6MARR scheme proposals feature significant upgrades to the A555/ A34 junction to include provision of additional lanes on all approaches, additional circulatory lanes, and full signalisation of the roundabout. Controlled crossing facilities for NMUs will be provided on the northern side of the junction. As part of the A6MARR scheme, the A555 westbound merge slip road will change from a direct merge taper to a lane gain configuration, and the eastbound diverge slip road will change from a direct diverge taper to a lane drop configuration.
- 2.56 To the north of the existing A555/ A34 junction, Footpath 38A which runs parallel to the A555 eastbound off-slip road will be upgraded to a new shared-use footway/ cycleway which connects Earl Road with the new footway/ cycleway running parallel to the length of the A6MARR. Similarly, a short section of Footpath 81 to the immediate south of the A555 westbound off-slip road will be diverted to facilitate earthworks associated with widening of the slip road, with a replacement section of footpath provided to the immediate south of the earthworks. In both cases the replacement facilities link to pedestrian/ cycle crossing facilities at the A555/ A34 junction.
- 2.57 To the north of the A555, the A34/ B5094 Stanley Road junction will also be improved as part of the A6MARR scheme. The junction proposals are located predominately within the existing highway with minor additional land-take required. The A6MARR scheme proposals are for an all movement at-grade signalised roundabout with controlled crossing facilities for NMUs to be provided across both the A34 northern and southern arms of the junction.



Figure 2.9 – Proposed Highway Route: Cheadle (A555/ A34 Junction)

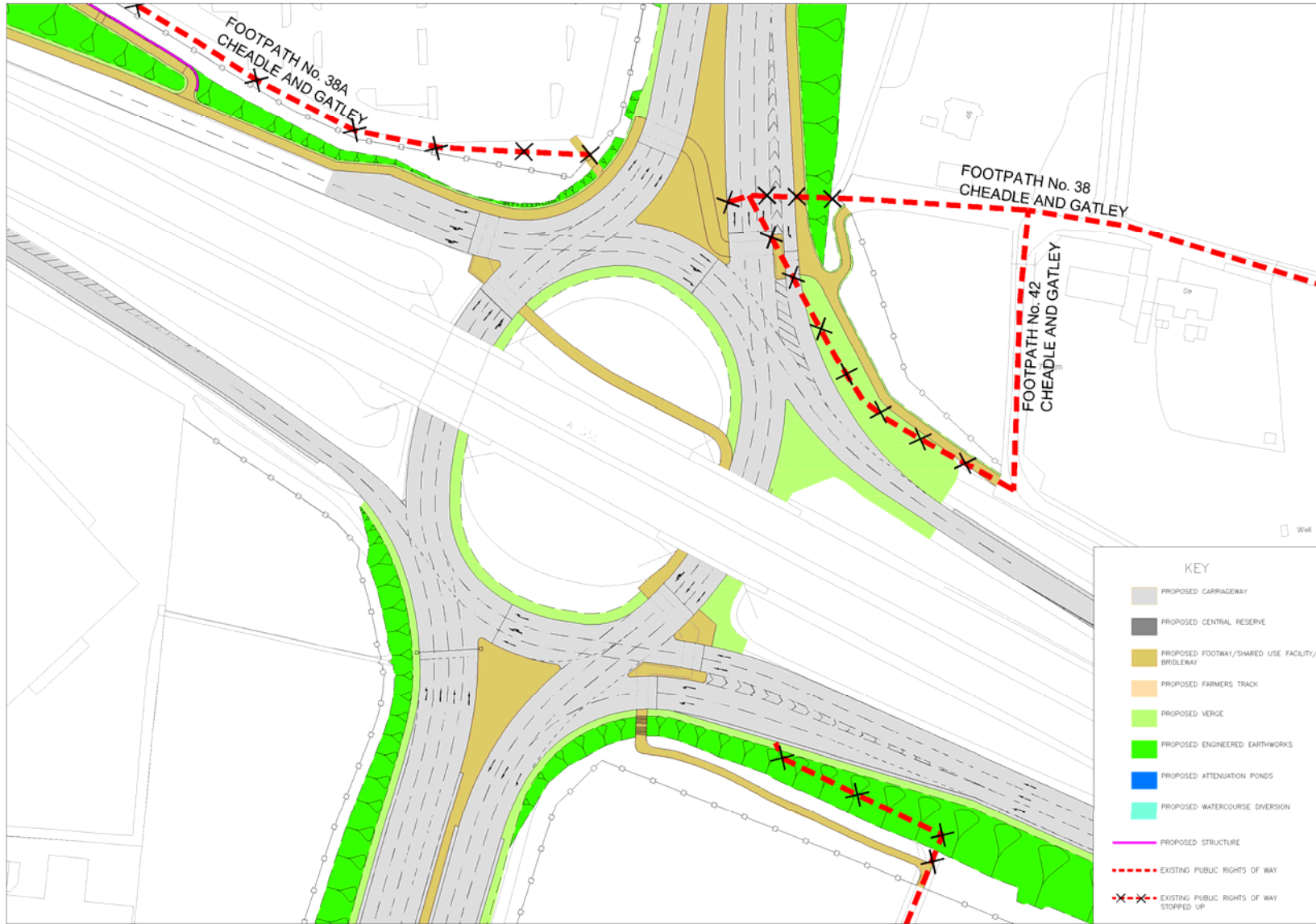
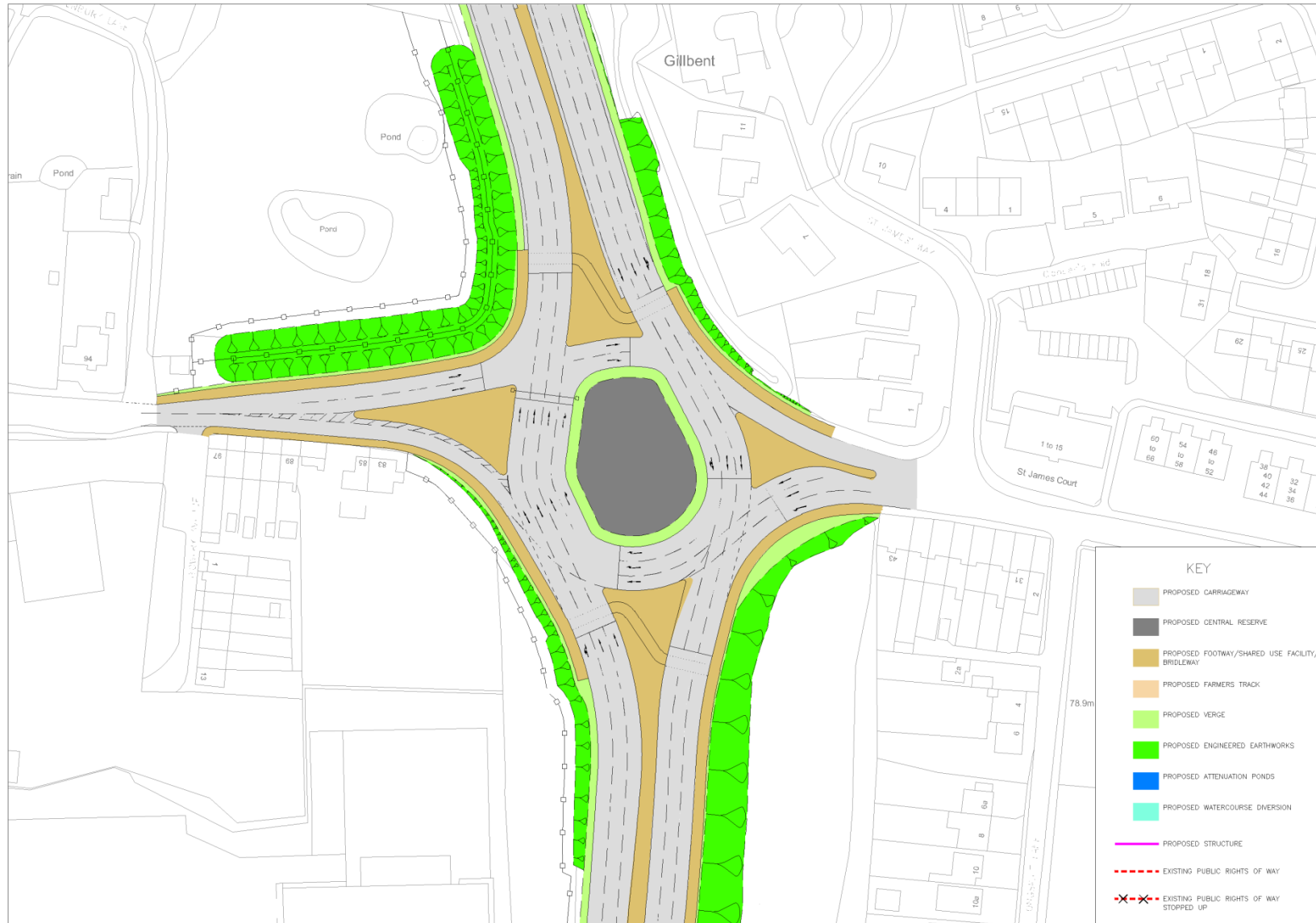


Figure 2.10 – Proposed Highway Route: Cheadle (A34/ B5094 Stanley Road Junction)



## Heald Green/ Handforth (B5358 Wilmslow Road)

### *Existing Situation*

- 2.58 The B5358 Wilmslow Road is a single carriageway road which running north-south connects Heald Green and Handforth. There is an existing grade separation between the existing A555 which heads east, and the 'dumb-bell' junction arrangement on the B5358 Wilmslow Road. Currently east-facing slip roads connect with the A555.
- 2.59 Clay Lane currently has direct vehicular access onto the B5358 Wilmslow Road via the southern 'dumb-bell' roundabout. This access is a requirement for any future junction configurations as part of the tie-in into the existing highway network.

### *Proposed A6MARR Scheme*

- 2.60 The existing A555/ B5358 half-diamond east-facing slip road grade separated 'dumb-bell' junction arrangement will be upgraded to cater for all movements through the provision of west-facing slip roads. Construction of the A6MARR mainline to the west of the B5358 Wilmslow Road and associated west-facing slip roads extinguishes the current use of land for car parking adjacent to the western side of the B5358 Wilmslow Road highway bridge. Temporary buildings associated with the current operation of the site will also be demolished.
- 2.61 Minor works will be carried out to the existing east-facing slips. In addition, formal crossing facilities for NMUs will be provided including a Toucan crossing on the B5358 Wilmslow Road north of the northern dumb-bell roundabout. Direct vehicular access/ egress to Clay Lane is accommodated via a remodelled fourth arm to the existing roundabout junction. Whilst vehicles joining the A6MARR via the westbound on-slip road will do so using this same arm, the junction configuration will enable vehicles to enter Clay Lane from the slip road, or to make right turns from Clay Lane across the slip road to join Wilmslow Road. To the north of the A6MARR, access to Little Acorn Day Nursery is to be retained without any impact.
- 2.62 The existing highway bridge which carries the B5358 Wilmslow Road (between the 'dumb-bell' roundabouts) was designed to permit the A6MARR mainline to pass under the B5358 within its existing width without modification.
- 2.63 Between the B5358 Wilmslow Road and the B5166 Styal Road, sections of Footpaths 119 and 10 will be diverted via a new ramped bridge ('Yew Tree footbridge') for pedestrians over the alignment of the A6MARR.

Figure 2.11 – Proposed Highway Route: Heald Green/ Handforth (B5358 Wilmslow Road)



## Heald Green/ Wythenshawe (B5166 Styal Road)

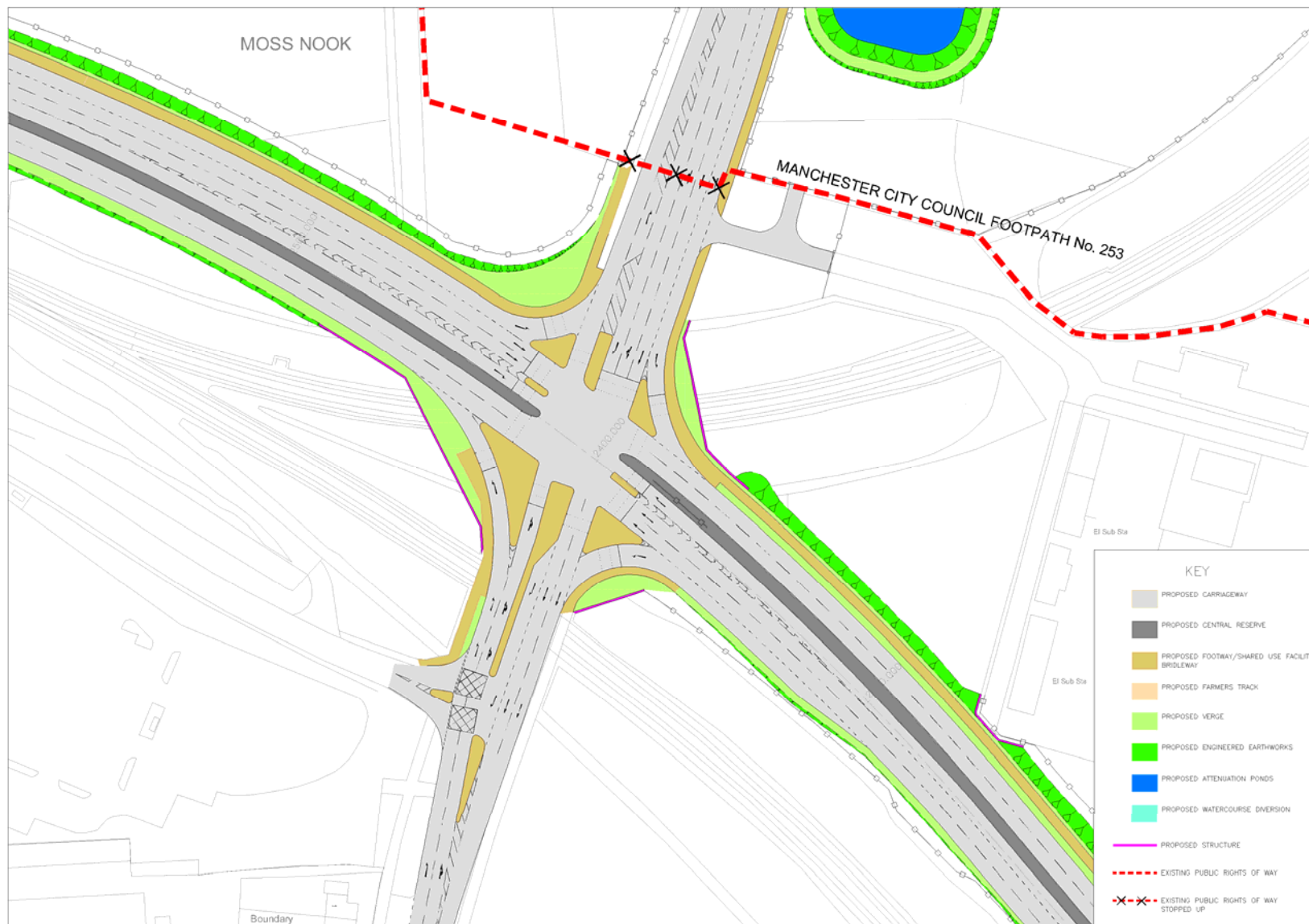
### *Existing Situation*

- 2.64 The B5166 Styal Road is a single carriageway which running north-south connects Wythenshawe and Styal. A shared cycle and footway is present on both sides of the B5166 Styal Road in the vicinity of the proposed new A6MARR junction. Immediately to the south of the proposed new A6MARR junction on the western side of B5166 Styal Road there is an access to private car parks that serve Manchester Airport, while to the east there is a large electricity substation with vehicular access from the B5166 Styal Road.
- 2.65 North of the proposed new A6MARR junction there is a signal controlled T-junction with Ringway Road. Ringway Road is the main route to Manchester Airport from the east.
- 2.66 The Styal rail line runs parallel to the B5166 Styal Road at this location with northern and southern rail spurs to Manchester Airport. All the rail lines are in cutting circa 8m deep. The B5166 Styal Road currently crosses over the Manchester Airport spur lines via two bridges over the rail lines.

### *Proposed A6MARR Scheme*

- 2.67 Between the B5358 Wilmslow Road and the B5166 Styal Road, the A6MARR passes across Styal Golf Course and some agricultural land, before crossing the Styal rail line. Discussions regarding modifications to Styal Golf Course are ongoing with the landowner, and the changes will be made through a separate planning application.
- 2.68 Footpath 7 forms part of a local PRow network and would be diverted to pass under the A6MARR via the new road over rail bridge crossing the Styal rail line.
- 2.69 It is proposed that the A6MARR scheme intersects with the B5166 Styal Road via a new all movement at-grade signal controlled junction to be constructed over the Manchester Airport spur railway line. This will require additional structures either side of the existing bridge and also to span the existing railway. In addition, signal controlled crossing facilities for NMUs will be provided.
- 2.70 To the south of the new junction, the B5166 Styal Road will be widened with access to the Manchester Airport Shuttle Parking retained. North of the junction, access into Moss Nook Electricity Substation on the east side of the B5166 Styal Road will also be retained.
- 2.71 To the immediate north of the new A6MARR/ B5166 Styal Road junction, an existing PRow crossing the widened B5166 Styal Road junction approach will be diverted to utilise crossing facilities at the new signalised junction to cross the B5166 Styal Road.
- 2.72 The footway and cycle path (Regional Cycle Route 85) running alongside the B5166 Styal Road would be severed by the new road. Access for pedestrians and cyclists would be maintained along the B5166 Styal Road via a new Toucan crossing incorporated into the new signalised junction.

Figure 2.12 – Proposed Highway Route: Heald Green/ Wythenshawe (B5166 Styal Road)



## Wythenshawe (Ringway Road, Ringway Road West and Shadowmoss Road)

### *Existing Situation*

- 2.73 Ringway Road/ Ringway Road West form an unclassified single lane carriageway road which runs east-west between the B5166 Styal Road and the M56 spur, and serves as the primary local access route to Manchester Airport. Ringway Road meets with the B5166 Styal Road via a signalised T-junction. Shadowmoss Road is an unclassified single lane carriageway road which runs north-south between Simonsway and Ringway Road.
- 2.74 Both of the Ringway Road/ Shadowmoss Road and Ringway Road/ Ringway Road West junctions are priority control junctions. However, as part of the Ringway Road Highway Improvement Works (RRHIW)<sup>3</sup>, the existing Ringway Road/ Ringway Road West priority control junction will be upgraded to signal control with associated pedestrian crossing facilities.

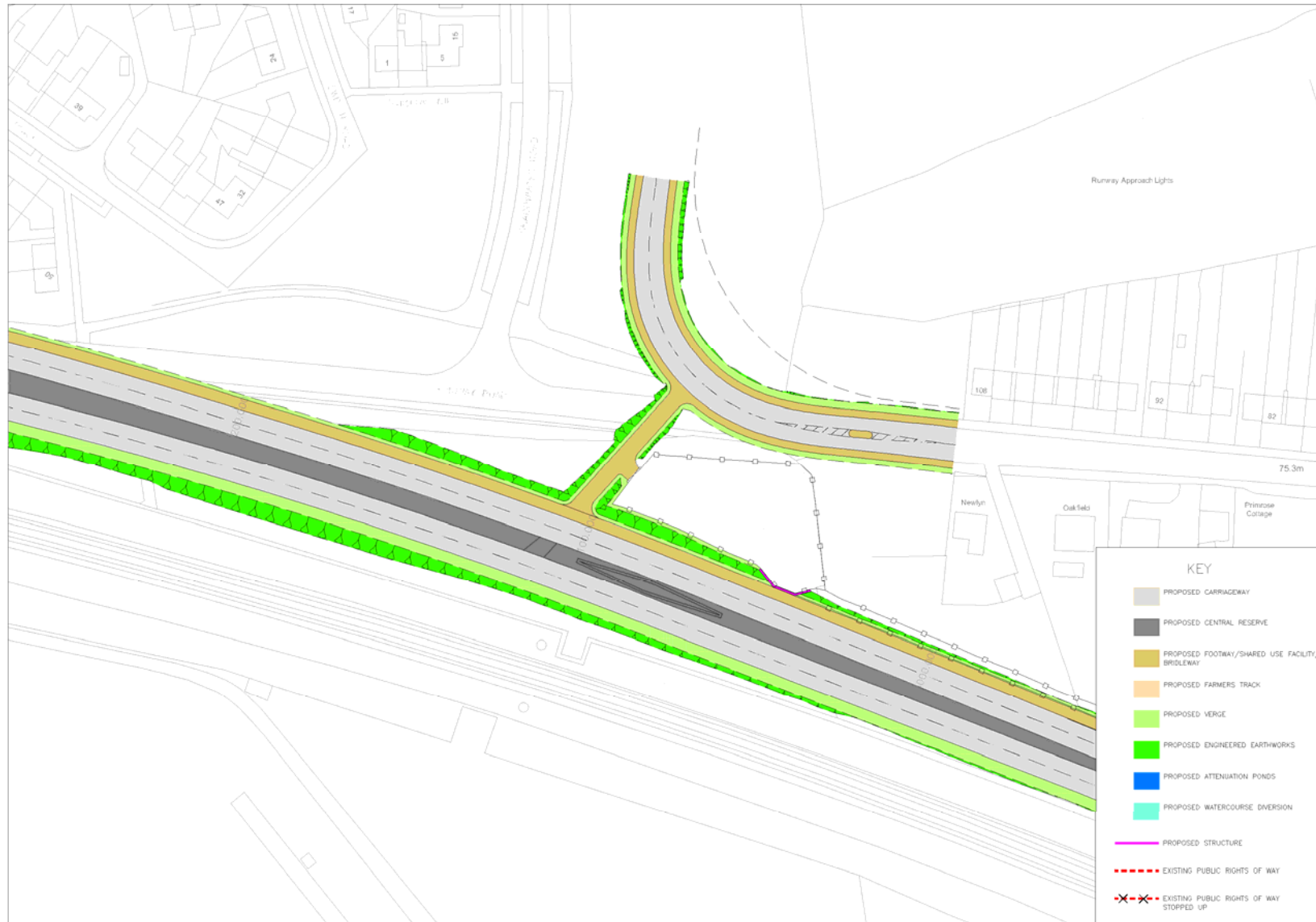
### *Proposed A6MARR Scheme*

- 2.75 From the B5166 Styal Road the A6MARR route will run parallel to the Manchester Airport rail spur. The A6MARR will tie in to the revised layout of the junction of Ringway Road and Ringway Road West.
- 2.76 Whilst there is no junction proposed with Shadowmoss Road, an emergency access route (which is also designated as a shared use footway/ cycleway) will be provided between Shadowmoss Road/ Ringway Road and the A6MARR.
- 2.77 Construction of the A6MARR scheme will require the demolition of one large greenhouse and outbuilding at Primrose Nursery off Ringway Road.
- 2.78 There is a committed Metrolink line under development at the western terminus of the A6MARR scheme. This Metrolink line to Manchester Airport is proposed to open in 2016. Metrolink will pass under the RRHIW scheme whereupon the tram route will descend to the level of the airport railway station. The interface details have been finalised by Transport for Greater Manchester in liaison with the A6MARR design team.

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<sup>3</sup> To the west of the Ringway Road junction, the RRHIW will upgrade Ringway Road to provide a continuous 2-lane dual carriageway link to Aviator Way and Outwood Lane.

Figure 2.13 – Proposed Highway Route: Wythenshawe (Ringway Road/ Shadowmoss Road)





## 3. Strategic Planning Context

### Background

- 3.1 In July 1998 the Government published *A New Deal for Trunk Roads in England*, following a strategic review of the roads programme undertaken in association with the development of its new Transport Policy. The report established a Targeted Programme of Improvements to the trunk road network to be taken forward by the Highways Agency (HA). The report also proposed a series of 'multi-modal' studies to address problems on the strategic trunk road network not covered by the short term Targeted Programme of Improvements.
- 3.2 The South East Manchester Multi-Modal Study (SEMMMS) was one of such studies. Recognising that transport problems and their solutions are not just limited to the trunk road network, the studies considered all modes of transport.
- 3.3 The SEMMMS study was commissioned because the following three road schemes were removed from the trunk roads programme along with the de-trunking of the A6 and the A523:
- A6(M) Stockport North South Bypass;
  - A555 Manchester Airport Eastern Link Road and Manchester Airport Link Road West; and
  - A555/ A523 Poynton Bypass.
- 3.4 These schemes have been identified in various plans since the 1930's and residential and employment developments in this area have been predicated on these schemes being delivered. All three corridors are protected within the relevant local authority strategic plans. The schemes were previously assigned to the HA to deliver, and progress on these schemes included agreeing preferred routes and appropriate procedures for the A6(M) following a Public Inquiry in 1988.
- 3.5 The central section of the A555 MAELR was constructed as part of a local authority A34 bypass scheme, with contributions from the HA and developers, on the assumption that the rest of the route would be built shortly afterwards, with strong supporting evidence presented at Public Inquiry by the HA.
- 3.6 The Brief for the SEMMMS study was to develop a 20-year transport strategy that addressed the problems of the study area and provide a plan of specific interventions to address those problems that were most urgent.

### A Review of National Transport Priorities

- 3.7 The Government has long-term objectives aimed at improving the economy, environment and society. These are the three tenets against which major transport infrastructure projects are assessed, and will continue to be assessed in future.
- 3.8 In its Autumn Statement 2011 and National Infrastructure Plan 2011, the Government presented its vision for the UK transport system, which included a number of elements of direct relevance to the A6MARR scheme:
- Transport infrastructure can play a vital role in driving economic growth by improving the links that help to move goods and people around and by supporting the balanced, dynamic and low-carbon economy that is essential for future prosperity.
  - Local transport systems must enable suburban areas to grow. The transport network must support good value and rapid movement of goods around the country. The transport system must be efficient but also resilient and responsive to infrequent and unexpected pressures.
  - Airports and ports are the gateways to international trade and the Government will work to improve the road and rail connectivity to major ports and airports.

3.9 To help deliver its vision, the Government has identified the A6MARR scheme as one of 70+ major infrastructure projects aimed at addressing congestion and improving performance on the road network. This is part of the Government's initiative to *'keep Britain moving by improving the capacity, performance and resilience of roads, railways and international gateways...targeting some of the worst pinch points where the networks are under particular stress and locations that are key in supporting growth'*<sup>4</sup>.

3.10 Confirmation of government funding to improve access to Manchester International Airport and the adjacent enterprise zone was announced on 1 October 2013. Setting the importance of the scheme in context, Lord Deighton, chair of the HS2 Growth Taskforce and Commercial Secretary, said:

*"This is another example of the government's willingness to unlock the key transport infrastructure vital to the regeneration of the economy.*

*Making this funding available for new road links around Manchester Airport reflects this government's commitment to drive growth in the economy and reduce congestion on our roads. Manchester International Airport is the 4th largest airport in the UK and of crucial economic importance to the future prosperity of the north of England.*

*The scheme will significantly improve access from the east not only to the airport but also the airport city enterprise zone. It will also relieve congestion in the south of the conurbation and support growth in the wider south Manchester corridor.*

*A parallel shared cycle and pedestrian path and a package of complementary measures, which could include the widening of pavements and new bus lanes, will maximise the scope of potential benefits by making the most efficient use of road space in the areas where there are forecast reductions in car traffic."*

3.11 The government's announcement grants what is known as programme entry approval to the scheme, an important milestone which precedes detailed design and the obtaining of the necessary statutory permissions. The government's announcement follows the decision of the Greater Manchester Combined Authority to approve the funding package this summer.

## A Strategy for Greater Manchester and Cheshire East

### A strategy for Greater Manchester

3.12 The Greater Manchester Strategy, which was published by the Association of Greater Manchester Authorities (AGMA) in 2009 provided a response to the Manchester Independent Economic Review (MIER) - the most robust analysis ever undertaken of a city, led by global experts. The 2009 GMS set an ambitious vision for 2020 to secure long-term economic growth and enable the city region to fulfil its economic potential, whilst ensuring that it's residents be able to contribute to and share in that prosperity. In doing so it provided the catalyst for a wide variety of interventions including;

- establishment of the UK's first Combined Authority (GMCA);
- establishment of the Local Enterprise Partnership;
- agreement of the first City Deal;
- piloted new ways of delivering public services through Greater Manchester's status as a Whole Place Community Budget Pilot;

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<sup>4</sup> National Infrastructure Plan 2011, HM Treasury, November 2011

- establishment of the GM investment framework for growth, including the GM Evergreen Fund which will be used to fund major developments, and a £1.5 billion Greater Manchester Transport Fund (GMTF) investment programme; and
- devolved responsibility for the allocation of Regional Growth Fund resources and the Growing Places Fund.

3.13 However, since the GMS's publication there have been significant changes to the context of its delivery which have prompted a fresh analysis of its priorities. The global economic downturn has created unprecedented and extremely difficult economic conditions within which growth has to be delivered, and these challenges are likely to persist for years to come. The consultation document Greater Manchester 2013 – 2013 published in March 2013 sets out what, in these very different and challenging circumstances, can be done to realise Greater Manchester's full potential.

3.14 The vision of the refreshed GM Strategy 2013-2020 is that *"by 2020, the Manchester city region will have pioneered a new model for sustainable economic growth based around a **more connected**, talented and greener city region where all our residents are able to contribute to and benefit from sustained prosperity"*.

3.15 Greater Manchester has consistently placed connectivity and transport investment at the heart of its economic strategy to focus investment on the city-region's strategic transport network to enhance local, national and international connectivity. This investment strengthens and widens GM's labour market which is critical to its future success. Indeed, the MIER highlighted that: *"improvements to transport networks within the Manchester City Region would provide the largest economic pay-off"*.

3.16 Significant investment in the transport network, already in the pipeline, will deliver a transformational step-change in connectivity:

- The initial £1.5 billion Greater Manchester Transport Fund (GMTF) investment programme, comprising a rigorously prioritised package that includes new Metrolink lines, transport interchanges, rapid bus system developments and key strategic highway schemes, is estimated to deliver an increase in GVA of £1.3 billion per annum by 2021, whilst also securing improved access from the most deprived communities in Greater Manchester and carbon benefits at a package level;
- The Earn Back model provides scope to extend GMTF spending power by up to a further £500 million by 2020, enabling the delivery of further key transport priorities that offer significant GVA potential, such as the Metrolink extension to Trafford Park (a key employment site) and funding for SEMMS (the A6 to Manchester Airport relief road) which will deliver enhanced access to the Airport City Local Enterprise Zone. Securing greater local control over local major transport scheme funding will enable a more integrated approach to future transport infrastructure investment;
- The Local Sustainable Transport Fund provides over £50 million investment in active travel, smarter choices and intelligent transport technologies, which aims to at least double the levels of commuter cycling in Greater Manchester and enable all commuters to make more sustainable choices in how they travel;
- The £560 million investment in the Northern Hub rail network expansion scheme, scheduled for delivery by 2019, is estimated to have an economic impact of £2.1 billion per annum across the wider economy of the north of England, with a significant proportion of this benefit being realised in Greater Manchester;
- The second phase of High Speed Rail 2 to Manchester and Leeds, which is expected for completion by 2033 and offers a further GVA boost of £1.2 billion per annum for the northern economy, with the Piccadilly and the Manchester Airport stations delivering significant growth and regeneration benefits for the wider area; and

- Manchester Airport, which provides direct employment for 19,000 people and has an estimated annual £1.7 billion impact on the UK economy, will continue to act as a major driver of future growth for the city region, both directly through the Airport City Enterprise Zone and through the development of new trade routes in support of Greater Manchester's target export markets.

3.17 The creation of the GMCA provides significant opportunity for further transformational impact through a more integrated approach to securing improvements to the strategic transport network. Key opportunities include:

- Securing greater management and direction of future Northern rail franchises, working alongside neighbouring city regions. Building on the Northern Hub investment, securing greater control over the development of rail services through the re-franchising process will ensure that rail service provision is clearly aligned to support the economic priorities of GM and the North of England;
- Innovative arrangements for highways coordination and collaboration, in partnership with all ten highway authorities and the Highways Agency, to maximise the efficiency of the Greater Manchester highway network;
- Ensuring that through devolved powers and funding we maximise transport efficiencies and respond to the wider public sector reform agenda across a range of capital and revenue activities;
- Establishment of future strategic freight interventions across road, rail and water, in support of strategic economic growth points such as Airport City, Trafford Park and Port Salford that optimally align the activities and investment priorities of the commercial and public sectors;
- Further integration of transport modes via Smart ticketing and real time travel information systems to ensure the full network benefits of the transport system can be realised;
- Piloting new technologies and systems which reduce reliance on fossil fuels and enable the acceleration of electrification of rail, freight, public transport and private vehicles; and
- The delivery of comprehensive cycle strategy including infrastructure and support measures that will ensure that cycling is a real option for commuters within a future low carbon economy. In August 2013, Greater Manchester was awarded £20 million national funding to towards these plans. In total the Vélocity 2025 programme will see between £150 and £200 million invested on a range of cycling infrastructure, interventions and culture shift of which £20 million will be from the Cycle City Ambition Grant, £20 million from the LSTF and the remainder from a range of local and national, public and private sources through to 2025. The target is to secure at least a 300% increase in the levels of cycling across Greater Manchester by 2025, and to see the proportion of trips by bicycle increase to 10% over the next 12 years.

3.18 The GMS refresh set out the following key actions:

- Continue to deliver the significant funded and planned investment in GM's strategic transport network to link people and neighbourhoods with jobs, and businesses to their supply chains and local, national and international markets;
- Capitalise on the opportunities provided by the unique governance structures and partnership arrangements in place to secure enhanced connectivity across GM and nationally, and internationally;
- Invest in strategic hubs and networks for passengers and freight;
- Initiate a pilot electric vehicle charging infrastructure programme;

- Develop new smart technologies to provide payment and information systems that will better enable commuters to take ever-smarter choices across their travel options in the interests of network efficiency and environmental sustainability; and
- Deliver a step-change in smarter travel choices and active travel.

3.19 The delivery of the A6MARR scheme is part of an overall programme of major highway and public transport projects planned for Greater Manchester, and will play a key role in helping to achieve the objectives set out in the Local Transport Plan and Greater Manchester Strategy.

#### A strategy for Cheshire East, Manchester and Stockport

3.20 Given the close partnership working across the conurbation, the objectives and priorities for Cheshire East, Manchester (City of) and Stockport align closely with those for Greater Manchester. These are summarised in **Table 3.1** to **3.3**. The emphasis, as with Greater Manchester and Central Government objectives, is on the economy and on reducing carbon emissions, with other objectives aimed at reducing fatalities and ill-health associated with accidents and poor environmental conditions.

3.21 All three local authorities emphasise the need for better accessibility to jobs and promote improved connectivity to Manchester Airport via the A6MARR scheme – recognising the growing role that Manchester Airport will play through its designation as an Enterprise Zone and also via links to the international business community. The benefits of this are expected to be two-fold: first, through the growth and employment opportunities directly associated with Manchester Airport; and second, as a result of business growth in the town and district centres of the south Manchester corridor.

Table 3.1 – Business strategy and priorities for Cheshire East Council

Business strategy objective (and source)	Key priorities for meeting the objectives
<ul style="list-style-type: none"> <li>• Maintain and enhance the role of Cheshire East as a knowledge economy, through innovation in its businesses and skills development of its workforce (<i>Economic Development Strategy, June 2011</i>)</li> <li>• <b>Provide a better connected economy, through enhancing transport connections to other areas, making the most of the strategic location and assets</b> (<i>Economic Development Strategy, June 2011</i>)</li> <li>• Actively raise the profile of Cheshire East and ‘sell’ the assets and opportunities of the area, particularly to external investors, influencers, decision-makers and visitors (<i>Economic Development Strategy, June 2011</i>)</li> <li>• <b>Facilitate economic growth through progressing schemes that will create jobs and improve the attractiveness of the area as a place to invest, live and visit</b> (<i>Economic Development Strategy, June 2011</i>)</li> <li>• Improve the liveability, local transport and aspirations for the area (<i>Economic Development Strategy, June 2011</i>)</li> <li>• Ensure a sustainable future (<i>Local Transport Plan, March 2011</i>)</li> <li>• <b>Create conditions for business growth</b> (<i>Local Transport Plan, March 2011</i>)</li> <li>• <b>Drive out the sources of poor health</b> (<i>Local Transport Plan, March 2011</i>)</li> <li>• Nurture strong communities (<i>Local Transport Plan, March 2011</i>)</li> <li>• Unlock the potential of our towns (<i>Local Transport Plan, March 2011</i>)</li> <li>• Supporting the vitality and accessibility of our town centres (<i>LDF Options Paper</i>)</li> <li>• <b>Developing improved transport and infrastructure networks</b> (<i>LDF Options Paper</i>)</li> <li>• Conserving and enhancing the natural and built heritage (<i>LDF Options Paper</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• Promote economic diversification across a range of business sectors, with a focus on future growth sectors.</li> <li>• It will retain and grow existing businesses already in the area, including those in the advanced manufacturing sector, and stimulate the formation of new businesses and support for existing small and medium-sized enterprises (SMEs).</li> <li>• Attracting new investment in growth sector and develop stronger links between economic priorities, by ensuring businesses have easy access to effective business support and high quality skills provision.</li> <li>• Improve graduate retention in the area through enhanced links with universities and employers, and addressing the needs and aspirations of graduates</li> <li>• Improve the coordination, quality of, and access to employment and skills activities in the sub-region.</li> <li>• Improved access to, and between, jobs and amenities</li> <li>• Develop improved transport links and integration with other centres of employment</li> <li>• Highlight the Borough’s heritage as an asset that can stimulate future economic growth</li> <li>• Ensure that Cheshire East products such as its commercial sites, transport infrastructure and visitor attractions, are developed with a view to improving external perceptions, attracting new investors and visitor spend, which will benefit the local workforce and businesses</li> <li>• Stimulate regeneration in town centres in terms of economic development and cohesive communities</li> <li>• Actively work to bring forward and promote the availability of strategic employment sites that are commercially attractive to investors, developers and occupiers</li> <li>• Reduce congestion and improve transport links between towns in Cheshire East and beyond</li> <li>• Respond to the challenge of climate change, through mitigation and adaptation</li> <li>• Improving transport connections and accessible services whilst protecting and enhancing heritage and countryside</li> <li>• Harness emerging growth opportunities</li> <li>• Make the most of tourism, heritage and natural assets</li> <li>• Create a climate attractive to business investment</li> </ul>

Table 3.2 – Business strategy and priorities for Manchester City Council

Business strategy objective (and source)	Key priorities for meeting the objectives
<ul style="list-style-type: none"> <li>• <b>Ensuring that transport contributes to the economic growth agenda and securing social outcomes</b></li> <li>• <b>Contributing to environmental outcomes, to create neighbourhoods of choice</b></li> <li>• Supporting the competitive advantage of current and future employers by ensuring good access to the City Centre</li> <li>• <b>Providing improved access for all users to the employment, cultural and leisure opportunities that a growing city centre offers to Manchester’s residents, workers and visitors</b></li> <li>• Tackle the issues climate change and deliver a low-carbon economy in a manner that is both environmentally and economically sustainable</li> <li>• Improving both actual and perceived personal safety and security</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Promoting economic growth</b></li> <li>• Promoting community spirit and pride in Manchester</li> <li>• <b>Creating desirable neighbourhoods</b></li> <li>• Making communities safe and feel safer</li> <li>• Delivering environmental sustainability</li> <li>• <b>Reducing worklessness</b></li> <li>• Raising ambitions</li> <li>• Supporting families</li> <li>• Raising standards in education</li> <li>• Improving health and wellbeing</li> </ul>

Table 3.3 – Business strategy and priorities for Stockport Metropolitan Borough Council

Business strategy objective (and source)	Key priorities for meeting the objectives
<ul style="list-style-type: none"> <li>• <b>A competitive economy with a diverse and expanding business base</b> (<i>Stockport Community Strategy</i>)</li> <li>• <b>Vibrant district centres well used by residents and well served by retail, leisure and cultural facilities</b> (<i>Stockport Community Strategy</i>)</li> <li>• Cohesive &amp; engaged communities with low crime rates and engendering community pride (<i>Stockport Community Strategy</i>)</li> <li>• Active and empowered people with good emotional and mental health (<i>Stockport Community Strategy</i>)</li> <li>• <b>Good connections with excellent public transport resulting in less congestion</b> (<i>Stockport Community Strategy</i>)</li> <li>• A sustainable approach to the natural environment (<i>Stockport Community Strategy</i>)</li> <li>• Sustainable Development – Addressing Inequalities and Climate Change (<i>Stockport LDF Core Strategy</i>)</li> <li>• Access to Services and Inclusive Communities (<i>Stockport LDF Core Strategy</i>)</li> <li>• Safeguard and Improve the Borough’s Environment (<i>Stockport LDF Core Strategy</i>)</li> </ul>	<ul style="list-style-type: none"> <li>• The regeneration of local, district and town centres and improved accessibility to employment, facilities and services will support those in deprived communities</li> <li>• <b>Reduction in traffic congestion through local centres resulting in reduced vehicle emissions and consequently reduced carbon emissions improving the local and global environment</b></li> <li>• <b>Efficient surface access and improved connectivity between Manchester Airport, employment sites and local, town and district centres</b></li> <li>• Sustainable and inclusive communities will be forged by the regeneration of local communities to encourage community, cultural and social inclusion</li> <li>• Adoption of sustainable principles with mitigation measures being put in place to ensure there is no net-loss in environmental terms</li> <li>• Development of efficient highway and public transport networks, linking international gateways to surrounding economic centres</li> <li>• Efficient linkages between Manchester Airport and the district centres, promoting extensive economic development that will benefit the local economy and provide employment opportunities for the local population</li> <li>• Shift local traffic, providing a safer, healthier environment for local residents, encouraging greater utilisation of local services</li> <li>• Reducing severance and improving accessibility, to generate increased trade for local businesses</li> <li>• Strengthening the links within communities to ward against crime</li> </ul>



## The importance of Manchester Airport and the Enterprise Zone

- 3.22 Manchester Airport is the largest airport outside the South East and the only international gateway to the north that has the capacity for substantial growth in business-based and tourist air traffic anticipated in existing growth strategies. In March 2011, the airport was designated by the Chancellor of the Exchequer as one of 21 UK 'Enterprise Zones', which will benefit from reduced tax rates for businesses to locate and invest in the area with a view to generating employment and economic growth.
- 3.23 Manchester Airport serves over 200 destinations across the world and continues to expand its network of direct links to major cities and economies across the world. It is the only UK airport outside London capable of supporting a significant network of long haul services. It has a clearly evidenced and significant economic contribution to Manchester, the North West and to the UK as a whole.
- 3.24 Manchester Airport is a major hub for international freight traffic, its World Freight Terminal accommodating 170,000 tonnes of cargo throughput per year, making it the UK's fourth-largest airport in terms of flown cargo volume. By 2015, the volume of freight traffic through Manchester Airport is expected to increase to 250,000 tonnes per annum – an increase of 47% compared to current levels.
- 3.25 The Manchester Independent Economic Review (MIER) stated that Manchester Airport is an existing "*strategic urban asset*", arguing that its development should be nurtured to maximise its substantial benefits to the wider economy through national and international connectivity for business and tourism. MIER noted of Manchester that "*its airport is one of the (City Region's) key differentiators from other comparator cities outside London and important in attracting investment*".
- 3.26 Manchester Airport currently facilitates over 189,000 flights and serves nearly 20 million passengers per annum. International passengers represent 86% of this market, including destinations to Singapore, Islamabad, Dubai and New York – the sort of places that the MIER would "*encourage Manchester to be thickening links to.*" National forecasts predict that passenger numbers will increase to around 40 million passengers per annum by 2030 with a corresponding increase in employees.
- 3.27 It is identified in the Northern Way (2008) as the most significant airport in the North of England, catering for more passengers than all the other northern airports combined. It is the only airport in the North with a network of inter-continental scheduled services and the only airport in the North that caters for a substantial volume of air freight.
- 3.28 York Aviation (2006), in its study of the economic importance of the Manchester Airport Group companies, identified the economic impacts of air transport:
- Direct impacts: employment, income or outputs that are wholly or largely related to the operation of an airport and are generated either on-site or in the surrounding area;
  - Indirect impacts: employment, income or outputs that are in the chain of suppliers of goods and services to the direct activities;
  - Induced impacts: employment, income or outputs that are due to household spending resulting from direct and indirect employment;
  - Catalytic impacts: employment, income or outputs that are generated by new businesses locating to the North West, inward investments and inbound tourism; and
  - Productivity/competitive advantage impacts: employment, income or outputs gains amongst existing businesses in the economy due to increased export volumes and productivity improvements.

- 3.29 As cited by the MIER: *“on site the Airport sustains 19,000 jobs, together with a further 16,000 indirectly. This translates to an income impact in the City Region of around £800m, before taking into account the wider impact on the North West economy.”*
- 3.30 In addition to those directly employed at Manchester Airport, more than 110,000 people are employed in a five mile area immediately surrounding the airport, contributing to travel demands in the local area. Key employment sectors in this immediate area include professional services, life sciences and aviation services. For a significant proportion of these businesses, proximity to Manchester Airport is a major factor influencing their choice of location.
- 3.31 As York Aviation highlights, whilst challenging to quantify, the consensus is that the catalytic impacts and the productivity and competitive advantage impacts of air transport greatly outweigh the direct, indirect and induced impacts. These significant impacts, listed below, come about because provision of international air services:
- Is an important element in company location decisions - the presence of an international airport can be a important factor in:
    - attracting new investment from outside the area, and especially companies from overseas,
    - retaining existing companies in the area, whether they had previously been inward investors or indigenous operations, and
    - securing the expansion of existing companies in the face of competition with other areas;
  - Promotes the export success of companies located in the area by the provision of passenger and freight links to key markets;
  - Enhances the competitiveness of the economy, and the companies in it, through its fast and efficient passenger and freight services; and
  - Attracts inbound tourism, including both business and leisure visitors, to the area.
- 3.32 Manchester Airport sustains 35,000 jobs, generating £800 million of direct productivity benefits, and provides links to 200 destinations around the world. It is the largest airport in the UK outside the south-east and the only international gateway to the North West offering the capacity for growth in business and tourist travel as envisaged in The Northern Way.
- 3.33 Manchester Airport has one of the largest catchments in the UK, attracting people from across the country. Approximately 89% of these trips use the road network. This has clear implications for the surrounding road network, where airport traffic mixes with strategic north-south and east-west movements, in addition to local traffic.
- 3.34 The Greater Manchester Strategy recognises the need to improve surface access to Manchester Airport and emphasises the key role that the A6, A523 and A34 in Stockport and Cheshire East play both locally and strategically. These links provide access routes into the North West and links to the M60 and Manchester Airport for traffic from the West Midlands and Wales.

### Airport City

- 3.35 Manchester Airport City was designated as Greater Manchester’s Enterprise Zone in March 2011. In January 2012, the Chancellor of the Exchequer unveiled the detailed Masterplan for a £659-million mixed use economic development – the first of its kind in the UK. Similar concepts now exist at 15 of the top 24 airports in Europe, designed for companies who require excellent access to international flights. This will see Manchester Airport developing as an international business destination in its own right, with the aim of attracting companies that would not previously have located in the North of England, or even in the UK.
- 3.36 The development at the Enterprise Zone is a 116-hectare space that will offer new business occupiers up to £275,000 of rates relief, a simplified planning process, super-fast broadband and

focused support from the Department for Trade and Industry for inward investment. Over the next 15 years, Airport City is expected to create around 16,000 new jobs.

- 3.37 The A6MARR will complement the growth of 'Airport City', providing much improved access from the east, complementing the extension of the Manchester Metrolink system to serve the Airport, which is due for completion in 2016. This development and employment opportunity will occupy a range of sites close to Manchester Airport, forming part of the agreed Wythenshawe Regeneration Framework.
- 3.38 In its Ground Transport Plan<sup>5</sup> the Airport identifies surface access capacity as the most significant constraint on its future growth and therefore the economic benefits that it can help deliver to the Northern economy. Enhanced surface access to the Airport is also important in improving access to employment opportunities, particularly from nearby deprived neighbourhoods. The A6MARR scheme will substantially improve the surface access to the airport.
- 3.39 A critical component of the Airport City concept is the accessibility and connectivity of the site. To facilitate tie-in between highway infrastructure works associated with Airport City and the A6MARR scheme, TfGM are currently implementing the Ringway Road Highway Improvement Works, which will provide a seamless link between the Airport City site and the A6MARR highway route.

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<sup>5</sup> Ground Transport Plan, part of the Manchester Airport Master Plan to 2030; and Civil Aviation Authority, UK Airport Statistics: 2009

## 4. SEMMMS Study

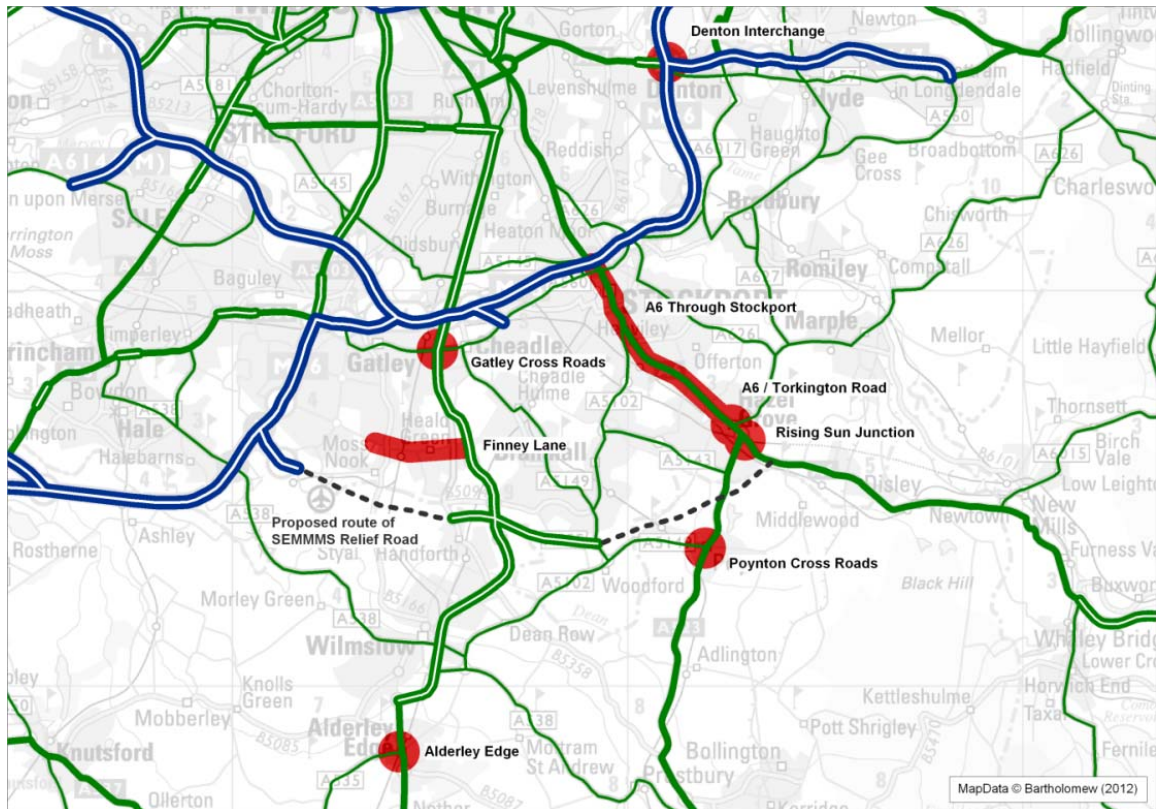
### Objectives

- 4.1 Within the over-arching national objectives for major transport scheme investment the following Core Objectives were defined for the SEMMMS Study:
- The promotion of environmentally sustainable economic growth;
  - The promotion of urban regeneration;
  - The improvement on amenity, safety and health;
  - The enhancement of the Regional Centre, town centres, local and village centres and Manchester Airport; and
  - The encouragement of the community and cultural life of neighbourhoods, and encouragement of social inclusion.
- 4.2 In using the Core Objectives as a starting point for the study, there was an explicit recognition that this pointed towards a strategy that promoted:
- Public transport use; and
  - The concentration of development at existing established centres, brownfield sites and a number of particularly priority locations as opposed to expansion on green-field sites located on the urban fringe and around major road junctions.

