

A6 to Manchester Airport Relief Road

Monitoring and Evaluation Baseline Report
Stockport Metropolitan Borough Council

April 2016



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1. Introduction

1.1. Background

The A6 to Manchester Airport Relief Road is a key part of the overall access strategy for South Manchester. The project includes a series of highway improvements which will improve linkages and provide better highway access across the south east of Manchester – specifically to Manchester Airport. These improvements include additional facilities for cyclists and pedestrians and offer the opportunity to make more efficient use of road space via improved public transport facilities. This will assist in making the region more attractive to inward investment, ultimately improving the quality of the physical environment and the associated societal benefits.

Traffic congestion and the lack of connectivity along the south Manchester corridor remain the most important transport issues to be resolved in the area, due to the substantial implications this has for the economy, society and environment. Greater Manchester is the largest economy outside of London, with Cheshire East's economy contributing above average levels of per capita economic value (when compared to the national economy). The North West as a whole is not contributing its full potential to the UK economy, with traffic congestion and the associated reduced journey reliability placing a constraint on the ability of the region's economy. Furthermore, the lack of strategic connectivity is a direct barrier to business and employment opportunities along the south Manchester corridor.

Manchester Airport is the UK's largest airport outside of the South East, and is a key international gateway. Numerous studies have identified that its development should be managed to ensure that the already substantial benefits that it brings to the local and wider economy are maximised via the national and international connectivity it provides for business and tourism. The existing lack of surface access capacity to the airport is considered to be the most significant constraint for future growth of the airport and the associated airport employment hub.

The A6 to Manchester Airport Relief Road will improve surface access to Manchester Airport and provide better connectivity across south Manchester, 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. Furthermore, 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. It is widely recognised that the A6 to Manchester Airport Relief Road is critical to delivering the long-term objectives of the SEMMMS strategy, and to meet national objectives for growth, employment and connectivity.

A Monitoring and Evaluation Plan was developed as part of the Major Scheme Business Case. This set out the scheme's evaluation and monitoring approach. The scheme objectives were summarised, and a logic map developed that graphically indicated the process by which the scheme outputs will deliver the primary objectives. The Plan outlined the evaluation approach for monitoring the extent to which the schemes objectives have been achieved.

1.2. This Report

This Report summarises the first stage of the A6 to Manchester Airport Monitoring and Evaluation, the Baseline Report. Namely, the existing conditions across south-east Manchester prior to the implementation of the scheme. The baseline is used to assess and measure change over time as part of the impact evaluation. This provides a basis from which the outcomes and impacts of the scheme are monitored, to assist with determining if the outcomes and impacts of the scheme are as intended.

The timing of the baseline data collection is important, and where feasible all data was collected prior to the start of construction, so that any effects such as road closures/ delays due to construction are not incorporated into the survey data.

The monitoring and evaluation will be undertaken in three stages, as follows:

- Pre-construction/ Baseline Report, commencing Autumn 2014; -
- One Year Post Opening Outcome Evaluation Report, commencing Autumn 2018; and -
- Five Year Post Opening Impact Evaluation Report, commencing Autumn 2022. -

The majority of the data utilised as part of the Baseline Report will need to be collected again in both post opening evaluation periods such that the effect of the scheme can be established. The One Year Post Opening Outcome Evaluation will focus on measuring the immediate outcomes of the scheme, such as a reduction in traffic congestion across the study area, in particular through local centres. It will examine how/ if journey times have changed. The Five Year Post Opening Evaluation will repeat the survey and analysis from the earlier evaluations in order to track the changes, and will also attempt to identify the impact of the scheme – notably the effect on the local economy and employment.

1.3. Structure of this Report

The remainder of this report is structured as follows: -

- Section Two – a summary of the evaluation and monitoring process; -
- Section Three – an outline of the process evaluation that will be undertaken throughout the scheme delivery;
- Section Four – a summary of the baseline data that will form the initial basis for the impact evaluation;
- Section Five - documents the next steps that will be undertaken in the A6 to Manchester Airport Evaluation and Monitoring.

2. Evaluation and Monitoring Process

2.1. Introduction

As outlined in the Monitoring and Evaluation Plan, at a high level, the evaluation of the scheme seeks to provide accountability for the investment in the scheme. The objectives of the Monitoring and Evaluation Plan were focussed on understanding:

- Whether and how the scheme's main objectives have been achieved, exceeded or not reached.
- Provide transferable evidence that may be used to inform future decision-making on similar schemes;
- Improve the efficiency and effectiveness in the delivery of future schemes based on the lessons learnt from this scheme.
- Did the benefits justify the costs?

This report is the first stage of the Evaluation and Monitoring, setting a baseline against which the Post Opening surveys and analysis can be compared, to assist in understanding if the scheme is delivering the outcomes as forecast. It is important to note that if the intended outcomes have not been realised at the Year One Post Opening, then the evaluation approach may need to be modified to try to understand the reasons for this, and what/ if any unintended consequences arise due to this.

The business case, as submitted at the time of Full Approval in December 2014 provides a summary of the forecast outcomes associated with the A6MARR scheme.

2.2. Evaluation Summary

As detailed in the Monitoring and Evaluation Plan, the evaluation can be broadly divided into three areas, as follows:

- The **process evaluation** seeks to understand what has been delivered, how it was delivered and what changes/ delays were encountered along the way. These all feed into the overall evaluation and provide important information on how to improve the management of other schemes. It is proposed that data is collected in discussion with the project team held during the implementation stages of the A6MARR's delivery. This will allow for real time feedback, with the aim of improving the overall delivery of the scheme.
- The **impact evaluation** assesses the outcomes and impacts generated by the A6MARR, focussing on the key question: what difference did the scheme make? In the case of the A6MARR, the impact evaluation focuses on monitoring outcomes and longer term impacts relating to changes in vehicular, cyclist and pedestrian movements across the network and the associated impacts; changes in journey time reliability; changes in safety (accident rates and the severity of road traffic accidents); changes in air quality emissions and noise impacts; and regeneration and wider economic benefits.
- **Economic evaluation** uses the evidence generated through impact and process evaluations to assess whether the outcomes and impacts generated by the scheme justify the investment.

This report documents what is planned for the process evaluation throughout the scheme delivery phase. In addition, it summarises all the survey data that has been collated as part of the baseline, such that the existing/ pre-construction conditions are clearly defined, providing the opportunity to compare all changes against this.

3. Process Evaluation

3.1. Introduction

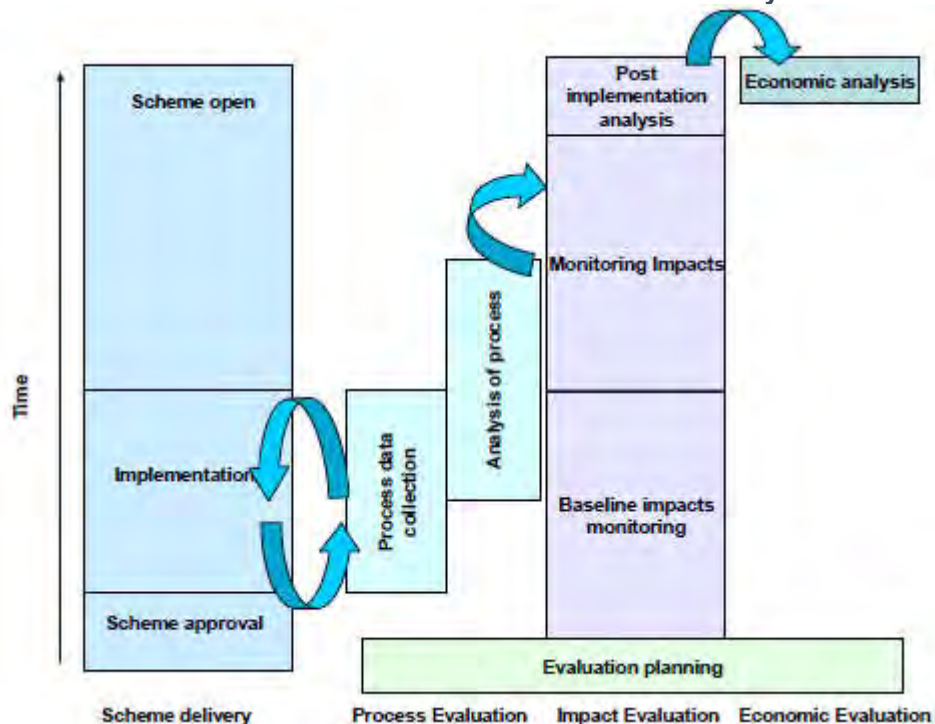
The 'process evaluation' examines the planning and management of the scheme. It seeks to learn lessons from the experience of implementing the scheme, thereby providing the opportunity to improve the management and implementation of other schemes. Furthermore it assesses whether the scheme has been delivered as intended, enabling an understanding of how the delivered scheme has influenced the scheme outcomes and impacts.