### Traffic and Transport Problems in the Study Area

- 4.3 The study recognised that there were a number of locations in the area that experienced significant traffic congestion and associated environmental impacts. The key locations identified by the study are listed below and shown in **Figure 4.1**:
- Finney Lane in Heald Green;
  - A523/ A5149 cross roads in Poynton;
  - Hazel Grove at the A6/ A523 intersection (Rising Sun) and the A6/ A627 (Torkington Road);
  - The A34 at Gatley cross-roads;
  - The M67/ A57 interchange in Denton;
  - The A6 through Stockport; and
  - Alderley Edge village.
- 4.4 The Alderley Edge bypass has recently been built resolving the traffic problems in Alderley Edge village. The M67/ A57 Denton Interchange is located on the M60 and not directly affected by the current A6MARR scheme proposal. All other identified locations would be affected by the proposed A6MARR.
- 4.5 The SEMMMS study recognised that there was a dispersed pattern of activity in relation to job location and employees which resulted in an orbital trip making pattern in the study area, which by its nature is challenging to cater for by public transport. The residential development patterns and social changes had reinforced the prevailing position of an affluent and highly mobile population around the southern fringe of the conurbation where the communities were characterised by high car ownership, long commuting distances and inherently low public transport use. The changing pattern of jobs and services had made access to and from them more difficult by those in the pockets of deprivation where car ownership was low.

Figure 4.1 – Areas of Significant Congestion



## Road Options Considered

- 4.6 The following five broad options were considered for each of the three road schemes remitted to the study:
- Do not construct the scheme (do minimum);
  - Construct the scheme as proposed at the time it was put on hold;
  - Construct the road but at a lower standard;
  - Construct the scheme but with provision for both private cars as well as dedicated facilities for goods vehicles and/ or public transport; and
  - Construct a scheme for goods and / or public transport only.
- 4.7 Considering the road schemes in isolation, the assessment indicated that:
- Constructing all schemes should be considered;
  - Constructing only one or two, but not all to the design previously proposed would simply amplify the existing traffic problems; and
  - Building lower capacity schemes is a viable option.
- 4.8 It would be compatible to build a lower standard MALRW and Poynton Bypass along with traffic management measures in Hazel Grove.
- 4.9 Not building the schemes is an option. A freight or public transport only facility along the A6(M) or the MALRW corridors is an option but there is insufficient demand for such a facility in the Poynton scheme corridor.

## Integrated Strategy Options Tested

4.10 The SEMMMS study developed and tested six separate strategy options in order to arrive at a preferred strategy of interventions. The key elements of these strategy options are listed in **Table 4.1**. All options assumed the construction of Alderley Edge Bypass.

**Table 4.1 – SEMMMS Strategy Options**

Option	Road	Metrolink	Rail	Quality Bus
Red	Reduced: A6(M), A555/ A523 and MALRW	Airport – Wilmslow, Airport – Poynton, Hough End – Stockport	Urban Metro, Western Rail Link	New QBC Corridors
Orange	Reduced: A555/ A523 and MALRW	Hough End – Stockport, Stockport – Rose Hill	Urban Metro, Eastern Rail Link, Western Rail Link	New QBC Corridors
Yellow	Reduced A6(M)	Hough End – Stockport, Stockport – Hazel Grove	Expanded Orbital Services: Stalybridge, Stockport	Do Minimum Corridors Enhanced
Green	Full Standard Road Schemes, A523 Dualling, A6 High Lane/ Disley Bypass	Hough End – Stockport,	Western Rail Link	New QBC Corridors
Blue	None	Airport – Poynton, Hough End – Stockport, Stockport – Hazel Grove	Urban Metro, Western Rail Link	New QBC Corridors
Violet	Reduced: A6(M), A555/ A523 and MALRW, A6 High Lane/ Disley Bypass	Hough End – Stockport, Stockport – Rose Hill, Stockport – Airport	Urban Metro, Western Rail Link	New QBC Corridors

4.11 Common to all infrastructure options was a package measures that would deliver road space reallocation, transport change measures and urban regeneration proposals.

4.12 It is clear from the options listed in **Table 4.1** that all six strategy options included significant public transport improvements in the broad Relief Road corridor.

4.13 Assessment of the six strategy options led to the development of a Core Strategy for further assessment. Key elements of the core strategy are listed in **Table 4.2**.

**Table 4.2 – SEMMMS Core Strategy**

Mode	Core Strategy Option
Road	Reduced A555/ A523, Reduced MALRW
Metrolink	Hough End – Stockport, Stockport – Rose Hill, Stockport – Airport
Rail	Urban Metro, Western Rail Link
Quality Bus	New QBC Corridors

4.14 The strategy assessment against the five national objectives concluded that whilst there were some slight to moderate adverse environmental impacts from the strategy it generally delivered moderate beneficial impacts across the other four objectives of Safety, Economy, Accessibility and Integration.

## SEMMS Study Recommendations

- 4.15 Based on the assessment of the study area traffic and transport problems, the appraisal of a wide range of strategy options and the detailed assessment of a core strategy, the SEMMS study led to a recommended strategy that included the key infrastructure listed in **Table 4.3** below.

**Table 4.3 – SEMMS Recommended Strategy - Infrastructure**

Mode	Strategy Infrastructure
Road	Reduced A6(M), Reduced A555/ A523, Reduced MALRW
Metrolink	Hough End – Stockport, Stockport – Rose Hill, Stockport – Airport
Rail	Urban Metro, Airport Western Rail Link, Expanded Orbital Services including Airport Eastern Link
Quality Bus	New QBC Corridors

- 4.16 The study recommended a substantial public transport investment in new infrastructure and services and also recommended the construction of all three remitted road schemes but to a lower standard of provision. In addition to the infrastructure interventions proposed, the strategy included recommendations for road space reallocation, transport change measures and urban regeneration proposals.
- 4.17 The appraisal of the recommended strategy showed that in 2021, there would be a small increase in car traffic in the morning peak compared to the Do Minimum but a small decrease in the off-peak period. The mode share for public transport would increase by about 20% in the morning peak and over 50% in the off-peak although this represented only 12% and 7% respectively of overall trips in the study area.
- 4.18 Whilst a 20-year Strategy was developed, the work was split into Short, Medium, and Long Term programmes.
- 4.19 The SEMMS study concluded that some of the serious congestion problems could only be addressed through the implementation of the remitted road schemes, albeit to a reduced standard. However, it was noted that the highway proposals were one element of the overall package of recommendations that the study concluded should be implemented in their entirety if the 20-year transport vision were to deliver its full outcomes.
- 4.20 In 2002 the recommendations of the Strategy were welcomed by the then Transport Minister, John Spellar, who invited the local authorities to take forward the schemes necessary for delivery.

## Progress on Implementation of the SEMMS Study Recommendations

- 4.21 Over the last ten years since the completion of the SEMMS study, approximately £63 million has been spent on SEMMS projects. Within the five priority themes of SEMMS, the schemes that have been delivered include:

### Public Transport

- 4.22 SEMMS Major Scheme Quality Bus Corridors/ Integrated Transport Corridors (QBCs/ ITCs). This included eleven main corridors plus a network of routes to serve the Manchester Airport. The improvements were designed to reduce journey time, improve reliability and to increase comfort and convenience to all users.
- 4.23 Other Public Transport improvements have included:
- accessibility improvements to bus stops on other bus routes;

- improvements to accessibility for number of transport interchanges and railway stations in the SEMMMS study area;
- the provision of a computerised booking and scheduling system for flexible transport providers such as Ring and Ride and Local Links; and
- the provision of yellow buses to improve school journeys by reducing anti-social behaviour and so increasing use of public transport for school journeys.

4.24 Work has also continued on the proposals for a Metrolink extension to Stockport. Consideration is also being given to tram-train options for extending the tram system beyond Stockport to Marple and Manchester Airport. The delay and possible non-delivery of these schemes have been identified as a possible weakness to the SEMMMS programme as it will compromise its overall integrated approach.

4.25 A rail station improvement programme has commenced across Tameside, Stockport, Manchester, Derbyshire and Cheshire East.

### Use of Road Space

4.26 Road space reallocation has involved the creation of on-street cycle facilities, improvements to the pedestrian network, reducing traffic speed and removal of targeted vehicles from inappropriate routes, in order to make vulnerable road users feel more secure.

### Transport Change

4.27 A key strength of the SEMMMS strategy is the increased ability to encourage behavioural change due to increased school travel plan delivery and the ability to improve the accessibility of routes. A large part of the work to encourage a change in modal split away from private motor vehicles, reducing congestion and the health and environmental effects of this type of transport, is related to the production of travel plans for schools and business but other actions that encourage modal shift have also been pursued such as:

- Safer Routes to Schools including the provision of improved traffic signals, signing and lining with relevant TROs, maintenance of sight lines, dropped kerbs and tactile paving;
- Walking promotion schemes such as walking buses, Walk Once a Week (WOW) and park-and-stride;
- Other education establishments such as Adult Education and Six Form Colleges have also been approached to develop travel plans and in Stockport, they are all involved in the Stockport Travel Easy Partnership (STEP) to support the implementation of these plans through collective working and joint travel initiatives; and
- In Stockport, area wide travel plans have been produced to help reduce specific congestion issues such as the Stanley Green Industrial Estate, in Heald Green and at another industrial estate in Bredbury.

### Urban Regeneration

4.28 The ability to regenerate district centres and integrate schemes with necessary maintenance works has been identified as a strength of SEMMMS. As such there has been a significant amount of work done by the Greater Manchester authorities via SEMMMS funding to improve accessibility, aid public transport, improve public safety, improve the environment and the streetscape in local, district, and town centres.



## Impact of the Implemented SEMMMS Schemes on Congestion

- 4.29 Of the areas of significant congestion identified by the SEMMMS study, the following have been addressed to some degree by the elements of the SEMMMS recommended strategy that have been implemented to date:
- The A6 through Stockport. This has benefited from the Quality Bus Corridor and the various transport change interventions; and
  - A523/ A5149 crossroads in Poynton. Although not a capacity improvement scheme, the cross-roads forms a key component of the Park Lane shared-space scheme which has provided public realm enhancements and traffic management changes to key routes within Poynton.
- 4.30 The SEMMMS study had assumed that the A34 Alderley Edge bypass would be built and this would resolve the traffic problems in Alderley Edge village. The Alderley Edge bypass was opened to traffic in 2010.
- 4.31 None of the other identified locations have benefited from any reduction in traffic congestion due to the elements of the SEMMMS strategy that have been implemented to date. These being:
- Finney Lane in Heald Green;
  - Hazel Grove at the A6/ A523 intersection (Rising Sun) and the A6/ A627 (Torkington Road);
  - A34 at Gatley cross-roads; and
  - M67/ A57 Denton Interchange.
- 4.32 In the following section we examine how traffic conditions have changed in the key areas of interest.

## 5. Existing Conditions

- 5.1 The previous section of this report has described how the A6MARR scheme proposal has been developed to address the significant traffic congestion problems in south Manchester. In this section we examine the traffic conditions around the time of the original SEMMMS study in 2000 and see how these have changed over the last 12 years.

### Current Traffic Conditions

- 5.2 Traffic count data collated by Transport for Greater Manchester confirms that the volume of traffic in the south Manchester corridor (Stockport and Trafford districts) has started to increase again since 2009 (following a slight decrease during the recession in 2008/09). These are the only two districts of Greater Manchester showing an increase. The statistics confirm the following:

- 12-hour weekday flows on A and B roads in Stockport and Trafford districts *increased by 0.4% and 3.0% respectively* between 2009 and 2010, compared to an overall *decrease* of 1.9% across Greater Manchester;
- The above increases were driven by an increase in cars and heavy goods vehicles on the Stockport and Trafford highway networks, which was partially offset by a reduction in light goods vehicles in both districts:
  - A 0.8% increase in the number of cars and a 5.0% increase in heavy goods vehicles was partially offset by a 4.2% reduction in light goods vehicles in Stockport District,
  - A 3.6% increase in the number of cars and a 20.0% increase in heavy goods vehicles was partially offset by a 6.0% reduction in light goods vehicles in Trafford District;
- Average journey time rates (minutes per mile) during the morning and evening peak hours are higher in Stockport than across Greater Manchester as a whole and have increased since 2008.

- 5.3 The mix of local and strategic traffic is one of the major causes of congestion on the highway network. Freight traffic from Derbyshire, Staffordshire and Cheshire, using the A34, A523 and A6 to access Manchester Airport, Manchester City Centre and distribution centres and other destinations across the North West, mixes with commuter and business traffic travelling between Cheshire and parts of Greater Manchester, and with local commuter and leisure trips in the centres along the south Manchester corridor. These travel patterns have a direct impact on the ability of the transport network to provide efficient connectivity and access to markets and jobs in the future. It also means that local communities are faced with large volumes of traffic and heavy goods vehicles passing through their centres, creating problems in terms of air quality, noise and safety.

- 5.4 Analysis undertaken as part of the development of the base year traffic models for the scheme show a large amount of journey time variability on the roads within and traversing the study area, both within and across time periods. The main findings from an assessment of 32 routes within and across the study area were:

- The morning peak hour (0800-0900) and evening peak hour (1700-1800) display substantial journey time variability:
  - across all routes journey times are, on average, 64% longer in the morning peak and 71% longer in the evening peak than the potential journey time within in each time period (the equivalent figure for the inter-peak is 25%),
  - comparing across time periods, morning peak and evening peak journey times are, on average, 26% and 24% longer than the equivalent mean inter-peak journey time;

- The greatest levels of journey time variation (unreliability) are observed on the motorway network...
  - the maximum observed variation in journey time in the morning peak was 166%, on the M56 between Manchester Airport and West Didsbury i.e. the difference between the minimum observed journey time of under seven minutes, and the maximum observed journey time of over 17 minutes,
  - the maximum observed variation in journey time in the morning peak was 205%, on the M60 between Junctions 6 and 24 i.e. the difference between the minimum observed journey time of ten minutes, and the maximum observed journey time of over 31 minutes;
- ...but journey time reliability and delay is a problem across the whole study area:
  - More than half of all routes surveyed in the morning and evening peak hours displayed a variation in journey time that was more than 50% greater than the potential minimum journey time for each route in that time period, which included the A6, A34, A555 and other routes through local and district centres such as Hazel Grove, Bramhall and Heald Green,
  - Looking across time periods, more than two-thirds of all routes showed journey time variability in the peak hours that was more than 50% longer than the potential journey time in the inter-peak,
  - Almost half of all routes in the morning and evening peak hours had mean journey times that were 25% greater than the equivalent mean inter-peak journey time.

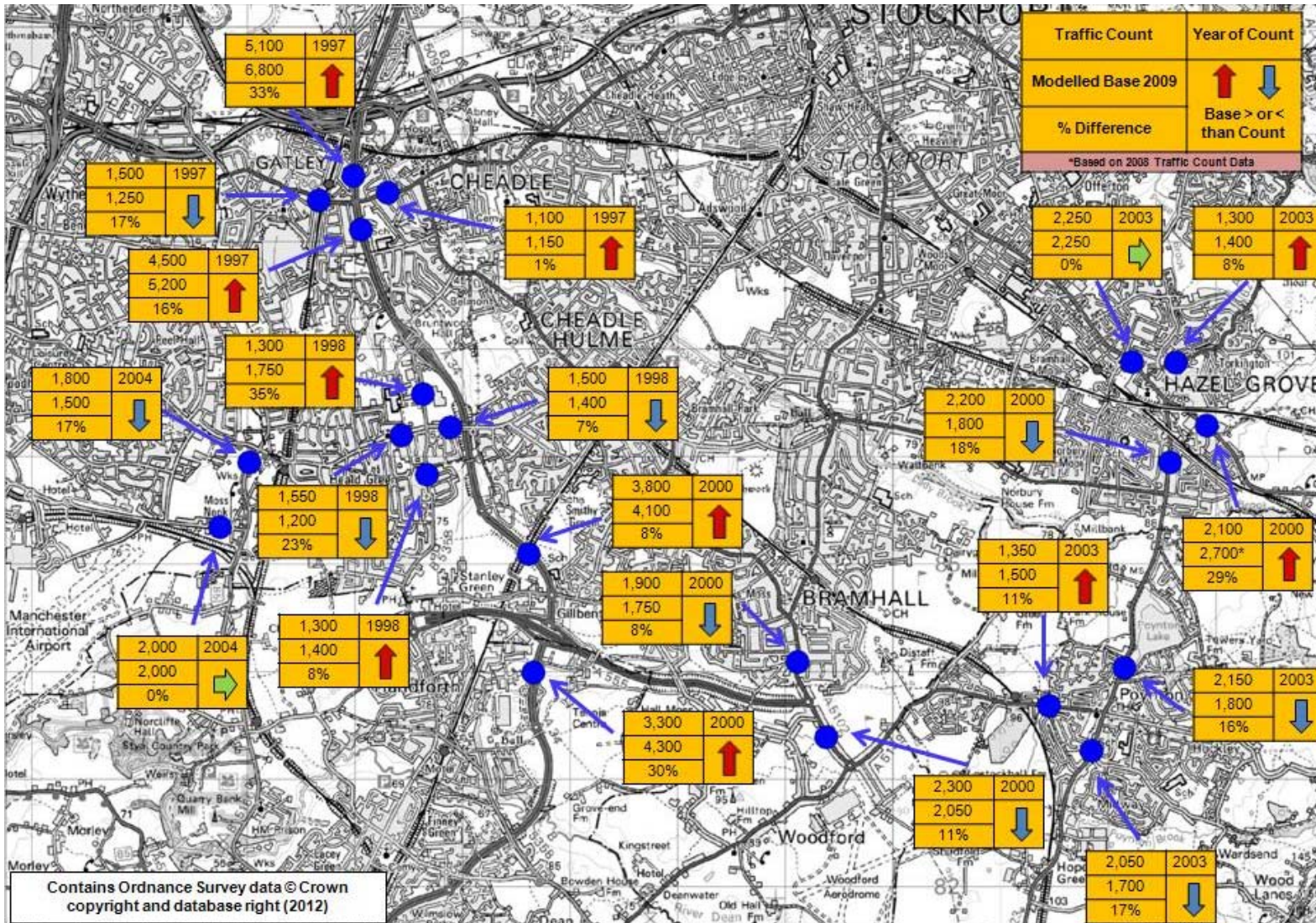
5.5 The findings from the journey time analysis confirm that journey times in general are much longer in the peak hours than the potential journey time under free-flow traffic conditions. It confirms also that within each time period – but particularly in the morning and evening peak hours – most routes in the study area suffer from regular and substantial journey time variability. Journey times across the study area are therefore highly susceptible to delay and very unreliable.

5.6 The impact of traffic congestion and journey time unreliability has far-reaching impacts, as the polycentric nature of the Manchester City Region means that whilst Manchester City Centre is the hub of economic, social and cultural activity, a number of distinct town centres exist as economic and social bases in their own right. In the south-east Manchester area, the largest of these centres is Stockport, and this is complemented by Hazel Grove, Heald Green, Poynton, Bramhall, Wilmslow, Handforth and Cheadle Hulme. The emergence and future potential of Manchester Airport as a hub of international commerce means the area traversed by the proposed A6MARR scheme contains substantial pockets of economic activity.

### Change since the SEMMMS Study

5.7 In looking at the current traffic conditions in the study area, and particularly at the locations of traffic congestion highlighted in the original SEMMMS study, it is necessary to compare the current (or modelled) situation to that in 2000, at the time of the SEMMMS study. **Figure 5.1** below shows the modelled base year (2009) morning peak hour modelled traffic flows compared to historic counts undertaken around the time of the original SEMMMS study. It also shows the percentage change in traffic volumes between the two sets of data.

Figure 5.1 – Comparison of Historic Morning Peak Hour Counts to Current Flows



5.8 It is evident from **Figure 5.1** that there has generally been a significant increase in traffic volumes on the north-south routes whilst traffic volumes have reduced on some of the east-west links. This confirms that because of the congested conditions on the road network in the study area, significant volumes of traffic are now using north-south roads along with the M60 as part of a route to make an east-west journey.

### Congestion

5.9 In order to better understand current traffic conditions on the road network in the study area, **Figures 5.2 to 5.5** provide an illustration of the levels of congestion on the highway network, using observed vehicle speeds<sup>6</sup> as a proxy for network ‘stress’. Both the local and strategic highway network are shown to be suffering from severe stress (i.e. those routes highlighted in red), with particular problems along the A6 through Stockport and Hazel Grove.

5.10 The road network in the study area is amongst the most congested in Greater Manchester. 2011/12 average vehicle speeds (flow weighted) during the weekday morning peak period (07:00-10:00) on locally managed ‘A’ roads are presented by Local Authority within the DfT’s Transport Statistics Great Britain 2012<sup>7</sup> document. **Table 5.1** summarises average speeds for the ten Greater Manchester local authorities.

**Table 5.1 - Average Morning Peak Vehicle Speeds by Greater Manchester Borough – 2011/12**

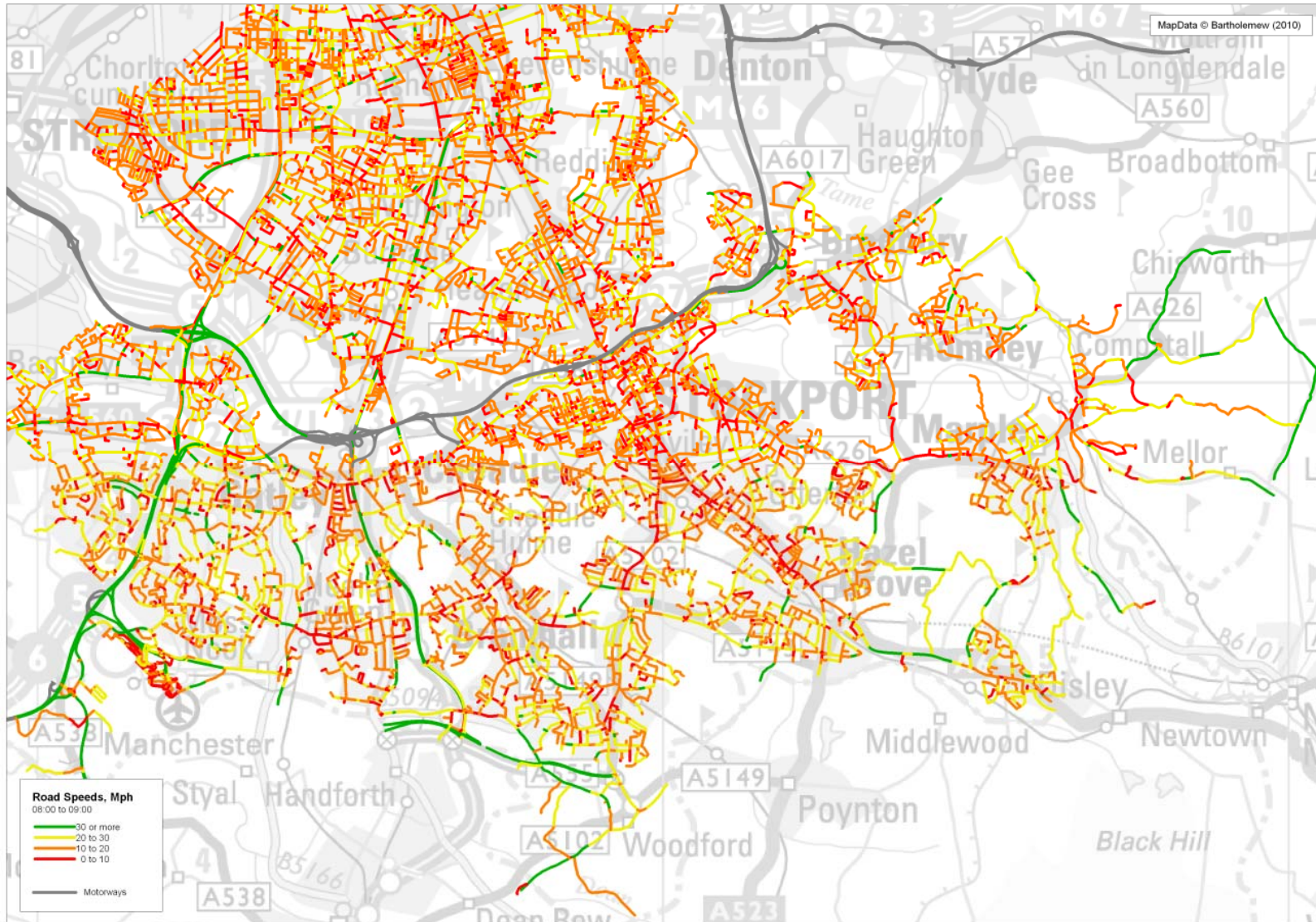
Local Authority	Average Speed
Bolton	21.2
Bury	18.7
Manchester	15.7
Oldham	19.1
Rochdale	19.9
Salford	17.3
Stockport	18.0
Tameside	15.7
Trafford	18.7
Wigan	20.5

5.11 **Table 5.1** shows that Stockport had the fourth lowest average vehicle speed on ‘A’ roads during the 2011/12 morning peak period of all ten Greater Manchester Local Authorities.

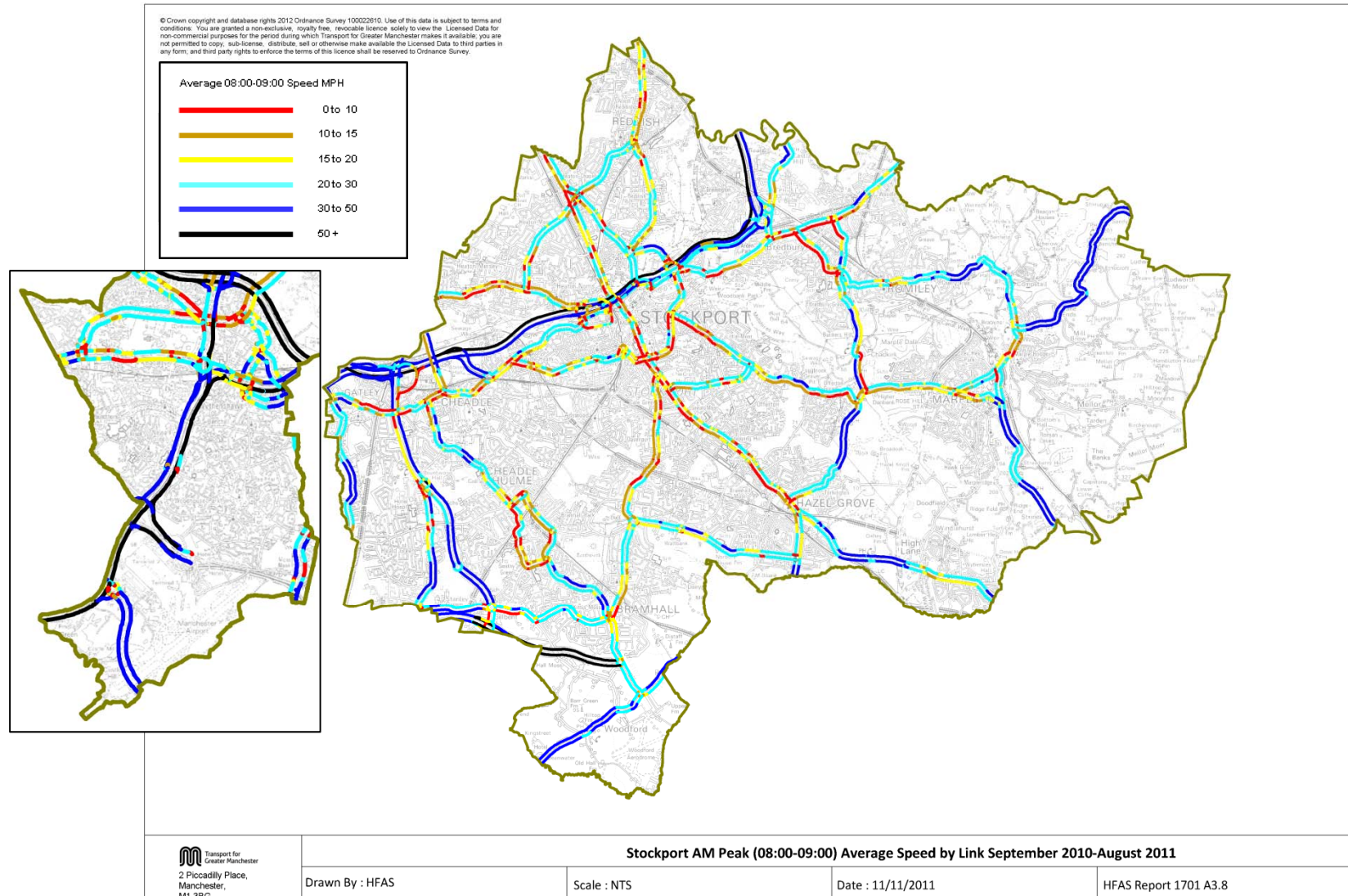
<sup>6</sup> 2008 morning peak hour (0800-0900) observed vehicle speeds, November 2008, GMTU

<sup>7</sup> [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/71279/tsgb-2012.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/71279/tsgb-2012.pdf)

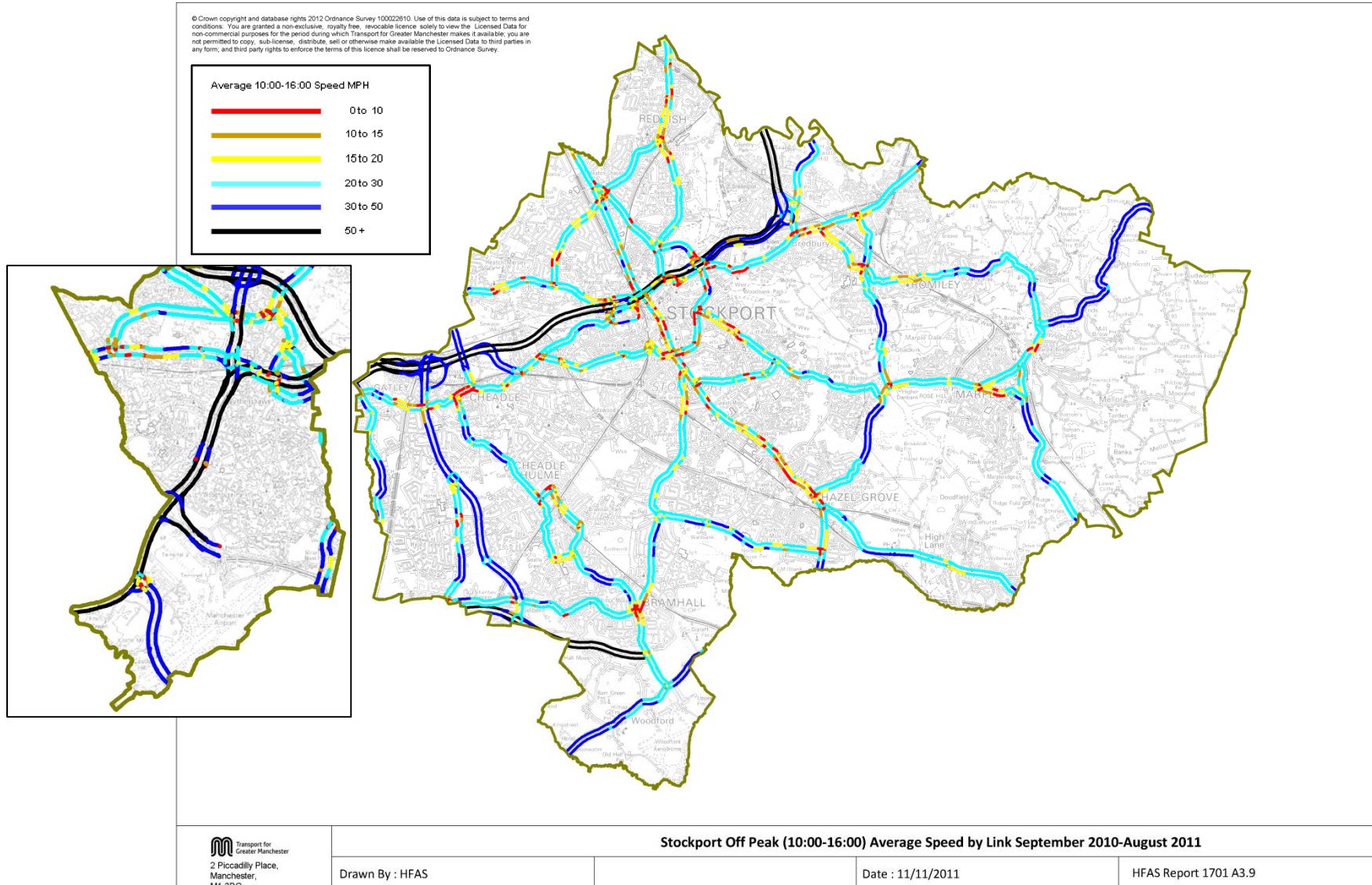
Figure 5.2 – Observed Vehicle Speeds as a Proxy for Network Stress/ Congestion



**Figure 5.3 – Stockport/ Wythenshawe Morning Peak (08:00-09:00) Average Speed by Link – September 2010-August 2011**

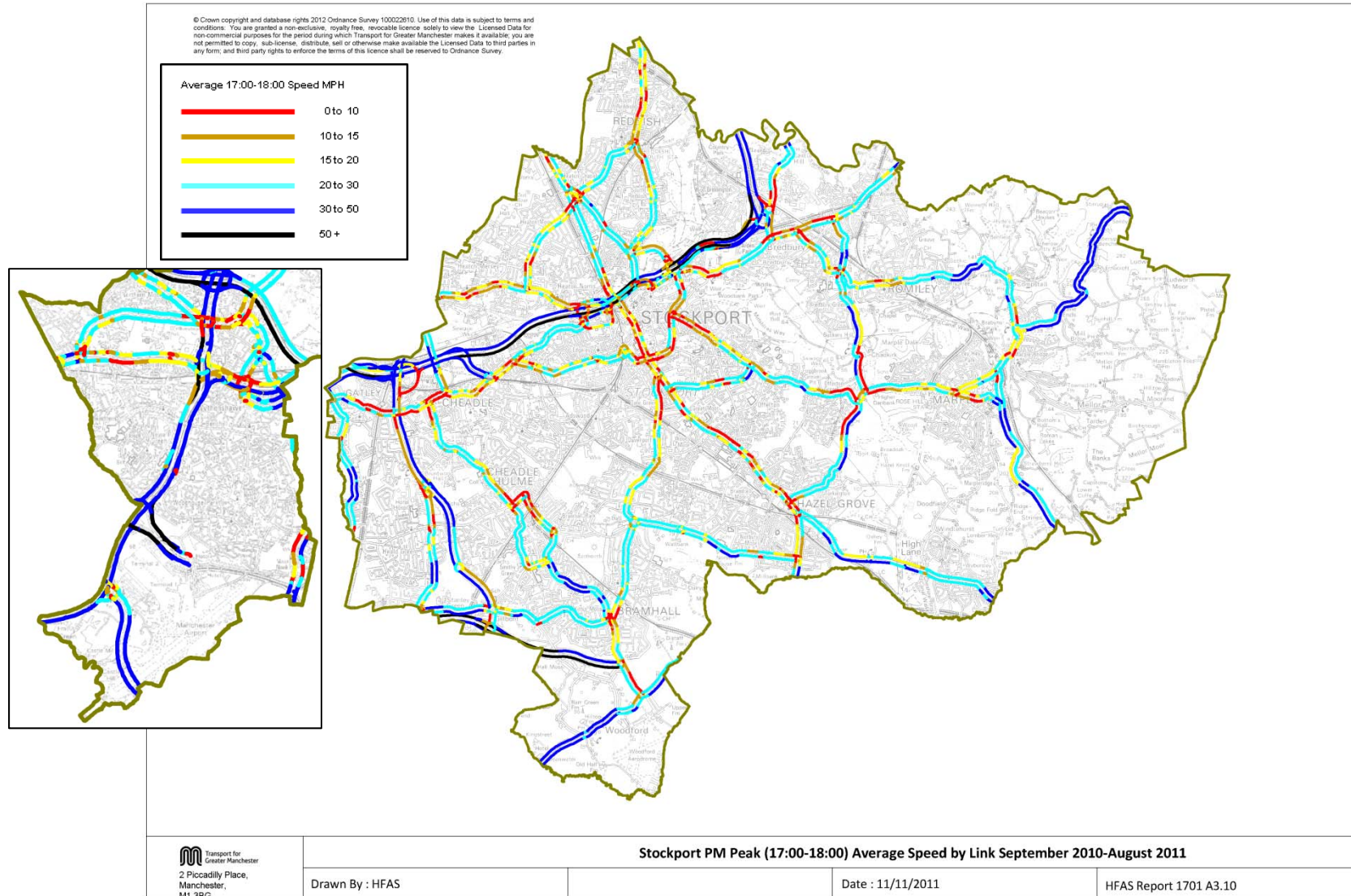


**Figure 5.4 – Stockport/ Wythenshawe Inter Peak (10:00-16:00) Average Speed by Link – September 2010-August 2011**



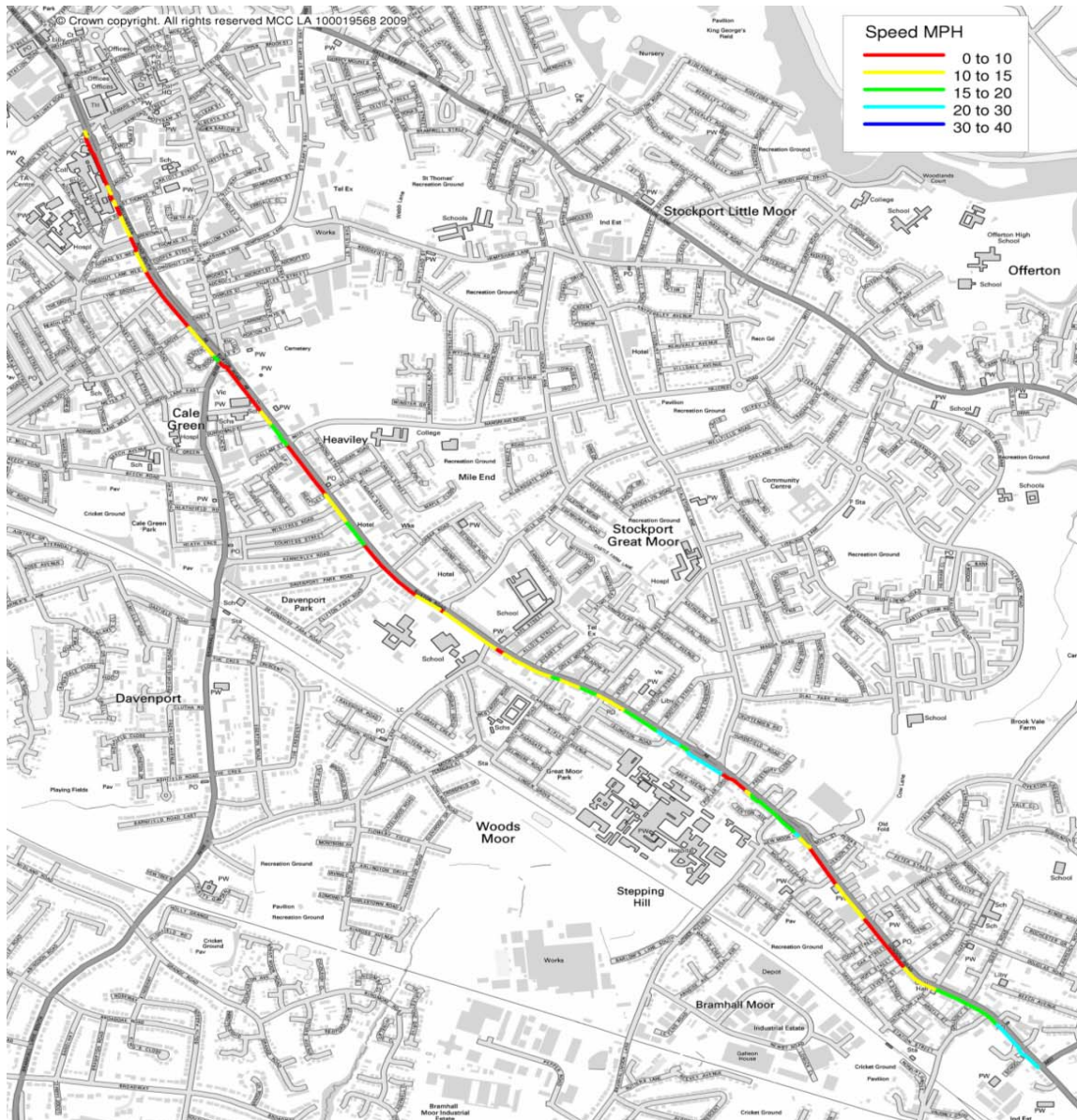


**Figure 5.5 – Stockport/ Wythenshawe Evening Peak (17:00-18:00) Average Speed by Link – September 2010-August 2011**



5.12 One of the 15 key monitoring routes for Greater Manchester is Route 7: A6 Stockport (North-Westbound) and shown in **Figure 5.6**. Data collected for 2007/08 show a person journey time of 6 mins and 16 secs per mile (the third slowest in Greater Manchester), with an average all vehicle speed of 10 mph. This is reflective of a pattern of congestion (and relatively flat flow profile) throughout the day on the A6 through Stockport. In contrast to some routes in Greater Manchester, the A6 Stockport has relatively low coefficient of variation<sup>8</sup> of 17%, indicating that most of the daily journey times for this route are likely to be close to the average journey time.

**Figure 5.6 – A6 North-Westbound Average Speeds**



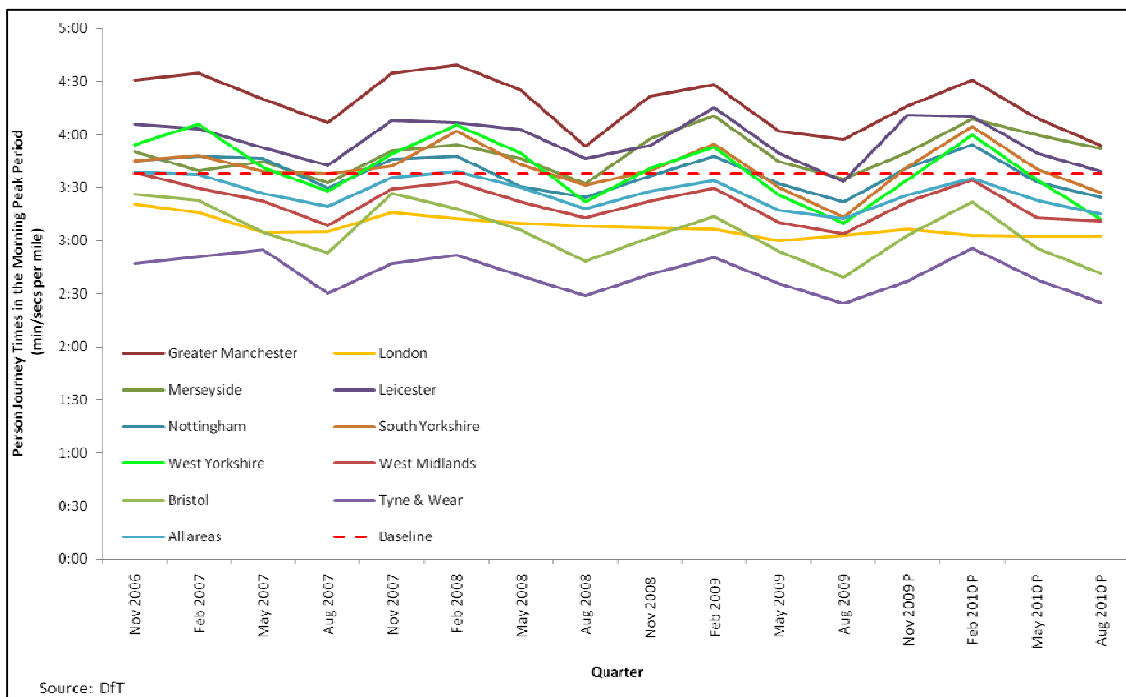
5.13 To put this into a national context, congestion on locally managed 'A' roads and on key routes in England is measured by estimating the average speed achieved by vehicles during the weekday morning peak, 7am to 10am. Traffic data<sup>9</sup> for the period September 2009 and July 2010 shows that the average vehicle speed for all routes in England was 25 mph. Greater Manchester (and Stockport) has comparable levels of congestion to Outer London, while a comparison of journey

<sup>8</sup> The ratio of the mean journey time over the standard deviation expressed as a percentage.

<sup>9</sup> Congestion on local authority managed 'A' roads and in urban areas: 2009/10 (DfT November 2010)

times<sup>10</sup> on key commuter links across England's ten largest urban areas over the same period identifies Greater Manchester as experiencing the greatest levels of congestion, as shown in **Figure 5.7** below.

**Figure 5.7 – Congestion in largest ten urban areas in England**



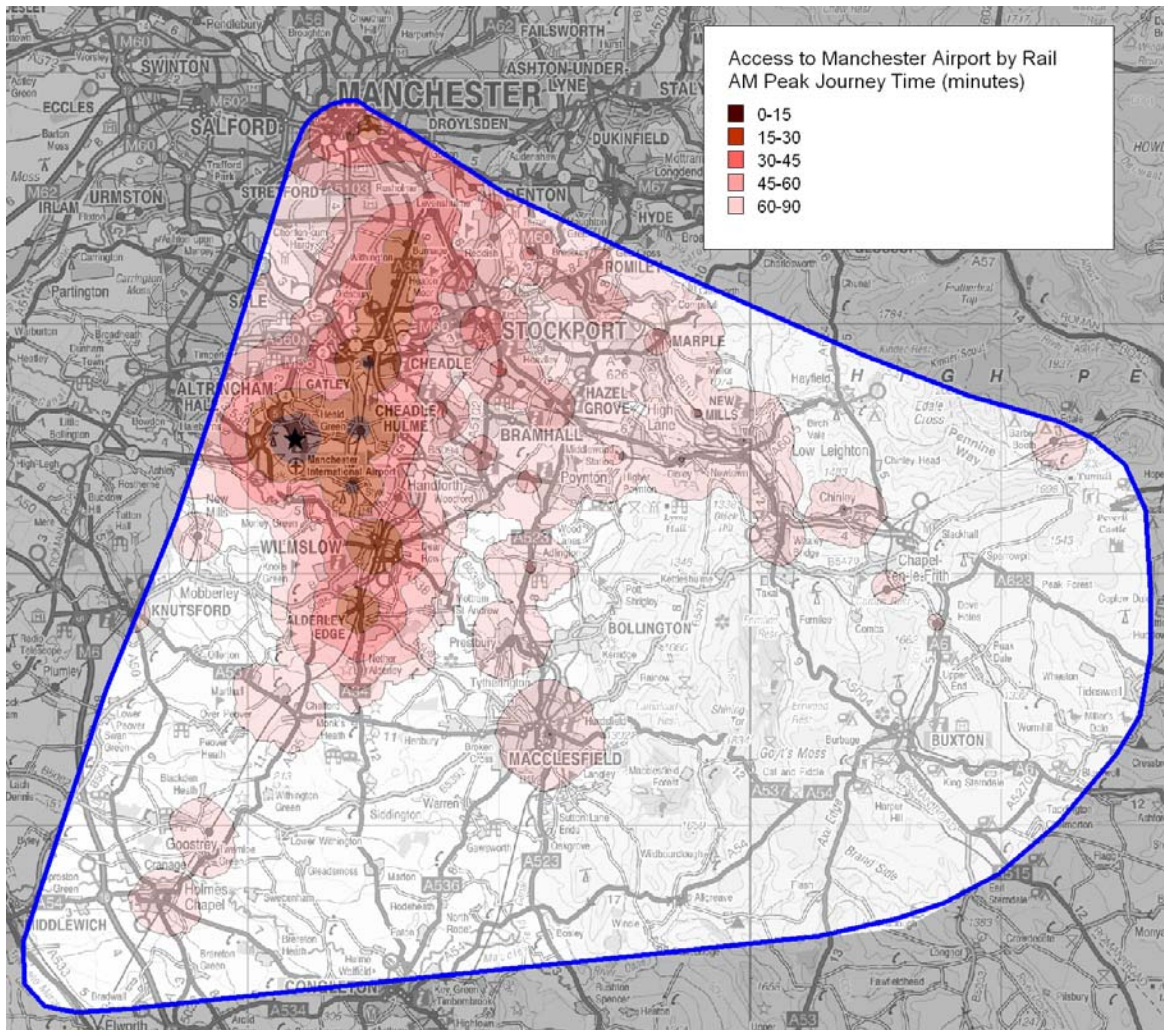
Source: DfT Transport Trends

### Connectivity and Accessibility

- 5.14 More than 22 million passengers pass through Manchester Airport every year, and it is forecast that this could rise to 50 million by 2030. Manchester Airport directly employs more than 19,000 people and supports more than 42,500 jobs across the North West. The proposed Airport City development will further increase employment opportunities at Manchester Airport.
- 5.15 Access to Manchester Airport for tourism and employment is clearly important to residents of the A6 Corridor. The A6MARR scheme will significantly enhance vehicular access to Manchester Airport from the A6 corridor but will also open up opportunities for new or re-routed bus services to improve airport accessibility. Access to Manchester Airport is still dominated by the car with 61% of passengers being picked-up and dropped-off by private car or taxis. By contrast, only 10% of passengers (and 15% of staff) use public transport.
- 5.16 **Figure 5.8** shows accessibility levels to Manchester Airport by rail services in the morning peak period (07:00-09:00).