It will be used to understand the following high level questions:

- What was delivered? -
- How was it delivered, including any changes/ delays that were encountered? -

The process evaluation complements the impact and economic evaluation, providing evidence on why the scheme has worked/ not worked. The following flow diagram is taken from the DfT best practice guidance and shows that the process evaluation occurs during the implementation/ scheme delivery stage, but that it also can provide evidence that feeds into the overall analysis of the impact and economic evaluations.

Figure 1. How the evaluation interlinks with the scheme's lifecycle



This section outlines the process evaluation that will be undertaken during the implementation phase of the scheme delivery. It summarises the metrics that will be used to understand how the scheme's planning and management operated throughout the scheme delivery, outlining the key questions that the process evaluation will seek to understand and answer.

Whilst this will ultimately be reported in the Year One Post Opening Report, it is proposed to undertake a desktop review of each of the process evaluation metrics that are summarised within this Baseline Report at six monthly intervals during the scheme delivery. Each review will be summarised in a technical note, which will provide a reference as to how the scheme delivery is progressing. The proposed dates for the six monthly reviews are:

- January 2016
- July 2016

- January 2017
- July 2017.

It is recommended that as part of the Year One Post Opening Reporting, a workshop is held with the scheme project management team to discuss each of the process evaluation metrics.

3.1.1. Scheme Context

The A6MARR scheme was developed due to the traffic congestion and the lack of connectivity along the south Manchester corridor, which were considered to be the most important transport issues to be resolved in the area, due to the substantial implications this has for the economy, society and environment. Greater Manchester is the largest economy outside of London, with Cheshire East's economy contributing above average levels of per capita economic value (when compared to the national economy). The North West as a whole is not contributing its full potential to the UK economy, with traffic congestion and the associated reduced journey reliability placing a constraint on the ability of the region's economy. Furthermore, the lack of strategic connectivity is a direct barrier to business and employment opportunity along the south Manchester corridor.

Since Full Approval of the scheme, the following observations have been noted, all of which could impact on the scheme's usage:

- In July 2015, the Hazel Grove park and ride facility was opened. Located on the former wasteland at the junction of the A6 Buxton Road and Macclesfield Road it links Hazel Grove, Stockport and Manchester City Centre, with the route stopping at Stepping Hill, Heaviley, Stockport and through to a number of stops en-route to Manchester City Centre. The services operate using hybrid electric vehicles, and aims to reduce traffic volumes along the A6 and adjacent corridors.
- As outlined in Cheshire East's Local Plan (March 2014), a site on the border of Stockport Metropolitan Borough, adjacent to the A34/ A555 has been identified as a site for potential development. The North Cheshire Growth Village, Handforth East, is currently outlined for the phased mixed land use development comprising of housing, some employment land, the potential provision of new mixed use centres such as a community centre, health care infrastructure, sporting facilities and a new primary school and the potential for additional secondary school facilities. Although the details of this proposed development are still being finalised, the likely scale of this development will impact upon traffic volumes across the local area, including the A6MARR scheme.
- In 2011 Manchester Airport was confirmed as one of the Government's 21 UK 'Enterprise Zones', with the site called Airport City. Companies locating at the Airport City site benefit from business rate discounts of up to £275,000, superfast broadband and simplified planning procedures. In October 2013 it was announced that the site would operate as a joint venture partnership, which included the Beijing Construction Engineering Group (BCEG). They alone are currently forecast to invest £800 million into the project - becoming one of the largest single investments in Britain from China. Furthermore, in the March 2015 budget statement, it was announced that Airport City will increase in size from 116 acres to 171 acres. Development at the site will be phased over a 15 year period. Whilst Airport City was underway at the time of the A6MARR's Full Approval, development at the site is clearly growing.
- Poynton Relief Road is a proposed 1.9 mile highway which aims to relieve congestion in and around Poynton. The scheme connects the A523 London Road, south of the existing Adlington Business Park to the A6MARR at Bramhall Oil Terminal. It is expected to cost in the order of £30m, with more than 70% of these costs secured via the Government's Local Growth Fund and the devolved majors fund. Public consultation was undertaken on the preferred route in Autumn 2015. The scheme is currently forecast to be implemented by 2018.
- In February 2015, Cheshire East Council appointed Consolidated Property Group (CPG) as its preferred purchaser to develop the 15 acre plot at the former Airparks site, off Earl Road, into a retail-led mixed-use scheme – Handforth Dean shopping park. Construction for the first phase of the development, a large scale 'Next' clothing and homeware store, began in December 2015, with the expected completion date Autumn 2017. A planning application for two further phases of the development was submitted in January 2016. If approved, the further phases could take the whole scheme to around 340,000 sq/ft of retail space, including shops, 'drive-thrus' and restaurants, a hotel, plus car parking and a gym. The scale of this development will impact upon traffic volumes across the local area, including the A6MARR scheme.

3.1.2. Scheme Build

Throughout the scheme delivery, the project management team will identify programme slippage, milestones and the consequences on dependent delivery activities. The mitigation measures to be implemented to manage the programme changes will be identified and their performance reviewed at later project management meetings. This enables a detailed overview of scheme delivery challenges and mitigation measures. Good practice and lessons learnt will be recorded.

Key questions that the evaluation seeks to address include:

- What governance procedures are in place to manage delivery of the scheme? How well are these working, and why?
- How is the anticipated programme being adhered to?
- What were the main causes of programme slippage, and at what stage did these occur?
- What were the key successes in term of programme delivery? What went well? What lessons could be shared with others?

At the six monthly desktop reviews, the project management team will be asked to provide the latest work programme, with any slippages/ modifications to milestones highlighted. The main reasons for any changes will be identified. The Year One Post Opening Report will provide a full summary of the programme management during the scheme build.

3.1.3. Scheme Design

The A6 to Manchester Airport Relief Road (A6MARR) will provide approximately 10km of new dual carriageway from the A6 near Hazel Grove (south east Stockport) to Manchester Airport via the existing A555. The scheme provides a relief road (see Figure 2) to avoid the heavily-congested district and local centres, including Bramhall, Cheadle Hulme, Hazel Grove, Handforth, Poynton, Wythenshawe, Gatley and Heald Green. It will improve connectivity and accessibility to and from the A6, A523 and A34, as well as to key employment and strategic locations such as Manchester Airport.

A full summary of the scheme description, as at Full Approval¹, is contained in **Appendix A** of this report. The key elements of the scheme, is summarised as follows:

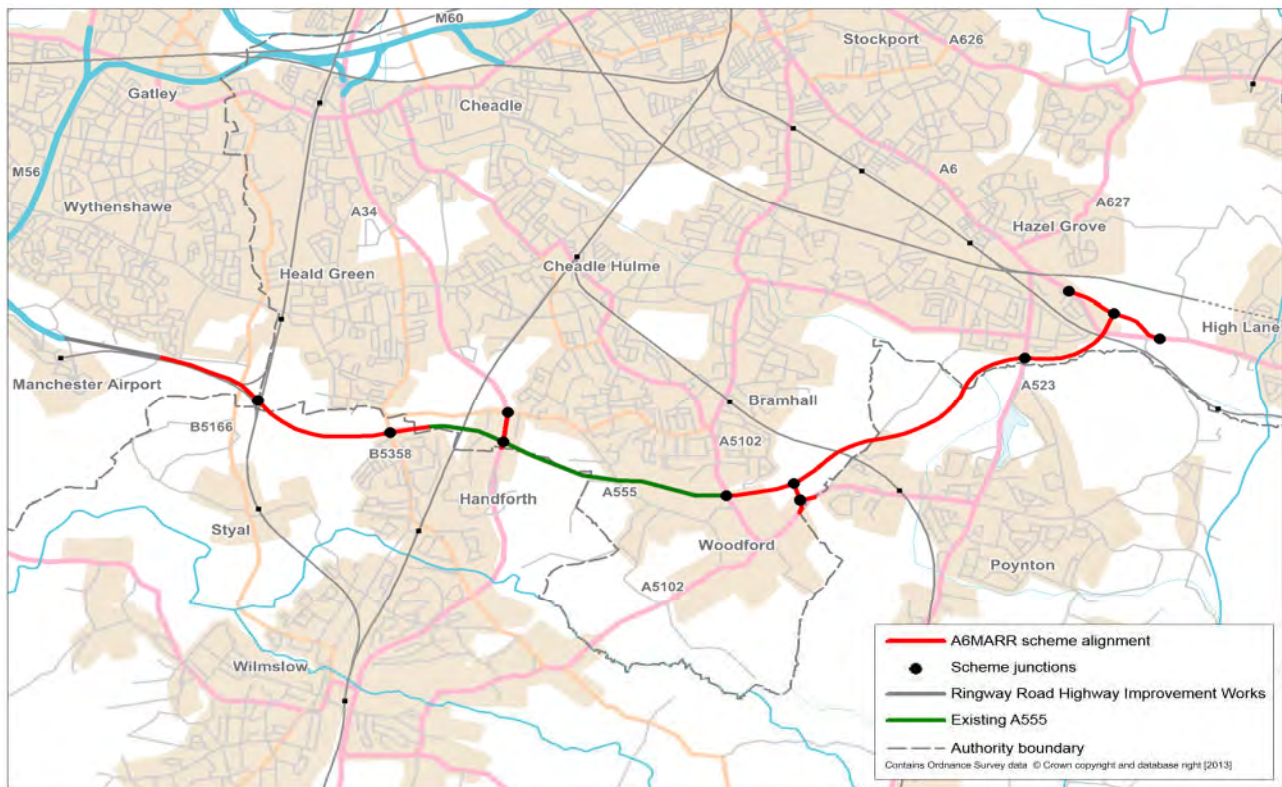
- The scheme is a largely a two-lane dual carriageway, with some single carriageway access links provided;
- From the new A6MARR/ A6 junction, travelling west, the route will pass under the existing A6 Buxton Road which is taken over the new road on a new bridge for the use of buses, equestrians, cycles 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 recently upgraded junction of Ringway Road and Ringway Road West. Transport for Greater Manchester (TfGM) has constructed 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

¹ A6MARR: Application for Full Approval – Annex 1 Scheme Description (November 2014)

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.

Figure 2. A6 to Manchester Airport Relief Road Plan



Throughout the scheme delivery any changes to the design will be noted and the potential impact of the change recorded. The key questions that the evaluation is seeking to address include:

- Does the delivered scheme differ from the planned scheme? If so, how, and what are the reasons behind any changes?
- What are the perceived impacts of these changes on delivery of the scheme objectives set out in the Business Case?

3.1.4. Scheme Costs

The forecast costs, as detailed in the documentation submitted as part of the MSBC Full Approval (Annex 3: Summary of Cost Estimate) are summarised in **Table 3-1**.