<sup>10</sup> Congestion in urban areas has until recently been measured through the use of 'person journey times'. These show the average time it takes a person to travel one mile on selected key routes in the largest urban areas during the weekday morning peak. Average journey time for each route is weighted according to flow, modal split and vehicle occupancy, in order to give a personal-based indicator.

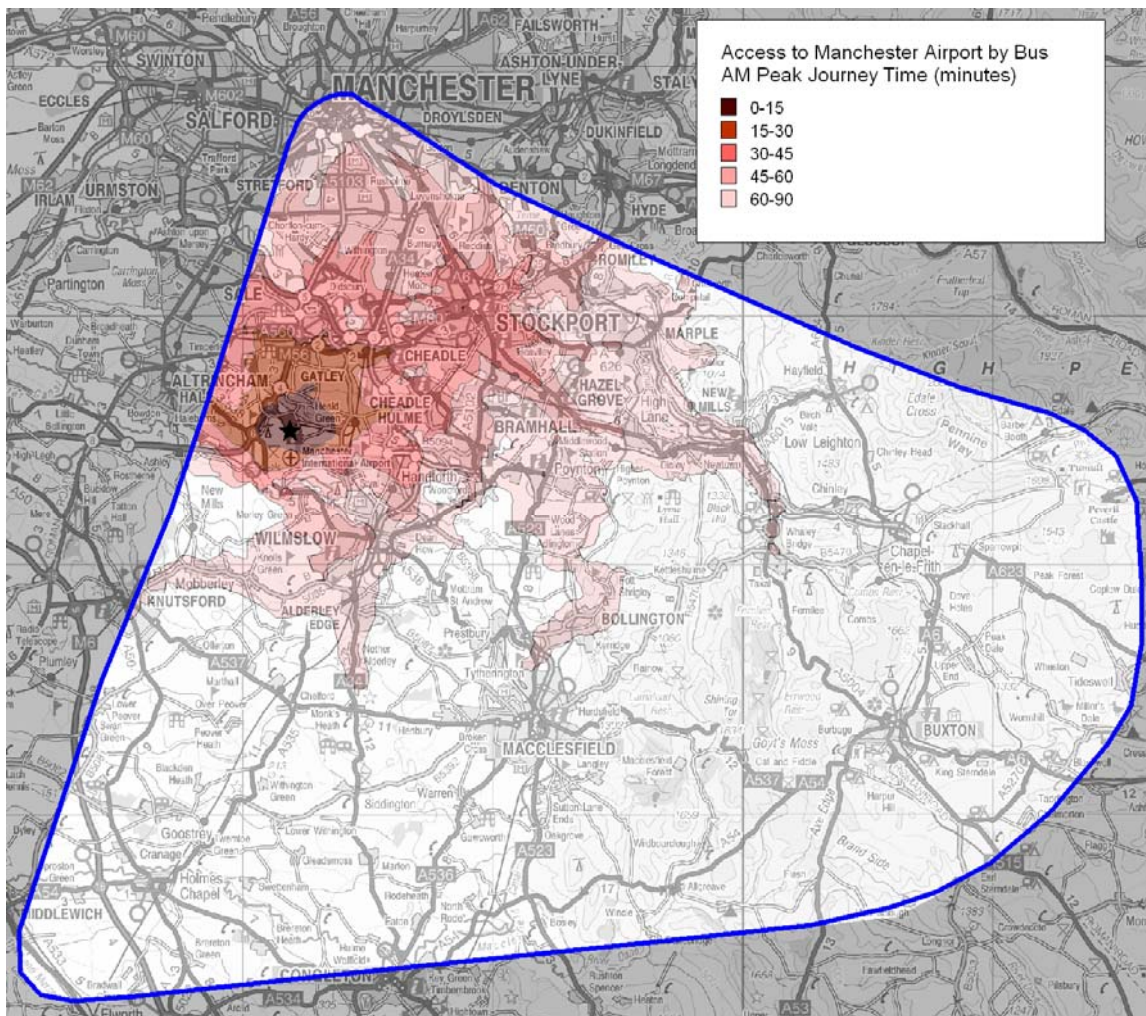
Figure 5.8 – Morning Peak Access to Manchester Airport by Rail



5.17 **Figure 5.8** shows that accessibility to Manchester Airport is greatest from rail stations within south Manchester and towns and villages within north Cheshire such as Wilmslow and Alderley Edge. Access to Manchester Airport from the A6 corridor is comparatively poor due to the absence of direct rail services and the need to change trains at Manchester Piccadilly. As a consequence journey times exceed 60 minutes for the vast majority of the corridor.

5.18 **Figure 5.9** shows accessibility levels to Manchester Airport by bus services in the morning peak period (07:00-09:00).

**Figure 5.9 – Morning Peak Access to Manchester Airport by Bus**



5.19 **Figure 5.9** shows that accessibility to Manchester Airport by bus is very limited from the A6 corridor with journey times exceeding 60 minutes beyond Hazel Grove.

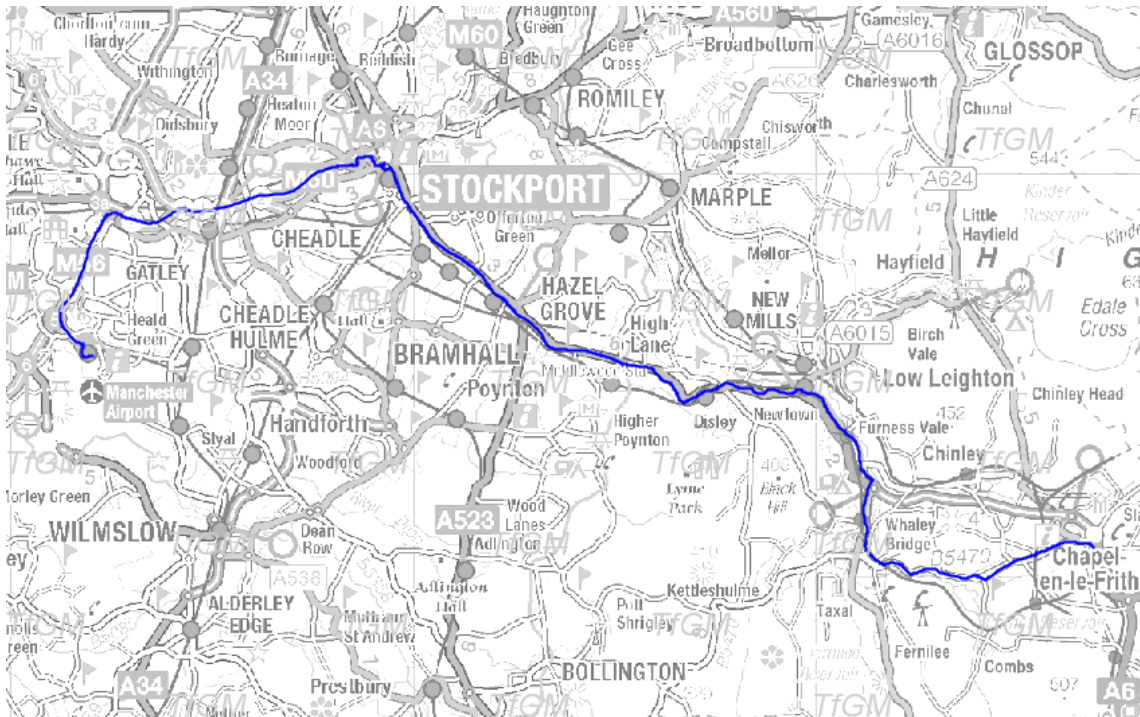
5.20 Skyline 199 operates a half hourly service between Buxton and Manchester Airport via Stockport Bus Station as shown in **Figure 5.10**. The timetabled journey time from Disley (Ram’s Head) to Manchester Airport is 53 minutes.

5.21 The A6MARR will open up the prospect of amended or new bus services along the corridor and provision for an improved direct route between Manchester Airport and the A6 corridor resulting in substantially reduced journey times and improved accessibility by bus.

5.22 Potential new bus services, supported by passenger and employment growth at Manchester Airport, could include the following:

- Stockport town centre to Manchester Airport (via Hazel Grove and Bramhall), for example, through changes to the existing service patterns of the 199 bus service or a new service with interchange facilities at the proposed circa 433 space bus-based park-and-ride site at A6 Rising Sun, Hazel Grove which is scheduled to open in 2014; and
- Macclesfield to Manchester Airport.

Figure 5.10 – Route of the Skyline 199 Bus Service



## Traffic Movements in the A6MARR Scheme Corridor

5.23 In this section we examine the nature of the traffic movements in this A6MARR scheme corridor. In order to do this, we have produced select link matrices for the three north-south routes shown in **Figure 5.11** below.

Figure 5.11 – Location of Select Link Matrices

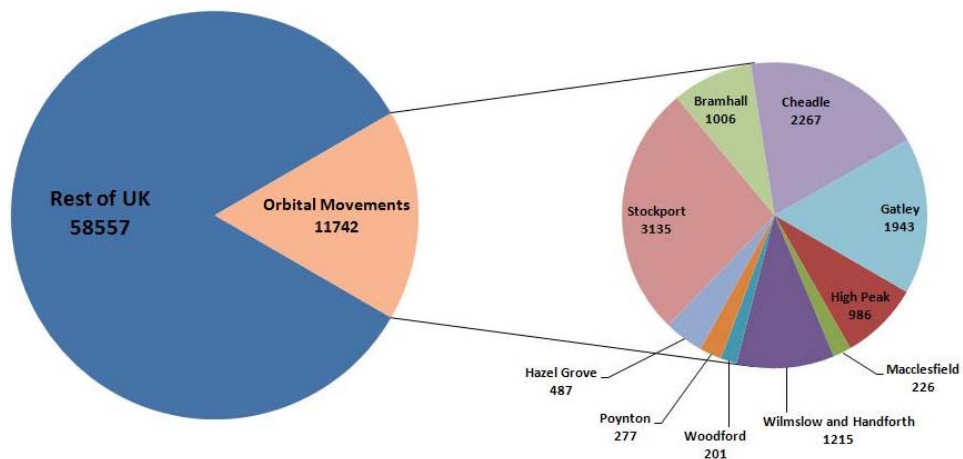


5.24 Analysis of these select link matrices has been undertaken to understand the proportion of trips on these links that are travelling north-south in order to make an orbital journey.

### M56 South of the Airport Spur

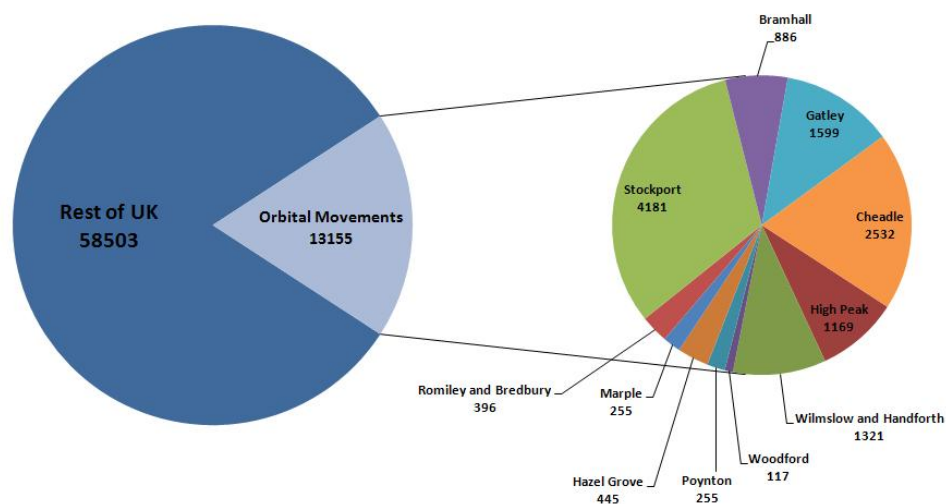
- 5.25 **Figure 5.12** shows the proportion of traffic travelling northbound on the M56 which is making an orbital movement from west to east; heading northbound before travelling along the M60 and then along radial routes in the study area such as the A34 or the A6. In total, around 11,700 (approximately 17%) of all trips on this section of the M56 make a north-south movement in order to travel in an easterly direction.
- 5.26 The A6MARR scheme would be of particular benefit for trips heading to areas such as Bramhall, Wilmslow and Handforth, Hazel Grove and Poynton where the scheme would offer a much shorter, direct route to these areas.

**Figure 5.12 – M56 Northbound Destination Sector Movements**



- 5.27 The trend is reciprocated in the southbound direction as can be seen by looking at the origin of traffic movements on the M56 southbound in **Figure 5.13**. Approximately 18% (around 13,000 pcus<sup>11</sup>) of traffic travelling in this direction make an orbital movement. Once again, the majority of the movements originate from areas such as Stockport (around 4,100 pcus), Cheadle (around 2,500) and Gatley (around 1,600). However, there are still as significant number of trips from areas further south such as Bramhall, Hazel Grove and Poynton which would benefit from the proposed A6MARR.

**Figure 5.13 – M56 Southbound Destination Sector Movements**



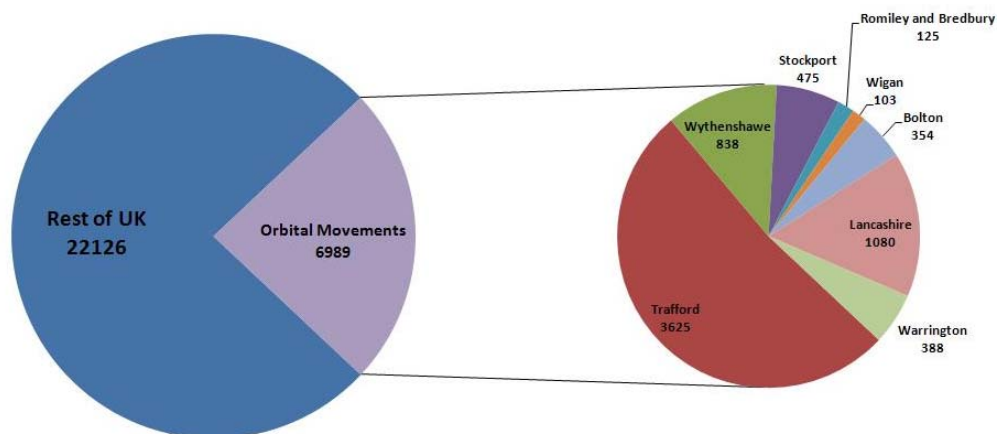
<sup>11</sup> PCUs – Vehicles measured as equivalent passenger car units where, for example, one heavy goods vehicle equate to two PCUs

### A34 North of the A555

5.28 **Figure 5.14** illustrates the proportion of orbital movements using the A34 to the north of the existing section of the A555. Approximately 6,600 pcus (23%) of all traffic on this section of the A34 make an easterly or westerly movement by first heading northbound on the A34. Most of the orbital movements head in a westerly direction towards nearby areas such as Trafford (around 3,600 pcus) and Wythenshawe (around 800 pcus). The A6MARR would represent a significantly quicker route for these trips, allowing traffic to access the areas via more appropriate routes. There are also a number of trips heading in an easterly direction towards Stockport and Romiley (around 600 pcus in total). Similarly, the A6MARR would allow trips to these areas to avoid having to use the M60 by using shorter, alternative routes such as the A6.

5.29 In addition, there are a number of longer distance trips which would benefit from the implementation of the new A6MARR. Around 1,700 trips currently route via the A34 before joining the M60 in order to head towards towns such as Wigan, Bolton and the rest of Lancashire to the north as well as Warrington to the west. The A6MARR would allow these trips access to the M56; allowing direct access to Warrington and presenting motorists wishing to travel north with the option of using the M6.

**Figure 5.14 – A34 Northbound Destination Sector Movements**

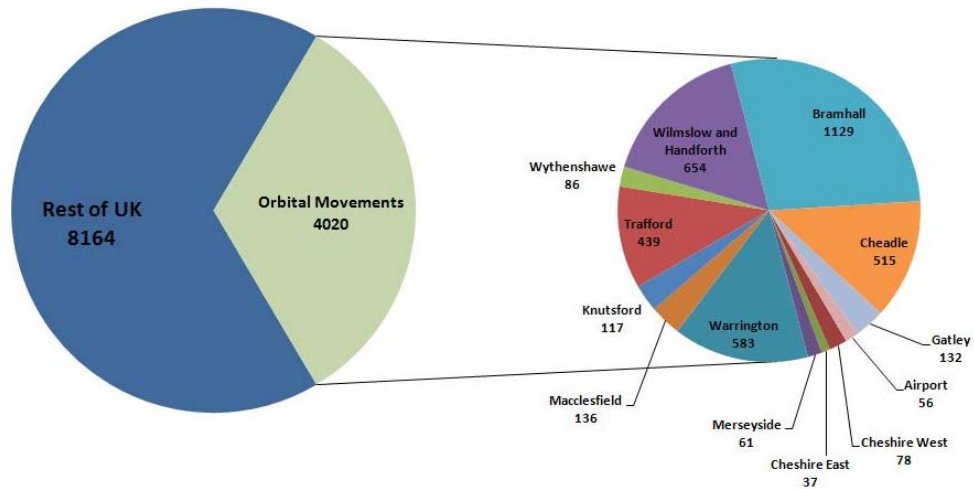


### A6 Southwest of Hazel Grove

5.30 Studying origin-destination movements along the A6 to the east of the study area also reveals a number of orbital movements involving vehicles that use the M60 or other north-south routes in order to travel in either a westerly or easterly direction. **Figure 5.15** represents the destination proportions for traffic travelling northbound along the A6. Approximately 4,000 pcus (33%) of all northbound traffic make an orbital movement in order to travel in a westerly direction. A number of these movements are relatively short-distance trips to local areas such as Bramhall, Wilmslow and Handforth. Currently, these trips are most likely to use a number of roads such as the A5143, the A5102 and the A523 in order to access these sectors. The A6MARR would offer a much more direct alternative for such trips.



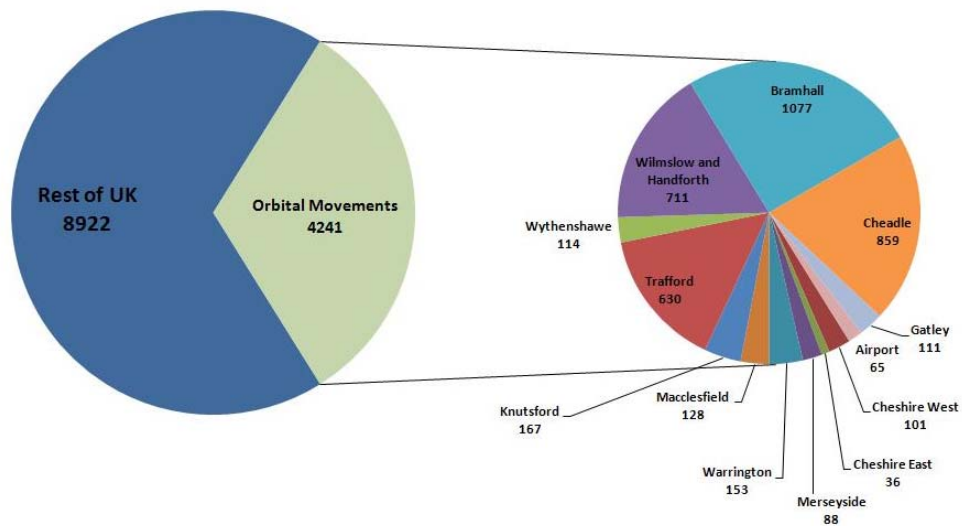
Figure 5.15 – A6 Northbound Destination Sector Movements



5.31 In addition, a number of trips also use the M60 in order to access sectors such as Cheadle, Wythenshawe, Trafford and Manchester Airport or to long distance destinations such as Warrington and Merseyside. The A6MARR would be significantly beneficial to these movements as it would allow motorists direct access to the A34 or to the M56, diverting traffic away from the centre of Stockport to the north.

5.32 **Figure 5.16** below shows a similar trend in terms of origin sectors for southbound movements along the A6.

Figure 5.16 – A6 Southbound Destination Sector Movements



5.33 Around 4,200 vehicles (32% of all traffic travelling through the link) are travelling in an easterly direction using existing north-south routes. Again, these movements are a combination of local trips from nearby areas such as Bramhall and Wilmslow and Handforth as well trips using the M60 before travelling along the A6 either from areas such as Manchester Airport, Cheadle and Gatley or further afield from Warrington and Merseyside.

## Conclusions

- 5.34 The comparison of current traffic volumes against historic counts shows that there has been a significant increase in traffic volumes on north-south routes. This is a reflection of the significant traffic congestion on the local east-west routes, forcing many drivers to choose a longer journey along north-south roads and the M60 in order to complete an east-west journey.
- 5.35 The analysis of traffic speeds confirms that the study area suffers from heavily congested conditions and demonstrates that these are amongst the worst conditions nationally, with particular problems along the A6 through Stockport and Hazel Grove.
- 5.36 The accessibility analyses show that public transport journey times are poor along the east-west corridor, in particular between the A6 corridor and Manchester Airport.
- 5.37 The select link analyses have shown that there is a significant proportion of traffic on north-south routes that are in effect making an east-west journey across the A6MARR corridor, with a dispersed pattern of origins and destinations.

## Road Safety

- 5.38 Accident data collated by TfGM for the three year period 2009 to 2011 in the HFAS Report No. 1701 presents evidence of accident clusters across the local highway network for both the Stockport Council local authority area and immediate adjacent Manchester City Council authority area including Wythenshawe.
- 5.39 **Figure 5.17** which presents the location of all road injury accidents by severity type (slight, serious and fatal) across the highway network shows:
- a concentration of accidents on the A6, notably between Hazel Grove and M60 motorway, and a smaller cluster of accidents on the A6 through High Lane;
  - relatively few accidents on the A34 (compared to the A6 despite carrying significantly higher traffic flows) apart for clusters at the A34/ A555, A34/ Stanley Road, A34/ Cheadle Royal junctions;
  - some accident issues on east-west routes through the study area including:
    - A560
    - Simonsway/ Finney Lane
    - B5094 Stanley Road/ Acre Lane/ Moss Lane
    - Hollyhedge Road
- 5.40 While in terms of KSI and pedestrian/ pedal cycle accidents, **Figures 5.18 to 5.20** (which separately identify child and adult accidents) show:
- a concentration of KSI and pedestrian/ pedal cycle accidents on the A6 between the Hazel Grove and M60 motorway, mainly involving adults;
  - a similar concentration of KSI and pedestrian/ pedal cycle accidents on the A560 High Street through Cheadle involving adults; and
  - a relatively high number of pedestrian/ pedal cycle injury accidents on roads across the Wythenshawe area involving children.

Figure 5.17 – Road Injury Accidents in Stockport and Wythenshawe 2009-2011

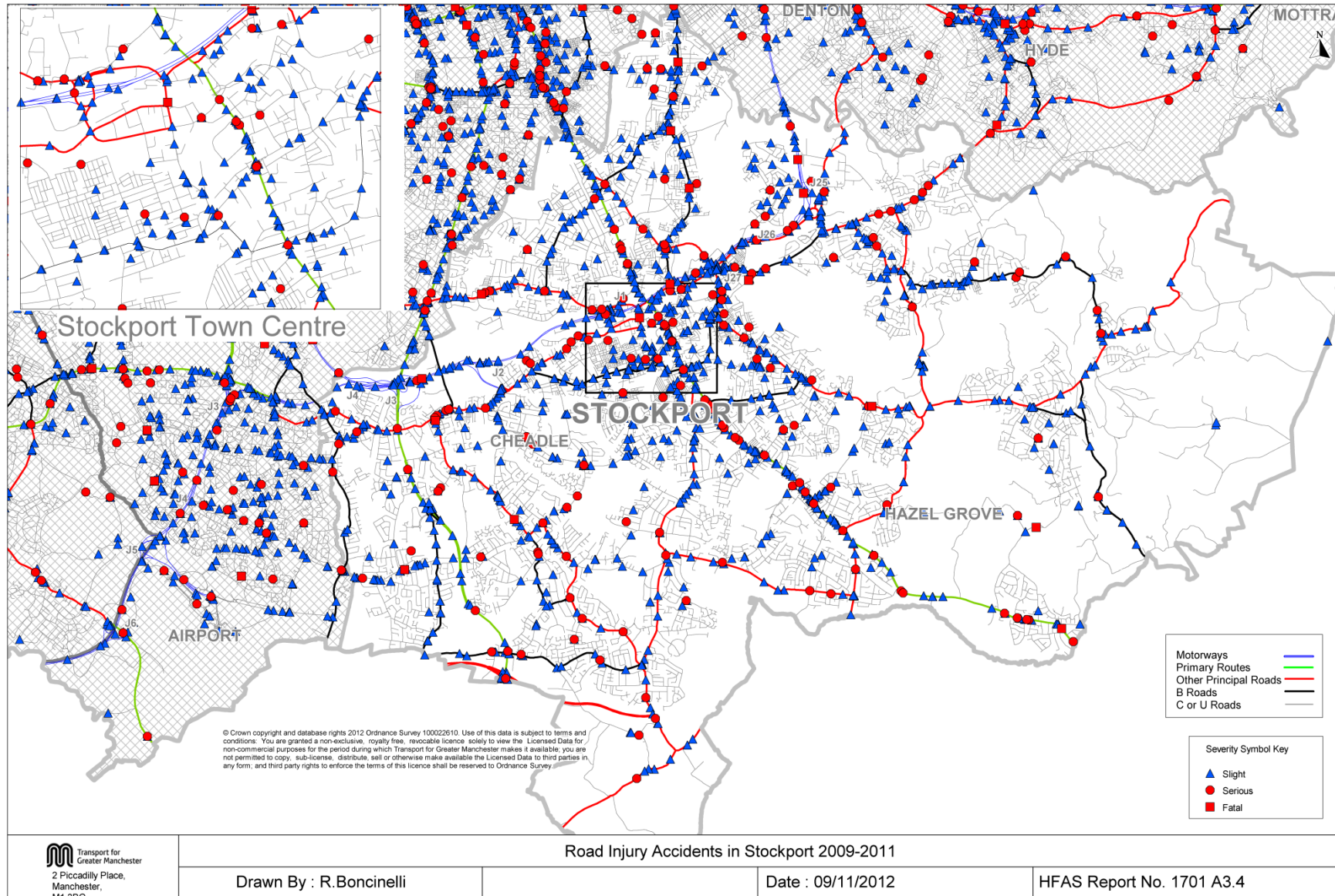


Figure 5.18 – Child and Adult Killed and Seriously Injured Road Accidents in Stockport and Wythenshawe 2009-2011

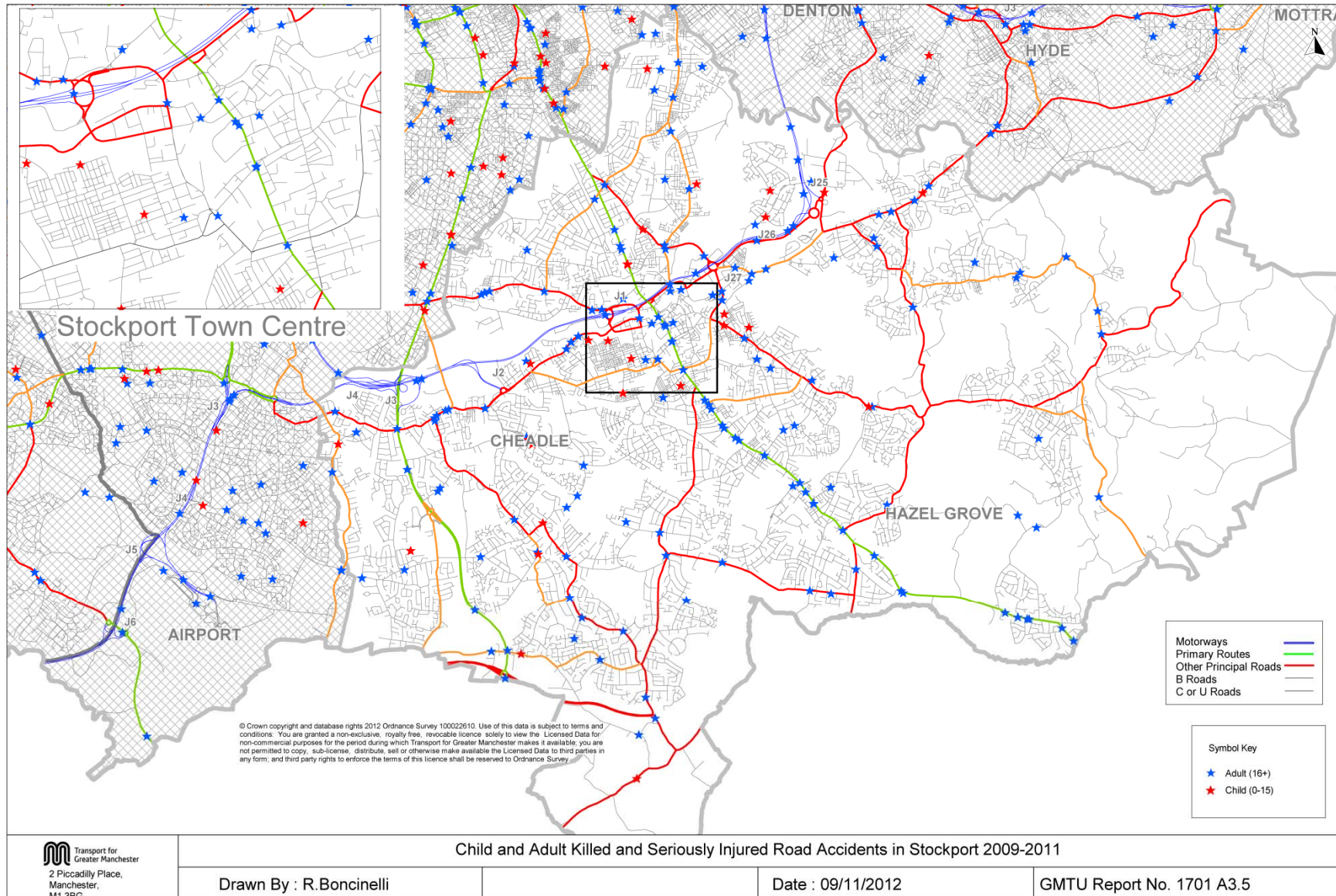
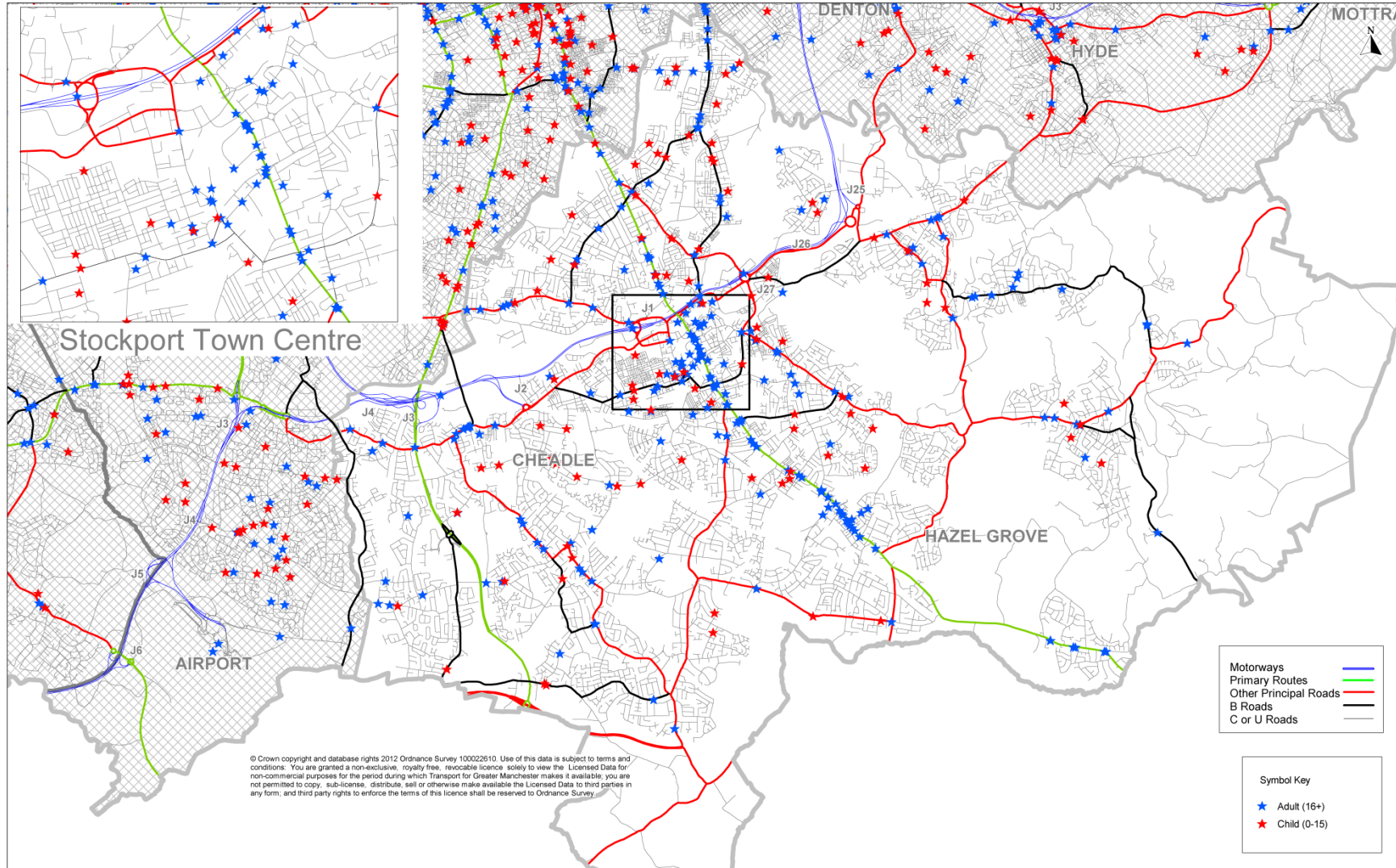


Figure 5.19 – Child and Adult Pedestrian Road Injury Accidents in Stockport and Wythenshawe 2009-2011



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Motorways	
Primary Routes	
Other Principal Roads	
B Roads	
C or U Roads	

Symbol Key	
	Adult (16+)
	Child (0-15)


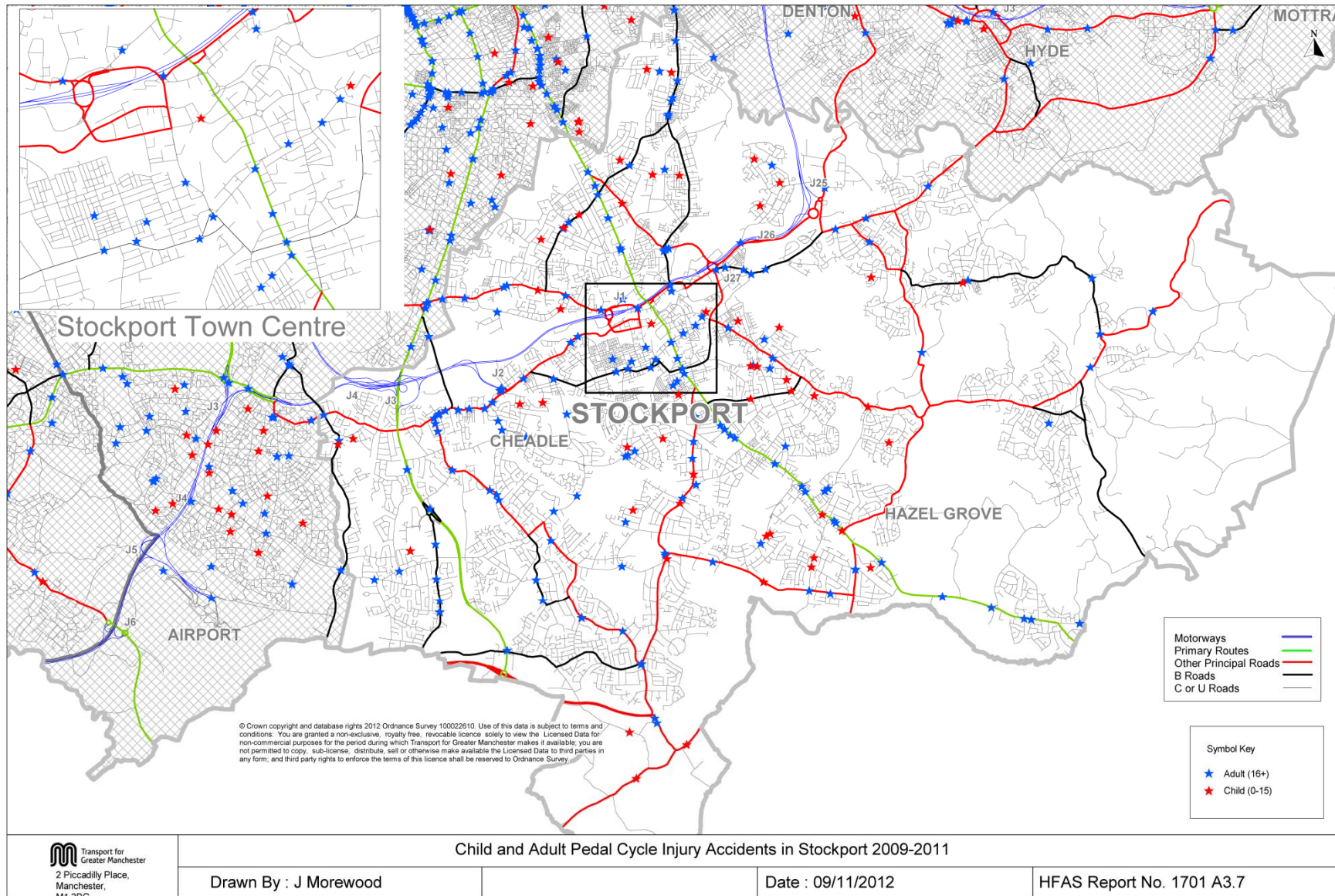
 Transport for Greater Manchester 2 Piccadilly Place, Manchester, M1 3BG	Child and Adult Pedestrian Road Injury Accidents in Stockport 2009-2011		
	Drawn By : R.Boncinelli	Date : 09/11/2012	HFAS Report No. 1701 A3.6

Figure 5.20 – Child and Adult Pedal Cycle Injury Accidents in Stockport and Wythenshawe 2009-2011



## Cycling/ Public Rights of Way

5.41 Like a public road, a public right of way is a highway which anybody may use at any time. Rights of way are classified according to the nature of the public's rights along them. There are four categories of public right of way:

- **Public footpaths:** For walkers only. You are allowed to take a pram, pushchair or wheelchair along any public footpath - albeit many paths, particularly in the countryside, may not be physically suitable for them;
- **Public bridleways:** For walkers, horse riders and cyclists. Cyclists must give way to walkers and horse-riders;
- **'Restricted byways':** Available for walkers, horse riders, cyclists and horse-drawn vehicles only. This is a new category of public right of way introduced by the CROW Act 2000. All routes which, immediately prior to the commencement of the relevant section of the CROW Act on 2 May 2006, were recorded as 'roads used as public paths' (or RUPPs) were changed to 'restricted byways'; and
- **'Byways open to all traffic' ('BOATs'):** Often simply called byways - are for walkers, horse riders, cyclists and vehicles - including horse-drawn carriages, motorcycles and other motor vehicles.

5.42 Typically users of a public right of way may take 'usual accompaniments' with them. These include prams, pushchairs, wheelchairs and dogs. A bicycle is not a 'usual accompaniments' and might be considered an act of trespass.

5.43 With the aim of overall connectivity and in keeping with the rationale of the A6MARR scheme design consideration has also been given to upgrading routes to public bridleways wherever practicable.

### Public Rights of Way Impacted by A6MARR

5.44 There is an extensive network of footpaths, cycleways (including on road and traffic free routes), and bridleways in the vicinity of the proposed A6MARR scheme alignment as shown on **Figure 5.21**.

5.45 PRoW near or affected by the A6MARR scheme and the existing status of the route is summarised in **Table 5.3** below:

**Table 5.3 – Existing Status of PRoW Near or Affected by the A6MARR Scheme**

Route No.	Status
Hazel Grove Bramhall 77HGB	Footpath
Hazel Grove Bramhall 65HGB	Footpath - Access Road
Poynton-with-Worth FP62/2	Footpath
Poynton-with-Worth FP15/1	Footpath
Poynton-with-Worth FP64/1	Footpath
Poynton-with-Worth FP3/2 NW	Footpath
Poynton-with-Worth FP3/1 SE	Footpath
Poynton-with-Worth FP37/1 N	Footpath
Poynton-with-Worth FP37/1 S	Footpath
Poynton-with-Worth FP31 N	Footpath

Route No.	Status
Poynton-with-Worth	Footpath
Poynton-with-Worth FP21 S	Footpath
Poynton-with-Worth RB39/1 to RB39/6	Restricted Byway
Hazel Grove Bramhall 19HGB	Footpath
Hazel Grove Bramhall 16HGB	Footpath
Hazel Grove Bramhall 17HGB	Footpath
Hazel Grove Bramhall 14(a)HGB	Footpath
Cheadle and Gatley 16CG	Footpath
Cheadle and Gatley 50CG	Footpath
Wilmslow FP140/1	Footpath
Cheadle and Gatley 42(a)CG	Footpath - Access Road
Cheadle and Gatley 42CG	Footpath-Access Road
Cheadle and Gatley 38CG	Footpath
Wilmslow FP80	Footpath
Wilmslow FP143	Footpath
Cheadle and Gatley	Footpath
Wilmslow FP7 NE	Footpath
Cheadle and Gatley 107CG	Footpath

5.46 A survey of NMUs on routes altered or impacted by the A6MARR scheme was undertaken by TfGM to establish indicative levels of use for each route. Surveys were undertaken on one weekday, one Saturday and one Sunday on a continuous basis from 0700 to 2100 in order to obtain data for an average day. The surveys were carried out in June and early July 2010, ensuring that they were finished before the school holidays. Consideration was also given to ensuring that the surveys did not clash with any local events.

5.47 The location of each survey sites is shown in **Figure 5.22**, whilst **Table 5.4** summarises the recorded level of use of each surveyed PRow over the three survey days.



Figure 5.21 – Existing Public Rights of Way Network

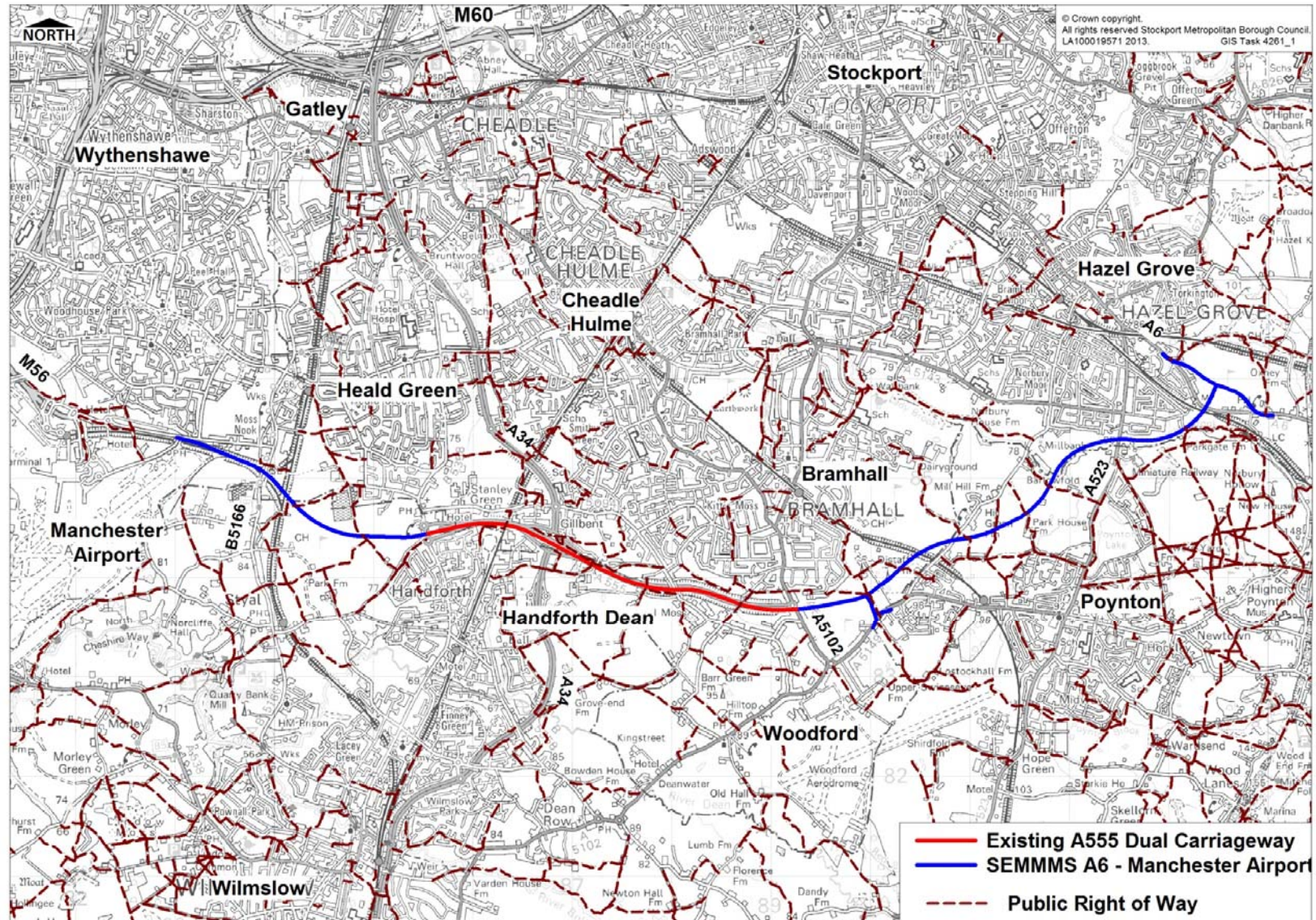
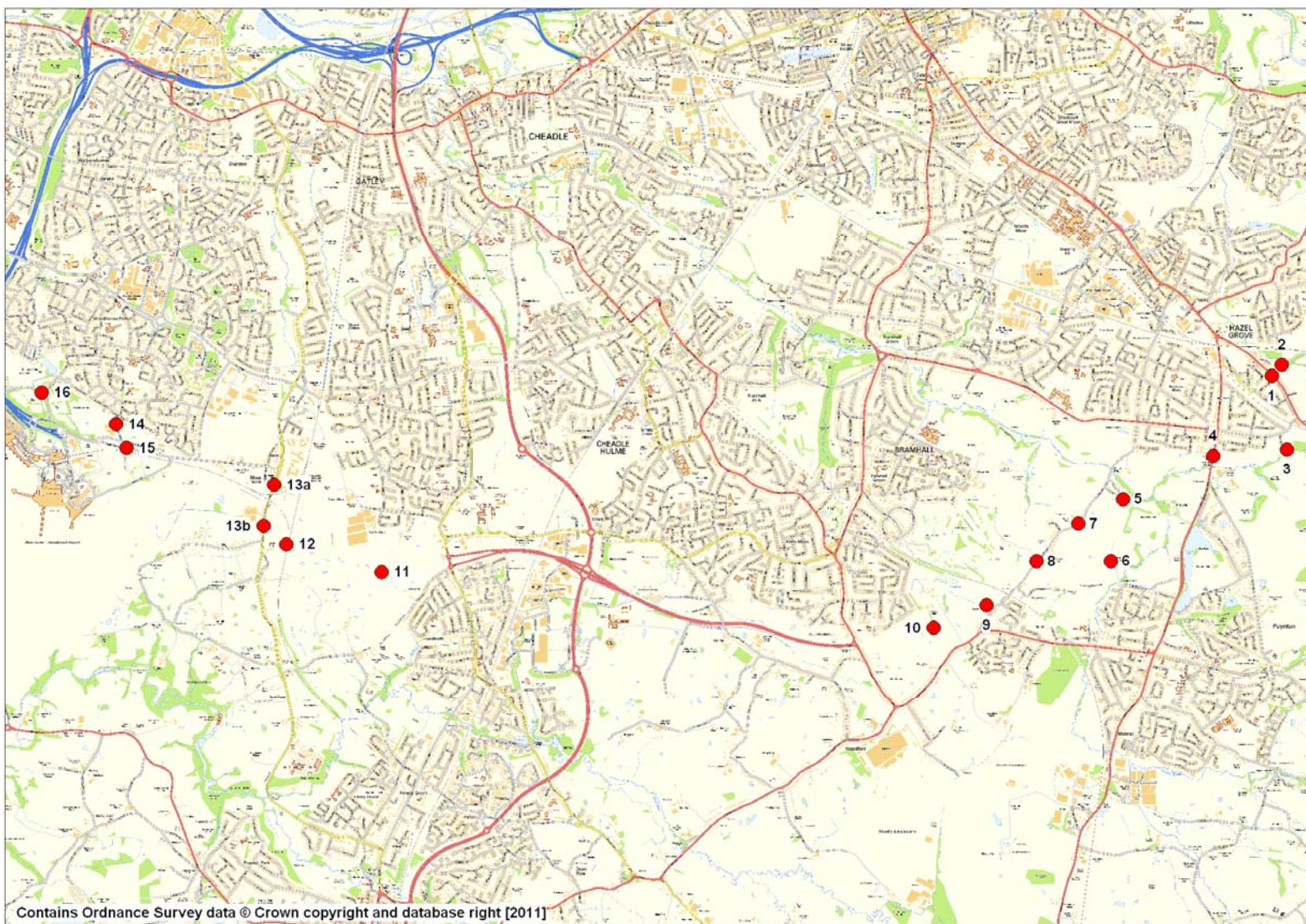


Figure 5.22 – Surveyed Public Rights of Way



**Table 5.4 – Footpath/ ‘Right of Way’ Usage Levels**

Site	Description	Pedestrians	cyclists	Equestrian	Wheelchair / Buggy
1	Toucan crossing on A6 Buxton Road opposite Yew Tree Avenue, Hazel Grove	111	16	0	13
2	Footpath 65 leading into Hazel Grove Golf Club	61	20	0	0
3	Footpath 109 near Old Mill Lane, Hazel Grove	193	75	0	6
4	Footpath alongside A523 Macclesfield Road – just north of Brookside Garden Centre car park, Hazel Grove	379	342	0	34
5	Footpath 3 at the end of Mill Hill Hollow, near Hazel Grove	53	1	0	0
6	Footpath 37 – just north of Park House Farm, Poynton	4	1	0	0
7	Footpath 31 – 175m east of Lower Park Crescent at the gate/ footpath sign on Woodford Road, Poynton	5	0	0	0
8	Footpath 21 at Birch Hall Kennels, Woodford Road, Poynton	48	145	2	0
9	Footpath 19 – starting opposite House number 32 on Woodford Road	0	0	0	0
10	Intersection of Footpaths 14a, 15 and 16 – off Chester Road, Woodford	35	0	0	0
11	Intersection of Footpaths 119 and 10 northwest of Clay Lane, Handforth	62	1	1	0
12	Footpath 7 footbridge over railway line west of Styal Road	10	0	0	0
13a	Footpath from Styal Road leading towards Bolshaw Road alongside the electricity sub-station	7	1	0	0
13b	Footpath and cycle path alongside B1566 Styal Road – approximately 100m north of Moss Lane	119	265	4	2
14	Woodhouse Lane, south of Dentdale Walk – near Manchester Airport	197	57	0	5
15	Railway Bridge south of Ringway Road West – near Manchester Airport	87	24	0	3
16	Thorley Lane, just south of Bailey Lane – near Manchester Airport	203	122	0	8

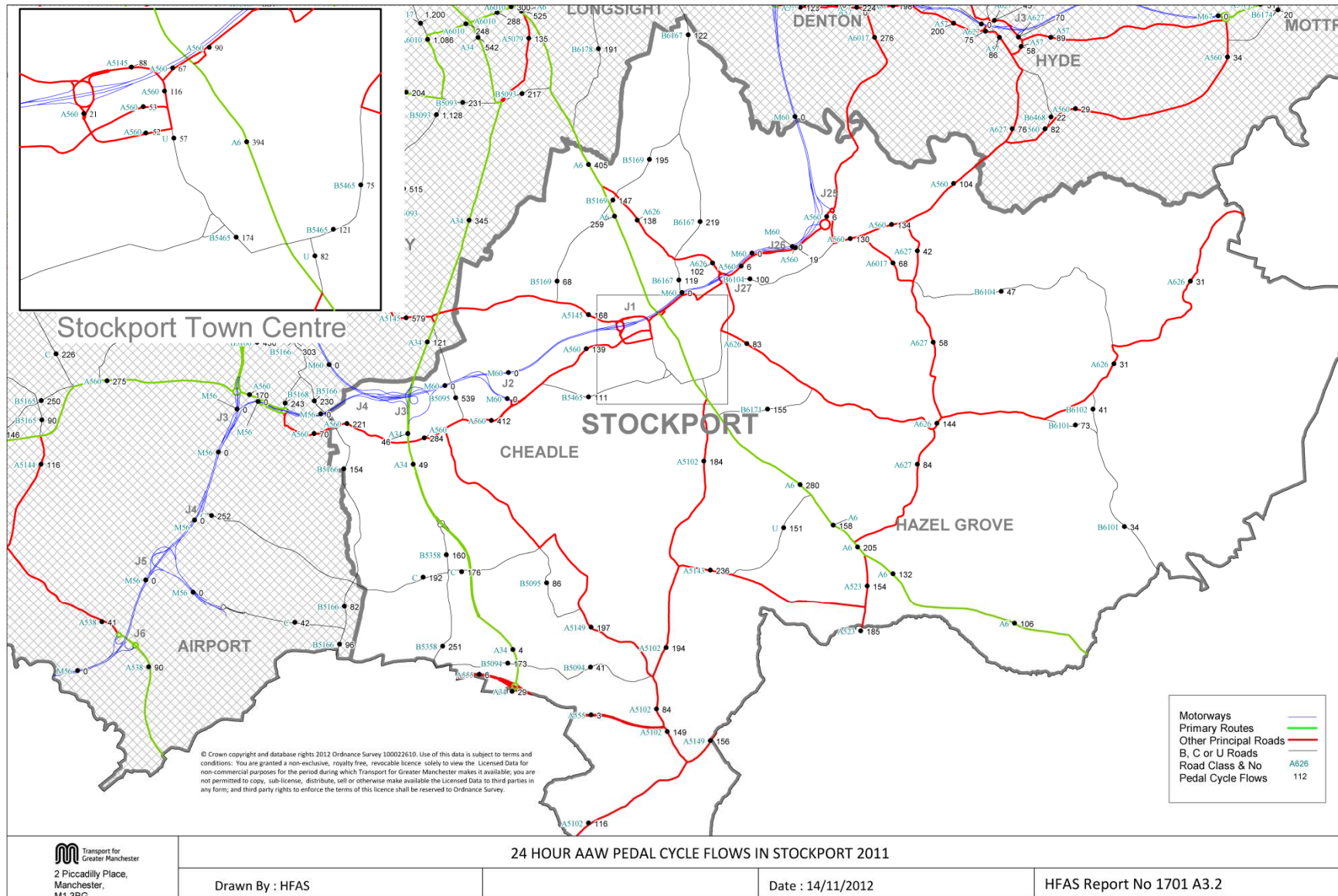
5.48 The full Footpath Monitoring Report is included in **Appendix B**, and the following descriptions of exiting PRoW draw upon the findings of the monitoring surveys.

- 5.49 PRow in the eastern section of the A6MARR scheme between the A6 and the A555 include footpaths, and on-road and traffic segregated cycle routes connecting the communities of Hazel Grove, Bramhall, and Poynton. The TfGM footpath monitoring identified that the principle use for footpaths in the eastern section is for recreation or dog walking.
- 5.50 East of the A6, footpaths 65 and 66 link the pedestrian footway adjacent to the A6 across the Hazel Grove Golf Club to the residential area in Torkington and a wider footpath network to the east. The A6 footway has moderate use with most people doing so for recreation or because it is the best route to their destinations which included the Hazel Grove golf course, the petrol station on the A6 and residential areas in Norbury Moor, Hazel Grove, and Stockport. Footpath 65 is used less and is primarily used for recreation and dog walking.
- 5.51 Footpath 109 is set in the wooded valley along the banks of Norbury Brook running south from Old Mill Lane and forms part of the long distance walking route, known as the Ladybrook Valley Interest Trail. The high amenity value is reflected in the relatively large number of recreational and dog walkers that use this footpath. It is also in close proximity to the residential area that forms the southern fringe of Hazel Grove and properties along the A6.
- 5.52 The footway along the eastern side of the A523 Macclesfield Road is heavily used. A relatively high number of wheelchair/ buggy users were recorded using this footway compared to other PRow. The route connects residential properties in Hazel Grove and Poynton to the Brookfield Garden Centre and Poynton Park and Lake. 35% of surveyed journeys along this footway were to or from the Brookfield Garden Centre, for work, shopping or recreation. The amenity value of this footway is low, with the 2m wide pavement being adjacent to the busy A523 Macclesfield Road.
- 5.53 The A523 Macclesfield Road has also been identified as an important cycle route and 45% of recorded NMUs were cyclists. There is a designated cycle lane along sections of the road, but it is not segregated from the high traffic flows.
- 5.54 Footpath 3 links the small number of residential properties on Mill Hill Hollow to the A523 Macclesfield Road and also forms part of the Ladybrook Valley Interest Trail. Relatively low numbers of NMU used the footpath over the survey period, and the majority of users did so for recreation or dog walking. The amenity value of the footpath is high, as the route runs along the top of the wooded valley of the Ladybrook and wooded field margins.
- 5.55 Footpaths 37, 31 and 21 form part of a small, dense network of PRow linking a residential area in Poynton to Woodford Road. Amenity is generally good along these routes which cross fields and farmyards. The network here also includes footpaths 43, 45 and restricted byway 39. At Woodford Road footpaths 31 and 37 terminate and any journeys beyond this to other parts of the footpath network would be undertaken along Woodford Road either north or south. Footpath 21 links to Bramhall via footpath 27. The footpaths surveyed in this area were poorly used over the survey period with all NMUs using the network for recreation or dog walking.
- 5.56 Woodford Road has been identified following the surveys as an important cycle route, although it is not designated, connecting Hazel Grove to Woodford, the western extents of Poynton, and indirectly to Bramhall via Chester Road.
- 5.57 Footpaths 14a, 15, 16 and 19 form a network crossing open hedge lined fields, linking the western most residential area of Poynton to the Woodford Oil Terminal and the southern extent of Bramhall. The Queensgate Primary School at the end of Albany Road is closely situated to where footpath 14a links into Bramhall. Footpath surveys showed that this part of the network was relatively poorly used and NMUs did so for recreation and dog walking,
- 5.58 PRow at the western end of the A6MARR scheme between the A555 and Shadowmoss Road comprising footpaths and cycle paths, form a network linking the communities of Handforth, Heald Green and Styal. Footpaths at this end of the study area are generally less well used than those at the eastern section of the study area, and the proportion of NMUs doing so for recreation is

lower, likely reflecting lower amenity value and reduced opportunity for linking into the wider PRoW network.

- 5.59 Footpaths 119 and 7 connecting to footpaths 9, 10 and 11 form a small local network that link the southernmost residential area of Heald Green to Handforth and Styal. This small dense area of footpaths crosses hedge lined fields and the Styal golf course. Footpath 119 has moderate use and footpath 7 low use during the survey period. NMUs using this network were mainly doing so for recreation or dog walking.
- 5.60 Along the western side of the B5166 Styal Road, separated by a 7.5m wide landscaped verge, is a footway and cycle path that is heavily used by both cyclists and pedestrians connecting Styal to Heald Green. The majority of NMUs surveyed were using this route to get to work or because it was the best way to get to their destinations, which included Wythenshawe, Styal Country Park, Manchester Airport, Heald Green, Styal, Moss Nook, Wilmslow, Styal train station and the petrol station on Hollin Lane.
- 5.61 West of Shadowmoss Road a small network of PRoW comprising footpaths and minor roads connects the residential area of Woodhouse Park to Manchester Airport. Most people were using the network to go to work or because it was the best route to their destinations which included Manchester Airport, Woodhouse Park, Styal, Newall Green, Wythenshawe, Baguely and Altrincham. Throughout the survey period 47% of recorded NMUs were travelling to or from the Airport.
- 5.62 Additional 2011 survey data for cyclist flows in Stockport and Wythenshawe is presented within TfGM monitoring reports, and reproduced in **Figure 5.23**. The monitoring data shows that the A6 in the vicinity of Stepping Hill Hospital is one of the highest recorded cycle counts. The cycle count at this location is more than double the figure on the A6 to the east of the junction with the A523 Macclesfield Road junction, showing that cycle flows reduce significantly beyond this junction as the A6 heads towards High Lane and Disley. The monitoring data shows that despite the 70 mph speed limit on the existing A555 MAELR there remain recorded cycle flows indicating that there would be demand for the parallel cycle facilities included in the A6MARR scheme. Monitoring data for the parallel B5094 Stanley Road near the Earl Road industrial area also shows relatively high levels of cycle demand. Similar recorded levels of cycle demand occur on the A5149/ A5102 Chester Road between Poynton and Woodford. High cycling levels are also recorded on Finney Lane through Heald Green, and on Simonsway in Wythenshawe close to Junction 4 of the M56.
- 5.63 On the A6 Buxton Road in the vicinity of the proposed new bridge over the A6MARR scheme around 130 cyclists were recorded as typically using the route on an average weekday. In the vicinity of the proposed new A6MARR junction, almost 200 cyclists typically use the A523 Macclesfield Road on an average weekday. In the vicinity of the existing A555 MAELR, around 150 cyclists typically use the A5102 Woodford Road to the south of the existing roundabout junction. To the west, few cyclists use the A34 to the immediate south of the junction with the A555 MAELR. In the vicinity of the proposed new A6MARR scheme junction with the B5166 Styal Road approximately 100 cyclists use Styal Road on a typical weekday.

Figure 5.23 – Average Weekday Cycle Flows in Stockport and Wythenshawe 2011



## Wider PRow Network

### *Manchester Airport Orbital Cycleway*

- 5.64 The Airport Orbital Cycleway is an eight mile, mainly off-road route around Manchester Airport and Wythenshawe. To the west of Manchester Airport the orbital route runs along Runger Lane. From Thorley Lane the cycleway crosses Painswick Park to join Simonsway through Woodhouse Park and Wythenshawe centre. To the east of Manchester Airport the cycleway runs along Styal Lane before routeing via quiet lanes and bridleways to join the A538 Wilmslow Road along the southern perimeter of the airport site.

### *Ladybrook Valley Interest Trail*

- 5.65 The Ladybrook Valley begins in the moorland countryside of the Peak District and over a distance of 15 km passes through a variety of changing landscapes and habitats to its confluence with the River Mersey at Cheadle. By successfully linking-up a number of existing designated rights-of-way, a footpath route now offers visitors the opportunity to walk the full length of the valley. In the Hazel Grove area, Footpath 109 running south from Old Mill Lane forms part of the trail, set in the wooded valley along the banks of Norbury Brook.
- 5.66 This long distance footpath also links with the 'Gritstone Trail' via Lyme Park, and intersects with the Middlewood Way near High Lane.

### *Regional / National Cycle Routes*

- 5.67 To the north of Manchester Airport, existing cycle routes connect the orbital route with residential areas, Manchester City Centre and the Stockport area. Regional Cycle Route **85** leads northwards from the orbital cycleway towards Manchester City Centre. This 16 km signed route passes through suburban areas on quiet roads and traffic-free links and provides connections to further strategic cycle routes including the Manchester Cycleway and Fallowfield Loop Line, and the Trans-Pennine Trail.
- 5.68 To the east of the B5166 Styal Road, the National Cycle Route **558** runs north-eastwards through Heald Green, running parallel to the A34 for a short section, before crossing into Cheadle and continuing further eastwards into Edgeley and Stockport town centre. The route therefore provides an important existing east-west route between Stockport town centre and Manchester Airport, improving access between a number of residential communities in the south Manchester area.
- 5.69 National Cycle Route **68**, known as the Pennine Cycleway, passes through Buxton, Whaley Bridge and New Mills. The cycle route crosses the A6 to the east of the roundabout junction with the A5004. Disley residents can access the cycle route via Redhouse Lane and Hague Bar.

### *Middlewood Way*

- 5.70 The Middlewood Way is a 16 km traffic-free greenway, between Macclesfield and Rose Hill, Marple. The Middlewood Way follows the route of the former Macclesfield, Bollington and Marple railway, and now provides a predominantly recreational route for walkers, dog walkers, cyclists, joggers and horse riders. It runs approximately parallel to the Macclesfield Canal and passes through Bollington and Higher Poynton. The route also forms part of National Cycle Network Route **55** from Ironbridge to Preston.

### *Gritstone Trail*

- 5.71 The 55 km Gritstone Trail is a long-distance footpath between Disley and Kidsgrove. The footpath leads southwards from the centre of Disley along Green Lane before entering Lyme Park via the East Gate. The trail continues across Sponds Hill towards Bollington, before continuing past Macclesfield to Congleton and Kidsgrove.

## Right of Way Improvement Plans

5.72 Under the Countryside and Rights of Way Act (2000), every highway authority in England was required to prepare and publish a Rights of Way Improvement Plan (ROWIP) for its area. The plan must then be assessed and reviewed within ten years and at similar intervals thereafter. ROWIPs were created to publish the authority's assessment of:

- the extent to which the local rights of way network meets the present and future needs of the public;
- the opportunities provided by local rights of way for exercise and other forms of open-air recreation and the enjoyment of the local authority's area; and
- the accessibility of local rights of way for blind or partially sighted persons and others with mobility problems.

5.73 ROWIPs were also designed to contain a statement of the action which the authority proposed to take for the management of local rights of way, and for securing an improved network of local rights of way.

### *Manchester*

5.74 The Manchester ROWIP is an integral part of the transport plan for Manchester and supports Manchester City Council's corporate aims and objectives. From 2010, Manchester's ROWIP was incorporated into the Greater Manchester Local Transport Plan (GMLTP), or its successor, as a distinct strand.

5.75 The purpose of the Manchester ROWIP is summarised by the following vision statement:

**“To develop a functional, adaptable off-road network which meets the current and future needs of the people of Manchester; and promotes and supports the development of sustainable communities.”**

5.76 The Council's statement of action sets out the 10-year plan for the achievement of this vision. A structure for the action plan has been developed with consideration to the emerging issues.

- **Theme One:** Strategy and Performance Management;
- **Theme Two:** Customer Relationship Management;
- **Theme Three:** Network Management;
- **Theme Four:** Network Maintenance; and
- **Theme Five:** Network Improvement.

5.77 Within each theme a number of key issues, outcomes and high-level actions have been identified.

- **1A:** To ensure opportunities to promote, extend and develop the off-road network are given consideration in the development of MCC policies and strategies at a strategic level;
- **1B:** To ensure the off-road network is acknowledged as a key part of the transport network and is given specific consideration in the planning and design of developments and highway schemes;
- **2A:** To improve the provision of information for existing and potential users of the off-road network;
- **2B:** To improve contact with 'hard to reach' groups;
- **3A:** To maintain the Definitive Map and Statement to reflect the current and future use of the network;



- **3B:** To develop working procedures and programmes which reflect the current and future management of the off-road network;
- **3C:** Improve access across the network for users with mobility or sensory impairments;
- **3D:** To support Manchester residents who wish to improve their health;
- **4A:** To maintain the structural integrity of the off-road network;
- **4B:** To improve the environmental condition and maintenance of the network;
- **5A:** To develop a contemporary network of off-road routes which link neighbourhoods to key destinations such as schools, public transport, shops, etc; and
- **5B:** To ensure on-highway links to the off-road network are safe for all users Stockport.

5.78 Work packages to implement the ROWIP will be drawn up in keeping with the methodology of the funding stream being utilised. Draft work packages will be put forward and developed following outline approval. The Local Access Forum will be consulted on proposals and priorities for work packages.

5.79 It is proposed that works to the off-highway network are prioritised using the following criteria:

- the potential to make a significant positive impact on corporate and transport objectives;
- where public safety could be substantially improved;
- according to the level of use;
- number and level of complaints; and
- cost and time in resolving the problem.

#### *Stockport*

5.80 Stockport intends to develop a strategic approach to the development of its Rights of Way network in order to facilitate both recreational and utility travel among a range of users both from within the borough and those passing through it.

5.81 The following objectives are from Local Transport Plan 2 and are designed to provide the high level statement of policy and objectives for improving the rights of way network. The guiding principles inform the assessment of Rights of Way network and future needs and statement of action stages.

1. To improve the accessibility, environment, attractiveness and safety of the regional centre, town and district centres and employment areas.
2. To improve road and community safety.
3. To minimise environmental damage caused by transport, thereby improving the quality of life and health of the population.
4. To increase the proportion of trips by non-car modes.
5. To improve accessibility by ensuring the RoW network meets the needs of all sections of the community and the rural economy, promotes social inclusion and widens choice.
6. To improve links with the rest of the country.
7. To maintain, improve and make best use of existing RoW, and ensure all schemes offer long-term value for money.
8. To assist in improving health, the local economy and recreational opportunities.

5.82 The Stockport ROWIP identifies 9 themes with 13 conclusions:

- **Conclusion 1:** The path network is valued and has a multitude of uses

**(a) Theme – Information**

- **Conclusion 2:** Improved information can increase use of the path network
- **Conclusion 3:** Information on wider access to green spaces and on other access routes needs to be collated and made more widely available

**(b) Theme – Recording of routes**

- **Conclusion 4:** The record of public rights of way and other access routes needs to be brought up to date

**(c) Theme - Missing links**

- **Conclusion 5:** There is need for additional off-road routes to address the needs of specific users

**(d) Theme - Access for all**

- **Conclusion 6:** Blind or partially sighted people and others with mobility problems have limited access to the path network both physically and in terms of information
- **Conclusion 7:** There is a variation in the accessibility to the path network for some communities and excluded groups (Ethnic groups, Younger and Older people) – this needs to be addressed so that opportunities to use paths are available to all members of our community

**(e) Theme – Network maintenance**

- **Conclusion 8:** Insufficient maintenance of paths discourages use and is a concern to all path users
- **Conclusion 9:** Improvement to signage can encourage wider use of the network

**(f) Theme – Anti-social behaviour**

- **Conclusion 10:** Problems of anti-social behaviour need to be addressed as this deters people from using paths and impacts on their enjoyment

**(g) Theme – Updating the network**

- **Conclusion 11:** There is a need to update the network to reflect current needs and use

**(h) Theme - Enhancing the Network**

- **Conclusion 12:** Path enhancements can increase use and to people's enjoyment

**(i) Theme – Partnership working**

- **Conclusion 13:** The rights of way network should not be considered in isolation. Use of, management of and improvements to rights of way are interlinked with many other existing and proposed plans and strategies

5.83 The Council's statement of action sets out the activities that will address the 13 conclusions identified within the ROWIP.

### *Cheshire East Council*

- 5.84 In April 2011, Cheshire East Council published its ROWIP for the period 2011-2026 which set out the strategy by which the Council aims to improve public rights of way and countryside access across the Borough.
- 5.85 The projects to be delivered under the ROWIP strategy will be set out in 4-yearly implementation plans. The Council's ROWIP Implementation Plan 2011-2015 is the first, and is informed by suggestions gathered from the public, user groups and other organisations.
- 5.86 Schemes relevant to the A6MARR study area include:
- **C3 Poynton Footpath No. 7:** Investigate the possibility of enabling cyclists to use this route on Princes Incline as a means to link Poynton and Hazel Grove with the Middlewood Way. Implementation of this improvement would further support proposals contained within Chapter 9 of this Transport Assessment for a new cycle route through Lyme Park to link Disley with High Lane/ Poynton;
  - **H30 Poynton Footpath No. 51:** Investigate the possibility of upgrading to bridleway status to give access onto the Middlewood Way and surrounding network; and
  - **T1 Peak Forest Canal Towpath, Disley:** Improve the surface of the towpath to create an active travel route to the facilities in Disley and commuter destinations further afield.

## 6. A6MARR Scheme Development

### Scheme Context

- 6.1 The genesis of SEMMMS was the referral of three schemes from the national Roads Programme, namely:
- the A6(M) Stockport North South Bypass;
  - the A555 Manchester Airport Link Road West (MALRW); and
  - the A555/ A523 Poynton Bypass.
- 6.2 It is helpful to recall that the Highways Agency's proposals were for:
- the A6(M) to be built to motorway standard;
  - the A555 MALRW scheme was for a fully grade separated dual carriageway and included major rebuilding and expansion of Junction 5 on the M56; and
  - the A555/ A523 Poynton Bypass was a dual carriageway grade separated proposal, extending from the northern end of the Silk Road in Macclesfield to Poynton and including an east-to-west link between the A555 Handforth Bypass and the A6(M) proposal at Hazel Grove.
- 6.3 The SEMMMS Strategy recommended that the study area local authorities develop smaller and more appropriate scale road proposals along the protected alignments. Furthermore, it was recommended that these road proposals should be designed to provide relief for the study area communities affected by inappropriate through traffic, but not to provide a new strategic route of regional and potentially national significance. In particular, it recommended that:
- a road is constructed between the M60 at Bredbury and the A6 at Hazel Grove following the protected alignment for the A6(M). The construction of the Stepping Hill Link between the A6 north of Hazel Grove centre and the new road forms part of the recommendation. It is recommended that the north-south bypass be constructed to dual carriageway standard with a 40/ 50 mph design speed;
  - junctions should be at-grade and most likely signal controlled;
  - a bypass of Poynton is constructed. The bypass should comprise an east-west section linking the A555/ A5102 junction north of Woodford to the A6 at Hazel Grove. Traffic modelling undertaken for the study indicates that a dual carriageway is more than likely required, but junctions can be accommodated at grade. For the north-south bypass of the A523 a single carriageway bypass is recommended from the existing A523 at Adlington, joining the east-west section of the bypass north of Woodford; and
  - a reduced scale scheme is constructed in the MALRW corridor. Traffic modelling indicates that an at-grade dual carriageway linking the Manchester Airport roundabout at the end of the M56 spur to the western end of the A555 at Handforth is sufficient. An at-grade junction at the B5166 Styal Road should be provided. Combined with other recommendations, there is the opportunity to introduce dedicated HGV/ public transport lanes along the MALRW corridor.
- 6.4 It was recommended that the protected alignments in the local development plans for the MALRW, Poynton Bypass and A6(M) proposals be maintained, whilst recognising, that the reduced scale schemes may be able to use modified alignments that have a lesser environmental impact.

- 6.5 The three local authorities involved, Cheshire East Council, Manchester City Council and Stockport Metropolitan Borough Council accepted the SEMMMS Strategy's recommendations and the Minister's request to begin development and appraisal of these schemes and ensure *"that the designs of these schemes maximises the benefits that they can bring to the study area."*
- 6.6 In July 2007, the DfT stated that while the scheme provided value for money, limited funding capabilities meant it was not possible to fund the Relief Road as a single scheme, such that consideration should be given to its phased delivery. Three potential phases of the scheme were identified by the local authorities, and were submitted the DfT for consideration in 2007/ 08 as follows:
- M60 to the A6, including the Stepping Hill Link;
  - A6 to Manchester Airport with Poynton Bypass; and
  - A6 to Manchester Airport without Poynton Bypass (the A6MARR scheme).
- 6.7 Given the funding constraints the DfT and Local Authority Officer's jointly examined the key policy drivers in the area and agreed that the A6 to Manchester Airport section was the priority scheme due to the potential economic impact on Manchester Airport (and therefore the City Region) of delaying access improvements, which in turn could constrain future economic growth.

## Consultation

- 6.8 The A6MARR scheme has been developed by Stockport Council working with its partners, Manchester City Council, Cheshire East Council and Transport for Greater Manchester (TfGM). Public consultation on the road scheme has taken place over two phases (<http://www.semmms.info/a6/consultation/>):
- The first phase of consultation on the A6MARR scheme ran between 22<sup>nd</sup> October 2012 and 25<sup>th</sup> January 2013. It was designed to specifically to capture opinion on the A6MARR scheme along with people's views on junction options to help determine a preferred scheme. Following analysis of the feedback from phase 1 consultation, Stockport Council, along with its partners revised their proposals to develop an emerging preferred scheme; and
  - The second phase of consultation ran from 3<sup>rd</sup> June 2013 to 19<sup>th</sup> July 2013 to allow residents, businesses and road user to give their views on the emerging preferred scheme.
- 6.9 Additional negotiations with landowners affected by the A6MARR scheme have been ongoing from early 2012.
- 6.10 The Vulnerable Road User Group (VRUG) has been set up specifically for the A6MARR scheme in order to discuss and gather feedback on pedestrian, cycle and equestrian facilities, provision for disabled groups and Public Rights of Way. A VRUG meeting was held during the Phase Two consultation on 12th June 2013, a total of 17 attendees were present at the meeting as listed below:
- Access & Bridleway Officer, British Horse Society;
  - Alderley Edge, Wilmslow & District Footpaths Preservation Society;
  - Bollin Valley Partnership;
  - Byways & Bridleways Trust;
  - Chair, Cheshire Local Access Forum;
  - Cheshire Local Access Forum;
  - CTC;
  - CTC NW;

- Cycle Stockport;
  - Cycle User Group;
  - Cycle Wilmslow;
  - Cycling Project for the North West;
  - Cycling Projects;
  - Dark Peak Bridleway Association;
  - Disability Stockport;
  - Footpath Co-ordinator, Greater Manchester / High Peak Area, Ramblers Association;
  - Greater Manchester Cycle Campaign;
  - Living Streets;
  - Macclesfield Wheelers;
  - Manchester Area Ramblers Association;
  - Manchester Local Access forum;
  - Mid-Cheshire Bridleway Association;
  - North and Mid Cheshire Ramblers' Association;
  - North Cheshire Riders;
  - North West Transport Roundtable;
  - Peak and Northern Footpath Society;
  - Peter Brett;
  - Stockport Access Local forum;
  - Stockport Council;
  - Stockport East Area Bridleways Association;
  - Stockport Equestrian Group;
  - Stockport Group. Ramblers;
  - Stockport PCT;
  - Stockport Walking Forum;
  - Stockport Walking Forum RA (Greater Manchester High Peak Area); and
  - Sustrans.
- 6.11 Meetings with the VRUGs have identified opportunities to improve the local public footpath and cycleway networks along the route of the A6MARR scheme.
- 6.12 In addition, an Environment Forum has been set up specifically for the A6MARR scheme in order to discuss and gather feedback on environmental aspects of the scheme, such as environmental impact, mitigation and landscaping.

- 6.13 Local Liaison Forums (LLFs) have been undertaken in areas most affected by the proposals. The areas are listed below:
- LLF 1. Hazel Grove - Buxton Road Area;
  - LLF 2. Hazel Grove - Mill Lane Area;
  - LLF 3. Hazel Grove - Norbury Hall Area;
  - LLF 4. Poynton - London Road South Area;
  - LLF 5. Poynton - Mill Hill Farm Area;
  - LLF 6. Poynton - Glastonbury Drive Area;
  - LLF 7. Poynton - Woodford Rd / Chester Road Area;
  - LLF 8. Bramhall - Woodford Road Area;
  - LLF 9. Bramhall - Albany Road Area;
  - LLF 10. Heald Green - Bolshaw Road Area;
  - LLF 11. Handforth - Clay Lane Area;
  - LLF 12. Moss Nook - Styal Road Area;
  - LLF 13 Queensgate Primary School; and
  - LLF 14 Stanley Green.
- 6.14 These LLF meetings are considered to be a vital channel for two-way dialogue between the local community, the Local Authorities and, eventually, the appointed contractor. LLF membership includes those businesses, land owners and local residents affected by the A6MARR scheme.
- 6.15 The purpose of the LLFs is to provide invited residents and businesses with the opportunity to comment on the scheme, make suggestions for improvements to the design of junctions and the overall scheme as well as direct any questions regarding the scheme to members of the project team. At the LLFs, participants have been provided with a number of plans detailing junction designs at locations in close proximity to their property, and encouraged to use post-it-notes to write down their comments and place it on the maps in the relevant positions. In conjunction with this, each table was facilitated by a member of the consultation and project team that recorded comments and questions.
- 6.16 LLFs were held for the Phase One consultation and the same groups have been used during the Phase Two consultation. During the Phase Two consultation, an additional LLF area has been added which includes properties in the vicinity of the A34/ B5094 Stanley Road junction. Information has continued to be shared with the LLFs through October 2013.

### Phase One Consultation Findings

- 6.17 The first phase of consultation was designed specifically to capture overall opinion of the scheme and preferences on the layout of six junctions along the proposed route. General comments about the scheme were also captured. All feedback from the first phase of consultation was considered in the development of the design for the emerging preferred scheme.
- 6.18 As part of consultation Phase One, two leaflets were distributed to approximately 85,000 properties within the area surrounding the A6MARR scheme. The purpose of leaflet one was to raise awareness of the A6MARR scheme, while leaflet two provided more detailed information about the scheme and junction options. Leaflet two also provided a self-completion response form including questions relating to overall support of the A6MARR scheme and preferences on the layout of the six junctions.

- 6.19 The level of response to the phase one consultation on the A6MARR scheme is shown below. The following provides a summary of the number of responses to the consultation that have been analysed and reported:
- 1,544 online responses have been completed;
  - 7,193 postal responses have been recorded; and
  - 294 responses have been received by a range of other methods as stipulated in Section 2.8, including email, telephone, post, twitter and the SEMMMS website.
- 6.20 The geographical distribution of respondents has been balanced. The information provided on each of the responses has been considered and utilised to determine any conclusions that are detailed fully in this report.
- 6.21 Information and data captured as part of the first phase of the consultation process demonstrates that there is support for the proposed A6MARR scheme. 69% (6,208) of overall respondents support the proposals with approximately 50% (4,505) of respondents specifying that they are strongly in favour of the A6MARR scheme. Approximately 13% (1,132) of overall respondents have specified that they are not in favour or definitely not in favour of the proposed A6MARR scheme.
- 6.22 Respondents have also provided more open and general comments regarding the A6MARR scheme and junction options. In total, 45% (3,971) of respondents who returned a response form provided an open comment on the A6MARR scheme, with three quarters being in favour of the A6MARR scheme, and 21% opposed. These comments were reviewed collectively alongside those comments provided by direct letters and emails, which totalled 4,228 respondents. A summary of the most frequently mentioned comments are summarised below:
- 13% (1,156) of respondents stated that the construction of the road is long overdue;
  - 13% (1,141) of respondents provided comments on specific design issues which covered a wide range of areas summarised within this report;
  - 8% (751) of respondents indicated that they believed the A6MARR scheme will reduce traffic/improve traffic flow, while 269 (3%) of respondents indicated that they believed the new road will generate more traffic;
  - 7% (641) of respondents indicated that they believed perceived negative economic impacts will be generated by the A6MARR scheme, in particular that it is a waste of money (2%, 144) and too expensive (1%, 85);
  - 6% (499) of respondents raised concerns over environmental impacts; and
  - 5% (441) of respondents stated that the new road should link the A6 to the M60 with this also being a key topic amongst non-supporters (216, 19% of non-supporters).
- 6.23 Information captured on the response forms also enabled conclusions to be drawn with regards to preferred junction options.

### Phase Two Consultation Findings

- 6.24 The purpose of the Phase Two consultation was to provide feedback from the Phase One consultation and seek comments on the emerging preferred scheme in order to inform the development of the preferred scheme for the planning application.
- 6.25 The Phase Two Consultation engaged with the following main groups:
- Residents and landowners adjacent to the A6MARR route;
  - Non-residential stakeholders, including businesses adjacent to the A6MARR route; and



- Key local stakeholders and people travelling through the area, e.g. business organisations, local authorities, local resident groups, special interest groups and politicians.

6.26 The stakeholder groups with which contact was made included:

- Adjacent Local Authorities;
- Local Politicians;
- Business Groups;
- District Centre Partnerships/ Local Trade Organisations;
- Public Transport Operators;
- Statutory Regional and Local Bodies;
- Freight Organisations;
- Parish and Local Councils;
- Residents' Groups;
- Schools;
- Land Owners (note: this is part of ongoing engagement with affected landowners and is therefore considered separately to this report); and
- Adjacent Land Owners.

6.27 A leaflet and response form was distributed to properties within the area surrounding the proposed scheme. The postal distribution of the leaflets was to an area of approximately 85,000 properties, including residential and business properties. 4,898 postal response forms were received.

6.28 Information about the consultation was also provided on the website [www.semms.info](http://www.semms.info). As well as a source of information, the website provided an opportunity for respondents to directly submit their comments by completing an online response form and also via an interactive map. 471 online questionnaires were completed during the Phase Two consultation period.

6.29 In addition, a total of nine exhibitions were held between 13 June and 4 July 2013 and were attended by approximately 870 people. In total, consultation responses were received from 5,481 respondents.

6.30 The consultation response form posed the following question:

*To what extent do you agree or disagree that the emerging preferred scheme for the A6 to Manchester Airport Relief Road:*

- Addresses the needs of pedestrians;
- Addresses the needs of cyclists;
- Accommodates public rights of way; and
- Addresses changes to traffic flows in the local area through complementary and mitigation measures.

6.31 **Table 6.1** below summarises responses to this question. The results indicate that the majority of respondents agree that access/ traffic issues are being addressed by the A6MARR scheme.

**Table 6.1 – Phase 2 Consultation Responses**

Topic	Agree or Strongly Agree	Disagree or Strongly Disagree	Neither Agree / Disagree or Don't Know	No Answer
Addresses the needs of pedestrians	58%	12%	27%	3%
Addresses the needs of cyclists	59%	12%	26%	3%
Accommodates public rights of way	58%	10%	29%	3%
Addresses changes to traffic flows in the local area through complementary and mitigation measures	63%	16%	18%	3%

6.32 Further analysis of respondents' views by geographical area identified that respondents living within Heald Green and Cheadle Hulme were most likely to agree that the scheme addresses changes to traffic flows, at 77% of respondents in this area. Conversely, respondents living within Hazel Grove were most likely to disagree or strongly disagree that the A6MARR scheme addresses changes to traffic flows, at 26% of respondents in this area. 17% of respondents in High Lane strongly disagree that the A6MARR scheme addresses changes to traffic flows. Residents within this area are also least likely to agree or strongly agree that the A6MARR scheme addresses changes to traffic flows.

6.33 Respondents have greatest strength of feeling regarding the proposals to address changes to traffic flows in the local area through complementary and mitigation measures. The results show that of the four access/ traffic issues under consideration, whilst respondents are most likely to agree that the A6MARR scheme will address changes to traffic flows, conversely, they are also most likely to disagree that this is the case. This is likely to reflect both positive and negative changes to traffic flows within the consultation area as a result of the scheme, as exemplified by the high levels of agreement in the Heald Green Cheadle area, contrasted with a notable strength of disagreement in High Lane.

6.34 Analysis of views on access/ traffic issues for respondents living within 500m and 1km of the A6MARR scheme indicates that respondents living closer to the scheme are less likely to agree or strongly agree that these issues are being addressed by the scheme.

6.35 Comments and concerns made during the consultation exhibitions regarding traffic and Complementary and Mitigation measures associated with the A6MARR scheme included the following:

- Concerns over the forecast traffic increases in High Lane and Disley. Requests were made for more detailed information on measures proposed to address the forecast traffic increases;
- Junction improvement required at the A6/ Windlehurst Road junction;
- Concern about increased levels of traffic on Offerton and Torkington Road. More detail in terms of mitigation measures was requested for these areas;
- A number of concerns were raised with regards to the proposed junction at Macclesfield Road and the impacts on the Fiveways junction, Dean Lane junction, traffic queues blocking back into Poynton, and standing traffic on the A6MARR to the rear of Darley Road properties;

- Concern about forecast traffic increases on Clifford Road. More detailed information about the proposed mitigation measures requested and suggestion that measures should be introduced before the A6MARR scheme is opened;
- Concern that the A6MARR scheme would increase traffic, especially HGVs, through Poynton. Poynton Bypass should be included in the A6MARR scheme or completed soon afterwards;
- Concerns over impacts on road safety on Chester Road and at the Chester Road/ Woodford Road junction. Measures requested to discourage HGVs using Chester Road to access the A6MARR from Poynton, and encourage vehicles to access the road from the A523 Macclesfield Road junction; and
- Concern over difficulty accessing properties on Woodford Road that are within/ adjacent to the proposed A6MARR/ A5102 Woodford Road junction.

6.36 Other access/ traffic comments and concerns made during the exhibition included the following:

- The speed limit on the existing A555 should be reduced to 50mph;
- Concerns over road safety at the proposed Clay Lane junction;
- Question as to whether the existing traffic lights at the Ringway Road/ Styal Road junction could be removed following introduction of the A6MARR scheme and associated Styal Road signalised junction;
- Concern over traffic flow increases at Adlington as a result of the scheme; and
- Recommendation that the full scheme to the M60 should be completed.

6.37 General comments made during meetings with Vulnerable Road User Groups (VRUG) and in written responses supplied by groups included within the VRUG include the following:

- Upgrade the proposed shared footway/ cycle way alongside the A6MARR scheme to a bridleway;
- Concern that the junctions along the A6MARR do not provide adequate priority for pedestrians and walkers. Junction layouts should be improved to the benefit of pedestrians and other vulnerable road users;
- Support for the construction of new bridleways, particularly in Poynton where none existed before, but require upgrade of adjoining footpaths to bridleway status;
- Concern from cyclists about the use of cycleways by equestrians;
- Choice of surfacing material on bridleways should best support commuter cycling;
- The A6MARR scheme needs to follow the guidance in the DfT Local Transport Note 1/04, where its "Hierarchy of Users" states which places pedestrians and cyclists above motorised modes of transport. The COPECAT (Concise Pedestrian and Cycle Audit) methodology, adopted by AGMA, should also be considered for the A6MARR scheme;
- Engagement with VRUGs should continue as the A6MARR scheme develops; and
- Any hedging alongside a cycle way must be planted at least two metres from the edge of the cycleway.

## A6MARR Scheme Design

- 6.38 In line with the SEMMS strategy recommendations, for a more appropriate scale road proposal to provide relief to local communities affected by inappropriate through traffic (but not to provide a new strategic route of regional and potentially national significance), the overall A6MARR scheme philosophy has been to provide at-grade signal controlled junctions and safe crossing facilities for Non-Motorised Users (NMUs) wherever possible.
- 6.39 The design ethos of the A6MARR scheme has been to move away from the outdated 'predict-and-provide' model for local major highway infrastructure projects, with a focus on catering for existing and 2017 opening year peak period traffic flows. There is little value in providing unnecessary surplus highway capacity when the rest of the local highway network is already operating under significant stress during peak periods, and unable to accommodate any significant increases in traffic demand.
- 6.40 This approach closely aligns with the vision of the refreshed GM Strategy 2013-2020 for "*sustainable economic growth based around a more connected, talented and greener city region where all our residents are able to contribute to and benefit from sustained prosperity*" that seeks a transformational step-change in connectivity through a more integrated approach to securing improvements to the strategic transport network; including:
- GMTF investment programme, comprising a rigorously prioritised package that includes new Metrolink lines, transport interchanges, rapid bus system developments and key strategic highway schemes;
  - LSTF in active travel, smarter choices and intelligent transport technologies, which aims to at least double the levels of commuter cycling in Greater Manchester and enable all commuters to make more sustainable choices in how they travel;
  - Northern Hub rail network expansion scheme;
  - Vélocity 2025 programme with a target to secure at least a 300% increase in the levels of cycling across Greater Manchester by 2025, and to see the proportion of trips by bicycle increase to 10% over the next 12 years; and
  - Further introduction of new smart technologies to provide payment and information systems that will better enable commuters to take ever-smarter choices across their travel options in the interests of network efficiency and environmental sustainability.
- 6.41 In planning for the future, the A6MARR scheme design has taken full account of committed (and near certain) developments and infrastructure schemes. As will be described later in this Chapter, the preferred A6MARR junction design for the Bramhall Oil Terminal junction provides a good example of how the future plans for Poynton Bypass have been taken into account as part of the A6MARR scheme design process, to avoid unnecessary and potentially costly abortive works being carried out

### A6MARR Mainline

- 6.42 The proposed A6MARR scheme consists of a dual two lane urban all-purpose carriageway (D2UAP) from the A6 Buxton Road to Manchester Airport and adjacent Enterprise Zone. The existing A555 between the B5358 Wilmslow Road and the A5102 Woodford Road has a speed limit of 70mph with a corresponding road cross section reflecting a dual two lane Rural All Purpose Road configuration.
- 6.43 The design of the A6MARR mainline has been carried out in accordance with the Design Manual for Roads and Bridges (DMRB), specifically the documents listed below, as follows:
- TD9 Highway Link Design
  - TD27 Cross Sections and Headroom

- TD22 Layout of Grade Separated Junctions
- TD19 Requirement for Road Restraint Systems
- TD50 The Geometric Layout of Signal-Controlled Junctions and Signalised Roundabouts
- TD42 Geometric Design of Major/ Minor Priority Junctions

6.44 The recommendations from the Advice Notes in the DMRB have been taken into account, specifically the documents listed below, as follows:

- TA90 The Geometric Design of Pedestrian, Cycle and Equestrian Routes

6.45 The A6MARR scheme comprises two sections of new two lane dual carriageway. The first section, starting from a new realigned section of the A6 at Hazel Grove, and extending west to the existing A555 at Woodford Road, Bramhall has a proposed design speed of 85kph (50mph speed limit).

6.46 The second new section of road is an extension of the existing A555, which currently terminates at the B5358 Wilmslow Road, and continues west towards Manchester Airport. The proposed design speed for the section of new carriageway from the B5358 Wilmslow Road to the B5166 Styal Road junction is 85kph (50mph speed limit), while the proposed design speed for the section of new carriageway from the B5166 Styal Road to its merge with the existing junction at Ringway Road/ Ringway Road West is 70kph (40mph speed limit).

6.47 DMRB TD27 paragraph 4.4.4 allows for the omission of hardstrips on a D2UAP by reason of reduced land costs, reduced construction costs and lower design speeds. It was therefore agreed by the Project Board to remove the hardstrips where the speed limit is 50mph or less. The cross section would therefore have a total width of 17.1m (assuming a 2.5m central reserve). Where the speed limit is 70mph (existing A555) the hardstrips are retained for safety reasons.

6.48 DMRB TD27 paragraph 4.11.13 indicates a minimum central reserve width without hardstrips of 1.8 metres (600mm setback either side of a 600mm thick standard rigid concrete barrier). This is subject to confirmation of the type of vehicle restraint system and visibility requirements (DMRB TD9). The A6MARR Project Design Team has developed the design to allow the provision of a central reserve concrete safety barrier.

6.49 A 2.5m wide shared cycleway/ footway runs from the A6 to the Bramhall Oil Terminal Gyratory. It is located adjacent to the eastbound carriageway and separated from the A6MARR by a 2.0m grass median. The 2.5m wide shared surface cycleway/ footway continues offline from Bramhall Oil Terminal Gyratory to the A34/ A555 junction. From the A34/ A555 junction the shared surface will be retro-fitted onto the existing A555 toward the B5358 Wilmslow Road. The design from the B5358 Wilmslow Road reverts back to the original concept with a 2.0m grass median separating the shared cycleway/ footway from the A6MARR as far as the B5166 Styal Road junction. The shared cycleway/ footway continues adjacent to the eastbound carriageway and is 3.0m wide, but without the 2.0m grass median.

6.50 The proposed A6MARR route has been designed as an Abnormal Load Route, but not as a High Load Route.

## A6MARR Side Road Standards

- 6.51 The design standards adopted for the A6MARR side roads are based upon:
- DMRB.
  - Consultations with the relevant local highway authority.
- 6.52 The design speeds adopted at each junction are based on the existing speed limits and/ or in consultation with the relevant local highway authority. Where appropriate new design speeds have been proposed and will be promoted by the A6MARR Project Team to the local highway authority.
- 6.53 Carriageway cross-sections, footpaths and verges for the side roads are based upon the existing site layout and/ or in consultation with the relevant local highway authority.

## A6MARR Scheme Junctions

- 6.54 The junction layouts considered during the design process have been designed to the DMRB where possible, with particular attention to forward visibility sight stopping distances (SSD) on approach to junctions:
- TD9 Highway Link Design;
  - TD22 Layout of Grade Separated Junctions;
  - TD27 Cross-Sections and Headrooms;
  - TD50 Geometric Layout of Signal Controlled Junctions and Roundabouts;
  - TD42 Geometric Design of Major/ Minor Junctions; and
  - TA90 Geometric Design of Pedestrian, Cycle and Equestrian Routes.
- 6.55 The design of facilities for non-motorised users has been carried out in accordance with the documents listed below, as follows:
- TD36 Subways for Pedestrians and Pedal Cyclists. Layout and Dimensions
- 6.56 The recommendations from the Advice Notes in the DMRB have been taken into account, specifically the documents listed below, as follows:
- TA68 The Assessment and Design of Pedestrian Crossing
  - TA90 The Geometric Design of Pedestrian, Cycle and Equestrian Routes
- 6.57 Increased provision such as Toucan/ Pegasus crossings have been incorporated into the design following consultation with Public Rights of Ways (PRoW) and cycling officers of all three local authorities.
- 6.58 Alternative road/ junction layouts have been considered along the A6MARR route and these are described in the following sections, whilst the operational performance of the A6MARR junctions is described in **Chapter 8** of this report.

### *A6MARR/ A6 Junction*

- 6.59 The A6 will be realigned (over a length of approximately 1 kilometre) to the north-east of the existing A6 Buxton Road, with a design speed of 60kph west of Occupiers Lane, 70kph east of Occupiers Lane junction with A6. The realigned A6 has been designed as a Wide Single 10 metres wide carriageway (WS10) with protected right turn lanes at the junctions. There is no provision for NMUs along the realigned A6, except for the western tie-in junction where a relocated Toucan crossing is located. Verges have been widened where required to provide adequate forward visibility in accordance with DMRB.

- 6.60 Approximately half way along the realigned road a new junction with the A6MARR would be constructed. An online junction layout is not feasible due to the proximity of the Manchester to Buxton Railway Line in conjunction with the proposed A6MARR passing under the aforementioned railway.
- 6.61 A number of junction options were produced and their suitability was considered by a Technical Working Group made up of a variety of engineering and environmental specialists from the A6MARR Project Team, namely:
- **Option 1 (All movement at-grade signalised roundabout):** This was the preferred layout configuration when the SEMMS scheme was from junction 25 of the M60 motorway to Manchester Airport.
  - **Option 2 (Fully signalised T-junction):** This layout differs from Option 1 due to the different traffic capacity requirements, namely no traffic arm toward the M60 motorway. This junction would be constructed in a green field location to the north-east of the existing A6 Buxton Road, and would be surrounded by extensive landscaping to minimise the visual effect to local residents. The junction would not support NMU facilities due to its offline location. NMUs will continue to use the existing A6 Buxton Road and cross the line of the A6MARR by means of a new bridge structure. MOVA control would be introduced to maximise the operational performance of the junction.
- 6.62 It was deemed that the larger land footprint required by Option 1 would have a greater environmental impact compared to Option 2, and would be more expensive to construct. For these reasons, **Option 2 (Fully signalised T-junction)** is included within the A6MARR preferred scheme.
- 6.63 As part of the Local Liaison Forums undertaken as part of the Phase Two Consultation, the LLF1 (Hazel Grove - Buxton Road area) forum was asked to provide their comments on the proposed junction arrangement and proposed measures for the A6 Buxton Road and connection of the scheme into the existing road network. Attendees were pleased to see the proposed bus only link on the existing Buxton Road alignment to remove through traffic from the front of their properties. Attendees also agreed that Buxton Road will provide a safe route for walkers, cyclists and equestrians but that this should be continued southwards along the A6 to the Middlewood Way by way of a dedicated cycle lane.
- Realigned A6 Tie-in Junctions*
- 6.64 The proposed tie-in junctions are located close to Yew Tree Avenue, to the west, and Norbury Hollow Road to the east. The existing Toucan crossing facility of A6 Buxton Road (north of Yew Tree Avenue) will be removed and relocated eastwards as part of the A6MARR scheme proposals.
- 6.65 The western tie-in point of the realigned A6 is to be constructed west of Yew Tree Avenue. Access to the realigned A6 from Yew Tree Avenue and Occupiers Lane will be via priority T-junctions. Each priority junction will have protected right turn lanes with illuminated refuge islands. Between the priority junctions, a new Toucan crossing will be provided to replace the existing facility. Access to Yew Tree Avenue and Occupiers Lane would be for local residents and service vehicles. Local bus services would turn right, at the Yew Tree Avenue junction, and continue to use the existing eastbound A6 via the new bridge structure over the proposed A6MARR.
- 6.66 The eastern tie-in point of the realigned A6 will be via a signalised junction located to the west of Wellington Road. MOVA control would be introduced to maximise the operational performance of the junction. There will be no provision for NMUs at this junction. Access to the existing A6 Buxton Road and Norbury Hollow Road will be provided via a priority T-junction.
- 6.67 It was not deemed necessary to consider alternative junction arrangements at either tie-in junction location.

### *A6MARR/ A523 Macclesfield Road*

- 6.68 A number of junction options were considered where the A6MARR intersects the A523 Macclesfield Road and their suitability was considered by a Technical Working Group made up of a variety of engineering and environmental specialists from the A6MARR Project Team, namely:
- **Option 1 (No junction provision):** The A6MARR would pass under a road bridge carrying A523 Macclesfield Road. There would be no direct access from the A523 Macclesfield Road to the proposed A6MARR.
  - **Option 2 (An at-grade all movements signal controlled cross-road junction):** Controlled crossing facilities for NMUs would be provided. MOVA control would be introduced to maximise the operational performance of the junction.
  - **Option 3 (A grade separated junction with restricted movements):** This layout would consist of west-facing slip roads only. Uncontrolled crossing facilities for NMUs at the top of the slip roads would be provided.
  - **Option 4 (An at-grade signalised satellite T-junction):** This junction layout would be located to the west of the A523 Macclesfield Road and would require a link road across adjacent fields to a signalised T-junction with the A6MARR. An additional signal controlled T-junction would be required with the A523 Macclesfield Road. MOVA control would be introduced at both T-junctions to maximise their operational performance. Both T-junctions would have appropriate crossing facilities for NMUs. Access along the A523 Macclesfield Road would be maintained via a new bridge structure over the A6MARR.
  - **Option 5 (Provision of a grade separated all movement junction):** The A6MARR would pass under the A523 Macclesfield Road and be connected via slip roads. Uncontrolled crossing facilities for NMUs at the top of the slip roads would be provided.
- 6.69 Option 1 was not supported by the Local Authorities on the grounds that existing traffic would continue to use the A523 Macclesfield Road, and would therefore be of no benefit to local residents.
- 6.70 Options 3 and 5 were not pursued as they were contrary to the overall scheme philosophy to provide at-grade junctions where practical and would be costly. In addition, Option 3 does not cater for all traffic movements.
- 6.71 Options 2 and 4 were presented at the Phase One public consultation. As part of this consultation process the options were renumbered as **Option 1 (signal controlled cross-road junction)** and Option 2 (at-grade signalised satellite T-junction). There was a clear preference for Option 1, with 40% (3,624) of respondents stating that they were in favour of this junction option compared to 25% (2,277) of respondents who stated that they preferred Option 2.
- 6.72 In terms of the Local Liaison Forums carried out during the Phase One consultation process opinion was divided. Members of the Hazel Grove (Mill Lane LLF2 and Norbury Hall LLF3) forums were asked to provide their comments on the two proposed junction options presented for the A523 Macclesfield Road. Members of both forums expressed a preference for Option 2, with a link road from the A523 Macclesfield Road to a satellite junction with the A6MARR mainline. Meanwhile, members of the LLF4 (Poynton – London Road South) and LLF6 (Poynton – Glastonbury Drive) expressed a preference for Option 1, with a signalised crossroads junction on the existing alignment of the A523 Macclesfield Road.
- 6.73 Option 1 was presented as the preferred junction option as part of the Phase Two public consultation on the basis that the layout provides an effective solution in terms of noise, visual and traffic impacts, as well as being the most cost effective solution.
- 6.74 During Phase Two Consultation process, attendees at the LLF forums for the Hazel Grove area (LLF2 – Mill Lane area and LLF3 – Norbury Hall area) were asked to provide their comments on



the proposals in relation to the scheme's junction with the A523 Macclesfield Road. Whilst attendees expressed some disappointment that Option 2 (at-grade signalised satellite T-junction) had not been selected as the preferred junction configuration, the A6MARR Project Team explained the environmental benefits of **Option 1 (signal controlled cross-road junction)** and allayed concerns regarding the future operation of the junction and knock-on effects at the A523/A5143 Dean Lane 'Fiveways' junction (which is described in **Chapter 8** of this report).

#### *A6MARR/ Woodford Road, Poynton*

6.75 Woodford Road is a single lane carriageway and is unclassified. The road travels between the south of Hazel Grove and the west of Poynton. Three layout options were considered at this location:

- **Option 1 (No junction provision):** The A6MARR would be in a cutting with Woodford Road being carried over on a road bridge.
- **Option 2 (An at-grade all movements signal controlled right/ left stagger junction):** Full signal controlled crossing facilities for NMUs would be provided.
- **Option 3 (No junction provision):** This would differ from Option 1 with the A6MARR crossing the line of Woodford Road at ground level. Woodford Road would be stopped-up with no though provision for motorised vehicles. Access between the severed parts of Woodford Road for NMUs would be via a bridging structure over the A6MARR.

6.76 Option 3 was not supported by the Local Authorities on the grounds that it would sever a road used by local residents which would result in a lengthy diversion route.

6.77 Options 1 and 2 were presented at the Phase One public consultation. There was a clear preference for Option 1, with 54% (4,915) of the respondents indicating that they are in favour of this junction option compared to just 10% (869) of respondents who stated that they preferred Option 2.

6.78 Option 1 was also supported by the LLF5 (Poynton – Mill Hill Farm area) and LLF6 (Poynton – Glastonbury Drive area) Local Liaison Forums, with strong opposition to Option 2.

6.79 **Option 1 (No junction provision)** was presented as the preferred junction option as part of the Phase Two public consultation, and is retained as part of the A6MARR preferred scheme.

#### *A6MARR/ Bramhall Oil Terminal & A5149 Chester Road Link Junctions*

6.80 The A5149 Chester Road is a single lane carriageway. The junction proposals are located within the green belt and surrounding pasture land. There are residential properties, adjacent to Bramhall Oil Terminal, on the northern boundary, with the A5149 Chester Road forming the southern boundary. The A6MARR route runs east to west across the site.

6.81 Five junction layout options were considered at this location - junction configurations have been considered at this location in conjunction with junction layout proposals at the A5102 Woodford Road due to their proximity and impact on predicted traffic movements in the surrounding area:

- **Option 1 (No junction provision):** Traffic movements would be transferred to the junction provision at the A5102 Woodford Road, Bramhall;
- **Option 2 (At-grade signalised cross-road junction):** At grade signalised crossroad junction with demand-only arm to Bramhall Oil Terminal, and provision of an additional at-grade T-junction to the south linking to the A5149 Chester Road. Controlled crossing facilities for NMUs including equestrians;
- **Option 3 (All movement grade separated junction):** All movement grade separated junction;

- **Option 4 (Restricted movement grade separated junction):** As option 3 but not catering for all traffic movements; and
- **Option 5 (At-grade large signalised roundabout):** At grade signalised roundabout with controlled crossing facilities for NMUs, a signalised demand only arm to Bramhall Oil Terminal, and a signalised T-junction to the south, providing a link back to the A5149 Chester Road.

6.82 Option 1 was not considered to be an appropriate option in this location. The A6MARR requires this location and the A5102 Woodford Road junction to be considered together. As it is not possible to cater for all movements at the A5102 Woodford Road junction, the absence of a junction at Bramhall Oil Terminal is therefore considered unacceptable. Options 3 and 4 were discounted due to the location of the proposed junction, the close proximity of residential properties and the large footprint of the layout.

6.83 Options 2 and 5 were both presented at the Phase One public consultation. **Option 5 (At-grade large signalised roundabout)** was renumbered as **Option 1**, whilst the signal controlled cross-road junction was retained as Option 2. Both junction options allow for the future development of the Poynton Bypass.

6.84 Consultation respondents were split over which junction form they preferred. 29% (2,659) of respondents indicated that they were in favour of junction Option 1 (large signal controlled roundabout) compared to 31% (2,800) of respondents who stated that they are in favour of Option 2 (signal controlled crossroads). 17% (1,560) of respondents indicated no preference with regards to either junction option.

6.85 Option 2 (signal controlled crossroads) was preferred by members of the LLF7 (Poynton – Woodford Road / Chester Road area) Local Liaison Forum. Meanwhile, members of the LLF6 (Poynton – Glastonbury Drive area) Local Liaison Forum expressed a preference for Option 1 (signal controlled roundabout) on the basis that it would provide an easier connection for the Poynton Bypass.

6.86 On the basis that it provides a better interface with a potential future Poynton Bypass, **Option 1 (at-grade large signalised roundabout)** was presented as the preferred junction option as part of the Phase Two public consultation, and is retained as part of the A6MARR preferred scheme.

#### *A6MARR/ A5102 Woodford Road*

6.87 The A5102 Woodford Road is currently a single lane carriageway and provides a link between Bramhall and Woodford. An at-grade roundabout provides a connection to the existing A555 dual carriageway.

6.88 Residential properties are located to the east and west of the A5102 Woodford Road and to the north and south of the A555. To the east of the existing junction there is land and property owned by the Highways Agency in preparation for the previously funded trunk road scheme between the M60 and Manchester Airport.

6.89 Six junction layout options were considered at this location - junction configurations have been considered at this location in conjunction with junction layout proposals at the A5149 Chester Road due to their proximity and impact on predicted traffic movements in the surrounding area:

- **Option 1 (No junction provision):** The A6MARR would pass under the A5102 Woodford Road in a cutting and link directly into the existing A555. There would be no direct access from the A5102 Woodford Road onto the existing A555 or A6MARR;
- **Option 2 (At-grade signalised crossroads):** At-grade signalised crossroads catering for all movements;
- **Option 3 (At-grade roundabout):** At-grade roundabout catering for all movements;

- **Option 4 (Grade separated junction – all movements):** Grade separated junction catering for all movements, with the A6MARR passing in a cutting under the A5102 Woodford Road;
- **Option 5 (Grade separated gyratory junction – restricted movements):** Grade separated junction (half diamond west-facing slip roads), with the A6MARR passing in a cutting under the A5102 Woodford Road; and
- **Option 6 (Grade separated T-junctions – restricted movements):** Grade separated junction (half diamond west-facing slip roads), with the A6MARR passing in a cutting under the A5102 Woodford Road, and signalised T-junctions at the top of each slip road to facilitate traffic movements.

6.90 Option 1 was discounted due to adverse traffic and environmental impacts, associated with increased traffic on local roads. Options 2 and 3 were discounted due to the findings of initial traffic modelling and the requirement for residential property acquisition. Option 4 was discounted due to the location and land restrictions associated with this site location.

6.91 When used in conjunction with a junction at the A5149 Chester Road, Options 5 and 6, facilitate traffic movements around the Woodford road area. In addition, controlled crossing facilities for NMUs could be provided where required. Options 5 and 6 were subsequently presented at the Phase 1 public consultation, renumbered as Option 1 (Grade separated gyratory junction – restricted movements) and **Option 2 (Grade separated T-junctions – restricted movements)** respectively.

6.92 There was a clear preference for Option 2, the introduction of grade separated T-junctions at the Phase One public consultation. 48% (4,325) of respondents indicated that they were in favour of this junction option compared to 16% (1,448) of respondents who favoured Option 1 (grade separated gyratory junction).

6.93 Members of the LLF8 (Bramhall – Woodford Road area) and LLF9 (Bramhall – Albany Road area) Local Liaison Forums were asked for their views on the two junction options for the A5102 Woodford Road. Throughout the course of discussions at LLF8, it was evident that there was no clear preference for either junction option. Meanwhile members of LLF9 expressed a preference for Option 2.

6.94 **Option 2 (Grade separated T-junctions – restricted movements)** was presented as the preferred junction option as part of the Phase Two public consultation, and is retained as part of the A6MARR preferred scheme.

#### *A555/ A34 Handforth Bypass*

6.95 The A34 is dual 2-lane carriageway and is a key north-south radial route linking Cheshire with Manchester. The existing junction with the A555 is grade separated with the free flow roundabout at the lower level and the mainline for the A555 crossing over on two highway bridges. The western highway bridge currently spans two lanes of traffic and the eastern bridge spans three lanes. There is sufficient room under the western structure to facilitate an additional third lane. The A555 including the west-facing slips cross Earl Road on a third highway bridge. There are no NMU facilities adjacent to the existing A555, although there are uncontrolled pedestrian crossing facilities at the bottom of both east-facing slip roads.

6.96 Under the A6MARR scheme proposals, the grade separated junction will be retained. The existing roundabout at the bottom of the slip roads will be signalised along with the circulatory carriageway movements. Both of the diverge slip roads will be widened to increase traffic capacity, as will the northbound and southbound roundabout entry arms of the A34. The westbound merge slip road will be altered from a direct merge taper to a lane gain configuration, and the eastbound diverge slip road will change from a direct diverge taper to a lane drop configuration. In addition, controlled crossing facilities for NMUs will be provided on the northern side of the junction and across the circulatory carriageway.

6.97 It was not deemed necessary to consider alternative junction arrangements at this location.

*A34 Handforth Bypass/ B5094 Stanley Road*

6.98 The B5094 Stanley Road is a single carriageway which runs east-west. It connects Cheadle Hulme to the east and Heald Green to the west. The current junction arrangement with the A34 is a priority roundabout. There are two circulatory lanes and traffic movements are spiral road markings provided. Controlled pedestrian crossing facilities are provided across both A34 approaches.

6.99 Two junction layout options were considered at this location. The proposals are predominately located within the existing highway boundary with minor additional land-take required. Residential properties restrict land-take to the east and west of the existing roundabout junction.

- **Option 1 (All movement at-grade signalised roundabout):** Upgrade of the existing roundabout layout to provide additional capacity and controlled crossing facilities for NMUs; and
- **Option 2 (All movement at-grade signalised crossroads):** Replacement of existing roundabout with all movement at grade signalised crossroads junction with controlled crossing facilities for NMUs.

6.100 Both junction improvement options were presented at the Phase One public consultation. There was a clear preference for Option 1, with 49% (4,372) of respondents stating that they are in favour of this junction option compared to 18% (1,654) of respondents who stated they prefer Option 2. As a result, **Option 1 (All movement at-grade signalised roundabout)** was presented as the preferred junction option as part of the Phase Two public consultation, and is retained as part of the A6MARR preferred scheme.

6.101 During the Phase Two public consultation an additional Local Liaison Forum was established for the Stanley Green area (LLF14). This LLF focussed on obtaining further comments on the proposed upgraded roundabout at the A34/ Stanley Road junction. Detailed comments in respect of highways matters included the following:

- Yellow box markings required at the junction of Longsight Lane and Stanley Road and at the junction of Henbury Lane and Stanley Road; and
- Concerns over the impacts of noise and light pollution on residents of Henbury Lane.

*A6MARR/ B5358 Wilmslow Road*

6.102 The B5358 Wilmslow Road is a single carriageway. The junction is located within the CEC authority boundary, with the SMBC boundary located approximately 200m north of the junction location.

6.103 There is an existing grade separation between the existing A555 and the 'dumb-bell' junction arrangement on the B5358 Wilmslow Road. Currently east-facing slip roads connect with the A555. Due to the existing terminus of the A555, no mainline traffic heads west under the existing highway bridge. However, the existing highway bridge permits the mainline A6MARR to continue within its existing width without modification. Clay Lane currently has direct vehicular access onto the B5358 Wilmslow Road via the southern 'dumb-bell' roundabout. This access is a requirement for any future junction configurations as part of the tie-in into the existing highway network.

6.104 To the north-west of the junction there are trading businesses including a private day nursery and retail shop. To the north-east there is open space and a hotel. To the south-east and south-west there are residential properties. To the west there is a private car park adjacent to the B5358 Wilmslow Road.

- 6.105 Two junction layout options were considered at this location:
- **Option 1 (Existing Junction Layout):** Retention of the existing junction configuration with east-facing slip roads only. Minor works to bottom of existing slip roads to create DMRB compliant merge and diverge layouts. Provision of a new pedestrian/ cycleway link adjacent to the eastbound merge slip road; and
  - **Option 2 (Grade separated junction – all movements):** Provision of new west-facing slip roads with tie-in to the existing dumbbell roundabouts. Minor works to bottom of existing east-facing slip roads to create DMRB compliant merge and diverge layouts. Direct vehicular access to Clay Lane accommodated, and provision of new pedestrian/cycleway link adjacent to the east bound merge slip road.

6.106 Option 1 was discounted due to the impacts on traffic routeing with increased traffic flows on local roads including Finney Lane through Heald Green, B5094 Stanley Road, B5166 Styal Road, and Stanneylands Road.

6.107 For these reasons, it was not deemed necessary to consider alternative junction arrangements at this location at Phase One public consultation, and **Option 2 (Grade separated junction – all movements)** is included as part of the A6MARR preferred scheme.

#### *A6MARR/ B5166 Styal Road*

- 6.108 The B5166 Styal Road is a single carriageway which running north-south connects Wythenshawe and Styal. A shared cycle and footway is present on the western side of the B5166 Styal Road in the vicinity of the proposed new A6MARR junction. Immediately to the south of the proposed new A6MARR junction on the western side of B5166 Styal Road there is access to private car parks that serve Manchester Airport, while to the east there is a large electricity substation with vehicular access from the B5166 Styal Road.
- 6.109 North of the proposed new A6MARR junction there is a signal controlled T-junction with Ringway Road. Ringway Road is the main route to Manchester Airport from the east.
- 6.110 The Styal rail line runs parallel to the B5166 Styal Road at this location with northern and southern rail spurs to Manchester Airport. All the rail lines are in cutting circa 8m deep. The B5166 Styal Road currently crosses over the Manchester Airport spur lines via two bridges over the rail lines.
- 6.111 The A6MARR Project Team considered three mainline alignments between the B5358 Wilmslow Road and Manchester Airport. All three routes cross Styal Golf Course and then diverge as follows, with each route alignment necessitating a different junction layout with the B5166 Styal Road:
- **Option 1 (At-grade signalised cross-road junction on a central route alignment):** Route aligned directly adjacent to the Electricity Sub-Station, with an all movement at-grade signalised crossroads junction constructed over the Manchester Airport spur railway line utilising new structures over the rail line and either side of the existing bridge;
  - **Option 2 (At-grade signalised T-junctions on a southern route alignment):** Route aligned to the south of the Electricity Sub-Station, with construction of two at-grade signalised T-junctions provided on the B5166 Styal Road and Hollin Lane (close to the junction with Moss Lane). The junctions would be linked by a dual carriageway on the line of the B5166 Styal Road utilising the existing bridge structures. This option would require the demolition of two residential properties on Hollin Lane; and
  - **Option 3 (At-grade signalised cross-road junction on a northern route alignment):** Route aligned to the north of the Electricity Sub-Station with an all movement at-grade signalised cross-roads junction on the B5166 Styal Road located to the north of the existing bridge structures in the vicinity of the entrance to the Electricity Sub-Station.

- 6.112 Each route option requires a new bridge structure to cross the Styal railway line, whilst the northern route option would also require an additional bridge structure to span the northern rail spur to Manchester Airport.
- 6.113 Option 2 was dismissed due to the requirement for building demolitions, and Options 1 and 3 were subsequently presented at the Phase One public consultation, renumbered as Options 1 and 2 respectively. There was a clear preference for **Option 1 (At-grade signalised cross-road junction on a central route alignment)**, with 52% (4,720) of respondents indicating that they are in favour of this junction option compared to 7% (643) of respondents who stated that they are in favour of Option 2 (At-grade signalised cross-road junction on a northern route alignment).
- 6.114 During the Phase One Consultation LLF12 (Moss Nook – Styal Road area) Local Liaison Forum, attendees were specifically asked to provide their comments on the two proposed junction options presented for Styal Road. It was evident that Option 2 (signalised crossroads on northern route alignment) was the preferred junction arrangement particularly for those residents of Styal Road who attended the forum. The main reason for this preference was the potential improved screening of the new road that can be provided with Option 2.
- 6.115 Notwithstanding, **Option 1 (At-grade signalised cross-road junction on a central route alignment)**, was presented as the preferred junction option as part of the Phase Two public consultation. Discussions at the Phase Two Consultation LLF12 focussed on maximising noise and visual screening around the Option 1 junction layout, which is retained as part of the A6MARR preferred scheme.

## COPECAT

- 6.116 An independent Concise Cycle & Pedestrian Audit (COPECAT) of the A6MARR scheme has been carried out and is attached as **Appendix C**. COPECAT is a nationally recognised 'check-list' scheme that forms a part of the design process, and where appropriate the audit will inform the detailed design of the scheme.

## A6MARR Signage Strategy

### Approach

- 6.117 The A6MARR scheme signage strategy seeks to integrate the A6MARR into the existing road network. This will be achieved by ensuring consistency and continuity of signing across local authority boundaries.
- 6.118 The approach adopted in this signing strategy is:
- To develop a signing strategy for the proposed A6MARR scheme; and
  - To assess the impact of the new road on the existing network signing by identifying those signs reviewed, and then in turn detailing those signs to be retained, removed and/ or changed.
- 6.119 The proposed signing strategy supports the overall scheme objectives of improving surface access to Manchester Airport, connectivity along the south Manchester corridor helping economic growth to flourish.

### General Principles

- 6.120 The general principles that underpin this strategy are to:
- Provide consistency in the use of primary/ local destination name and graphic elements along the A6MARR and the surrounding existing road network in order to eliminate conflicting information. In general only those local destination closest to the line of the proposed A6MARR will be signed with traffic being directed along the most suitable route taking account of junction capacity, traffic management and safety needs;

- Provide continuity of signing at ‘Key Decision Points’ on the traveller’s journey. Continuity of route signing is considered especially important as loss of continuity is a major source of irritation to road users;
- Improve clarity; and
- Minimise the environmental intrusion and impact of the signing in terms of numbers/ size.

6.121 The A6MARR signage strategy will also encompass integration with the pedestrian and cycle network.

### Destination Types

6.122 The signing strategy considers separately each destination type:

- **Primary destinations:** Usually cities and large towns linked by the Primary Route Network for long distance trips. These are prescribed in Appendix C of Local Transport Note 1/ 94 and detailed below;
- **Non-primary destinations:** Usually small towns and villages linked by the Non-Primary Route Network and detailed below;
- **Local Destinations:** Individual destinations which are signed for local traffic such as Industrial Estate, Train Station etc; and
- Permanently established **Tourist Attractions** or facilities.

### Primary Destinations

6.123 The review of existing signs has identified eight primary destinations. The proposed signing strategy for these primary destinations is set out in **Tables 6.2** and **6.3** below.

**Table 6.2 – Proposed A6MARR (A555) Primary Destinations**

Destination	Signed Destination	Route
Buxton	Buxton A6	via A555 Eastbound then A6 Southbound
Congleton	Congleton A34	via A555 then A34 Southbound
Macclesfield	Macclesfield A523	via A555 then A523 Southbound
Manchester	Manchester A6	via A555 Eastbound then A6 Northbound
Manchester	Manchester A34	via A555 then A34 Northbound
Manchester Airport	Manchester Airport	via A555
Motorway	Motorway (M56)	via A555
Motorway	Motorway (M60)	via A555 then A34 Northbound
Stockport	Stockport A6	via A555 Eastbound then A6 Northbound

**Table 6.3 – A34 Primary Destinations**

Destination	Signed Destination	Route
Congleton	Congleton A34	via A34 Southbound then A34 Southbound
Manchester	Manchester A34	via A34 Northbound then A34 Northbound
Manchester Airport	Manchester Airport	via A34 then A555 Westbound
Motorway	Motorway (M60)	via A34 Northbound then A34 Northbound
Motorway	Motorway (M56)	via A34 then A555 Westbound

## Non-Primary Destinations

- 6.124 The review of existing signs has identified fifteen non-primary destinations. The proposed signing strategy for these non-primary destinations is set out in **Tables 6.4** and **6.5** below.

**Table 6.4 – Proposed A6MARR (A555) Non-Primary Destinations**

Signed Destination	Route
Alderley Edge (B5359)	via A555 then A34 Southbound
Bramhall A5149 (A5102)	via A555 Westbound then A5149 Southbound
Bramhall A5102	via A555 then A5102 Northbound
Cheadle A34	via A555 then A34 Northbound
Disley A6	via A555 Eastbound then A6 Southbound
Gatley B5166	via A555 then B5166 Northbound
Handforth B5358	via A555 then B5358 Southbound
Handforth Dean	via A555 then A34 Southbound
Hazel Grove A523	via A555 then A523 Northbound
Hazel Grove A6	via A555 then A6 Northbound
Heald Green B5166	via A555 Eastbound then B5166 Northbound
Heald Green B5358	via A555 Westbound then B5358 Northbound
High Lane A6	via A555 Eastbound then A6 Southbound
Poynton A523	via A555 then A523 Southbound
Poynton A5149	via A555 then A5149 Southbound
Styal B5166	via A555 then B5166 Southbound
Wilmslow A34	via A555 then A34 Southbound
Woodford A5102	via A555 Eastbound then A5102 Southbound
Woodford A5149 (A5102)	via A555 Westbound then A5149 Southbound
Wythenshawe B5166	via A555 then B5166 Northbound

**Table 6.5 – A34 Non-Primary Destinations**

Signed Destination	Route
Bramhall A555	via A34 then A555 Eastbound
Cheadle A34	via A34 Northbound then A34 Northbound
Cheadle Hulme B5094	via A34 Northbound then B5094 Eastbound
Handforth A555	via A34 Southbound then A555 Westbound
Handforth Dean A34	via A34 Southbound then A34 Southbound
Poynton A555	via A34 Southbound then A555 Eastbound
Stanley Green B5094	via A34 Northbound then B5094 Eastbound
Wilmslow A34	via A34 Southbound then A34 Southbound
Woodford A5102	via A34 then A555 Eastbound



## Road Safety Audit

- 6.125 A Stage 1 Feasibility Road Safety Audit (RSA) was undertaken by SMBC officers in October 2013 for the A6MARR scheme. The RSA was conducted in accordance with SMBCs Road Safety Audit Procedure, adopted 1 May 2006. In particular, it the Audit was based on the Highways Agency's *Design Manual for Roads and Bridges HD19/03* which supersedes the previous Standards *HD19/94* and *Advice Note HA42/94*, and also had regard to the Institution of Highways and Transportation reference document, '*Guidelines for the Safety Audit of Highways*'.
- 6.126 The RSA examined the road safety implications associated with the A6MARR scheme design, and the associated proposed improvement works. The Audit team considered visibility, levels, turning manoeuvres, alignment and facilities for non-motorised users as part of the audit process. The October 2013 RSA followed a previous Stage 1 Audit Review undertaken in June 2013, to reflect changes to the proposed scheme layout.
- 6.127 The following section summarises the comments, problems and recommendations identified by the 2013 RSA, and the subsequent Engineer's Response. A full copy of the 2013 RSA and Engineer's Response is included in **Appendix D**.

### Realigned A6 Tie-In Junction near Yew Tree Avenue

- 6.128 The RSA identified a problem with the proposed relocation of the Toucan crossing on the realigned section of the A6 close to the tie-in junction with the existing Buxton Road alignment. The crossing point is proposed in close proximity to a new right-turn pocket from the realigned section of the A6 into Buxton Road. The RSA questioned the absence of physical islands within the hatched area on each approach to the right-turn pocket for existing Buxton Road alignment. In response the designer advised that physical islands were provided within the hatched area on approach to the two right-turn pockets for the Buxton Road alignment and Hazel Grove Golf Course. The relocated Toucan crossing will be located between the two right-turn pockets. Given the close proximity of the two pockets and associated protective islands, along with the 30mph speed limit, the designer opted to retain the currently proposed design in this location with additional "D" islands either side of the crossing point.
- 6.129 The RSA also commented that the existing safety camera located on the existing A6 Buxton Road near to the junction with Alma Road would become redundant with the reduced traffic flow and absence of through-traffic on this section following realignment of the A6 to meet with the new A6MARR. The engineer noted that any relocation of the camera would be at the discretion of the Camera Partnership. The A6MARR design team has contacted the Camera Partnership to make them aware of the situation.

### A6MARR/ A523 Macclesfield Road Junction

- 6.130 The RSA raised concerns over the layout of the right-turn pocket for Brookside Garden Centre and its proximity to the new A6MARR signalised junction. The Audit raised concerns that the proposed layout could lead to driver confusion, with vehicles wishing to turn right from the A523 Macclesfield Road south to the A6MARR entering the earlier right-turn pocket for the garden centre before then trying to filter back into flow of traffic heading towards the A6MARR junction. The Audit recommended extending the limit of carriageway widening on the A523 Macclesfield Road southwards to the proposed central island south of Norbury Court, and providing a physical island at the end of the right-turn pocket.
- 6.131 The engineer responded that the proposed junction layout provides adequate queuing capacity within the public highway whilst minimising private land take. The issue of right turning drivers queuing back from the junction and using the garden centre right turn lane would not occur according to predicted peak traffic queues for the scheduled 2017 scheme opening year. The inclusion of a physical island will be considered at the detailed design stage.

### Mill Hill Hollow

- 6.132 In the vicinity of Mill Hill Hollow, two vehicle accesses and waiting areas are proposed from the A6MARR to provide maintenance access to the proposed attenuation ponds located to the north and south of the scheme alignment. Waiting areas would be accessed via left-in/ left-out movements from both the east and westbound carriageways.
- 6.133 The RSA raised concerns over use of the vehicular access points, for which vehicles would have to rapidly decelerate/ accelerate when leaving/ joining the A6MARR mainline carriageway. The RSA recommended that the frequency of use and anticipated type of vehicle should be clarified with the option of providing acceleration/ deceleration feeder lanes or a widened vehicular access from the A6MARR.
- 6.134 The Engineer's Response outlined that use of the accesses and waiting areas by vans and Land Rover type vehicles with trailers would be extremely infrequent. Both the vehicle type and frequency of use will be determined by the highway maintenance authority. Lockable barriers preventing public access would be positioned back from the relief road ensuring maintenance vehicles are clear of the highway. The proposed geometry of the scheme on both approaches affords forward visibility in excess of the Desirable Minimum required within DMRB, providing road users with ample warning of slow turning vehicles. Consequently, the engineer did not consider there to be a need for acceleration/ deceleration feeder lanes or a widened vehicular access.

### A6MARR/ A5102 Woodford Road Junction

- 6.135 The RSA identified a problem with a maintenance lay-by located on the westbound carriageway midway between the Bramhall Oil Terminal gyratory and the junction with the A5102 Woodford Road. The short lay-by is located at the point where the A6MARR reduces from three lanes to two. Concerns were raised over the speed at which vehicles could accelerate away from the layby and the potential for side impact collisions. The RSA recommended that the detailed design proposals should determine expected frequency and type of vehicle use, and advised that it may be appropriate to extend the lay-by length and/ or move the point at which the number of lanes reduces.
- 6.136 The Engineer responded that the lay-by is proposed to provide a hard-standing off road parking area for attenuation pond maintenance vehicles. The design team recognise the concerns raised in the RSA and will review access to this area at detailed design.

### A34 Handforth Bypass/ A555 Junction Improvement

- 6.137 The RSA questioned the short length of the proposed left-turn lane from the A555 eastbound off-slip road to the A34 Handforth Bypass and recommended that, if constraints permitted, the left-turn lane be extended and a reduced taper angle provided to ease traffic into the lane earlier.
- 6.138 The engineer responded that the eastbound off-slip road has been designed to accommodate predicted peak-hour traffic flows for the scheduled 2017 scheme opening year. As a consequence it was concluded that the length of the left-turn lane provided adequate capacity for predicted traffic demand.
- 6.139 The RSA questioned the removal of the pedestrian crossing facility on the exit of roundabout on to the eastbound merge slip road.
- 6.140 The engineer responded by explaining that pedestrians will be routed through the centre of the roundabout following discussions with SMBC Network Manager advising that where possible pedestrian crossing facilities at roundabout exit locations should be removed.

### A6MARR/ B5358 Wilmslow Road Junction

- 6.141 The Audit raised concerns over the proximity of the Clay Lane access junction to the roundabout junction of the B5358 Wilmslow Road and A6MARR westbound on-slip road. Concerns centred upon the perceived risk of vehicles exiting Clay Lane being struck by vehicles travelling along the slip road, and the potential for nose-to-tail incidents from vehicles turning left into/ and out of Clay Lane. The Audit recommended that the proposed junction of the A6MARR slip road and Clay Lane be removed from the proposals, with changes being made instead to the B5358 Wilmslow Road/ Kingston Road junction to accommodate vehicles accessing Clay Lane.
- 6.142 The Engineer's Response advised that the present junction layout was adopted from former Cheshire County Council proposals, and that there is a historic requirement/ in-principle agreement that direct access to Clay Lane would be maintained from the B5358 Wilmslow Road.
- 6.143 The 30mph speed limit zone will cover Clay Lane, the B5358 Wilmslow Road and the section of road between the two junctions, with the 50mph speed limit only beginning on the A6MARR slip road to the west of the Clay Lane junction. As a result vehicles will still be travelling at reduced speeds as they exit the B5358 Wilmslow Road roundabout.

### A6MARR/ B5166 Styal Road Junction Westbound Approach

- 6.144 The RSA queried the intended use of an access point to/ from the A6MARR to the east of the Styal rail line. The Engineer's Response advised that the vehicular access was for left in/left out movements for field access and maintenance access to the Styal Railway Bridge. Lockable barriers preventing public access would be positioned back from the A6MARR carriageway ensuring maintenance and farm vehicles are clear of the highway to prevent rear end collisions. The proposed A6MARR geometry on approach to this location provides forward visibility in excess of the Desirable Minimum distance required within DMRB, providing road users with ample warning of slow turning vehicles.

## 7. A6MARR Traffic Model

### Model Development: An Overview

- 7.1 A robust approach to scheme assessment has been undertaken, using a variable demand modelling framework originally developed for the Greater Manchester Transport Innovation Fund (GMTIF) work, but updated specifically for the A6MARR scheme. The modelling suite was developed jointly by the Transport for Greater Manchester, Highways Forecasting and Analytical Services (TfGM, HFAS) and MVA Consultancy. Additional modelling input and a formal reviewing role was provided by Atkins. The model has been used to inform both the A6MARR scheme design and major scheme business case. The model is fully compliant with national (WebTAG) guidance and has been subject to rigorous review by the Department for Transport in relation to the major scheme business case for the scheme, which has secured programme entry approval.
- 7.2 The model captures origin-destination trip and cost data across the extent of the UK, with detailed simulation modelling across Greater Manchester, Cheshire and the surrounding environs.
- 7.3 Models were created to represent three time periods:
- Morning peak (0700-1000);
  - Inter-peak average hour (1000-1600); and
  - Evening peak hour (1600-1900).
- 7.4 The model developed for GMTIF work had a base year of 2007. The A6MARR model has been updated with a base year of 2009. The model was calibrated and validated in accordance with DfT criteria using observed traffic count and journey time data collected in neutral months throughout 2009. Full details of the data used to develop, calibrate and validate the base year transport model are presented in *HFAS Report 1677: SEMMMS7C Model Data Report, September 2011 (Appendix B-1 of Atkins A6MARR Major Scheme Business Case, November 2012)*.
- 7.5 All modelled time periods pass the calibration and validation criteria and are deemed to provide a good representation of observed traffic conditions across the study area. Full details of the calibration and validation methodology and outputs are provided in *HFAS Report 1678: SEMMMS8 Local Model Validation Report, October 2011 & HFAS Briefing Note: SEMMMS8 Local Model Validation Update, September 2012 (Appendix B-2 of Atkins A6MARR MSBC, November 2012)*. Full details of the demand model are provided in the *MVA Model Development Report, February 2012 (Appendix B-4 of Atkins A6MARR MSBC, November 2012)*.
- 7.6 In line with DfT best practice, model forecasts were prepared for 2017 (the planned opening year for the A6MARR scheme) and a future year 'design' horizon chosen to be 2032 for use in preparation of the major scheme business case. It is necessary to produce at least two future year forecasts of the scheme as the business case covers a 60-year appraisal period from the year of opening. The transport network and public transport services have been updated to reflect schemes under construction and committed transport options anticipated to be in place by 2017 and 2032 respectively.
- 7.7 Future year forecast models were produced for the following scenarios:
- Without the A6MARR in place, which contains all committed developments and committed transport schemes (highway and public transport) across the study area to 2032; and
  - With the A6MARR in place, as above plus the A6MARR scheme.
- 7.8 The demand model was run 'Without' and 'With' the A6MARR in place, to enable any variation in traffic due to the A6MARR scheme (induced traffic) to be reflected in the appraisal.

- 7.9 Further details of the development of the future year forecast models are presented in the *HFAS Report 1718: SEMMS8B Design Freeze 6 Forecasting Report, November 2012 (Appendix B-5 of Atkins A6MARR MSBC, November 2012)*.

## A6MARR Highway Model Network

- 7.10 The A6MARR highway model represents all roads of traffic carrying significance within the area through which the proposed scheme will run - Stockport, South Manchester, the north of Cheshire East and High Peak area of Derbyshire - and the remainder of Greater Manchester, including all motorways, A roads, B roads and C class roads. The network outside the county is represented in much less detail, and becomes increasingly less dense with increasing distance from the county boundary.
- 7.11 SATURN offers two levels of network detail, both types of which are used in the A6MARR highway model;
- **Simulation network**, which represents the operation of junctions in detail where capacity restraint is based on gap acceptance and the impact of traffic signal timings applied to the interaction between different movements at junctions; and
  - **Buffer network**, which represents the network in terms of its links, rather than as a series of junctions, and capacity restraint is based on flow-delay curves specified individually for each link.
- 7.12 The entire network within Greater Manchester and the northern part of Cheshire East is coded in full SATURN simulation format. The coding of the simulation network was checked and updated as necessary, based on information from a number of sources, including digital maps and aerial photographs. Site visits were undertaken to examine lane usage and the operation of junctions in each of the modelled time periods. Furthermore, saturation flows at key junctions in the study area were checked and updated where appropriate. Signal staging/ phasing, green-times, inter-greens and signal offsets were updated where necessary using information obtained from the TfGM for all signalised junctions in the core study area.
- 7.13 The information required for buffer network coding includes the following attributes for each link:
- link length;
  - speed at capacity;
  - speed in free-flow conditions;
  - flow at capacity; and
  - a measure of the steepness of the flow-delay curve (often referred to as the power function of the curve).
- 7.14 Link flow-delay relationships for the buffer links are based on COBA speed-flow curves.
- 7.15 Buses are represented in the model as fixed loads, with routes defined as chains of nodes in the simulation and buffer networks.

## A6MARR Highway Model Trip Matrices

- 7.16 The A6MARR highway model trip matrices contain representations of all vehicle trips with an origin or destination inside the study area and the remainder of Greater Manchester, and all external-to-external trips that cross the county boundary. The matrices do not, however, represent intra-zonal trips that take place entirely within the same zone.
- 7.17 Separate matrices are maintained for car, Light Goods Vehicle (LGV) and Other Goods Vehicle (OGV) trips, for the morning peak hour (0800-0900), the evening peak hour (1700-1800) and an average inter-peak hour for the period 1000-1530.

7.18 For cars, matrices are available for 12 journey purposes. For assignment purposes, however, the matrices are aggregated to form 5 'user classes', comprising:

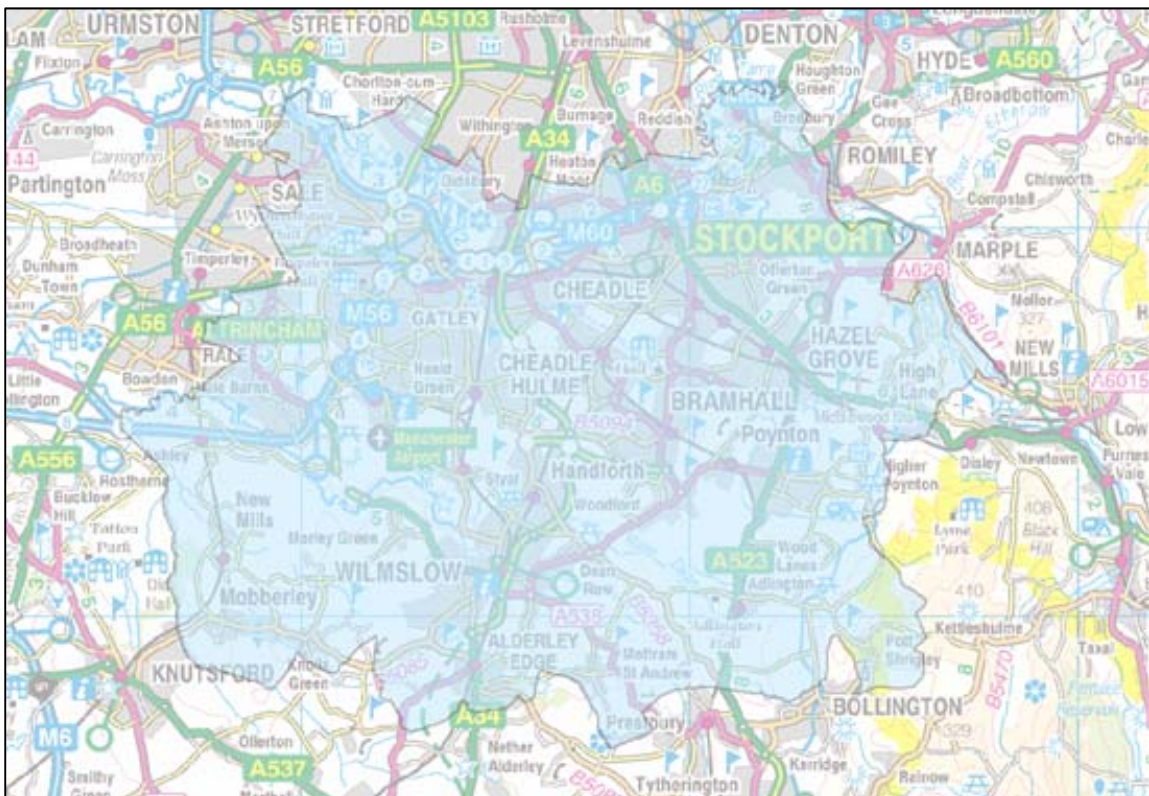
- Commuting cars (home-to-work plus work-to-home car trips);
- Employer's business cars (home-based plus non-home-based employer's business car trips);
- Other cars (all other car trips);
- LGVS (all purpose LGV trips); and
- OGVs (all purpose OGV trips).

## Area of Influence

7.19 The A6MARR scheme will provide strategic connectivity to Manchester Airport and along the south Manchester corridor. In light of this, the project modelling team set out to identify an 'Area of Influence' (AoI) for the A6MARR scheme, within which to focus attention on aspects such as network coding and density, inclusion of significant developments as individual zones, and compliance to DfT criteria (including base assignment validation).

7.20 The A6MARR AoI was initially identified using a base year network with the scheme added. The defined AoI was later confirmed using interim future forecasts based on the preliminary SATURN model as shown in **Figure 7.1** below.

**Figure 7.1 – A6MARR Highway Network within Area of Influence**



## Development Assumptions and Committed Highway Schemes

7.21 The A6MARR model incorporates a number committed developments and highway schemes which will be in place and operational before the modelled future years. An Uncertainty Log has been developed in accordance with WebTAG Unit 3.15.5 in order to determine the certainty of all developments and highway schemes relevant to this study. The Uncertainty Log categorises all potential developments and highway schemes according to the following levels of certainty:

- Near certain;
- More than likely;
- Reasonably foreseeable; and
- Hypothetical.

7.22 The Core Scenario represents the 'best estimate' of conditions in the forecast year(s). WebTAG 3.15.5 describes the steps by which to complete the core scenario and alternative/ sensitivity tests as follows:

- Assemble demographic, economic and other data for the study, drawing on the TEMPRO database and other material provided by the DfT, together with material provided in regional and local planning documents;
- Consider the sources of uncertainty and qualitatively assess their likelihood;
- Establish a core scenario, based on national and local data and taking account of the uncertainty associated with various elements of that data;
- Establish a range of alternative scenarios or sensitivity tests, where forecast inputs are likely to differ from the core and materially impact on analysis results;
- In the analysis of scheme options, the core scenario and alternative scenarios or sensitivity tests should form the basis for a full business case appraisal. The core scenario would be reported in the Appraisal Summary Table (AST), with alternative scenarios being exceptions.

### Land Use Assumptions

7.23 The majority of the data collected for the uncertainty log comprised land use data received from local authority planners from councils whose boundary fell at least partially within the A6MARR Aol.

7.24 A minimum limit was set for the size of developments to be included within the data set. For housing developments the agreed minimum was approximately 75 dwellings and for employment/ retail use the agreed minimum floorspace was approximately 500 square metres. This was judged appropriate given that there were large numbers of very small developments which would have minimal impact and would be accounted for in the overall TEMPRO growth levels.

7.25 Details of developments assumptions are contained in **Appendix E**.

7.26 Development details were agreed with the relevant local planning authorities during 2012. Assumptions regarding key development sites and emerging proposals which have been agreed with the relevant local planning authorities and inform the forecast model scenarios are summarised below.

### *Greater Manchester Enterprise Zone*

7.27 The Greater Manchester Enterprise Zone focused on Airport City was one of four vanguard zones announced in the 2011 Budget. The Enterprise Zone includes the following new development sites:

- **Airport City North:** development of a high quality new business district located between Manchester Airport and the Woodhouse Park residential area, attracting global companies into grade A offices, high tech manufacturing and research and ancillary facilities;
- **World Logistics Hub:** development supporting the operational growth of Manchester Airport and providing opportunities to enhance the logistics role of the airport. Employment will be logistics-focused, building upon the existing airport freight and logistics operations at the World Freight Terminal; and
- **Medipark and Roundthorn Industrial Estate:** development opportunity adjoining Wythenshawe Hospital to promote health and biotech commercial development, related to the research strengths of University Hospital of South Manchester;

7.28 Following the approval of the Manchester Airport City Enterprise Zone Framework Plan in October 2012 the Manchester Airports Group (MAG) secured outline planning permissions for Airport City South in November 2012 and Airport City North in January 2013.

7.29 The Airport City North and World Logistics Hub developments have both been accounted for in the development assumptions that underpin the A6MARR forecast model scenarios.

7.30 The potential MediPark development was not identified by MCC planning officers during discussions on potential future development sites, and has not therefore been accounted for within the A6MARR forecast model scenarios.

### *Manchester Airport and Area K*

7.31 Manchester Airport is a one of the main stakeholders with respect to the A6MARR scheme, being located adjacent to the proposed site and having direct connections with the scheme itself. Given the scale of Manchester Airport in terms of existing and potential additional traffic demand on the surrounding transport network, specific discussions were held with MAG in order to establish their views on the Airport's future growth.

7.32 As part of the wider expansion and relocation of Manchester Airport car parking facilities, MAG submitted a planning application (reference 102834/FO/2013/S2) in June 2013 for development of a 9,000 space new car park to the north of Ringway Road. The site, known as Area K, is bound by Ringway Road to the south, Shadowmoss Road to the west, the B5166 Styal Road to the east, and the Atlas Business Park to the north. The site was allocated for Airport Car Parking and Surface Access in the Manchester Core Strategy, and would be accessed from both Styal Road and Shadowmoss Road. This development has been included in both the 2017 and 2032 forecast model matrices.

### *Woodford Aerodrome Redevelopment*

7.33 SMBC has approved a Supplementary Planning Document for the redevelopment of the former Woodford Aerodrome site. The Woodford Aerodrome Opportunity Site SPD<sup>12</sup> (January 2013), as approved by SMBC, provides guidance on the part of the site within Stockport and concludes that a residential led development may amount in the region of 750 to 850 dwellings<sup>13</sup>.

7.34 There are a range of lawful uses within the site which can continue or could in principle be reintroduced without the need for a further grant of planning permission. Any planning application,

<sup>12</sup> Adopted on 14<sup>th</sup> January 2013

<sup>13</sup> Based on an overall density of 22-24 dwellings per hectare



however, for redevelopment of the site seeking to make use of a ‘fall back’<sup>14</sup> position would need to demonstrate that there is a realistic possibility of the site returning to its permitted lawful use or some element of it.

7.35 For the purpose of the A6MARR application the 2017 traffic model provides for 250 residential units at Woodford, with a maximum of 950 residential units modelled in 2032. This would represent a realistic timeframe for any future phased development of the site.

*Potential Handforth East New Settlement*

7.36 CEC consulted on a draft Development Strategy during early 2013 as part of its preparation of a new Local Plan to set the preferred levels and locations of growth across the Borough to 2030. The draft Development Strategy identified a potential new settlement at Handforth East on land bound to the north by the A555 and to the west by the A34 Handforth bypass. The site was identified as being potentially capable of accommodating up to 2,300 new residential units (1,800 dwellings in the plan period) along with circa 5 hectares of employment development, and ancillary facilities and services. Following the consultation process, CEC is giving further consideration to development of the site and its potential inclusion in a draft Local Plan Core Strategy.

7.37 As explained previously, for transport modelling purposes, development details were agreed with the relevant local planning authorities during 2012. At the time, a small amount of development was identified for Handforth on land south of Coppice Way. On the advice of CEC planners no development was identified at Handforth East as representing committed or near certain development, and this remains the current position.

**Transport Supply Data**

*Highway Networks*

7.38 A package of schemes deemed to be “committed” was added to the base year network to create the new network for 2017 and 2032. To be included in this package, a scheme had to meet one or more of the following criteria:

- Scheme completed since 2009;
- Scheme construction in progress;
- Scheme funding allocated;
- Scheme is part of the Highways Agency programme; and
- Scheme likely to be completed by the forecast year(s).

7.39 **Table 7.1** lists highway schemes identified that are either within the core A6MARR Aol or outside the Aol but could affect or be affected by the A6MARR scheme in each of the forecast years.

**Table 7.1 – Do-Minimum (Without A6MARR) Highway Scheme Assumptions**

Highway Scheme	Status	2017	2032
Alderley Edge Bypass	Complete	√	√
Poynton Village Centre Enhancements	Complete	√	√
A556 Knutsford to Bowdon improvements	NIP Scheme	√	√
Manchester Airport Blue Works (M56 J6)	Triggered by Airport passenger throughput <sup>1</sup>	√	√

<sup>14</sup> Evidence as to the impact of the previous use is given by traffic and travel survey data from 2001 submitted by BAE Systems to support a major planning application for a new hangar building, training facilities and an additional car park.

Highway Scheme	Status	2017	2032
Manchester Airport Yellow Works (Runger Lane)	Triggered by Airport passenger throughput <sup>1</sup>	√	√
Cross City Bus Scheme	NIP Scheme	√	√
Metrolink Phase 3B (Chorlton – Manchester Airport) – Associated Highway Works	Under Construction	√	√
Airport City Infrastructure	Under Construction	√	√
M60 J12 to 15 Widening	NIP Scheme	√	√
M60 J8 to 12 Managed Motorway Scheme	NIP Scheme	√	√
Manchester Airport Demand Management	MAG Ground Transport Plan	√	√
Manchester Airport Red Works (M56 J5 to 6)	Triggered by Airport passenger throughput		√
Western Gateway Infrastructure Scheme	Privately funded <sup>2</sup>		√

Notes:

<sup>1</sup> Scheme to be provided/ funded by Manchester Airport

<sup>2</sup> Promoted by Peel as part of Port Salford development; funded largely by Peel with contribution from Regional Growth Fund

NIP = National Infrastructure Package

### Public Transport

7.40 A number of key public transport schemes were included in each scenario based on the likelihood of their delivery in each year. These public transport schemes are summarised in **Table 7.2**.

**Table 7.2 – Do-Minimum (Without A6MARR) Public Transport Schemes**

Public Transport Scheme	Status	2017	2032
Metrolink: Chorlton to Manchester Airport	Under Construction	√	√
Metrolink: Droylsden to Ashton	Under Construction	√	√
Metrolink: Chorlton to East Didsbury	Complete	√	√
Leigh-Salford-Manchester Busway	Under Construction	√	√
Metrolink Second City Crossing	Approved Route; TWAO application mid 2012	√	√
Altrincham Interchange	Under Construction	√	√

7.41 On the 28<sup>th</sup> January 2013 the Government published its proposals for the second phase of High Speed Rail (HS2) in “*High Speed Rail: Investing in Britain’s Future – Phase Two: The route to Leeds, Manchester and beyond*”. This document sets out the Government’s initial preferred route with station and depot options for Phase Two of the network, which will extend directly to Manchester and Leeds. With regard to Manchester the Government’s initial preferences are for new HS2 stations for:

- Manchester city centre alongside the existing Manchester Piccadilly main line station; and
- Manchester Airport, sitting parallel to the M56, between Warburton Green and Davenport Green, approximately half way between Junctions 5 and 6 on the M56.

- 7.42 Delivery of HS2 between Birmingham and Manchester is currently timetabled for 2032/33. No allowance for the scheme is currently made within the A6MARR traffic modelling.
- 7.43 The Northern Hub project is a package of rail improvement schemes impacting on services across the north of England. The package of works is scheduled for completion in 2019. The package will deliver a step change in connectivity between regional centres, with 700 more trains a day linking key northern cities, a ten minute reduction in journey time between Manchester and Leeds, and a 10-15 minute reduction in journey times between Manchester and Liverpool. As part of the Northern Hub proposals a fourth platform for rail services will be provided at Manchester Airport, increasing capacity to accommodate additional services from across the north of England. Furthermore, the impacts of relieving existing network capacity constraints will also impact on suburban rail services across Greater Manchester. Due to uncertainty over the scale of affected services and physical changes to timetabling, the impacts of the Northern Hub package of works is not currently included within the A6MARR traffic modelling.
- 7.44 In addition to the public transport schemes identified in **Table 7.2**, it is anticipated that bus operators will also respond to the improved highway access opportunities to Manchester Airport provided by the A6MARR scheme. Vehicular access improvements open up the possibility of more direct routes to Manchester Airport from Stockport, north Cheshire and south Manchester. Such improved service provision will be supported by passenger and employment growth at Manchester Airport. However, as the detail of any amended service provision is not known at this stage, no such improvements have been assumed as part of the A6MARR forecast model scenarios.

## 8. A6MARR Scheme Operation

### Mainline Operation

- 8.1 DMRB provides guidance on the appropriate carriageway standards to be considered for new road schemes based on the expected traffic flow levels. The guidance is given in Technical Advice Notes (TAs) and depends on whether the scheme is a rural or urban road. The proposed A6MARR scheme consists of a dual two lane urban all-purpose carriageway (D2UAP) from the A6 Buxton Road to Manchester Airport and adjacent Enterprise Zone.
- 8.2 TA 79/99<sup>15</sup> sets out the expected carriageway standards provision for a new urban road based on the expected hourly traffic volumes. The TA defines four Road Types for Urban All-Purpose roads – UAP1 through to UAP4. The closest Road Type to the proposed A6MARR scheme is UAP1. This relates to a high standard single or dual carriageway road carrying predominantly through traffic with limited access. The capacity thresholds for Road Type UAP1 in terms of one-way hourly traffic flow are:
- 1,590 vehicles per hour for a two-lane single carriageway; and
  - 3,600 vehicles per hour for a dual two-lane carriageway.
- 8.3 It is appropriate to compare the design year forecast traffic flows against the guide capacities above. **Figure 8.1** below shows the forecast highest peak hour directional flow on the sections of the proposed A6MARR under 2017 future year conditions. The existing A555 is the section between B5358 Wilmslow Road and A5102 Woodford Road.

Figure 8.1 – Forecast 2017 Opening Year Highest Hourly Directional Flow

	B5166 Styal Road	B5358 Wilmslow Road	A34 Handforth Bypass	A5102 Woodford Road	Bramhall Oil Terminal	A5123 Macclesfield	A6 Buxton Road
Manchester	2550	2275	2275	3200	2400	1850	1150
Airport	2350	1825	2450	3025	2225	1525	1075

- 8.4 **Figure 8.1** confirms that based on the forecast traffic volumes that a dual 2-lane carriageway standard is an appropriate standard of road for the A6MARR scheme.

### Layout of Grade Separated Scheme Junctions

- 8.5 In line with the SEMMMS strategy recommendations, for a more appropriate scale road proposal to provide relief to local communities affected by inappropriate through traffic (but not to provide a new strategic route of regional and potentially national significance), the overall A6MARR scheme philosophy has been to provide at-grade signal controlled junctions and safe crossing facilities for Non-Motorised Users (NMUs) wherever possible.
- 8.6 For those locations where we have grade separated junctions, DMRB TD 22/06 'Layout of Grade Separated Junctions' sets out the design requirements, and is the adopted standard against which the merge, diverge and weaving section requirements for the A6MARR scheme have been assessed.
- 8.7 **Table 8.1** overleaf provides a comparison the scheme proposals against TD 22/06 based on SATURN model outputs for 2017 opening year predicted traffic flows.

<sup>15</sup> DMRB Volume 5, Section 1, Chapter 3, May 1999

Table 8.1 – A6MARR Merge/ Diverge Assessment

Section	Direction	2017		TD 22/06			A6MARR Provision		
		AMP vph	PMP vph	Mainline Lanes	Merge/ Diverge Type	Description	Mainline Lanes	Merge/ Diverge Type	Description
A555 Mainline - Bramhall Oil Terminal to A5102 Woodford Road	Westbound	2220	1560	2			2		
A5102 On-Slip	Westbound	803	358		B	Parallel Merge		B	Parallel Merge
A555 Mainline - A5102 Woodford Road to A34 Handforth Bypass	Westbound	3023	1918	2			2		
A34 Off-Slip	Westbound	1199	1028		B	Ghost Island Diverge/ Parallel Diverge		A	Taper Diverge
Through A34 Junction	Westbound	1824	891	2			2		
A34 On-Slip	Westbound	619	478		A or D	Merge Taper/ 2 Lane Urban Merge		E	Lane Gain
A555 Mainline - A34 Handforth Bypass to B5358 Wilmslow Road	Westbound	2443	1369	2			3		
B5358 Off-Slip	Westbound	832	450		A	Diverge Taper		C	Lane Drop
Through B5358 Junction	Westbound	1612	919	2			2		
B5358 On-Slip	Westbound	214	350		A or D	Merge Taper/ 2 Lane Urban Merge		B	Parallel Merge
A555 Mainline - B5358 Wilmslow Road to B5166 Styal Road	Westbound	1826	1269	2			2		
A555 Mainline - B5166 Styal Road to B5358 Wilmslow Road	Eastbound	1553	2274	2			2		
B5358 Off-Slip	Eastbound	477	469		A	Diverge Taper		A	Diverge Taper
Through B5358 Junction	Eastbound	1076	1805	2			2		
B5358 On-Slip	Eastbound	360	472		A or D	Merge Taper/ 2 Lane Urban Merge		E	Lane Gain
A555 Mainline - B5358 Wilmslow Road to A34 Handforth Bypass	Eastbound	1437	2277	2			3		
A34 Off-Slip	Eastbound	357	445		A	Diverge Taper		C	Lane Drop
Through A34 Junction	Eastbound	1080	1832	2			2		
A34 On-Slip	Eastbound	1042	1355		B	Parallel Merge		B	Parallel Merge
A555 Mainline - A34 Handforth Bypass to A5102 Woodford Road	Eastbound	2121	3187	2			2		
A5102 Off-Slip	Eastbound	472	789		A	Diverge Taper		A	Diverge Taper
A555 Mainline - A5102 Woodford Road to Bramhall Oil Terminal	Eastbound	1649	2398	2			2		

8.8 **Table 8.1** shows that the introduction of lane gain and lane drop arrangements on the existing section of the A555 between the A34 and B5358 will require a Departure from Standard. The proposed layout is an over-provision compared to standard, and is reflective of the relative close proximity between existing junctions. Completion of the A6MARR scheme will introduce a section of weaving between the A34/ A555 and A6MARR/ B5358 Wilmslow Road junctions; defined in TD 22/06 as:

*“The length of the carriageway between a successive merge or lane gain and diverge or lane drop, where vehicles leaving the mainline at the diverge or lane drop have to cross the paths of vehicles that have joined the mainline at the merge or lane gain”.*

8.9 The existing A555 between the B5358 Wilmslow Road and the A5102 Woodford Road has a speed limit of 70mph with a corresponding road cross section reflecting a dual two lane Rural All Purpose Road configuration. TD 22/06 states, in paragraph 4.36, that for Rural All-Purpose Roads: *“the desirable minimum weaving length must be 1km”*. This is a mandatory requirement to which the Design Organisation must comply or obtain agreement to a departure from the local highway authority.

8.10 The distance between the A34/ A555 and B5358 junctions (junction centre to junction centre) is 1300 metres of which 650 metres is defined as being part of the slip roads. This leaves a weaving length<sup>16</sup> of approximately 650 metres. There will, therefore, also be a requirement to obtain a Departure from Standard for the weaving section.

8.11 Alternatively, to negate the need for a Departure from Standard there remains the option to reduce the existing speed limit to 50mph and reclassify and amend the cross section of this section of road to Urban, in which case the number of weaving lane required is determined through reference to TD 22/06, paragraph 2.71:

$$N = 1/D (Q_{nw} + Q_{w1} + Q_{w2} (2 L_{min}/L_{act} + 1))$$

Where	N	= Number of traffic lanes
	$Q_{nw}$	= Total non-weaving flow in vph
	$Q_{w1}$	= Major weaving flow in vph
	$Q_{w2}$	= Minor weaving flow in vph
	D	= Maximum mainline flow in vph per lane
	$L_{min}$	= Desirable minimum weaving length for the road class
	$L_{act}$	= Actual weaving length available

8.12 The formula above shows that the minor weaving flow can have an impact on traffic demand of up to three times its numerical value. For the A6MARR scheme the impact of the minor weaving on traffic demand will be twice its numerical value as the absolute minimum weaving length<sup>17</sup> is 325 metres (compared to an actual weaving length of 650 metres).

<sup>16</sup> TD 22/06 Figure 4/10

<sup>17</sup> TD 22/06 Figure 4/14

8.13 **Table 8.2** below presents the weaving lane requirements for the A555 between the A34 and B5358 assuming an urban road type.

**Table 8.2 – Weaving Lane Requirements for A555 between A34 and B5358 assuming Urban Road**

	Description	A555 Eastbound <sup>18</sup>	A555 Westbound <sup>19</sup>
Flow 1	Slip road to slip road non-weaving flow (vph)	150	398
Flow 2	Slip road to mainline weaving flow (vph)	323	221
Flow 3	Mainline to slip road weaving flow (vph)	295	434
Flow 4	Mainline to mainline non-weaving flow (vph)	1510	1390
Q <sub>nw</sub>	Total non-weaving flow (vph)	1660	1788
Q <sub>w1</sub>	Major weaving flow (vph)	323	434
Q <sub>w2</sub>	Minor weaving flow (vph)	295	221
D	Maximum mainline flow in vph per lane	1600	1600
L <sub>min</sub>	Desirable minimum weaving length for the road class (metres)	325	325
L <sub>act</sub>	Actual weaving length available (metres)	650	650
<b>N</b>	<b>Number of lanes required</b>	<b>1.6</b>	<b>1.7</b>

8.14 **Table 8.2** confirms that the proposed dual 3-lane section of A555 between the A34 and B5358 junctions can accommodate the predicted weaving movements following completion of the A6MARR scheme.

8.15 The two remaining Departures from Standard are the:

- proposed westbound taper diverge at the A34 Handforth Bypass junction. The proximity of the Spath Lane over-bridge constrains the provision of a ghost-island diverge (or parallel) at this location. A taper diverge is deemed acceptable on the basis that the slip road arrangement, which flares to four lanes at the A555/ A34 roundabout, provides adequate queuing capacity within the confines of the slip road. The layout has been assessed to ensure that ant queuing traffic will not interfere with the mainline flows; and
- proposed westbound parallel merge at the B5383 Wilmslow Road junction. This is an over-provision compared to standard based on predicted traffic flows and reflects the outcome of consultations with local authority highway officers.

## Operational Performance of At-Grade Scheme Junctions

8.16 SATURN model outputs have been used to inform the discrete local junction modelling for each of the A6MARR at-grade scheme junctions.

8.17 It is current Transport for Greater Manchester Urban Traffic Control (TfGM UTC) practise to install MOVA/ SCOOT at all new signal control junctions. Auto-adaptive systems such as Microprocessor Optimised Vehicle Actuation (MOVA) respond dynamically to vehicle demands to improve traffic throughput.

<sup>18</sup> Based on 2017 evening peak hour traffic flows

<sup>19</sup> Based on 2017 morning peak hour traffic flows

## A6MARR/ Realigned A6 Junction

- 8.18 The A6 will be realigned (over a length of approximately 1 kilometre) to the north-east of the existing A6 Buxton Road. Approximately half way along the realigned road a new signalised T-junction with the A6MARR will be constructed comprising:
- **Realigned A6 north (south-eastbound)**
    - single 3.7m wide straight-ahead lane
    - protected 3.7m wide right-turn lane
  - **A6MARR (eastbound)**
    - single 4.7m wide left-turn lane
    - single 4.5m wide right-turn lane
  - **Realigned A6 south (north-westbound)**
    - dedicated 4.7m wide left-turn lane
    - single 4.5m wide straight-ahead lane
- 8.19 To accommodate the predicted traffic movements and minimise delay for the left-turn from the realigned A6 north-westbound to the A6MARR, the dedicated left-turn lane will not operate under signal control, and instead will operate under free flow conditions directly feeding one of the two running lanes on the A6MARR.
- 8.20 The junction has been designed to enable the future provision of a double exit on the realigned A6 south-eastbound with an associated double right-turn from the A6MARR. On the basis of the opening year traffic flow predictions this layout is not required, but the proposed design enables future provision if required.
- 8.21 There is no provision for NMUs at this junction; instead NMU provision is via the existing alignment of Buxton Road and associated links to the new pedestrian/ cycleway provision alongside the A6MARR.
- 8.22 The operational assessment of the A6MARR/ realigned A6 junction has been carried out using LinSig. Model outputs are presented in **Table 8.3** in terms of the Degree of Saturation (DoS) for each modelled link, and the Mean Maximum Queue (MMQ) presented in Passenger Car Units (pcus). Full LinSig model outputs are presented in **Appendix F.1**.

**Table 8.3 – A6MARR/ Realigned A6 Junction Operational Assessment**

LinSig Link	Lane Description	Morning Peak		Evening Peak	
		DoS	MMQ	DoS	MMQ
1/1	A6 north (Ahead)	72%	14	85%	20
1/2	A6 north (Right)				
2/1	A6 south (Left)	64%	7	54%	7
2/2	A6 south (Ahead)				
3/1	A6MARR (Left)	8%	1	10%	1
3/2	A6MARR (Right)	74%	23	87%	33

- 8.23 **Table 8.3** confirms that the A6MARR/ realigned A6 junction layout is predicted to operate within capacity under 2017 future year conditions, with a maximum DoS value of 87% for the right-turn from the A6MARR to the A6 (toward High Lane/ Disley) during the evening peak period.



### Realigned A6/ Buxton Road (Eastern Tie-in Junction)

- 8.24 The existing and realigned sections of the A6 will tie-in at a new signalised junction approximately 500 metres east of the A6MARR/ realigned A6 junction. To the immediate south of the realigned A6/ Buxton Road signalised junction, Norbury Hollow Road will tie-in to the existing A6 via a remodelled priority junction.
- 8.25 The signalised junction will comprise:
- **Realigned A6 north (south-eastbound)**
    - single 3.65m wide straight-ahead lane
    - dedicated 3.65m wide right-turn lane measuring 50 metres in length
  - **Realigned A6 south (north-westbound)**
    - single 3.65m wide straight-ahead and left-turn lane
  - **Buxton Road (northbound)**
    - single 4.6m wide right and left-turn lane
- 8.26 Verges are proposed to be widened where necessary to provide adequate forward visibility in accordance with DMRB.
- 8.27 No provision for NMUs is proposed at this location or along the realigned section of the A6. Pedestrians heading westwards on the footway alongside the northern kerbline of the existing A6 will be required to cross the A6 utilising a new refuge to the east of Wellington Road. Having crossed to the southern side of the A6, pedestrians will then follow the footway alongside the former alignment of the A6 to the remodelled junction of Norbury Hollow Road, where dropped kerbs and tactile paving will formalise the crossing location. To the west of the junction of Norbury Hollow Road, pedestrians will cross Buxton Road via one of two new pedestrian refuges in order to access the dedicated footway/ cycleway provided across the northern side of the Buxton Road bus bridge over the A6MARR.
- 8.28 The operational assessment of the realigned A6/ Buxton Road junction has been carried out using LinSig, and summarised in **Table 8.4**. Full LinSig model outputs are presented in **Appendix F.2**.

**Table 8.4 – Realigned A6/ Buxton Road Junction Operational Assessment**

LinSig Link	Lane Description	Morning Peak		Evening Peak	
		DoS	MMQ	DoS	MMQ
1/1	A6 north (Ahead)	81%	23	93%	43
1/2	A6 north (Right)				
2/1	A6 south (Ahead & Left)	85%	31	70%	19
3/1	Buxton Road	82%	7	52%	3

- 8.29 **Table 8.4** confirms that the realigned A6/ Buxton Road junction is predicted to operate within capacity under 2017 future year conditions.
- 8.30 Opportunities to coordinate signal timings between this junction and the A6MARR/ realigned A6 junction will be explored during the detailed design process to minimise queuing between the two junctions, and create a 'green-wave' for dominant movements (for instance the right-turn from the A6MARR heading towards High Lane through the realigned A6/ Buxton Road junction).
- 8.31 The Norbury Hollow Road priority junction is located approximately 30 metres south of the realigned A6/ Buxton Road junction. Morning peak period queues on Buxton Road of 7 pcus will extend back from the stop-line to the junction with Norbury Hollow Road. As a result vehicles are

likely to be unable to turn right out of Norbury Hollow Road until this queue is discharged. However, the vast majority of traffic using Buxton Road is also likely to be using Norbury Hollow Road. Consideration will be given to interaction between the two junctions as part of the detailed design process, with the potential introduction of 'Keep Clear' markings on Buxton Road opposite the Norbury Hollow Road junction. Land between the former and realigned sections of the A6 to the east of the Norbury Hollow Road junction will be landscaped to maximise visibility for vehicles turning out of Norbury Hollow Road.

### Realigned A6/ Buxton Road (Western Tie-in Junction)

- 8.32 The western tie-in point of the realigned A6 is to be constructed west of Yew Tree Avenue. Access to the realigned A6 from Yew Tree Avenue and Occupiers Lane will be via priority T-junctions. Each priority junction will have protected right turn lanes with illuminated refuge islands. Between the priority junctions, a new Toucan crossing will be provided to replace the existing facility. Access to Yew Tree Avenue and Occupiers Lane would be for local residents and service vehicles. Local bus services would turn right from the A6 west into the Yew Tree Avenue junction, and continue to use the existing eastbound A6 via the new bridge structure over the proposed A6MARR.

### A6MARR/ A523 Macclesfield Road Junction

- 8.33 The A6MARR scheme will intersect the A523 Macclesfield Road via an at-grade all movement signalised cross-roads junction arrangement, comprising:

- **A523 Macclesfield Road north (southbound)**
  - flared 5m wide left-turn flare lane
  - dedicated 3.65m wide straight-ahead lane and 1.5m wide cycle feeder lane
  - flared 3.65m wide straight-ahead and right-turn lane measuring approximately 60 metres
  - flared 3.65m wide right-turn lane measuring approximately 125 metres
- **A6MARR east (westbound)**
  - flared 3.65m wide left-turn lane measuring approximately 75 metres
  - two 3.65m wide dedicated straight-ahead lanes
  - flared 3.7m wide right-turn lane measuring approximately 100 metres
- **A523 Macclesfield Road south (northbound)**
  - flared 3.7m wide left-turn lane measuring approximately 75 metres
  - dedicated 3.65m wide straight-ahead lane and 1.5m wide cycle feeder lane
  - flared 3.65m wide right-turn lane measuring approximately 65 metres
- **A6MARR west (eastbound)**
  - flared 3.65m left-turn lane measuring approximately 130 metres
  - two 3.65m straight-ahead lanes
  - flared 3.7m wide right-turn lane measuring approximately 85 metres

- 8.34 All left-turn lanes are filtered and have associated island refuges for NMUs, with Toucan crossing facilities provided across the northern A523 Macclesfield Road arm along with the eastern and western A6MARR approaches. Crossing facilities provide connections to the new footway/cycleway which would run alongside the northern kerbline of the scheme at this location, and also link with a new footpath proposed to run alongside Norbury Brook to the immediate south of the

A6MARR. Cycle feeder lanes on the A523 Macclesfield Road northbound and southbound approaches provide access to Advance Cycle Stop-lines.

- 8.35 The opportunity has been taken to rationalise the access arrangements to the Brookside Garden Centre and Miniature Railway via a single two-way access, compared to the current provision of separate entry and exit points. A dedicated right-turn 'pocket' lane will be provided for vehicles wishing to enter the site from the south. Vehicular access to Norbury Hall and Norbury Court will be maintained unchanged by the scheme proposals.
- 8.36 To the north of the proposed A6MARR junction the A523 Macclesfield Road is subject to a 30mph speed limit through Hazel Grove, while to the south the road is subject to a 40mph speed limit towards Poynton. Verges will be widened where required to provide adequate forward visibility in accordance with DMRB.
- 8.37 The operational assessment of the A6MARR/ A523 Macclesfield Road junction has been carried out using LinSig, and summarised in **Table 8.5**. The junction model includes the A523 Macclesfield Road/ A5143 Dean Lane 'Fiveways' junction located approximately 250 metres to the north, following concerns raised at the LLF of the potential for queues to block-back between the two junctions. Full LinSig model outputs are presented in **Appendix F.3**.

**Table 8.5 – A6MARR/ A523 Macclesfield Road Junction Operational Assessment**

LinSig Link	Lane Description	Morning Peak		Evening Peak	
		DoS	MMQ	DoS	MMQ
<b>Fiveways Junction</b>					
1/1	A523 south (Ahead & Left)	73%	13	84%	34
1/2	A523 south (Ahead & Right)				
3/1	A5143 Dean Lane	85%	13	86%	13
4/1	Mill Lane	22%	3	15%	1
5/1	A523 north (Ahead & Left)	66%	12	56%	10
5/2	A523 north (Right)				
<b>A6MARR Junction</b>					
1/1	A6MARR west (Left)	75%	11	89%	22
1/2	A6MARR west (Ahead)				
1/3	A6MARR west (Ahead)	73%	11	96%	21
1/4	A6MARR west (Right)				
2/1	A523 north (Ahead & Left)	88%	12	94%	12
2/2	A523 north (Ahead & Right)	93%	15	98%	18
2/3	A523 north (Right)				
3/1	A6MARR east (Left)	90%	16	65%	9
3/2	A6MARR east (Ahead)				
3/3	A6MARR east (Ahead)	87%	15	64%	9
3/4	A6MARR east (Right)				
4/1	A523 south (Left)	78%	12	79%	12
4/2	A523 south (Ahead)				
4/3	A523 south (Right)	25%	3	35%	4

8.38 **Table 8.5** confirms that both the A6MARR/ A523 Macclesfield Road and A523 Macclesfield Road/ A5143 Dean Lane 'Fiveways' junctions are predicted to operate within capacity. There is predicted to be no queuing interaction between the two junctions.

#### A6MARR/ Bramhall Oil Terminal Gyrotory Junction and A6MARR Link Road/ A5149 Chester Road Junction

8.39 The A6MARR scheme incorporates a new at-grade signalised gyrotory at Bramhall Oil Terminal, including a new signalised link road connection to the A5149 Chester Road and a signalised on-demand link to Bramhall Oil Terminal.

8.40 The A6MARR gyrotory junction comprises the following:

- **A6MARR east (westbound)**
  - three 3.65m wide lanes, with the nearside lane catering for both ahead movements and left turning vehicles heading toward the A5149 Chester Road
- **A6MARR/ A5149 link road (northbound)**
  - two lane flaring on approach to the gyrotory to provide a 6.2m wide nearside lane and a 5.6m wide offside lane
- **A6MARR west (eastbound)**
  - three 3.65m wide lanes, with the nearside lane catering for both ahead movements and left turning vehicles heading toward Bramhall Oil Terminal, the middle lane providing for ahead movements only, and the offside lane for right turn movements only toward the A5149 Chester Road.
- **Gyrotory**
  - westbound gyrotory carriageway maintains three 3.65m wide straight ahead lanes with the offside lane also providing a right turn facility for the Bramhall Oil Terminal
  - eastbound gyrotory carriageway maintains two 3.65m wide straight ahead lanes with the offside lane providing a right turn facility towards the A5149 Chester Road

8.41 It is proposed that the A6MARR will maintain an 85kph design speed through the junction. Forward visibility on the approaches and within the gyrotory complies with DMRB Standards.

8.42 The gyrotory design includes provision for Toucan pedestrian and cyclist crossings on the eastern approach and exit arms, along with the Bramhall Oil Terminal approach. The crossing facilities will tie-in with the dedicated footway/ cycleway running parallel to the northern side of the A6MARR at this location.

8.43 The A6MARR Link Road/ realigned A5149 Chester Road junction is proposed to be a signalised T-junction. It will provide a link to the A6MARR from the A5149 Chester Road and maintain a local traffic route between Bramhall, Woodford and Poynton. The junction layout will provide safe signalised crossing facilities for pedestrians and cyclists across the eastern and southern approaches to the junction, and comprise the following:

- **A6MARR Link Road (southbound)**
  - dedicated 3.7m wide filter left-turn lane towards the A5149 Chester Road
  - dedicated 3.7m wide straight-ahead lane
- **Realigned A5149 Chester Road east (westbound)**
  - flared approach to form two dedicated 3.6m wide right turn lanes over a distance of approximately 90m, and a single 3.7m wide left turn filter lane measuring approximately 70m in length.

- realigned A5149 will remain subject to a 30mph speed limit
- **Realigned A5149 Chester Road south (northbound)**
  - dedicated 3.95m wide straight-ahead lane
  - flared 3.95m wide right-turn lane measuring approximately 50m
  - realigned A5149 will remain subject to a 30mph speed limit

8.44 The operational assessment of the A6MARR/ Bramhall Oil Terminal gyratory and A6MARR Link Road/ realigned A5149 Chester Road signalised junction has been carried out using LinSig, and summarised in **Table 8.6**. Full LinSig model outputs are presented in **Appendix F.4**.

**Table 8.6 - A6MARR/ Bramhall Oil Terminal Gyratory Operational Assessment**

Link	Lane Description	Morning Peak		Evening Peak	
		DoS	MMQ	DoS	MMQ
<b>A6MARR/ Bramhall Oil Terminal/ A6MARR Link Road Gyratory</b>					
1/1	A6MARR west (Ahead)	38%	4	59%	9
1/2	A6MARR west (Ahead)	56%	4	78%	9
1/3	A6MARR west (Ahead)	56%		78%	
2/1	Gyratory at Bramhall Oil Terminal (Left)	41%	3	64%	6
2/2	Gyratory at Bramhall Oil Terminal (Ahead)	41%		64%	
2/3	Gyratory at Bramhall Oil Terminal (Ahead)	40%	4	60%	9
2/4	Gyratory at Bramhall Oil Terminal (Right)	36%	2	48%	2
3/1	Bramhall Oil Terminal (Ahead & Left)	9%	1	9%	1
4/1	A6MARR east (Ahead & Left)	50%	7	34%	4
4/2	A6MARR east (Ahead)	56%	9	42%	6
4/3	A6MARR east (Ahead)	56%		41%	
5/1	Gyratory at A6MARR west (Right)	20%	1	40%	3
5/2	Gyratory at A6MARR west (Right)	27%	1	45%	3
6/1	Gyratory at A6MARR Link Road (Ahead)	31%	1	25%	1
6/2	Gyratory at A6MARR Link Road (Ahead)	54%	4	42%	3
6/3	Gyratory at A6MARR Link Road Ahead	53%	3	41%	2
9/1	Gyratory at A6MARR east (Ahead)	41%	4	56%	6
9/2	Gyratory at A6MARR east (Right & Ahead)	41%	4	55%	6
11/1	A6MARR Link Road (Left)	64%	3	41%	7
11/2	A6MARR Link Road (Left)	62%	5	55%	6
<b>Gyratory – A6MARR Eastbound Exit Pedestrian Crossing</b>					
1/1	A6MARR east at Pedestrian Crossing (Ahead)	36%	4	57%	9
1/2	A6MARR east at Pedestrian Crossing (Ahead)	35%	4	52%	8

Link	Lane Description	Morning Peak		Evening Peak	
		DoS	MMQ	DoS	MMQ
<b>A6MARR Link Road/ realigned A5149 Chester Road</b>					
1/1	A6MARR Link Road (Left)	46%	7	71%	15
1/2	A6MARR Link Road (Ahead)	64%	4	45%	3
2/1	A5149 south (Ahead)	62%	5	72%	9
2/2	A5149 south (Right)	62%		72%	
4/1	A5149 east (Left)	64%	8	53%	6
4/2	A5149 east (Right)	64%		53%	
4/3	A5149 east (Right)	53%	7	33%	3

8.45 **Table 8.6** confirms that both of the A6MARR/ Bramhall Oil Terminal and A6MARR Link Road/ realigned A5149 Chester Road junctions are predicted to operate within capacity under 2017 future year conditions. There is predicted to be no queuing interaction between the two junctions.

#### A6MARR/ A5102 Woodford Road Junction

8.46 It is proposed that the A6MARR scheme intersects with the A5102 Woodford Road via a grade separated (half-diamond west-facing slip roads) restricted movements junction arrangement. The A6MARR would pass under a new road bridge for the A5102 Woodford Road with signalised T-junctions at the top of each slip road to facilitate traffic movements.

8.47 The A5102 Woodford Road will be carried over the A6MARR on a single structure with a single lane northbound and two lanes southbound between the two T-junctions. Shared footway/ cycleways, each 3.0m wide, will be provided along both the eastern and western sides of the bridge. A 2.0m wide hard-surfaced central reserve will separate the northbound and southbound carriageways across the bridge structure. Street lighting will be provided for this junction and approaches.

8.48 Access to residential properties 135 – 143 Woodford Road will be remodelled with a short section of cul-de-sac on the former alignment of Woodford Road used to access the properties. The cul-de-sac will be accessed from the new signalised junction of the A5102 Woodford Road and A555 eastbound off-slip road, with a dedicated on-demand signal stage incorporated for residential traffic exiting the cul-de-sac. Dedicated provision for the few vehicles that wish to turn right into cul-de-sac within the signal phasing was deemed unnecessary. Adequate width is provided for a vehicle to wait in advance of the signal stopline to seek an appropriate gap in oncoming traffic or clear at the end of the signal stage.

8.49 In summary, the junction layout will comprise the following:

#### Northern T-Junction

- **A5102 Woodford Road north (southbound)**
  - dedicated 3.65m wide straight ahead lane
  - flared 3.65m wide straight-ahead lane measuring approximately 35 metres
- **A5102 Woodford Road south (northbound)**
  - shared 4.5m wide ahead and right-turn lane
- **A6MARR off-slip road (eastbound)**
  - dedicated 3.65m wide left-turn lane

- dedicated 3.65m wide right-turn lane
- **Residential cul-de-sac access**

**Southern T-Junction**

- **A5102 Woodford Road north (southbound)**
  - dedicated 3.65m wide straight-ahead lane, which will effectively operate as a free-flow lane
  - dedicated 3.65m wide right-turn lane
- **A5102 Woodford Road south (northbound)**
  - flared 3.0m wide left-turn lane measuring approximately 90m
  - dedicated 3.0m wide straight-ahead

8.50 The operational assessment of the A6MARR/ A5102 Woodford Road junction has been carried out using LinSig, and is summarised in **Table 8.7** below. Full LinSig model output is contained in **Appendix F.5**.

**Table 8.7 – A6MARR/ A5102 Woodford Road Junction Operational Assessment**

LinSig Link	Lane Description	Morning Peak		Evening Peak	
		DoS	MMQ	DoS	MMQ
<b>A6MARR/ A5102 Woodford Road (Northern Junction)</b>					
1/1	A5102 north (Ahead)	76%	8	48%	4
1/2	A5102 north (Ahead)	76%		48%	
2/1	A5102 south (Ahead & Right)	51%	8	77%	5
3/1	A6MARR Off-slip (Left)	55%	6	81%	12
3/2	A6MARR Off-slip (Right)	21%	1	28%	1
5/1	Resident cul-de-sac	6%	1	6%	1
<b>A6MARR/ A5102 Woodford Road (Southern Junction)</b>					
2/2	A5102 north (Right)	69%	5	46%	3
3/1	A5102 south (Left)	19%	2	7%	1
3/2	A5102 south (Ahead)	67%	7	52%	7

8.51 **Table 8.7** confirms that the A6MARR/ A5102 Woodford Road junction is predicted to operate within capacity under 2017 future year conditions, with a maximum DoS value on any link of 77% in the evening peak hour. Mean Max Queues on the A6MARR eastbound off-slip road are predicted to be 12 pcus in the left-turn lane and 1 pcu in the right-turn lane during the evening peak hour, equating to queue lengths of 69 metres and 6 metres respectively.

8.52 In terms of the potential for queues to block-back between the two signalised T-junctions, the LinSig modelling predicts a maximum queue of 8 pcus (or 46 metres) during the morning peak hour, and a maximum queue of 5 pcus (or 29 metres) northbound also during the morning peak hour. Neither queue exceeds the physical storage capacity of the junction.

## Proposed A34 Handforth Bypass/ A555 Junction Improvement

- 8.53 The A34 is dual 2-lane carriageway and is a key north-south radial route linking Cheshire with Manchester. The existing A34 Handforth Bypass/ A555 junction is grade separated with a roundabout at the lower level and the mainline for the A555 crossing over on two highway bridges. The western highway bridge currently spans two lanes of circulatory traffic and the eastern bridge spans three lanes. The western highway bridge has sufficient space available to facilitate an additional third lane. The A555 including the west-facing slip roads cross Earl Road on a third highway bridge.
- 8.54 The A34/ A555 roundabout is currently subject to the national speed limit, while the A34 north of the A555 is subject to a 30mph speed limit before reverting to a 40mph speed limit north of the A34/ B5094 Stanley Road junction. South of the A555, the A34 is subject to the national speed limit. In order to align with long-standing ambitions of SMBC, it is proposed that speed limit for the A34/ A555 roundabout and A34 north to include the A34/ B5094 Stanley Road junction will be changed to 40mph. Street lighting will be upgraded for this junction and approaches.
- 8.55 Crossing facilities are proposed across the northern side of the junction, replacing the existing uncontrolled facility with new signal controlled Toucan crossings at the junction of the A6MARR eastbound off-slip road and circulatory carriageway, the junction of the A34 southbound approach and circulatory carriageway, and on the A34 northbound exit from the roundabout. On the southern side of the junction, new signalised crossing facilities are proposed at the junction of the A6MARR westbound off-slip road and circulatory carriageway. A new footway and shared use footway/ cycleway route would be provided across the central island of the roundabout to provide connections between Footpath No.81 to the south, the A6MARR footway/ cycleway and a new shared-use facility leading northwards towards the Stanley Green roundabout.
- 8.56 The A6MARR scheme proposals feature significant upgrades to the A555/ A34 junction to include provision of additional lanes on all approaches, additional circulatory lanes, and full signalisation of the roundabout, comprising:
- **A34 north (southbound)**
    - approach widened to four lanes on entry
    - dedicated 3.7m wide left-turn lane on to the A555 (eastbound) measuring approximately 100m in length
    - remaining three 4m wide running lanes extended back to the upstream Stanley Green junction and separated from the left-turn lane by a 3.0m wide island that provides a safe reservoir for a dedicated Toucan crossing facility
  - **A555 east (westbound) diverge**
    - approach widened to four lanes on entry
    - two 4.6m wide left-turn lanes for the A34 southbound movement
    - two 3.65m wide right-turn lanes for the A34 northbound movement
  - **A34 south (northbound)**
    - widening to incorporate four 3.65m wide lanes, comprising dedicated left-turn lane for the A6MARR eastbound merge and three ahead lanes for movements onto the roundabout circulatory
    - gantry with signals and signage will span this location
  - **A555 west (eastbound) diverge**
    - widened from two to three lanes each 4.0m wide



- flared nearside lane is a dedicated left-turn on to the A34 measuring approximately 30m in length
- **Circulatory carriageway**
  - widening to provide three 4.0m wide lanes

8.57 The operational assessment of the modified A34 Handforth Bypass/ A555 junction has been carried out using LinSig, and is summarised in **Table 8.8** below. Full LinSig model output is contained in **Appendix F.6**.

**Table 8.8 – A34 Handforth Bypass/ A555 Junction Operational Assessment**

LinSig Link	Lane Description	Morning Peak		Evening Peak	
		DoS	MMQ	DoS	MMQ
J1:1/1	A555 off-slip west (Left)	65%	5	69%	4
J1:1/2	A555 off-slip west (Left & Ahead)				
J1:1/3	A555 off-slip west (Right)	41%	3	41%	3
J1:2/1	Gyratory at A555 west (Ahead)	73%	8	77%	9
J1:2/2	Gyratory at A555 west (Ahead)	61%	4	65%	5
J1:2/3	Gyratory at A555 west (Ahead & Right)	67%	6	66%	5
J2:1/1	A34 north (Left)	66%	9	92%	19
J2:1/2	A34 north (Ahead)	78%	10	71%	10
J2:1/3	A34 north (Ahead)				
J2:1/4	A34 north (Right)	62%	9	71%	10
J2:2/1	Gyratory at A34 north (Ahead)	32%	3	34%	3
J2:2/2	Gyratory at A34 north (Ahead & Right)	32%	2	51%	5
J2:2/3	Gyratory at A34 north (Right)	32%	1	17%	1
J3:1/1	Gyratory at A555 east (Ahead)	68%	4	71%	5
J3:1/2	Gyratory at A555 east (Ahead)	68%	5	65%	2
J3:1/3	Gyratory at A555 east (Ahead & Right)	70%	5	66%	2
J3:2/1	A555 off-Slip east (Left)	53%	4	33%	2
J3:2/2	A555 off-Slip east (Left)	53%		32%	
J3:2/3	A555 off-Slip east (Ahead)	64%	6	64%	6
J3:2/4	A555 off-Slip east (Ahead)	71%	7	60%	6
J4:1/1	Gyratory at A34 south (Ahead)	21%	3	14%	2
J4:1/2	Gyratory at A34 south (Ahead & Right)	56%	3	60%	3
J4:1/3	Gyratory at A34 south (Right)	47%	1	48%	1
J4:2/1	A34 south (Left)	33%	4	28%	3
J4:2/2	A34 south (Left & Ahead)	80%	13	78%	13
J4:2/3	A34 south (Ahead)	80%	13	79%	13
J4:2/4	A34 south (Ahead)	80%	13	78%	13

8.58 **Table 8.8** confirms that the modified A34 Handforth Bypass/ A555 junction will operate within capacity under 2017 future year conditions.

### Proposed A34/ B5094 Stanley Road Junction Improvement

8.59 The B5094 Stanley Road is a single carriageway which running east-west connects Bramhall, Cheadle Hulme and Heald Green. The A34/ B5094 Stanley Road junction is a roundabout with two circulatory lanes and traffic movements controlled by spiral road markings.

8.60 The A34/ B5094 Stanley Road 'Stanley Green' roundabout junction is an existing capacity constraint that generates significant queuing in the morning and evening peak periods and makes limited provision for pedestrians and cyclists. Toucan crossings are provided across both A34 approaches. However, the operation of these crossing facilities can exacerbate peak period congestion when large volumes of traffic turning to/ from the B5094 Stanley Road (toward Bramhall) leading to significant queuing on the northbound and southbound A34 approaches. Blocking back from this junction on the A34 currently impacts on the northbound flow of traffic through the A555 junction, a situation that will deteriorate under future year traffic levels.

8.61 The need for improvements to the Stanley Green roundabout is therefore seen as being integral to the A6MARR scheme, by way of an all movement at-grade signalised roundabout comprising:

- **A34 north (southbound)**
  - existing two lanes will be increased to three 3.65m wide lanes
  - integrated pedestrian and cyclist crossing facilities maintained
  - approach within the proposed 40mph speed limit zone
- **B5094 Stanley Road east (westbound)**
  - approach will remain subject to a 30mph speed limit
- **A34 south (northbound)**
  - widening to three 4.0m wide lanes, with the nearside lane also providing for left-turn movements
  - integrated pedestrian and cyclist crossing facilities maintained
  - approach within the proposed 40mph speed limit zone
- **B5094 Stanley Road west (eastbound)**
  - approach will remain subject to a 30mph speed limit
- **Circulatory carriageway**
  - Northern section – single 4.0m wide straight-ahead lane, single 4.0m wide lane right-turn lane
  - Eastern section – two 4.0m wide lanes for A34 south, single 4.0m wide right-turn lane
  - Southern section – two 4.0m wide right-turn lanes north, single 4.0m wide straight-ahead lane
  - Western section – three 4.0m wide straight-ahead lanes north, single 4.0m wide right-turn lane. A gantry with signals and signage spanning this location.

8.62 Street lighting will be upgraded for this junction and approaches.

8.63 The operational assessment of the modified A34/ B5094 Stanley Road junction has been carried out using LinSig, and is summarised in **Table 8.9** below. Full LinSig model output is contained in **Appendix F.7**.

Table 8.9 – A34/ B5094 Stanley Road Junction Operational Assessment

Item	Lane Description	2017			
		AM		PM	
		DoS	MMQ	DoS	MMQ
1/1	A34 north (Left & Ahead)	98%	20	99%	23
1/2	A34 north (Ahead)	98%	39	98%	51
1/3	A34 north (Ahead)	103%		105%	
2/1	B5094 east (Left)	89%	10	84%	7
2/2	B5094 east (Left)	99%	22	86%	7
2/3	B5094 east (Ahead)				
3/1	A34 south (Left & Ahead)	96%	19	94%	16
3/2	A34 south (Ahead)	98%	21	96%	18
3/3	A34 south (Ahead)	97%	20	96%	18
4/1	B5094 west (Left)	32%	1	54%	3
4/2	B5094 west (Ahead)	23%		59%	
10/1	Gyratory at A34 north (Ahead)	76%	7*	86%	9*
10/2	Gyratory at A34 north (Right)	76%		86%	
11/1	Gyratory at B5094 east (Ahead)	59%	1	43%	2
11/2	Gyratory at B5094 east (Ahead)	99%	14*	84%	3
11/3	Gyratory at B5094 east (Ahead & Right)	96%	12*	80%	2
12/1	Gyratory at A34 south (Ahead)	52%	4	23%	1
12/2	Gyratory at A34 south (Right)	58%	1	34%	1
12/3	Gyratory at A34 south (Right)	58%		34%	
9/1	Gyratory at B5094 west (Ahead)	74%	3	72%	2
9/2	Gyratory at B5094 west (Ahead)	82%	3	79%	3
9/3	Gyratory at B5094 west (Ahead)	82%	10*	72%	8*
9/4	Gyratory at B5094 west (Right)	82%		72%	

Note: In some cases modelled queues, highlighted by an asterisk, extend beyond the physical storage available, but do not block upstream movements as the moving queue discharges by the time the upstream queue moves off.

8.64 **Table 8.9** shows that notwithstanding the significant betterment in operational performance brought about by the improvements to the A34/ B5094 Stanley Road junction, some residual issues are likely to remain (albeit to a lesser extent), on both the A34 southbound and B5094 Stanley Road westbound approaches. Importantly, queues on the A34 northbound approach are not predicted to block-back to the A555 junction.

## A6MARR/ B5358 Wilmslow Road Junction

8.65 The existing A555/ B5358 half-diamond east-facing slip road grade separated 'dumb-bell' junction arrangement will be upgraded to cater for all movements through the provision of west-facing slip roads. Minor works will be carried out to the existing east-facing slips. Street lighting will be provided for this junction and approaches. The junction layout will comprise the following:

### Northern dumb-bell roundabout

- **B5358 Wilmslow Road north (southbound)**
  - Flared 3m wide left-turn lane measuring approximately 50m in length
  - Dedicated 3m wide straight-ahead lane
- **B5358 Wilmslow Road south (northbound)**
  - Flared approach forming 3m wide ahead lane and 3m wide right-turn lane
- **A6MARR off-slip road (eastbound)**
  - Single 3.7m wide lane flaring on approach to the junction and accommodating all turning movements

### Southern dumb-bell roundabout

- **B5358 Wilmslow Road north (southbound)**
  - Single 3.7m wide lane flaring on approach to the junction
- **A6MARR off-slip road (westbound)**
  - Single 4.7m wide ahead and left-turn lane
  - Single 4.7m wide right-turn lane
- **B5358 Wilmslow Road south (northbound)**
  - Single 4.7m wide straight-ahead and left-turn lane
- **Clay Lane (A6MARR on-slip) egress**
  - Single 4.5m wide left and right-turn lane

8.66 The operational assessment of the A6MARR/ B5358 Wilmslow Road junction has been carried out using ARCADY, and summarised in **Table 8.10** below. Full ARCADY model output is contained in **Appendix F.8**.

**Table 8.10 – A6MARR/ B5358 Wilmslow Road Junction Operational Assessment**

	Morning Peak		Evening Peak	
	RFC	Max Queue	RFC	Max Queue
<b>Northern dumb-bell roundabout</b>				
B5358 north	0.47	1	0.55	2
B5358 south	0.71	3	0.63	2
A6MARR off-slip west	0.49	1	0.43	1
<b>Southern dumb-bell roundabout</b>				
B5358 north	0.82	5	0.81	5
A6MARR off-slip east	0.45	1	0.25	1
B5358 south	0.67	3	0.74	3
Clay Lane (from A6MARR on-slip)	0.07	1	0.03	0

8.67 **Table 8.10** confirms that the A6MARR/ B5358 Wilmslow Road junction will operate within capacity under 2017 future year conditions, with a maximum RFC value of 0.82.

#### A6MARR/ B5166 Styal Road Junction

8.68 It is proposed that the A6MARR scheme intersects with the B5166 Styal Road via a new all movement at-grade signal controlled junction to be constructed over the Manchester Airport spur railway line, comprising:

- **B5166 Styal Road north (southbound)**
  - flared 3.7m wide left-turn lane measuring approximately 140m
  - dedicated 3.7m wide straight-ahead lane
  - shared 3.65m wide ahead and right-turn lane
  - flared 3.65m wide right-turn lane measuring approximately 95m
- **A6MARR east (westbound)**
  - single 3.7m wide left-turn lane measuring approximately 70m
  - two 3.65m wide straight-ahead lanes
  - single 3.7m wide right-turn lane measuring approximately 215m
- **B5166 Styal Road south (northbound)**
  - dedicated 3.65m wide left-turn lane
  - shared 3.65m wide ahead and right-turn lane
- **A6MARR west (eastbound)**
  - single 3.7m left-turn lane measuring approximately 350m
  - two 3.65m straight-ahead lanes
  - single 3.7m wide right-turn lane measuring approximately 175m

8.69 The junction improvement will require additional structures either side of the existing bridge and also to span the existing railway. All left-turn lanes have associated filter islands that act as safe pedestrian/ cyclist reservoirs for the Toucan crossing facilities.

8.70 Street lighting will be upgraded for this junction and approaches.

8.71 The operational assessment of the A6MARR/ B5166 Styal Road junction has been carried out using LinSig and summarised in **Table 8.11** below. Full LinSig model output is contained in **Appendix F.9**.

**Table 8.11 – A6MARR/ B5166 Styal Road Junction Operational Assessment**

LinSig Link	Lane Description	Morning Peak		Evening Peak	
		DoS	MMQ	DoS	MMQ
1/1	B5166 south (All movements)	92%	17	98%	15
1/2					
2/1	A6MARR west (Left)	63%	23	79%	33
2/2	A6MARR west (Ahead)	89%		99%	
2/3	A6MARR west (Ahead)	84%	24	96%	38
2/4	A6MARR west (Right)	95%		98%	

LinSig Link	Lane Description	Morning Peak		Evening Peak	
		DoS	MMQ	DoS	MMQ
3/1	B5166 north (Left)	97%	14	99%	22
3/2	B5166 north (Ahead)	97%		99%	
3/3	B5166 north (Ahead & Right)	95%	12	92%	11
3/4	B5166 north (Right)	95%		92%	
4/1	A6MARR east (Left)	96%	35	91%	21
4/2	A6MARR east (Ahead)	96%		91%	
4/3	A6MARR east (Ahead)	96%	32	94%	26
4/4	A6MARR east (Right)	77%		98%	

8.72 **Table 8.11** confirms that the A6MARR/ B5166 Styal Road junction will operate within capacity under 2017 future year conditions.

### Conclusion

8.73 The local junction modelling assessment confirms that the A6MARR scheme is able accommodate future year traffic forecast in-line with SEMMMS design philosophy.

## 9. Wider Scheme Impact

### Scheme Benefits

- 9.1 By improving access to south-east Manchester and Cheshire East, the A6MARR will benefit communities and the local economy.
- 9.2 The following is a summary of the key benefits:
- Economic growth generating additional economic output for the region of up to £2.5 billion and contributing towards the creation of up to 5,450 new jobs;
  - Better access to Manchester Airport and other key destinations for employment, education, health, leisure and retail;
  - Less traffic on local roads - reducing congestion on local roads in surrounding areas;
  - Shorter journey times for cyclists, public transport users, car drivers and freight;
  - Improved road safety, particularly for pedestrians and cyclists by reducing the volume of traffic passing through residential areas; and
  - Increased investment encouraged in Manchester Airport and Airport City Enterprise Zone as well as areas of Stockport, Cheshire East and Manchester.

### Overall Highway Network Performance

- 9.3 **Table 9.1** summarises the overall highway network performance statistics without and with the A6MARR in place. Briefly, these statistics are aggregated over the whole modelled area (for the modelled peak-hour and the period after the peak-hour to allow the completion of any trips delayed by queues or congestion) and represent the following:
- **Over-Capacity Queues** – this is the time spent in queues resulting from turning movements in excess of capacity, resulting in the build-up of a permanent queue that is unable to clear in a single signal cycle;
  - **Total Travel Time** – this is the sum of the time spent in transient and over-capacity queues plus the link cruise time;
  - **Travel Distance** – this is the total distance travelled by all vehicles during the modelled hour; and
  - **Average Speed** – this is simply the total distance divided by the total travel time,
- 9.4 The statistics shown in **Table 9.1** demonstrate a significant decrease in the amount of time spent in over capacity queues and associated travel time in the morning and evening peak hours, with completion of A6MARR compared to the without A6MARR scenario in the scheduled 2017 opening year. Whilst there is a marginal increase in the total travel distances there is also predicted to be an overall improvement in the average network speed.

**Table 9.1 – A6MARR SATURN Model – Overall Highway Network Summary Statistics**

		2017			
		Without A6MARR	With A6MARR	Impact of A6MARR	% Impact of A6MARR
Morning Peak Hour	Over capacity queuing (pcu hours)	2,294	1,935	-359	-15.7%
	Total travel time (pcu hours/ hours)	43,794	43,128	-665	-1.5%
	Total travel distance (km/ hr)	1,663,577	1,681,116	17539	1.1%
	Average network speed (kph)	38.0	39.0	1.0	2.6%
	Trips Loaded on to network (pcus)	183,526	184,049	523	0.3%
Inter Peak Hour	Over capacity queuing (pcu hours)	81	78	-3	-3.1%
	Total travel time (pcu hours/ hours)	25,437	25,500	63	0.2%
	Total travel distance (km/ hr)	1,215,976	1,231,332	15356	1.3%
	Average network speed (kph)	47.8	48.3	0.5	1.0%
	Trips Loaded on to network (pcus)	142,121	142,370	249	0.2%
Evening Peak Hour	Over capacity queuing (pcu hours)	1,470	1,171	-298	-20.3%
	Total travel time (pcu hours/ hours)	42,084	41,570	-514	-1.2%
	Total travel distance (km/ hr)	1,651,878	1,668,700	16822	1.0%
	Average network speed (kph)	39.3	40.1	0.9	2.3%
	Trips Loaded on to network (pcus)	175,856	176,310	454	0.3%

## Changes to Traffic Flow Patterns

9.5 In terms of traffic movement the introduction of the proposed scheme will result in changes to traffic flow patterns in and around the south east Greater Manchester area, with some traffic that currently uses local roads transferring onto the new A6MARR.

9.6 Traffic modelling of the A6MARR proposals has been used to predict changes in daily traffic flows on an average day in 2017 (the planned year of opening of the scheme). Traffic plans have been produced to show traffic flows for 2009 at selected locations and the predicted traffic flows for the year 2017 without and with the A6MARR scheme in place. For each location the traffic plan shown in **Figure 9.1** (and **Table 9.2**) highlights where the traffic flow is predicted to increase or decrease by more than a 5% daily variation with the A6MARR in place:

- **2009 base year [yellow]:** this shows modelled traffic flows in this base year incorporating extensive traffic survey information collated across the study area;
- **2017 opening year [green] without the A6MARR in place:** this includes committed transport schemes along with predicted background traffic growth and traffic generated by committed/ near certain developments across the area; and
- **2017 opening year [blue] with the A6MARR in place:** as above but with completion of the A6MARR scheme.

9.7 It is evident from **Figure 9.1** (and **Table 9.2**) that, compared to a situation with no A6MARR in place, completion of the A6MARR scheme will in general reduce future year traffic flows on many local roads in the surrounding areas, notably:

- Heald Green, Bramhall, and Hazel Grove (and to a lesser extent Gatley, Cheadle and Cheadle Hulme) to the north of the A6MARR; and
- Styal, Wilmslow, Woodford and Poynton town centre to the south of the A6MARR.

9.8 In terms of the traffic using local primary routes and the strategic road network, completion of the A6MARR scheme will reduce traffic using:

- A6 between the eastern terminus of the A6MARR and M60 motorway;
- A523 between the A6 Rising Sun and Poynton cross-roads;
- A538 between the M56 motorway and Wilmslow and between Wilmslow and Prestbury;



- A560 between Gatley and Cheadle;
- A5102 between the A555 (at Woodford) and A538 (at Wilmslow);
- M60 between junctions 1 and 2; and
- M56 between junctions 1 and 2 (Sharston Link) and between junctions 4 and 5.

9.9 It is recognised, however, that some local areas will experience some increase in traffic following completion of the A6MARR scheme, notably:

- Wythenshawe (south of Simonsway) to the north of the A6MARR; and;
- Handforth, High Lane and Disley to the south of the A6MARR;

9.10 Potential local routeing issues following completion of the A6MARR scheme have also been identified in connection with:

- Gillbent Road, Cheadle Hulme;
- Torkington Road and Threaphurst Lane, Hazel Grove; and
- Clifford Road, Poynton

9.11 In terms, of the traffic using local primary routes and the strategic road network, completion of the A6MARR scheme will increase traffic using:

- A6 between through High Lane and Disley;
- A34 between the A555 and Dean Row Road;
- A555 between the B5358 (at Handforth) and A5102 (at Woodford/ Bramhall), the existing completed section of MAELR; and
- M56 between junctions 5 and 7.

9.12 At the time of writing, discussions are ongoing between the A6MARR Project Team and Highways Agency regarding the impact of the scheme on the Strategic Road Network (SRN) and the M56 in particular. The Highways Agency has been included in all stages of consultation on the scheme development from its original conception as a Highways Agency proposed trunk road scheme, through to the current proposals. It is understood that a statement will be issued by the Highways Agency to confirm that there is no objection to the scheme proposals, and that it is compliant with the NPPF and latest SRN planning policy document.

9.13 A package of measures, known as Complementary and Mitigation Measures, has been proposed to address changes in traffic flow on the local highway network and this package is described in the following section.

Figure 9.1 – A6MARR: Forecast Annual Average Daily Traffic (Base Year, 2017 Without A6MARR, 2017 With A6MARR without any Mitigation)

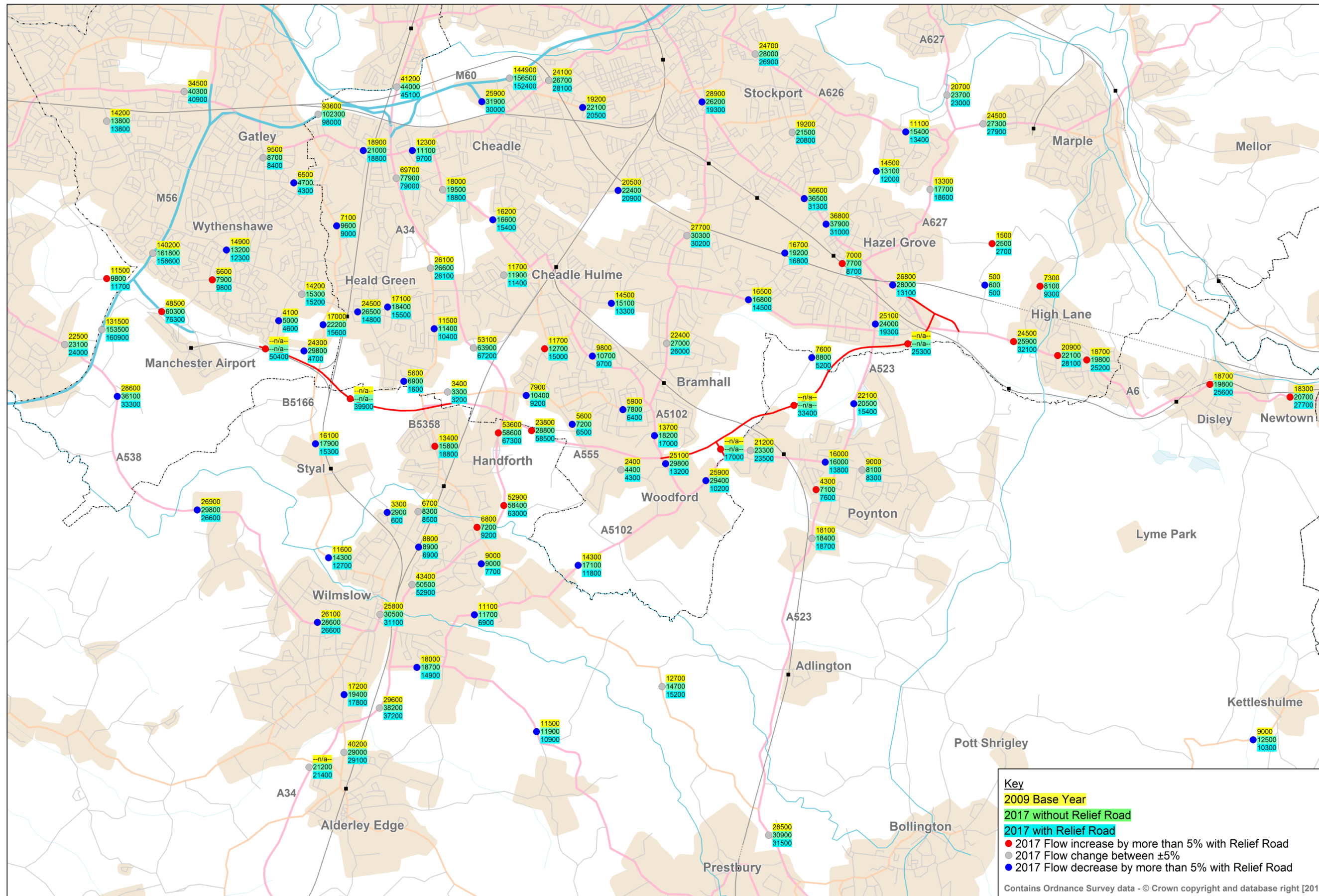


Table 9.2 – A6MARR: Forecast Annual Average Daily Traffic (Base Year, 2017 Without A6MARR, 2017 With A6MARR plus No Mitigation)

Site	Description	Forecast Annual Average Daily Traffic				
		2009 Base	2017 Without A6MARR	2017 With A6MARR	2017 Impact of A6MARR	2017 %Impact of A6MARR
1	A6MARR (west of Styal Road)	--n/a--	--n/a--	50400	--n/a--	--n/a--
2	A6MARR (between Styal Road and Handforth)	--n/a--	--n/a--	39900	--n/a--	--n/a--
3	A555 (between A34 and A5102 Woodford Road)	23800	28800	58500	29700	103%
4	A6MARR (between Relief Road Oil Terminal Spur and A523 Macclesfield Road)	--n/a--	--n/a--	33400	--n/a--	--n/a--
5	A6MARR (between A523 Macclesfield Road and A6 Buxton Road)	--n/a--	--n/a--	25300	--n/a--	--n/a--
6	A6MARR Bramhall Oil Terminal Spur	--n/a--	--n/a--	17000	--n/a--	--n/a--
7	M56 Junctions 1 to 2 (Sharston Link)	93600	102300	98000	-4300	-4%
8	M56 Junctions 4 to 5	140200	161800	158600	-3200	-2%
9	M56 Junctions 5 to 6	131500	153500	160900	7400	5%
10	M56 Junction 5 Airport Spur	48500	60300	76300	16000	27%
11	M60 Junctions 1 to 2	144900	156500	152400	-4100	-3%
12	M60 Junction 2 Spur	25900	31900	30000	-1900	-6%
13	A6 London Road (north of A5102 Bramhall Lane)	28900	26200	19300	-6900	-26%
14	A6 London Road (between Dialstone Road and Bramhall Moor Lane)	36600	36500	31300	-5200	-14%
15	A6 London Road (between Bramhall Moor Lane and Commercial Road)	36800	37900	31000	-6900	-18%
16	A6 Buxton Road (east of A523 Macclesfield Road)	26800	28000	13100	-14900	-53%
17	A6 Buxton Road (between Threaphurst Lane and Windlehurst Road)	24500	25900	32100	6200	24%
18	A6 Buxton Road (between Windlehurst Road and Andrew Lane)	20900	22100	28100	6000	27%
19	A6 Buxton Road (between Andrew Lane and Jacksons Edge Road)	18700	19800	25200	5400	27%
20	A6 Buxton Road West (between Buxton Old Road and Redhouse Lane)	18700	19800	25600	5800	29%
21	A6 Buxton Road (between Greenshall Lane and A6015 Albion Road)	18300	20700	27700	7000	34%
22	A34 Kingsway (north of M60)	41200	44000	45100	1100	3%
23	A34 Kingsway (between A560 Gatley Road and Broadway)	69700	77900	79000	1100	1%
24	A34 (between Stanley Road and Eden Park Road)	53100	63900	67200	3300	5%
25	A34 (south of A555)	53600	58600	67300	8700	15%
26	A34 (between Coppice Way and Dean Row Road)	52900	58400	63000	4600	8%
27	A34 (between Dean Row Road and A538 Manchester Road)	43400	50500	52900	2400	5%
28	A34 (south of A538 Prestbury Road)	29600	38200	37200	-1000	-3%
29	A34 Alderley Edge Bypass (south-west of A535 Wilmslow Road)	--n/a--	21200	21400	200	1%
30	A535 Alderley Road (south of A34)	40200	29000	29100	100	0%
31	A523 Macclesfield Road (between A5143 Dean Lane and Haddon Road)	25100	24000	19300	-4700	-20%
32	A523 Macclesfield Road (south of A6MARR)	22100	20500	15400	-5100	-25%
33	A523 London Road (Adlington Park south of Poynton)	18100	18400	18700	300	2%
34	A523 London Road (south of B5358 Bonnis Hall Road)	28500	30900	31500	600	2%
35	A538 Hale Road (west of M56 J6)	22500	23100	24000	900	4%
36	A538 Wilmslow Road (east of M56 J6)	28600	36100	33300	-2800	-8%
37	A538 Altrincham Road (Holly Bank Farm)	26900	29800	26600	-3200	-11%
38	A538 Altrincham Road (west of Hawthorn Street)	26100	28600	26600	-2000	-7%
39	A538 Manchester Road (Wilmslow)	25800	30500	31100	600	2%
40	A538 Prestbury Road (east of A34)	18000	18700	14900	-3800	-20%
41	A538 Wilmslow Road (between Adlington Road and Blackhurst Brow)	11500	11900	10900	-1000	-8%
42	A560 Altrincham Road (between Hall Lane and A5103 Princess Parkway)	34500	40300	40900	600	1%
43	A560 Gatley Road (between Cambridge Road and Church Road)	18900	21000	18800	-2200	-10%
44	A560 Gatley Road (between A34 Kingsway and A5149 Wilmslow Road)	12300	11100	9700	-1400	-13%
45	A560 Stockport Road (east of B5465 Edgeley Road)	24100	26700	28100	1400	5%
46	A626 Hall Street (between Abbey Grove and Turcroft Lane)	24700	28000	26900	-1100	-4%
47	A626 Marple Road (between A627 Offerton Road and Bean Leach Road)	11100	15400	13400	-2000	-13%
48	A626 Stockport Road (east of A627 Dooley Lane)	24500	27300	27900	600	2%
49	A627 Dooley Lane (north of A626 Stockport Road)	20700	23700	23000	-700	-3%
50	A627 Offerton Road (between Torkington Road and A626 Marple Road)	13300	17700	18600	900	5%
51	A5102 Bramhall Lane South (between Grange Road and Broadoak Road)	27700	30300	30200	-100	0%
52	A5102 Bramhall Lane South (between Ladythorne Road and Ramsdale Road)	22400	27000	26000	-1000	-4%
53	A5102 Woodford Road (between A555 and Queensgate)	13700	18200	17000	-1200	-7%
54	A5102 Woodford Road (between A555 and Jenny Lane)	25100	29800	13200	-16600	-56%
55	A5102 Wilmslow Road (between Dean Row Road and Wilmslow Church Lane)	14300	17100	11800	-5300	-31%
56	A5102 Adlington Road (between Dean Row Road and Wilmslow Park North)	11100	11700	6900	-4800	-41%

Table 9.2 Cont. – A6MARR: Forecast Annual Average Daily Traffic (Base Year, 2017 Without A6MARR, 2017 With A6MARR plus Mitigation)

Site	Description	Forecast Annual Average Daily Traffic				
		2009 Base	2017 Without A6MARR	2017 With A6MARR	2017 Impact of A6MARR	2017 %Impact of A6MARR
57	A5143 Jackson's Lane (east of Bramhall Moor Lane)	16500	16800	14500	-2300	-14%
58	A5149 Wilmslow Road (between Broadway and Wilmslow Road)	18000	19500	18800	-700	-4%
59	A5149 Cheadle Road (between Bruntwood Lane and Orrishmere Road)	16200	16600	15400	-1200	-7%
60	A5149 Ack Lane West (between Yew Tree Park Road and Oak Drive)	9800	10700	9700	-1000	-9%
61	A5149 Chester Road (between Woodford Road and Oil Terminal Spur)	25900	29400	10200	-19200	-65%
62	A5149 Chester Road (east of Woodford Road)	21200	23300	23500	200	1%
63	A5149 Chester Road (between Clifford Road and A523)	16000	16000	13800	-2200	-14%
64	B5094 Stanley Road (between B5358 and A34)	3400	3300	3200	-100	-3%
65	B5094 Grove Lane (east of A34)	7900	10400	9200	-1200	-12%
66	B5094 Moss Lane (between Acre Lane and Ack Lane East)	5900	7800	6400	-1400	-18%
67	B5166 Styal Road (between Hollyedge Road and Lomond Road)	7100	9600	9000	-600	-6%
68	B5166 Styal Road (north of Ringway Road)	17000	22200	15600	-6600	-30%
69	B5166 Styal Road (south of Holly Lane)	16100	17900	15300	-2600	-15%
70	B5166 Styal Road (west of Cliff Road)	11600	14300	12700	-1600	-11%
71	B5358 Wilmslow Road (between Etchells Road and A34)	26100	26600	26100	-500	-2%
72	B5358 Wilmslow Road (north of Outwood Road)	11500	11400	10400	-1000	-9%
73	B5358 Wilmslow Road (between Station Road and Spath Lane)	13400	15800	18800	3000	19%
74	B5358 Handforth Road (north of Dean Row Road)	6800	7200	9200	2000	28%
75	B5358 Bonis Hall Lane (south of Mill Lane)	12700	14700	15200	500	3%
76	B5454 Edgeley Road (east of Bird Hall Lane)	19200	22100	20500	-1600	-7%
77	B5470 Macclesfield Road (east of Higher Lane)	9000	12500	10300	-2200	-18%
78	Bramhall - Manor Road (between Ladybrook Road and Carrwood Road)	14500	15100	13300	-1800	-12%
79	Cheadle Hulme - Adswold Road (between Ladybridge Road and Garner's Lane)	20500	22400	20900	-1500	-7%
80	Cheadle Hulme - Gillbent Road (between Grove Lane and Hulme Hall Road)	11700	12700	15000	2300	18%
81	Cheadle Hulme - Grove Lane (between B5094 Acre Lane and Dairy House Road)	5600	7200	6500	-700	-10%
82	Cheadle Hulme - Turves Road (between Highfield Road and A5149 Cheadle Road)	11700	11900	11400	-500	-4%
83	Davenport Green - Thornley Lane (west of Runger Lane)	11500	9800	11700	1900	19%
84	Hazel Grove - Bean Leach Road (between Bosden Fold Road and Shearwater Road)	14500	13100	12000	-1100	-8%
85	Hazel Grove - Bramhall Moor Lane (between A6 London Road and A5143 Jackson's Lane)	16700	19200	16800	-2400	-13%
86	Hazel Grove - Chester Road (between A6 London Road and A5143 Dean Lane)	7000	7700	8700	1000	13%
87	Hazel Grove - Dialstone Lane (between Cherry Tree Lane and Brooklyn Road)	19200	21500	20800	-700	-3%
88	Heald Green - Bolshaw Road (west of B5358 Wilmslow Road)	5600	6900	1600	-5300	-77%
89	Heald Green - Finney Lane (between B5166 Styal Road and Outwood Road)	24500	26500	14800	-11700	-44%
90	Heald Green - Finney Lane (between Queensyway and St Ann's Road South)	17100	18400	15500	-2900	-16%
91	High Lane - Windlehurst Road (between Andrew Lane and Torkington Lane)	7300	8100	9300	1200	15%
92	High Lane - Torkington Road (east of Threaphurst Lane)	1500	2500	2700	200	8%
93	High Lane - Threaphurst Lane (A6 Buxton Road to Torkington Road)	500	600	500	-100	-17%
94	Poynton - Clifford Road	4300	7100	7600	500	7%
95	Poynton - Park Lane (east of A523 London Road)	9000	8100	8300	200	2%
96	Poynton - Woodford Road (between A5143 Dean Lane and Meadway)	7600	8800	5200	-3600	-41%
97	Roundthorn - Southmoor Road (south of A560 Altrincham Road)	14200	13800	13800	0	0%
98	Wilmslow - Alderley Road (north of A34)	17200	19400	17800	-1600	-8%
99	Wilmslow - Dean Row Road (east of A34)	9000	9000	7700	-1300	-14%
100	Wilmslow - Dean Row Road (east of Manchester Road)	8800	8900	6900	-2000	-22%
101	Wilmslow - Manchester Road (north of Dean Row Road)	6700	8300	8500	200	2%
102	Wilmslow - Stanneylands Road	3300	2900	600	-2300	-79%
103	Woodford - Moor Lane (north of Jenny Lane)	2400	4400	4300	-100	-2%
104	Wythenshaw - Brownley Road (between A560 Altrincham Road and Hollyedge Road)	9500	8700	8400	-300	-3%
105	Wythenshaw - Hollyedge Road (between Covert Road and B5166 Styal Road)	6500	4700	4300	-400	-9%
106	Wythenshaw - Portway (between Cornishway and Oatlands Road)	6600	7900	9800	1900	24%
107	Wythenshaw - Ringway Road (between B5166 Styal Road and Shadowmoss Road)	24300	29800	4700	-25100	-84%
108	Wythenshaw - Simonsway (between Oatlands Road and Brownley Road)	14900	13200	12300	-900	-7%
109	Wythenshaw - Simonsway (between Styal Road and Shadowmoss Road)	14200	15300	15200	-100	-1%
110	Wythenshaw - Shadowmoss Road (between Cornishway and Ringway Road)	4100	5000	4600	-400	-8%

## Complementary and Mitigation Measures

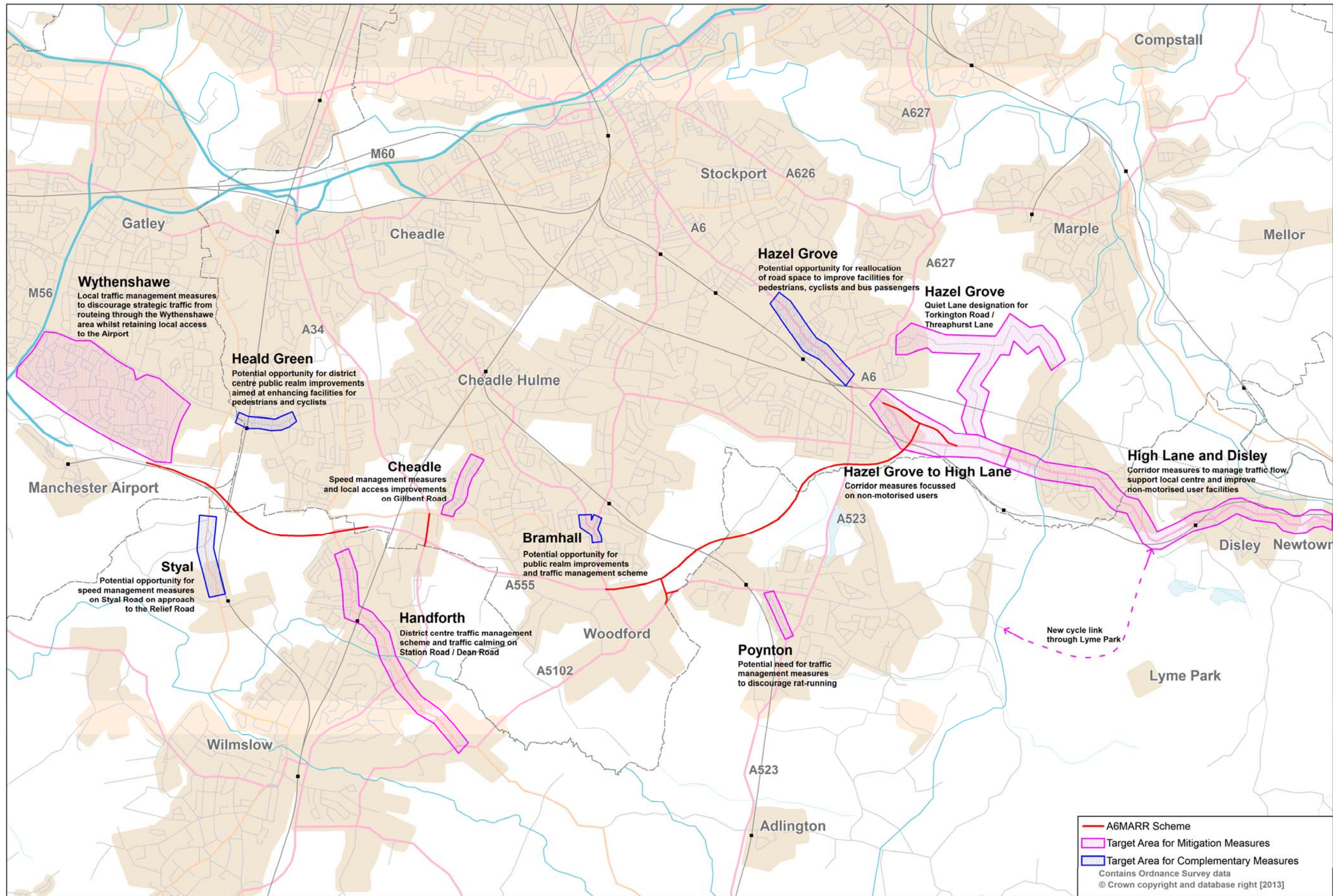
- 9.14 A package of measures, known as Complementary and Mitigation Measures (CMM), has been proposed to address the predicted change in traffic flow on the local highway network following completion of the A6MARR scheme. The measures aim to ameliorate the scheme's impact on local communities where there are predicted to be traffic increases, and seek opportunities to encourage walking, cycling and support to local centres where there are predicted to be reductions in traffic flow.
- 9.15 Further to consultation with highway officers at CEC, MCC and SMBC a number of routes and areas were identified as a priority for Complementary and Mitigation Measures as shown in **Figure 9.2** and presented at the Phase Two Consultation.
- 9.16 Funding within the A6MARR scheme budget has been allocated for the proposed CMM package. Following planning approval, the A6MARR Project Team will consult with CEC, MCC and SMBC officers regarding the implementation of mitigation measures within their respective authorities. Whilst it is anticipated that most mitigation measures will be implemented prior to the opening of the A6MARR scheme, the authority responsible for implementation of an individual measure may choose to monitor the level of impact on traffic patterns prior to deciding whether or not it is appropriate to implement the agreed mitigation measure.

### Mitigation Measures

#### *A6 through High Lane and Disley*

- 9.17 The traffic modelling predicts significant increases in traffic flow on the A6 through High Lane and Disley, both in terms of background traffic growth and the reassignment of longer distance traffic as a result of the introduction of the A6MARR. There is also the potential risk of increased traffic flows on Windlehurst Road.
- 9.18 The A6 Buxton Road performs an important role for the Greater Manchester City Region carrying a mix of general and freight traffic from the Peak District and beyond into Greater Manchester. The A6 is part of the national Primary Route Network (PRN) and provides a strategic link between Greater Manchester and key towns in north Derbyshire including Buxton, Matlock and Chapel-en-le-Frith. It also serves New Mills, Whaley Bridge and a number of smaller settlements including High Lane and Disley. The A6 is also a major access route for the Peak District National Park.
- 9.19 Through Disley and High Lane the A6 is fronted by a mixture of open fields, wooded areas, residential and commercial properties, and numerous side-roads providing access to residential areas and onward connections to Marple and Whaley Bridge. To the west of Disley village centre, attempts have been made to reduce the width of carriageway through the introduction of central hatching and cycle lanes as the road continues towards High Lane. Within High Lane itself, the wide carriageway accommodates numerous right-turn facilities, and occasional formalised on-street parking facilities. Elsewhere, double yellow line markings prevent on-street parking for the majority of the A6 through High Lane. A constant high level of traffic movement creates a potentially intimidating environment for vulnerable road users along the A6.
- 9.20 Footways are generally adequate along this corridor, although the volume of traffic and heavy goods vehicles using this route detracts from the high street environment within High Lane and Disley. Pedestrian crossing facilities are provided at the signalised junctions with Windlehurst Road and Buxton Old Road, along with occasional pedestrian refuge islands and Pelican crossings on Market Street in Disley and at two locations in High Lane.
- 9.21 The nature of the A6 through High Lane and Disley means that it is neither possible nor desirable to significantly increase network capacity along this corridor. For this reason during the preparation for Phase Two Consultation it was considered that the package of measures on the A6 corridor through High Lane and Disley should focus on improving non-motorised user facilities.

Figure 9.2 – A6MARR: Priority Areas for Complementary and Mitigation Areas



### *Torkington Road & Threaphurst Lane, Hazel Grove*

- 9.22 The traffic modelling has identified a potential risk that completion of the A6MARR scheme could lead to some inappropriate routing of local traffic between the A6 south-east of the new A6MARR junction and Offerton using 'country lanes' such as the unclassified Torkington Road and Threaphurst Lane.
- 9.23 In order to mitigate this potential risk it is recommended that both Torkington Road and Threaphurst Lane are designated as Quiet Lanes. Quiet Lanes are minor rural roads, typically C or unclassified routes, which have been designated by the local highway authority to pay special attention to the needs of walkers, cyclists, horse riders and other vulnerable road users, and to offer protection from speeding traffic. Cars are not banned from Quiet Lanes and the use of Quiet Lanes is shared. Measures such as lower speed limits and discrete road signs aim to encourage drivers to slow down and be considerate to more vulnerable users who can in turn use and enjoy country lanes in greater safety, with less threat from speeding traffic. The final form of mitigation would be subject to consultation with Stockport Metropolitan Borough Council.

### *Clifford Road, Poynton*

- 9.24 The traffic modelling predicts a potential slight risk of increased traffic levels on Clifford Road following completion of the A6MARR scheme.
- 9.25 Clifford Road has the potential to act as an alternative route for through traffic between the A5149 Chester Road and the A523 London Road South (and vice versa). For this reason and to control traffic speeds, Clifford Road has already been traffic-calmed with shallow vertical deflections.
- 9.26 It is recommended that prior to and following completion of the A6MARR scheme that traffic flows on Clifford Road are monitored to ascertain whether or not it attracts increased through traffic between the A5149 Chester Road and the A523 London Road South.
- 9.27 In the event that Clifford Road is shown to attract increased through traffic appropriate traffic management would be introduced to discourage 'rat-running' and ensure as far as practicable that Clifford Road retains its function as a residential local distributor route. The final form of traffic management would be subject to consultation with Cheshire East Council.
- 9.28 Traffic signage will play an important role in directing strategic traffic that wishes to use the A6MARR to use the most appropriate route through Poynton.

### *Gillbent Road, Cheadle*

- 9.29 The traffic modelling predicts a potential risk of increased traffic levels on Gillbent Road following completion of the A6MARR scheme, or more specifically the proposed junction improvements to the A34/ B5094 Stanley Road junction.
- 9.30 In order to mitigate this potential risk and discourage its use it is recommended that consideration is given to the introduction of speed management measures and/ or local access improvements on Gillbent Road. The final form of mitigation would be subject to consultation with Stockport Metropolitan Borough Council.

### *Handforth*

- 9.31 The traffic modelling predicts increased traffic flows along the A34 Handforth bypass following completion of the A6MARR scheme. The A34 is 2-lane dual carriageway and is a key north-south radial route linking Cheshire with Manchester.

- 9.32 Capacity issues along the A34 Handforth bypass are currently limiting the attractiveness of this route with some traffic from the south heading to/ from Manchester Airport predicted instead to route through Handforth town centre on the B5357 Wilmslow Road. It is intended that the A34 - A555 route should be used for longer-distance journeys, with the B5358 Wilmslow Road/ A6MARR junction reserved for use by more locally Handforth-based traffic.
- 9.33 In order to discourage inappropriate routeing through Handforth town centre, whilst retaining the proposed west-facing slip roads at the B5358 Wilmslow Road/ A6MARR junction, it is recommended that district centre traffic management and traffic calming along the B5358 Station Road/ Dean Road is introduced. The final form of traffic management would be subject to consultation with Cheshire East Council.

#### *Wythenshawe (south of Simonsway)*

- 9.34 The traffic modelling predicts that the changes to Shadowmoss Road/ Ringway Road junction which are necessary to facilitate the A6MARR scheme could increase the risk of inappropriate routeing of traffic through the Wythenshawe area south of Simonsway, traffic which without the A6MARR Scheme would use the Ringway Road/ B5166 Styal Road junction.
- 9.35 Simonsway is a local distributor road which provides an important east-west route within Wythenshawe both for vehicular traffic and pedestrians and cyclists. The route provides access to residential areas, Wythenshawe town centre, and the Atlas Business Park, as well as providing a strategic link to the motorway network via north-facing slip roads on to the M56 at Junction 4. Portway and Cornishway provide single carriageway access routes to residential properties, occasional retail units and other uses. Traffic is free-flowing throughout the day and both routes are lightly traffic calmed in the form of coloured carriageway surfacing and shallow speed cushions.
- 9.36 To manage this potential risk it is recommended that further local traffic management measures are introduced on residential routes to the south of Simonsways to discourage, as far as practicable, strategic traffic routeing through the Wythenshawe area, but at the same time retaining local accessibility to Manchester Airport for Wythenshawe residents. The final form of traffic management would be subject to consultation with Manchester City Council.
- 9.37 Traffic signage will play an important role in directing strategic traffic wishing to access Manchester Airport to use the most appropriate routes through the area, notably Simonsway, Styal Road and the western section of the A6MARR.

### Complementary Measures

#### *Interface of the A6MARR with the Existing Pedestrian/ Cycle Network*

- 9.38 The A6MARR scheme includes provision of a shared pedestrian and cycle route adjacent to the new road and existing length of the A555, providing a new orbital link for the strategic cycle/ pedestrian network. It is essential that this new orbital link is fully integrated with the existing local cycle and pedestrian network to maximise access to the new route and therefore maximise the benefits associated with the A6MARR scheme.
- 9.39 Further to consultation with landowners the **Table 9.3** sets out the proposed PRow upgrades to be promoted as being complementary to the A6MARR scheme having taken account of public benefits and the in-principle support from landowners in terms of delivery.



**Table 9.3 – Proposed Upgrades to PRoW**

<b>Footpath No.</b>	<b>Extents</b>	<b>Current Status</b>	<b>Proposed Status</b>
Poynton-with-Worth FP3/1 SE	A6MARR to London Road North	Footpath	Bridleway
Hazel Grove Bramhall 19HGB	From Woodford Road to A6MARR	Footpath	Bridleway
Hazel Grove Bramhall 17HGB	16HGB to Adelaide Road including the link to corner of Meadway.	Footpath	Bridleway
Cheadle and Gatley 16CG	From Moor Lane to Highfield Parkway	Footpath	Bridleway
Poynton-with-Worth FP80	From 42(a)CG to Marthall Way	Footpath	Bridleway
Cheadle and Gatley 33CG	From FP143 to Stanley Road	Footpath	Bridleway
Hazel Grove Bramhall 16HGB	From A6MARR to 17HGB	Footpath	Bridleway
Cheadle and Gatley 42(a)CG	From FP140/1 to 42CG	Footpath - Access Road	Bridleway
Cheadle and Gatley 42CG	From 42(a)CG to 38CG	Footpath-Access Road	Bridleway
Longsite Lane	Stanley Road to FP38CG	Private Road	Bridleway
Wilmslow FP119	From Clay Lane RB87 to CEBC/SMBC boundary and in to SMBC	Footpath	Bridleway
Cheadle and Gatley 38CG	From 42CG to Longsight Lane	Footpath	Bridleway
Poynton-with-Worth FP37/1 S	A6MARR to Woodford Road Lower Park Road	Footpath	Bridleway
Poynton-with-Worth FP31 N	A6MARR to Woodford Road	Footpath	Bridleway
Wilmslow FP143	From Tatton Road to 33CG	Footpath	Bridleway
Hazel Grove Bramhall 77HGB	From Sandown Road to 65HGB	Footpath	Bridleway
Hazel Grove Bramhall 65HGB	Hazel Grove Golf Course to A6	Footpath - Access Road	Bridleway

9.40 A full copy of the A6MARR Public Rights of Way report (September 2013) is contained in **Appendix G**.

### *A6 through Hazel Grove*

- 9.41 The traffic modelling predicts that completion of the A6MARR will significantly reduce traffic flows on the A6 north of the new A6MARR junction.
- 9.42 The A6 through Hazel Grove currently carries high volumes of traffic, including a large proportion of heavy goods vehicles and high frequency bus services. The pedestrian/ cycle environment along the A6 through Hazel Grove is currently poor, and is an accident 'hot-spot' for pedestrian road injury accidents. All of these factors, coupled with the impact of congestion on noise, severance, vibration, and poor air quality, are adversely affecting the vitality of the District Centre.
- 9.43 Existing traffic levels and the width of available carriageway within the District Centre create further problems in respect of on-street parking and servicing/ deliveries to the numerous retail and commercial properties that line the A6. Delivery vehicles frequently block one of the two available lanes for through traffic leading to delays not only during but also outside of peak periods. Parking restrictions prevent on-street parking through the District Centre, leading to a lack of parking overall for visitors to shops and properties.
- 9.44 Greater Manchester Combined Authority, Manchester City Council and Stockport Metropolitan Borough Council have made a bus quality partnership scheme (QPS) for the A6 between Manchester City Centre, Stockport and Hazel Grove. The A6 is a key bus corridor into Manchester city centre, operates with the most frequent single bus service in Greater Manchester (the 192) carrying almost 10 million passengers every year, and plays a critical role in supporting sustainable economic growth and accessibility in Greater Manchester. The QPS will ensure high standards of service for the passengers along this route and a commitment to the provision of quality infrastructure for bus operators. This includes bus lanes, upgraded bus stops and traffic management measures.
- 9.45 The predicted reduction in traffic through Hazel Grove presents the opportunity to reallocate road space in a more sustainable manner by, for example, the introduction of bus lanes where space permits, and/ or by reducing the number of lanes to a single lane in each direction with a shared third lane for right-turning provision and pedestrian refuges.

### *Bramhall*

- 9.46 The traffic modelling predicts a reduction in traffic flows through Bramhall following completion of the A6MARR scheme.
- 9.47 The Ack Lane East/ Bramhall Lane South junction is located at the heart of the vibrant Bramhall District Centre. The junction is a three-arm mini-roundabout with uncontrolled crossing facilities located on each arm of the roundabout. The Ack Lane East/ Moss Lane three-arm priority junction lies to the immediate west of the mini-roundabout. The junctions currently experience peak period congestion due to the high volume of traffic passing through the District Centre and the close proximity of the two junctions, as well as catering for high pedestrian movements. With high traffic flows, and uncontrolled pedestrian crossing provision at the mini-roundabout intersection of key routes, the District Centre lacks adequate pedestrian crossing facilities on key desire lines (although signalised pedestrian crossings exist to the immediate north of the mini-roundabout).
- 9.48 Completion of the A6MARR therefore represents a potential opportunity for an environmental and traffic scheme to be introduced in Bramhall that improves the pedestrian and traffic environment within the local district centre.

### *Finney Lane, Heald Green*

- 9.49 The traffic modelling predicts that Finney Lane will experience a significant reduction in traffic flow as a result of completion of the A6MARR scheme.
- 9.50 Heald Green is a thriving Local Centre with a wide variety of retail outlets, shops and services and is therefore a focus for pedestrian activity. Due to its location and close proximity to Manchester Airport and motorway system, Heald Green shopping area serves the needs of the local Heald Green community as well as regular commuters who travel to and from Manchester Airport and Cheadle Royal Business & Retail Park.
- 9.51 Notwithstanding recent public realm improvements, completion of the A6MARR and the associated reduction in airport traffic flows will present a potential opportunity for further district centre environmental improvements/ public realm aimed at enhancing facilities for pedestrians and cyclists.

### *Styal Road, Styal*

- 9.52 The traffic modelling predicts that the B5166 Styal Road will experience a reduction in traffic flow as a result of completion of the A6MARR scheme.
- 9.53 The B5166 Styal Road currently provides a popular route to Manchester Airport from Handforth, Wilmslow and further afield. Whilst it would be desirable in-principle to see this traffic using the A34, the scope and effectiveness of traffic calming along the length of the B5166 Styal Road would be limited, particularly for local residents.
- 9.54 Completion of the A6MARR does, however, present a potential opportunity for speed management measures to be introduced on the B5166 Styal Road on the approach to the new A6MARR junction.
- 9.55 Traffic signage will play an important role in directing strategic traffic wishing to access Manchester Airport to use the most appropriate routes through the area. For example, traffic from Macclesfield should be signed via Monks Heath and the Alderley Edge bypass to the A34 - currently the only signing for Manchester Airport from Macclesfield is via the B5358 Bonis Hall Lane.

### **Residual Impact of A6MARR with Proposed Mitigation**

- 9.56 Traffic modelling of the A6MARR scheme with the proposed mitigation measures in place has been used to predict changes in daily traffic flows on an average day in 2017 (the planned year of opening of the scheme). Plans have been produced to show traffic flows for 2009 at selected locations and the predicted traffic flows for the year 2017 without and with the A6MARR scheme (plus mitigation) in place. For each location the plan shown in **Figure 9.3** (and **Table 9.3**) highlights where the traffic flow is predicted to change to increase or decrease by more than a 5% daily variation with the A6MARR scheme (plus mitigation) in place.
- 9.57 In terms of changes it can be seen from **Figure 9.3** (and **Table 9.3**) that:
- significant traffic increases of between 25 to 30% continue to be expected on the A6 through High Lane and Disley;
  - mitigation in Wythenshawe (south of Simonsway) may lead to increased traffic flows on Simonsway; and
  - mitigation on Gillbent Road may lead to increased traffic on the A34 north of the A34/ B5094 Stanley Road junction.

Figure 9.3 – A6MARR: Forecast Annual Average Daily Traffic (Base Year, 2017 Without A6MARR, 2017 With A6MARR plus Mitigation)

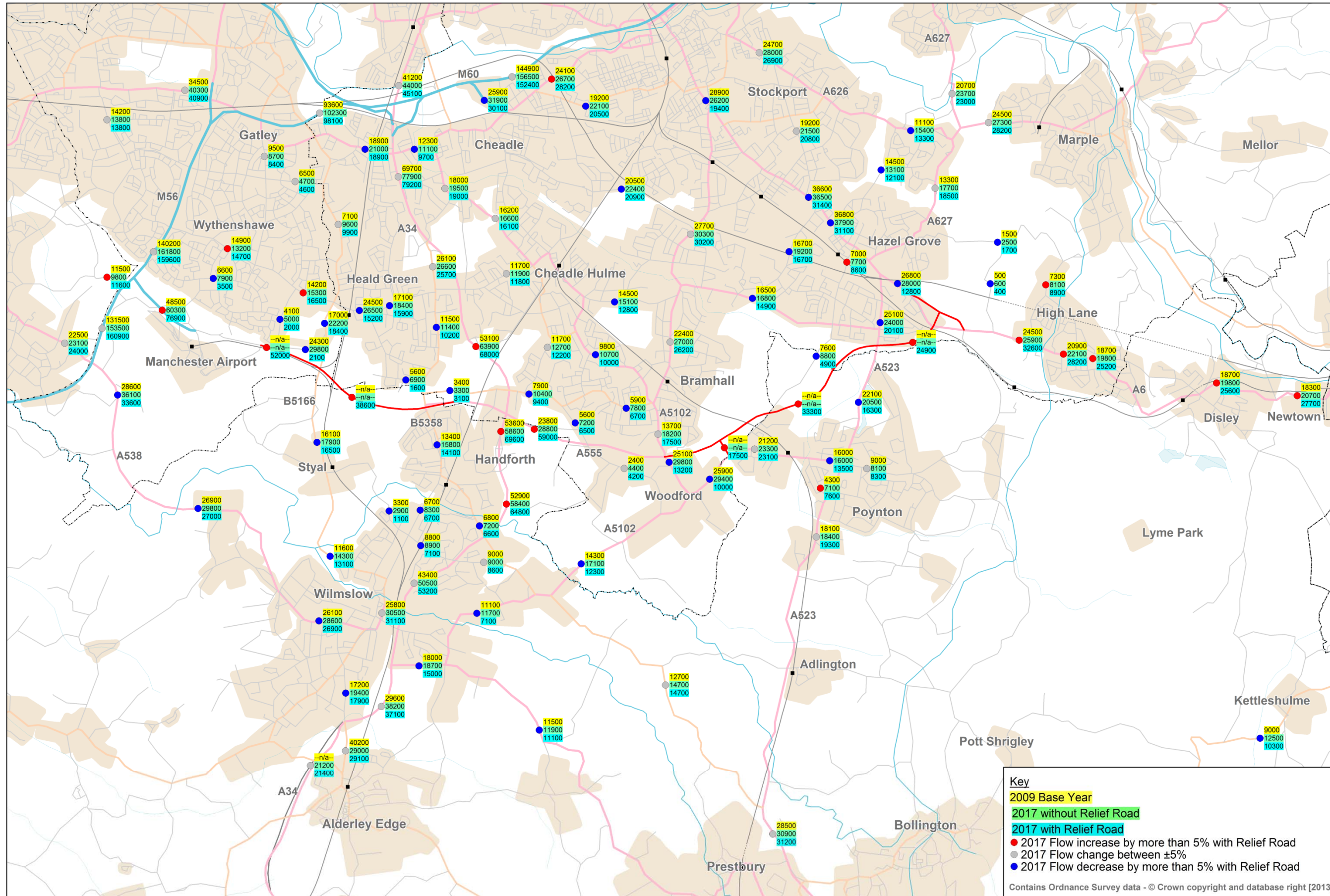


Table 9.3 – A6MARR: Forecast Annual Average Daily Traffic (Base Year, 2017 Without A6MARR, 2017 With A6MARR plus Mitigation)

Site	Description	Forecast Annual Average Daily Traffic				
		2009 Base	2017 Without A6MARR	2017 With A6MARR	2017 Impact of A6MARR	2017 %Impact of A6MARR
1	A6MARR (west of Styal Road)	--n/a--	--n/a--	52000	--n/a--	--n/a--
2	A6MARR (between Styal Road and Handforth)	--n/a--	--n/a--	38600	--n/a--	--n/a--
3	A555 (between A34 and A5102 Woodford Road)	23800	28800	59000	30200	105%
4	A6MARR (between Relief Road Oil Terminal Spur and A523 Macclesfield Road)	--n/a--	--n/a--	33300	--n/a--	--n/a--
5	A6MARR (between A523 Macclesfield Road and A6 Buxton Road)	--n/a--	--n/a--	24900	--n/a--	--n/a--
6	A6MARR Bramhall Oil Terminal Spur	--n/a--	--n/a--	17500	--n/a--	--n/a--
7	M56 Junctions 1 to 2 (Sharston Link)	93600	102300	98100	-4200	-4%
8	M56 Junctions 4 to 5	140200	161800	159600	-2200	-1%
9	M56 Junctions 5 to 6	131500	153500	160900	7400	5%
10	M56 Junction 5 Airport Spur	48500	60300	76900	16600	28%
11	M60 Junctions 1 to 2	144900	156500	152400	-4100	-3%
12	M60 Junction 2 Spur	25900	31900	30100	-1800	-6%
13	A6 London Road (north of A5102 Bramhall Lane)	28900	26200	19400	-6800	-26%
14	A6 London Road (between Dialstone Road and Bramhall Moor Lane)	36600	36500	31400	-5100	-14%
15	A6 London Road (between Bramhall Moor Lane and Commercial Road)	36800	37900	31100	-6800	-18%
16	A6 Buxton Road (east of A523 Macclesfield Road)	26800	28000	12800	-15200	-54%
17	A6 Buxton Road (between Threaphurst Lane and Windlehurst Road)	24500	25900	32600	6700	26%
18	A6 Buxton Road (between Windlehurst Road and Andrew Lane)	20900	22100	28200	6100	28%
19	A6 Buxton Road (between Andrew Lane and Jacksons Edge Road)	18700	19800	25200	5400	27%
20	A6 Buxton Road West (between Buxton Old Road and Redhouse Lane)	18700	19800	25600	5800	29%
21	A6 Buxton Road (between Greenshall Lane and A6015 Albion Road)	18300	20700	27700	7000	34%
22	A34 Kingsway (north of M60)	41200	44000	45100	1100	3%
23	A34 Kingsway (between A560 Gatley Road and Broadway)	69700	77900	79200	1300	2%
24	A34 (between Stanley Road and Eden Park Road)	53100	63900	68000	4100	6%
25	A34 (south of A555)	53600	58600	69600	11000	19%
26	A34 (between Coppice Way and Dean Row Road)	52900	58400	64800	6400	11%
27	A34 (between Dean Row Road and A538 Manchester Road)	43400	50500	53200	2700	5%
28	A34 (south of A538 Prestbury Road)	29600	38200	37100	-1100	-3%
29	A34 Alderley Edge Bypass (south-west of A535 Wilmslow Road)	--n/a--	21200	21400	200	1%
30	A535 Alderley Road (south of A34)	40200	29000	29100	100	0%
31	A523 Macclesfield Road (between A5143 Dean Lane and Haddon Road)	25100	24000	20100	-3900	-16%
32	A523 Macclesfield Road (south of A6MARR)	22100	20500	16300	-4200	-20%
33	A523 London Road (Adlington Park south of Poynton)	18100	18400	19300	900	5%
34	A523 London Road (south of B5358 Bonnis Hall Road)	28500	30900	31200	300	1%
35	A538 Hale Road (west of M56 J6)	22500	23100	24000	900	4%
36	A538 Wilmslow Road (east of M56 J6)	28600	36100	33600	-2500	-7%
37	A538 Altrincham Road (Holly Bank Farm)	26900	29800	27000	-2800	-9%
38	A538 Altrincham Road (west of Hawthorn Street)	26100	28600	26900	-1700	-6%
39	A538 Manchester Road (Wilmslow)	25800	30500	31100	600	2%
40	A538 Prestbury Road (east of A34)	18000	18700	15000	-3700	-20%
41	A538 Wilmslow Road (between Adlington Road and Blackhurst Brow)	11500	11900	11100	-800	-7%
42	A560 Altrincham Road (between Hall Lane and A5103 Princess Parkway)	34500	40300	40900	600	1%
43	A560 Gatley Road (between Cambridge Road and Church Road)	18900	21000	18900	-2100	-10%
44	A560 Gatley Road (between A34 Kingsway and A5149 Wilmslow Road)	12300	11100	9700	-1400	-13%
45	A560 Stockport Road (east of B5465 Edgeley Road)	24100	26700	28200	1500	6%
46	A626 Hall Street (between Abbey Grove and Turcroft Lane)	24700	28000	26900	-1100	-4%
47	A626 Marple Road (between A627 Offerton Road and Bean Leach Road)	11100	15400	13300	-2100	-14%
48	A626 Stockport Road (east of A627 Dooley Lane)	24500	27300	28200	900	3%
49	A627 Dooley Lane (north of A626 Stockport Road)	20700	23700	23000	-700	-3%
50	A627 Offerton Road (between Torkington Road and A626 Marple Road)	13300	17700	18500	800	5%
51	A5102 Bramhall Lane South (between Grange Road and Broadoak Road)	27700	30300	30200	-100	0%
52	A5102 Bramhall Lane South (between Ladythorne Road and Ramsdale Road)	22400	27000	26200	-800	-3%
53	A5102 Woodford Road (between A555 and Queensgate)	13700	18200	17500	-700	-4%
54	A5102 Woodford Road (between A555 and Jenny Lane)	25100	29800	13200	-16600	-56%
55	A5102 Wilmslow Road (between Dean Row Road and Wilmslow Church Lane)	14300	17100	12300	-4800	-28%
56	A5102 Adlington Road (between Dean Row Road and Wilmslow Park North)	11100	11700	7100	-4600	-39%

Table 9.3 Cont. – A6MARR: Forecast Annual Average Daily Traffic (Base Year, 2017 Without A6MARR, 2017 With A6MARR plus Mitigation)

Site	Description	Forecast Annual Average Daily Traffic				
		2009 Base	2017 Without A6MARR	2017 With A6MARR	2017 Impact of A6MARR	2017 %Impact of A6MARR
57	A5143 Jackson's Lane (east of Bramhall Moor Lane)	16500	16800	14900	-1900	-11%
58	A5149 Wilmslow Road (between Broadway and Wilmslow Road)	18000	19500	19000	-500	-3%
59	A5149 Cheadle Road (between Bruntwood Lane and Orrishmere Road)	16200	16600	16100	-500	-3%
60	A5149 Ack Lane West (between Yew Tree Park Road and Oak Drive)	9800	10700	10000	-700	-7%
61	A5149 Chester Road (between Woodford Road and Oil Terminal Spur)	25900	29400	10000	-19400	-66%
62	A5149 Chester Road (east of Woodford Road)	21200	23300	23100	-200	-1%
63	A5149 Chester Road (between Clifford Road and A523)	16000	16000	13500	-2500	-16%
64	B5094 Stanley Road (between B5358 and A34)	3400	3300	3100	-200	-6%
65	B5094 Grove Lane (east of A34)	7900	10400	9400	-1000	-10%
66	B5094 Moss Lane (between Acre Lane and Ack Lane East)	5900	7800	6700	-1100	-14%
67	B5166 Styal Road (between Hollyedge Road and Lomond Road)	7100	9600	9900	300	3%
68	B5166 Styal Road (north of Ringway Road)	17000	22200	18400	-3800	-17%
69	B5166 Styal Road (south of Holly Lane)	16100	17900	16500	-1400	-8%
70	B5166 Styal Road (west of Cliff Road)	11600	14300	13100	-1200	-8%
71	B5358 Wilmslow Road (between Etchells Road and A34)	26100	26600	25700	-900	-3%
72	B5358 Wilmslow Road (north of Outwood Road)	11500	11400	10200	-1200	-11%
73	B5358 Wilmslow Road (between Station Road and Spath Lane)	13400	15800	14100	-1700	-11%
74	B5358 Handforth Road (north of Dean Row Road)	6800	7200	6600	-600	-8%
75	B5358 Bonis Hall Lane (south of Mill Lane)	12700	14700	14700	0	0%
76	B5454 Edgeley Road (east of Bird Hall Lane)	19200	22100	20500	-1600	-7%
77	B5470 Macclesfield Road (east of Higher Lane)	9000	12500	10300	-2200	-18%
78	Bramhall - Manor Road (between Ladybrook Road and Carrwood Road)	14500	15100	12800	-2300	-15%
79	Cheadle Hulme - Adswold Road (between Ladybridge Road and Garner's Lane)	20500	22400	20900	-1500	-7%
80	Cheadle Hulme - Gillbent Road (between Grove Lane and Hulme Hall Road)	11700	12700	12200	-500	-4%
81	Cheadle Hulme - Grove Lane (between B5094 Acre Lane and Dairy House Road)	5600	7200	6500	-700	-10%
82	Cheadle Hulme - Turves Road (between Highfield Road and A5149 Cheadle Road)	11700	11900	11800	-100	-1%
83	Davenport Green - Thornley Lane (west of Runger Lane)	11500	9800	11600	1800	18%
84	Hazel Grove - Bean Leach Road (between Bosden Fold Road and Shearwater Road)	14500	13100	12100	-1000	-8%
85	Hazel Grove - Bramhall Moor Lane (between A6 London Road and A5143 Jackson's Lane)	16700	19200	16700	-2500	-13%
86	Hazel Grove - Chester Road (between A6 London Road and A5143 Dean Lane)	7000	7700	8600	900	12%
87	Hazel Grove - Dialstone Lane (between Cherry Tree Lane and Brooklyn Road)	19200	21500	20800	-700	-3%
88	Heald Green - Bolshaw Road (west of B5358 Wilmslow Road)	5600	6900	1600	-5300	-77%
89	Heald Green - Finney Lane (between B5166 Styal Road and Outwood Road)	24500	26500	15200	-11300	-43%
90	Heald Green - Finney Lane (between Queensyway and St Ann's Road South)	17100	18400	15900	-2500	-14%
91	High Lane - Windlehurst Road (between Andrew Lane and Torkington Lane)	7300	8100	8900	800	10%
92	High Lane - Torkington Road (east of Threaphurst Lane)	1500	2500	1700	-800	-32%
93	High Lane - Threaphurst Lane (A6 Buxton Road to Torkington Road)	500	600	400	-200	-33%
94	Poynton - Clifford Road	4300	7100	7600	500	7%
95	Poynton - Park Lane (east of A523 London Road)	9000	8100	8300	200	2%
96	Poynton - Woodford Road (between A5143 Dean Lane and Meadway)	7600	8800	4900	-3900	-44%
97	Roundthorn - Southmoor Road (south of A560 Altrincham Road)	14200	13800	13800	0	0%
98	Wilmslow - Alderley Road (north of A34)	17200	19400	17900	-1500	-8%
99	Wilmslow - Dean Row Road (east of A34)	9000	9000	8600	-400	-4%
100	Wilmslow - Dean Row Road (east of Manchester Road)	8800	8900	7100	-1800	-20%
101	Wilmslow - Manchester Road (north of Dean Row Road)	6700	8300	6700	-1600	-19%
102	Wilmslow - Stanneylands Road	3300	2900	1100	-1800	-62%
103	Woodford - Moor Lane (north of Jenny Lane)	2400	4400	4200	-200	-5%
104	Wythenshaw - Brownley Road (between A560 Altrincham Road and Hollyedge Road)	9500	8700	8400	-300	-3%
105	Wythenshaw - Hollyedge Road (between Covert Road and B5166 Styal Road)	6500	4700	4600	-100	-2%
106	Wythenshaw - Portway (between Cornishway and Oatlands Road)	6600	7900	3500	-4400	-56%
107	Wythenshaw - Ringway Road (between B5166 Styal Road and Shadowmoss Road)	24300	29800	2100	-27700	-93%
108	Wythenshaw - Simonsway (between Oatlands Road and Brownley Road)	14900	13200	14700	1500	11%
109	Wythenshaw - Simonsway (between Styal Road and Shadowmoss Road)	14200	15300	16500	1200	8%
110	Wythenshaw - Shadowmoss Road (between Cornishway and Ringway Road)	4100	5000	2000	-3000	-60%

- 9.58 In order to better understand the implications of changes in traffic on the operation of the local highway network, further analysis has been carried out with the strategic A6MARR SATURN highway model, to identify any residual junction ‘hot-spots’ following completion of the A6MARR scheme, as well as junctions expected to receive congestion relief. **Figures 9.4 and 9.5** present the location of junctions experiencing an overall change in traffic flow of  $\pm 5\%$  and a change in the average junction delay of  $\pm 15$  seconds as a result of the completion of the A6MARR scheme in 2017 for the morning and evening peak hours respectively.
- 9.59 **Table 9.4** presents the local junctions that are predicted to experience some congestion relief following completion of the A6MARR scheme in either the morning and/ or evening peak hour.

**Table 9.4 – Local Junctions with Predicted Reduced Traffic Flows and Average Junction Delay Following Completion of the A6MARR plus Mitigation**

Junction	2017	
	AMP	PMP
A6/ A523 Macclesfield Road (‘Rising Sun junction’) signalised junction, Hazel Grove	√	√
A6/ Mill Street (Sainsbury’s egress junction) signalised junction, Hazel Grove		√
A6/ Dialstone Lane signalised junction, Hazel Grove	√	√
A523 London Road/ A5149 Chester Road (Poynton Cross-roads)		√
A538 Water Lane/ B5086 Alderley Road signalised junction, Wilmslow		√
A626 Marple Road/ Lisburne Avenue signalised junction, Offerton	√	
A5143 Jackson’s Lane/ Bramhall Moor Lane gyratory	√	
B5166 Styal Road/ Ringway Road signalised junction, Moss Nook	√	√
B5166 Styal Road/ Altrincham Road priority junction, Styal	√	
B5358 Station Road/ Manchester Road signalised junction, Handforth		√
B5358 Wilmslow Road/ Outwood Road priority junction, Heald Green		√
B5358 Wilmslow Road/ Etchells Road/ Finney Lane signalised junctions, Heald Green	√	√
B5465 Edgeley Road/ Bird Hall Lane roundabout junction, Cheadle Heath		√
Bramhall Moor Lane/ Newby Road roundabout junction, Hazel Grove	√	
Finney Lane/ St Ann’s Road North & South cross-road junctions, Heald Green	√	
Finney Lane/ Outwood Road priority junction, Heald Green	√	√

Figure 9.4 – 2017 Morning Peak: Predicted Change in Junction Flow/ Delay Following Completion of A6MARR (plus Mitigation)

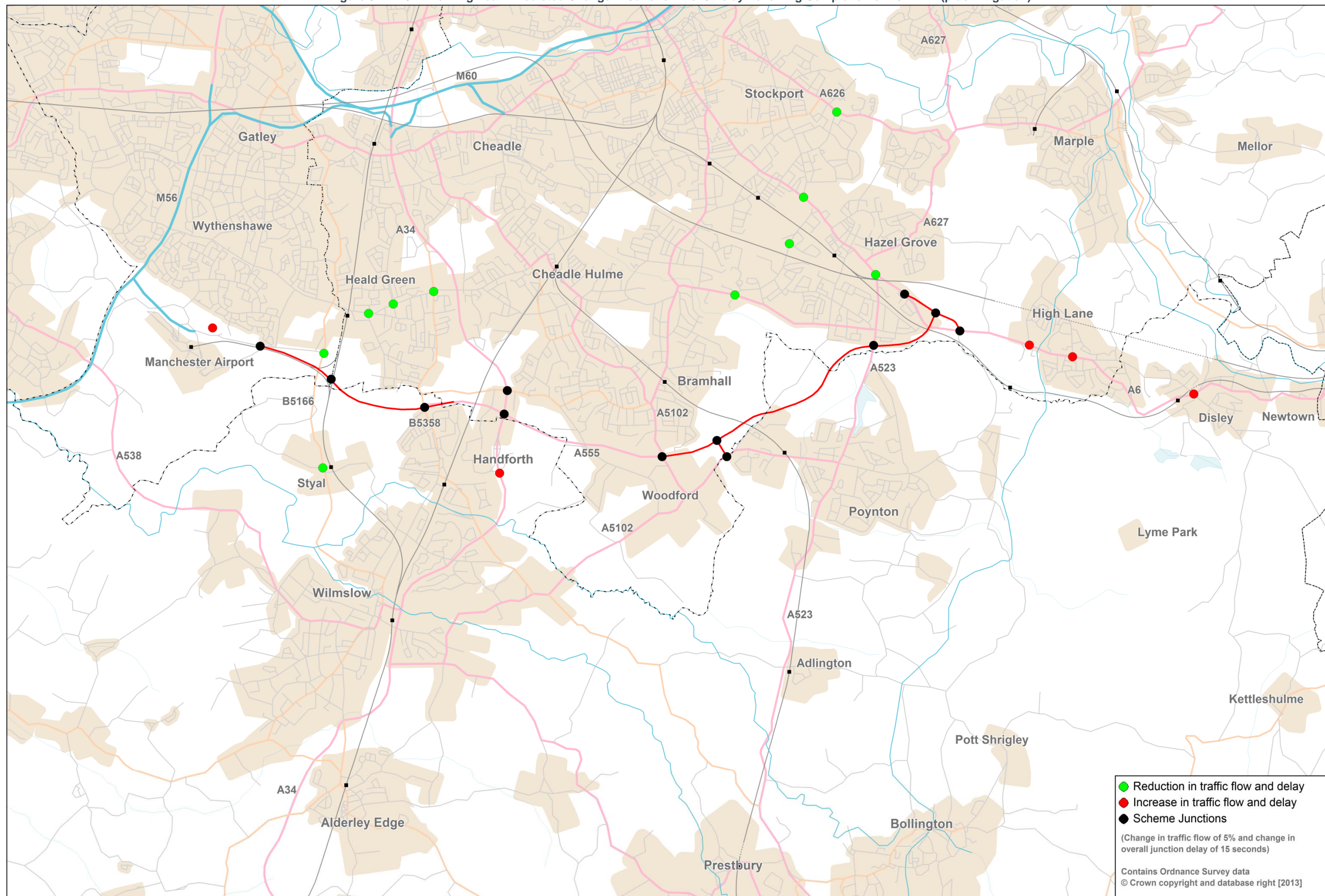
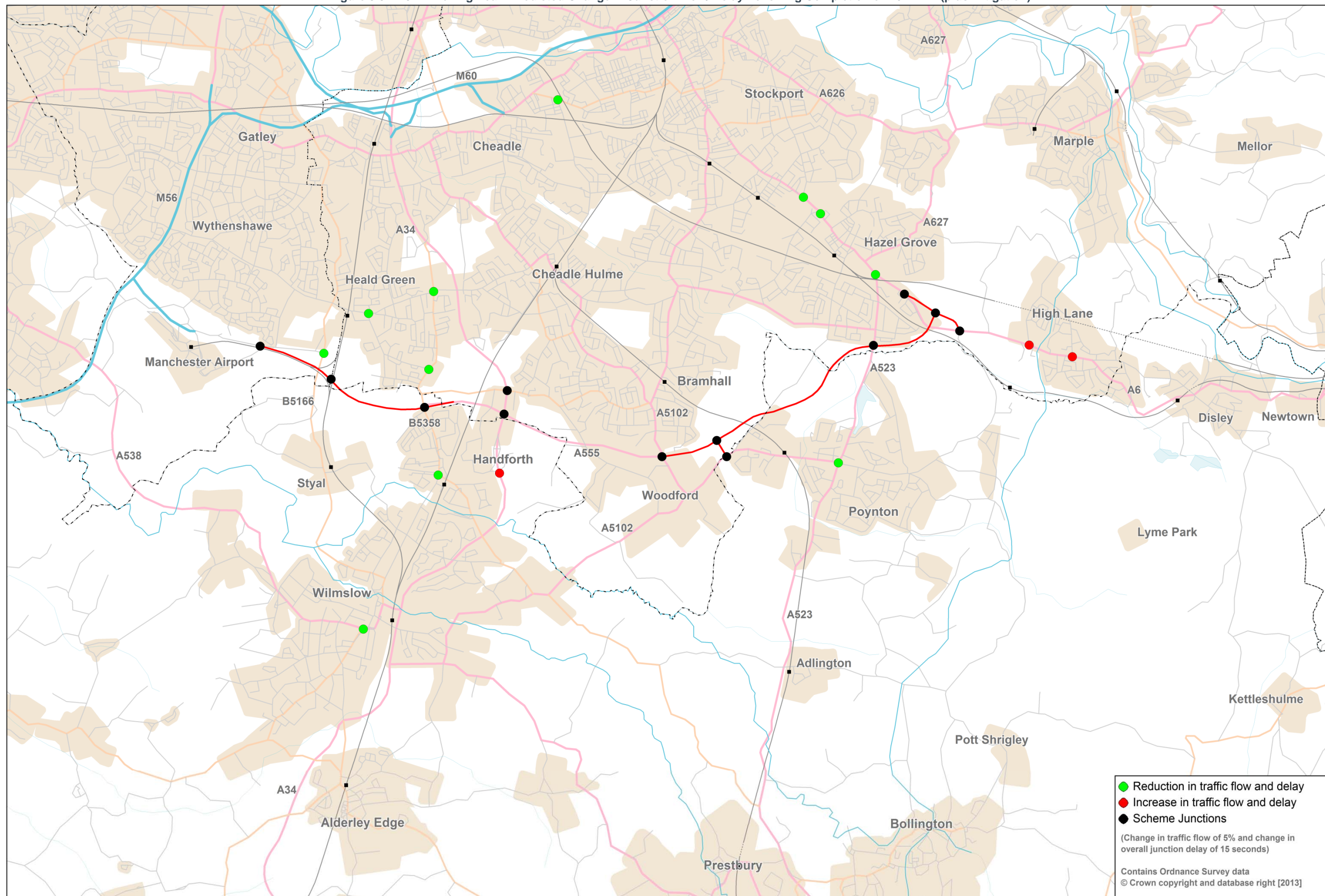




Figure 9.5 – 2017 Evening Peak: Predicted Change in Junction Flow/ Delay Following Completion of A6MARR (plus Mitigation)



9.60 In contrast, **Table 9.5** presents the residual local junction ‘hot-spots’ warranting further consideration as a result of the completion of the A6MARR scheme in either the morning and/ or evening peak hour.

**Table 9.5 – Local Junctions with Predicted Increased Traffic Flows and Average Junction Delay Following Completion of the A6MARR plus Mitigation**

Junction	2017	
	AMP	PMP
A6/ Windlehurst Road signalised junction, High Lane	√	√
A6/ Andrew Lane priority junction, High Lane	√	√
A6/ Buxton Old Road/ Jacksons Egde Road (‘Fountain Square’)	√	
A34 Handforth Bypass/ Coppice Way roundabout, Handforth	√	√

9.61 On the basis of this evidence, residual issues associated with A6MARR scheme are focussed on the A6 corridor through High Lane and Disley.

9.62 Whilst Simonsway through Wythenshawe is predicted to experience some increase in traffic flow with the A6MARR plus mitigation in place this is not matched by any noticeable increase in junction delay. It is considered therefore that given the current role of Simonsway as a local distributor road, in providing access to Wythenshawe town centre and the Atlas Business Park, such traffic flow increases would not materially alter the prevailing character of the road.

9.63 The one remaining junction where the analysis suggests a potential residual impact is on the A34 Handforth Bypass at the Coppice Way roundabout. The A34 Handforth Bypass/ Coppice Way roundabout provides access to the Handforth Dean retail park. As described in **Chapter 7** of this report, CEC is currently considering the potential for up to 2,300 new residential units (1,800 dwellings in the plan period) along with circa 5 hectares of employment development, and ancillary facilities and services at Handforth East for potential inclusion in a draft Local Plan Core Strategy. Highway access is a key constraint for the future development of the site. Detailed assessments regarding the operation of the A34 Handforth Bypass/ Coppice Way roundabout will form a key part of the future proposals at Handforth East.

9.64 The nature of the A6 through High Lane and Disley means that it is neither possible nor desirable to significantly increase network capacity along this corridor. The A6MARR Project Team has been sensitive to the concerns raised by the public and stakeholders alike in relation to the predicted increases in traffic through High Lane and Disley, both as a result of background traffic growth and the reassignment of longer distance traffic movements following completion of the A6MARR scheme, such that:

- a separate study is already underway to consider traffic growth and demands in the wider A6 corridor, irrespective of the A6MARR scheme coming forward. Ultimately, a multi-modal transport strategy is required to manage/ mitigate the predicted traffic growth and associated demands on the public transport networks in the corridor over the next twenty years, with an emphasis on achieving modal shift towards more sustainable modes. The A6 Corridor Group consists of representatives from CEC, DCC, High Peak Borough Council, Peak District National Park Authority, SMBC, and TfGM; and
- following the Phase Two Consultation the promoting Authorities have resolved to implement a package of enhanced mitigation measures on the A6 tailored to limiting, as far as practicable, the impacts of the A6MARR scheme through a combination of; discrete local junction improvements, environmental enhancement measures, and speed management measures.

- 9.65 These enhanced mitigation measures seek a balanced approach to managing the predicted traffic on the A6 through High Lane and Disley by:
- better managing traffic flows for local residents at the A6 Buxton Road/ Windlehurst Road junction through a local junction improvement scheme;
  - enhancing the local district centre environment in Disley village through the introduction of shared-space type interventions; and
  - limiting the attractiveness of the A6 to longer distance traffic which would otherwise switch from other cross-county routes with the A6MARR in place. This will be achieved through a combination of gateway treatments and reduced speed limits.
- 9.66 Indeed, these enhanced measures build upon the package of mitigation measures promoted as part of the Phase Two consultation which focussed on improvements to non-motorised user facilities, including:
- cycle lanes on sections of the A6 between Hazel Grove and New Mills Newtown where practicable;
  - a new pedestrian refuge on the A6 Buxton Road at Wellington Road;
  - a new Puffin crossing on the A6 Buxton Road outside the Church/ War memorial in High Lane;
  - new uncontrolled pedestrian crossings with refuge islands on Windlehurst Road;
  - a new pedestrian refuge on the A6 Buxton Road West outside Lyme Park to link bus stops and the park entrance; and
  - a new cycle link between Disley and High Lane/ Poynton through Lyme Park.
- 9.67 Traffic modelling of the A6MARR scheme previously predicted an increase in traffic of up to 30% on the A6 through High Lane and Disley. The introduction of enhanced mitigation measures markedly reduces this increased traffic flow to between 11 to 16%, as shown in **Figures 9.6 and 9.7**.
- 9.68 Some growth on A6 through High Lane and Disley should be expected when one considers the following:
- Without the A6MARR in place traffic growth in the A6 corridor between the M60 motorway and Disley is heavily constrained, compared to other routes through Stockport, most notably through Hazel Grove and Stockport Town Centre; and
  - With the A6MARR in place, the A6 through Hazel Grove and Stockport Town Centre is predicted to experience reduced traffic levels (below 2009 base year levels). As a result journey times over this section of A6 will markedly improve.
- 9.69 Therefore, whilst there may be some junction delay at particular locations on the A6, such as the Fountain Square junction in Disley or Windlehurst Road junction in High Lane, these delays are more than offset by reduced junction delays elsewhere along the A6.
- 9.70 The latest traffic modelling predicts that there is a potential risk that completion of the A6MARR along with enhanced mitigation measures on the A6 through High Lane and Disley could lead to a material increase in traffic on the A627 Torkington Road/ Offerton Road, Hazel Grove. It is recommended, therefore, that traffic flows on the A627 Torkington Road/ Offerton Road are monitored prior to and following completion of the A6MARR scheme. In the event that the A627 Torkington Road/ Offerton Road is shown to attract a material increase in traffic as a consequence of the scheme appropriate traffic management would be introduced to mitigate its impact. The final form of traffic management would be subject to consultation with Stockport Metropolitan Borough Council.

- 9.71 It should be noted that the 'removal' of some longer distance traffic from the A6 through High Lane and Disley as a result of the proposed enhanced mitigation measures, is predicted to have a 'knock-on' effect in reducing traffic flows on the A6MARR scheme itself. For robustness, these reduced traffic flows have not been re-assessed as part of the A6MARR scheme junction operational assessments.

Figure 9.6 – A6MARR: Forecast Annual Average Daily Traffic (Base Year, 2017 Without A6MARR, 2017 With A6MARR plus Enhanced Mitigation)

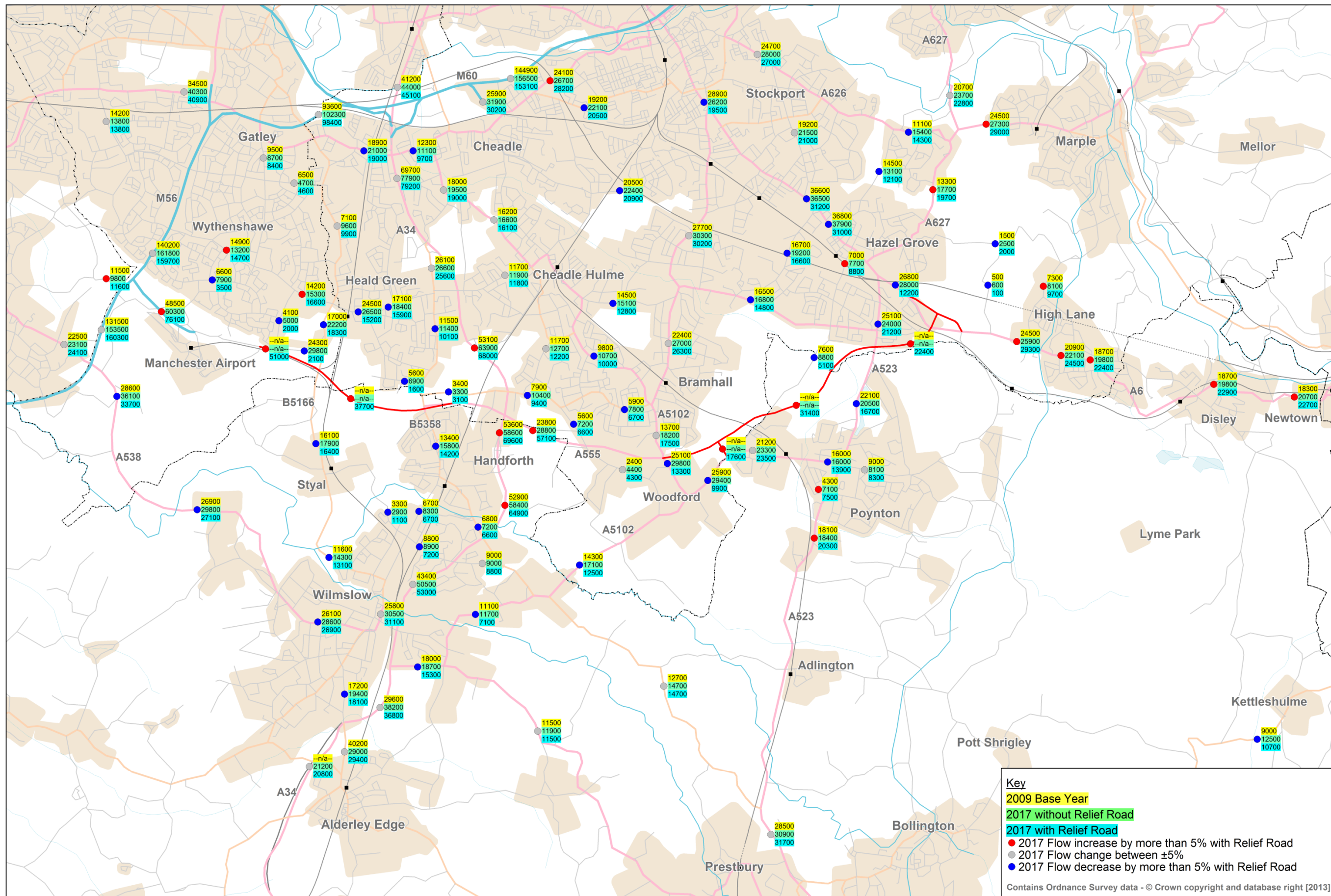
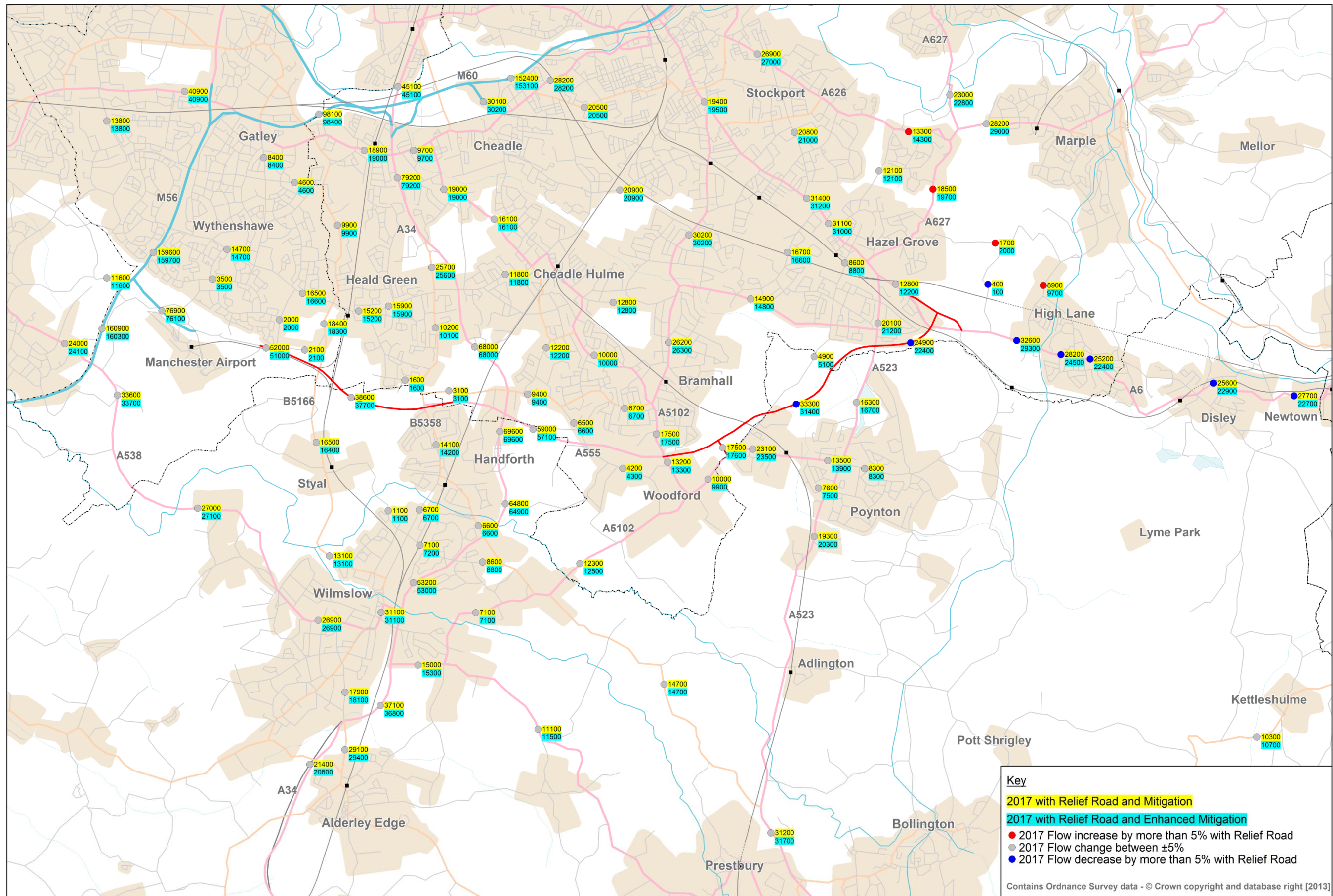


Figure 9.7 – A6MARR: Forecast Annual Average Daily Traffic (2017 With A6MARR plus Mitigation, 2017 With A6MARR plus Enhanced Mitigation)



## Bus Service Patterns

- 9.72 The A6MARR will open up the prospect of amended or new bus services along the corridor and provision for an improved direct route between Manchester Airport and the A6 corridor resulting in substantially reduced journey times and improved accessibility by bus.
- 9.73 Potential new bus services, supported by passenger and employment growth at Manchester Airport, could include the following:
- Stockport town centre to Manchester Airport (via Hazel Grove and Bramhall), for example, through changes to the existing service patterns of the 199 bus service or a new service with interchange facilities at the proposed circa 433 space bus-based park-and-ride site at A6 Rising Sun, Hazel Grove which is scheduled to open in 2014; and
  - Macclesfield to Manchester Airport.
- 9.74 A small number of existing bus services will be affected by the A6MARR scheme in terms of routeing patterns. The tie-in of the A6MARR and Ringway Road Highway Improvement Works (RRHIW) currently being implemented by TfGM will sever Ringway Road to the immediate west of the existing junction with Shadowmoss Road.
- 9.75 Services which previously used Shadowmoss Road to access Ringway Road West have already been diverted to alternative routes: namely
- 19 (Altrincham – Sale – Wythenshawe – Manchester Airport) has been re-routed to Bailey Lane to access Manchester Airport;
  - 369 (Stockport – Cheadle Hulme – Heald Green – Wythenshawe – Manchester Airport) has been re-routed to Bailey Lane to access Manchester Airport;
  - X69 (Stockport – Cheadle Hulme – Heald Green – Manchester Airport) has been re-routed to the B5166 Styal Road and Ringway Road.
- 9.76 It is understood that routes via Shadowmoss Road would be reinstated following completion of the RRHIW in the absence of the A6MARR scheme.
- 9.77 Consequently, Ringway Road is now used by three bus routes via the B5166 Styal Road, namely:
- 44 (Manchester – Fallowfield – East Didsbury – Gatley – Manchester Airport);
  - X69 (Stockport – Cheadle Hulme – Heald Green – Manchester Airport); and
  - 200 (Wilmslow – Styal – Manchester Airport).
- 9.78 In the future, it is anticipated that both the 44 and 200 services will use the A6MARR from the B5166 Styal Road to access Ringway Road West and Manchester Airport bus station.
- 9.79 The X69 route provides early morning services at 30 minute intervals from Stockport to Manchester Airport from Monday to Sunday, and a late night return service at 23:40. During the rest of the day, the 369 service operates the same route between Stockport and Heald Green but then serves Wythenshawe en-route to Manchester Airport.
- 9.80 It is anticipated that following implementation of the A6MARR and severance of the existing Ringway Road route, the X69 will either take the same route through Wythenshawe as the 369 via Bailey Lane, or route via the new section of the A6MARR from the B5166 Styal Road. Consideration of future service routeing will also take account of commercial opportunities associated with future development and employment at Airport City.
- 9.81 Discussions are ongoing with TfGM to minimise disruption to existing bus services and maintain accessibility to Manchester Airport, Wythenshawe, Stockport, Manchester and wider areas for residents of Ringway Road and the southern section of Shadowmoss Road.

- 9.82 On the basis of the anticipated service route changes discussed above, walking distances for residents of Ringway Road to bus stops on the B5188 Styal Road north would be up to 850 metres, over a kilometre to stops on Cornishway, and further to access stops on the B5166 Styal Road south for services to Wilmslow.
- 9.83 Ringway Road residents are currently served by stops close to the junction with Shadowmoss Road and outside the Tatton Arms Public House towards the junction with the B5166 Styal Road. Whilst residents will benefit from the future provision of a new Metrolink stop on Shadowmoss Road and will also be able to make use of the existing Local Link service for journeys to Manchester Airport and into Wythenshawe centre, the A6MARR design team are in discussions with TfGM regarding the potential provision of bus stops on the new road (with an associated pedestrian link through to Ringway Road) or the provision of a bus-only link between Ringway Road and the A6MARR to enable services to continue to use Ringway Road from the B5166 Styal Road.

## Road Safety

- 9.84 Predictions of future accident numbers have been undertaken using modelled traffic flow data from the A6MARR traffic model. Accident rates have been applied to modelled vehicle kilometres with and without the A6MARR scheme in place to predict the overall number and severity of accidents for the modelled Area of Influence. Where observed accident rates are available from TfGM monitoring data then these rates have been applied to the relevant modelled traffic movements. Where observed rates are not available then default DMRB accident rates have been applied.
- 9.85 **Table 9.1** shows that total travel distance (kilometres per hour) is forecast to increase following implementation of the A6MARR scheme. For example, in the 2017 opening year assessment, the total travel distance is predicted to increase from 1,663,577 to 1,681,116 km/hr in the morning peak hour, and from 1,651,878 to 1,668,700 km/hr in the evening peak hour. **Table 9.1** also shows that the average network speed is forecast to increase by approximately 1kph in both the morning and evening peak hours, with an increase in traffic levels using higher speed routes following implementation of the A6MARR scheme.
- 9.86 Due to the reduction in traffic flow on routes with high observed accident rates such as the A6 through Hazel Grove and Stockport, A560 through Cheadle, Finney Lane through Heald Green, and the B5094 Stanley Road/ Acre Lane/ Moss Lane, there is forecast to be an overall reduction in accident numbers following implementation of the A6MARR scheme, as shown in **Table 9.4**.
- 9.87 However, as a consequence of the application of default accident rates across large areas of the modelled Area of Influence, coupled with the forecast increase in total travel distance, the predicted reduction in accident numbers is marginal. Furthermore, with the overall increase in average network speed following implementation of the A6MARR scheme, the overall reduction in accident numbers is not replicated by a reduction in the number of KSI casualties.

**Table 9.4– Predicted Impact of A6MARR on Accidents in Opening Year (2017)**

	Without A6MARR	With A6MARR	Impact of A6MARR
Number of Personal Injury Accidents	2,623	2,602	-21
Casualties Fatal	27	27	0
Serious	298	299	+1
Slight	3,402	3,374	-28



# 10. Managing Impacts of Construction

## Code of Construction Practice

- 10.1 Construction of the A6MARR scheme is programmed to take place from late 2014 to mid 2017. A Code of Construction Practice (the Code) has been developed to protect the interests of local residents, businesses and the general public in the immediate vicinity of the construction works. The Code will seek to minimise impacts, such as noise, vibration and traffic, during the period of construction. The Code is submitted as part of the Planning Application for the A6MARR scheme. It will be the responsibility of the appointed Contractor to comply with the Code.
- 10.2 The Code will include:
- **Contractor Parking:** The Contractor is to agree any areas of parking for their employees that fall outside the boundary of the site compound with the relevant local authority prior to the commencement of the works. The Contractor shall ensure that any disruption caused to local residents is kept to a minimum;
  - **Temporary Signing:** The use of temporary signing to restrict vehicle types/ sizes and sign agreed construction traffic routes. The requirement to access the site via these routes will be communicated to suppliers of the Contractor;
  - **Traffic Sensitive Routes:** Certain roads are 'traffic sensitive' routes and as such works affecting the carriageway are restricted to between 9.30am and 3.30pm on weekdays unless otherwise agreed with the relevant councils' traffic managers and local Police;
  - **Noise Limits for Work Site:** Agreements will be in place with local authorities on noise limits for work sites and other relevant issues before the works are due to commence on site. Measures to reduce noise during construction include:
    - Site compounds to be surrounded by fencing or other barriers, where appropriate
    - Use of electrical items of plant instead of diesel or petrol plant in especially sensitive locations
    - Exhaust silencing and plant muffling equipment to be maintained in good working order
  - **Construction Working Hours:** The hours of working for the construction works are likely to be limited to between 8.00am and 6.30pm Monday to Friday and between 8.00am and 1.00pm on a Saturday unless the Contractor proposes additional or alternative working hours for construction reasons or the contractor is required to undertake certain works outside these hours. It is anticipated that some works on the rail crossings will be undertaken at night times and weekends. In instances where the Contractor proposes a change to the working hours, prior approval will be sought;
  - **Vibration:** The Contractor will ensure that all reasonable measures are taken to protect local residents from nuisance and physical damage that may be caused by vibration;
  - **Dust:** The Contractor will take all necessary measures to avoid creating a dust nuisance; and
  - **Complaints Procedure:** A complaints procedure will be in place whereby members of the public can, if necessary, make contact by telephone direct with a "hot line" facility. Details of the named contacts to whom all written complaints, including emails, should be addressed will be available.

## Considerate Constructor Scheme

- 10.3 In addition to the Code, the contractor will adopt the recommendations of the Considerate Constructor Scheme which aims to ensure good construction practice on the part of the contractor.

## Site Access Routes

- 10.4 Allowable Site Access routes are illustrated in **Figure 10.1**. Specific areas to note are:
- Access is required along Woodford Road for bridge construction and side road construction traffic for the structures at the WCML railway structure and the Woodford Road diversion and structure; and
  - Access is required along the A523 Macclesfield Road to the South of Hazel Grove to allow access along the full length of the A6MARR scheme.

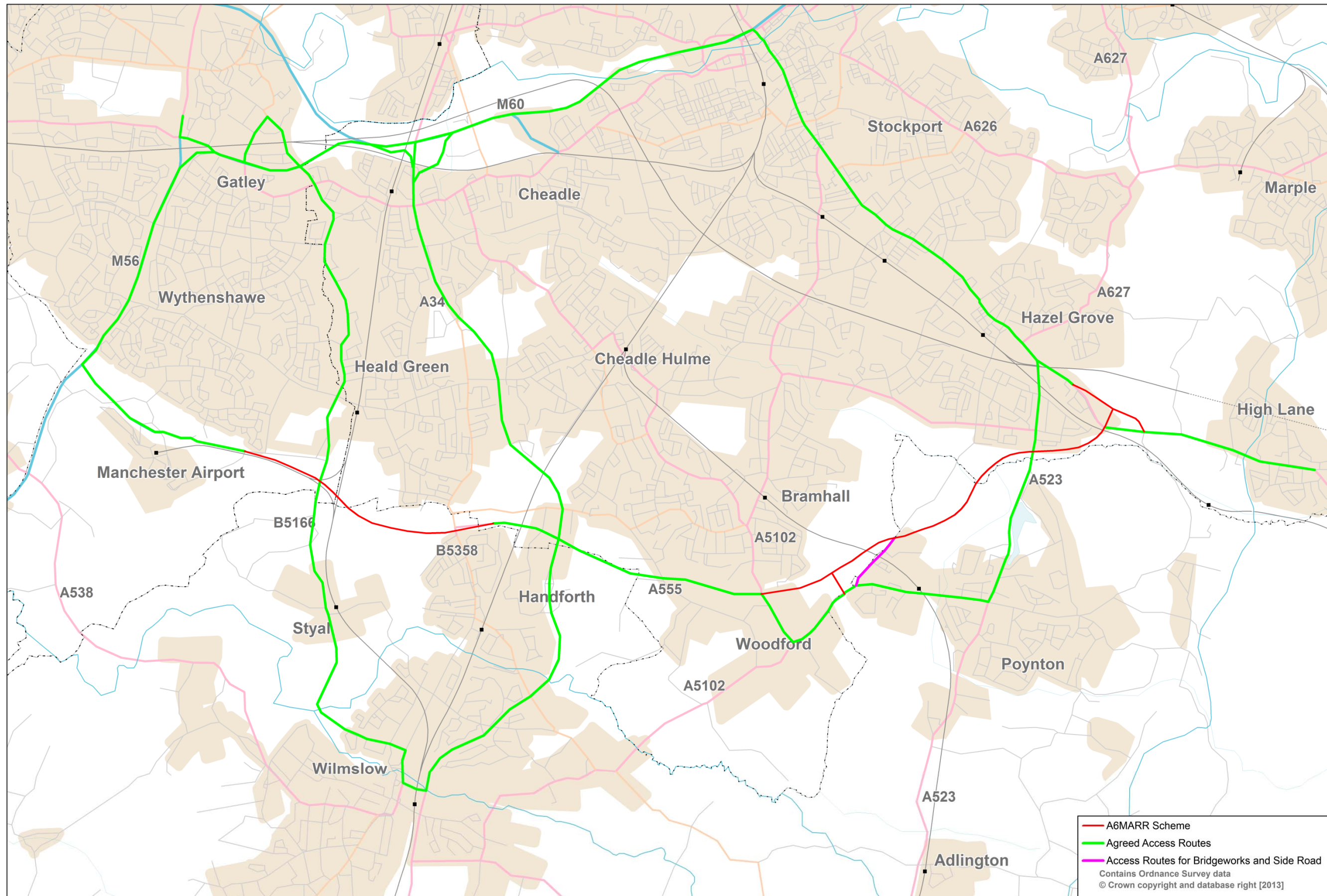
## Issues maintaining the existing traffic flow on the highway network

- 10.5 The majority of works are offline hence there are no specific areas of concern for maintaining existing traffic flows. However, due to the proposed structures, particularly the proposed rail bridges, the movement of surplus earthwork excavations from areas may need to be hauled via public highway to other locations within the works. There will be some disruption where tie-ins need to be completed. This can be mitigated through the design being sympathetic to the existing levels of carriageway and off peak working. If a pavement requires reconstruction due to the required design levels being below the existing pavement then the traffic management arrangements are significantly more complex than a simple overlay. The construction of tie-ins with the existing road network and the side road bridges will require temporary traffic management. This will involve the use of single way working under temporary traffic signals, possibly limited to off-peak times.
- 10.6 There may be a significant interface with the traffic on the A34, however, there are currently insufficient details to comment. The works may need to be carried out during off peak periods if that is possible. If not the central reserve may need to be hardened and a 2+2 contra-flow implemented to allow sufficient working space.
- 10.7 Traffic management measures would have the greatest impact on Macclesfield Road, Woodford Road, Chester road, Existing A555, Woodford Road Junction, A34 Junction, Wilmslow Road Junction, Styal Road and at the Ringway Road West where traffic and detailed measures would be agreed with the appropriate highway authorities.

## Issues maintaining PRow

- 10.8 During construction, pathways would be maintained on the existing routes where possible. Details of footpath closure/ diversion during construction are currently not available, however, the contractor would be required to develop and agree a Traffic Management Plan with the appropriate local authorities for the duration of the contract. The plan would identify proposals for the principal phases of the works and individual construction activities which would potentially involve disruption to existing vehicular and pedestrian access in specific locations along the construction corridor.

Figure 10.1 – A6MARR Site Access Routes



## Issues relating to potential Network Rail disruption

- 10.9 Along the length of the A6MARR scheme there are a total of four rail crossings:
- **Hazel Grove to Buxton Rail Line:** The A6MARR crosses the Buxton and Edgeley Junction Branch railway line (ELR: BEJ at an approximate mileage of 3 miles 32 chains) (National Grid reference E393334, N385654). Under-bridge and over-bridge solutions have both been discussed for this location. The preferred A6MARR scheme is for a road under-bridge (rail over) at this location;
  - **West Coast Mainline:** The A6MARR crosses the West Coast Mainline (ELR: MCH) at an approximate mileage of 2 miles 804 yards (National Grid reference E390456, N384219). The preferred A6MARR scheme is for a road over-bridge (rail under) at this location;
  - **Styal Mainline:** The A6MARR crosses the Styal Railway Line (ELR: STY) at an approximate mileage of 2 miles 1357 yards (National Grid reference E384116, N384832). The preferred A6MARR scheme is for a road over-bridge (rail under) at this location; and
  - **Northern Airport Spur:** There is an existing road over-bridge (rail under) structure that carries the B5166 Styal Road over the northern airport spur rail line (ELR: MIA) at an approximate mileage of 1 mile 502 yards (National Grid reference E383905, N385056). The preferred A6MARR scheme incorporates a new junction between the A6MARR/ B5166 Styal Road at the location of the over-bridge. The preferred A6MARR scheme includes extensions on the east and west side of the existing bridge.
- 10.10 The design to date has identified potential Network Rail possessions and isolation opportunities that may be required for the construction of the bridge crossings. The Network Rail Rules of the Route (RoR) document details standard possession times where third party works are permitted to be carried out with existing prescribed timescale and 'windows'. The aim of the design is, wherever possible, for construction works to be programmed into RoR possession times. Access using much more disruptive Outside Rule of the Route (ORoR) possessions will only be considered where no other practicable alternative exists.
- 10.11 The A6MARR Project Team will work in liaison with the principal contractor, on appointment, to develop a comprehensive programme of works under agreement with Network Rail, which will look to minimise the impact and disruption on rail operations, the Train Operating Companies and its passengers.

# 11. Conclusions

- 11.1 This application represents a key component of the programme of works recommended by the SEMMMS study, with the over-arching objective of delivering:
- The promotion of environmentally sustainable economic growth;
  - The promotion of urban regeneration;
  - The improvement on amenity, safety and health;
  - The enhancement of the Regional Centre, town centres, local and village centres and Manchester Airport; and
  - The encouragement of the community and cultural life of neighbourhoods, and encouragement of social inclusion.
- 11.2 The 20-year Strategy comprises a series of work packages that could be delivered in the short, medium and longer term. Over the last ten years since the completion of the SEMMMS study, approximately £63 million has been spent on SEMMMS projects including; Quality Bus Corridors and Integrated Transport Corridors on a number of route; accessibility improvements to bus stops and transport interchanges; creation of on-street cycle facilities and improvements to the pedestrian network; traffic speed management schemes; and a range of behaviour change and urban regeneration interventions.
- 11.3 Scheme development has been the subject of detailed planning and consultation, in line with the SEMMMS strategy recommendations for a more appropriate scale road proposal to provide relief to local communities affected by inappropriate through traffic, but not to provide a new strategic route of regional and potentially national significance.
- 11.4 By improving access to south-east Manchester and Cheshire East, the A6MARR will benefit communities and the local economy, in terms of:
- Economic growth generating additional economic output for the region of up to £2.5 billion and contributing towards the creation of up to 5,450 new jobs;
  - Better access to Manchester Airport and other key destinations for employment, education, health, leisure and retail;
  - Less traffic on local roads - reducing congestion on local roads in surrounding areas;
  - Shorter journey times for cyclists, public transport users, car drivers and freight;
  - Improved road safety, particularly for pedestrians and cyclists by reducing the volume of traffic passing through residential areas; and
  - Increased investment encouraged in Manchester Airport and Airport City Enterprise Zone as well as areas of Stockport, Cheshire East and Manchester.
- 11.5 A package of complementary and mitigation measure has been proposed to address the predicted change in traffic flow on the local highway network following completion of the A6MARR scheme. The measures aim to ameliorate the scheme's impact on local communities where there are predicted to be traffic increases, and seek opportunities to encourage walking, cycling and support to local centres where there are predicted to be reductions in traffic flow.
- 11.6 The scheme's importance is highlighted in the refreshed Greater Manchester Strategy 2013-2020, which places connectivity and transport investment at the heart of its economic strategy to focus investment on the city-region's strategic transport network to enhance local, national and international connectivity. This investment strengthens and widens GM's labour market which is critical to its future success. Indeed, the Manchester Independent Economic Review highlighted

that: *“improvements to transport networks within the Manchester City Region would provide the largest economic pay-off”.*

- 11.7 Confirmation of government funding to improve access to Manchester International Airport and the adjacent enterprise zone was announced on 1 October 2013. Setting the importance of the scheme in context, Lord Deighton, chair of the HS2 Growth Taskforce and Commercial Secretary, said:

*“This is another example of the government’s willingness to unlock the key transport infrastructure vital to the regeneration of the economy.*

*Making this funding available for new road links around Manchester Airport reflects this government’s commitment to drive growth in the economy and reduce congestion on our roads. Manchester International Airport is the 4th largest airport in the UK and of crucial economic importance to the future prosperity of the north of England.*

*The scheme will significantly improve access from the east not only to the airport but also the airport city enterprise zone. It will also relieve congestion in the south of the conurbation and support growth in the wider south Manchester corridor.*

*A parallel shared cycle and pedestrian path and a package of complementary measures, which could include the widening of pavements and new bus lanes, will maximise the scope of potential benefits by making the most efficient use of road space in the areas where there are forecast reductions in car traffic.”*

- 11.8 The government’s announcement grants what is known as programme entry approval to the scheme, an important milestone which precedes detailed design and the obtaining of the necessary statutory permissions. The government’s announcement follows the decision of the Greater Manchester Combined Authority to approve the funding package this summer.