Table 3-1 A6 to Manchester Airport Relief Road - Scheme Delivery Budget Spend Profile (December 2014)

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	Post 2017/18	Total
Preparation Costs	£2,947,268	£1,919,605	£1,977,558	£483,543					£7,327,974
Client/ LA Costs				£908,289	£295,000	£215,000	£140,000	£560,000	£2,118,289
Ringway Road Highway Works				£29,000,000					£29,000,000
Construction DD			£709,373	£877,953					£1,587,326
Construction KS4				£523,021					£523,021
Construction costs Pre KS6			£167,820	£2,073,587					£2,241,407
Construction KS6 – Final Target Cost				£2,470,847	£33,006,598	£42,279,121	£13,574,318	£1,144,198	£92,475,082
Construction – Evaluation Events & Compensation Events Allowance				£100,000	£1,200,000	£2,700,000	£1,400,000	£300,000	£5,700,000
Complementary and Mitigation Measures					£1,597,000	£3,113,000			£4,710,000
SU Diversions			£186,378	£11,107,193		£4,550,000			£15,843,571
NR Costs			£34,486	£2,098,763					£2,133,249
Employers Agent Fees Pre KS6 Award			£80,000	£150,987					£230,987
Site Supervision/ Employers Agent Fees				£64,211	£1,198,684	£1,198,684	£299,671		£2,761,250
Land Acquisition Cost		£35,581	£192,751	£9,164,181	£2,500,000	£902,496	£902,496	£902,496	£14,600,001
Land Costs Over & Above Acquisition		£142,277	£224,412	£1,185,376	£476,984	£476,984	£476,984	£476,984	£3,460,001
Part 1 Claims including fees								£15,202,800	£15,202,800
SUBTOTAL	£2,947,268	£2,097,463	£3,572,778	£60,207,951	£40,274,266	£55,435,285	£16,793,469	£18,586,478	£199,914,958
Land Risk				£1,267,477	£2,076,614	£788,307	£288,307	£5,189,522	£9,610,227
Construction & Preparation Cost Risk				£287,892	£5,570,853	£5,954,710	£2,782,960		£14,596,415
SUBTOTAL	-	-	-	£1,555,369	£7,647,467	£6,743,017	£3,071,267	£5,189,522	£24,206,642
Allowance for Inflation					£1,716,343	£4,511,351	£2,229,617	£257,209	£8,714,520
TOTAL	£2,947,268	£2,097,463	£3,572,778	£61,763,320	£49,638,076	£66,689,653	£22,094,353	£24,033,209	£232,836,120

Source: A6MARR MSBC Full Approval Form (dated 18 Dec 2014) Annex 3

Inflation has been applied to capital costs at 5.2% per annum, based upon long run RPI assumptions in government tender documentation of 2.5%, plus a 2.7% - premium, based upon the Royal Institute of Chartered Surveyors (RICS) Building Cost Information Services (BCIS) Civil Engineering Index. These assumptions are in line with the assumptions used within the Greater Manchester Transport Fund (GMTF) financial strategy. -

Throughout the scheme construction period, costs will be monitored with the aim of answering the following: -

- How did the outturn construction costs compare with the forecast construction costs? -
- Which phase of the scheme construction resulted in the largest cost variance? What lessons could be shared with others? -
- What were the main reasons for cost changes between Full Approval and the outturn construction costs? -
- To what extent could any cost variances have been foreseen and mitigated at an early stage? -

3.1.5. Scheme Construction

3.1.5.1. Employment and Skills

One of the aims of the scheme delivery was the upskilling of the local labour market. In terms of evaluation, the key question this addresses is:

- How many local jobs were created during the construction of the scheme?

Carillion Morgan Sindall (CMS) were appointed as the (joint venture) contractor in late 2013. An Employment and Skills Plan (ESP) was developed which outlines how the contractor will work with the project partners to ensure the opportunities to secure local employment and skills benefits for local people are maximised, in particular focusing on those individuals not in employment.

The objectives of the Plan are summarised as follows:

- To ensure local unemployed people seeking employment from the areas covered by the new road, have opportunities targeted towards them by the contractors and sub-contractors, including Apprenticeship opportunities;
- To grow the work-ready labour market for construction in the three LA areas, therefore addressing employer demand and future skills needs arising from construction activity; Therefore, whilst the A6MARR will necessarily focus on its own specific skills needs it will contribute to the wider economy, complementing other infrastructure projects and their employment and skills strategies, in particular Airport City. Airport City has its own Employment & Skills Strategy, and the proposals that arise out of this brief should also link with other projects such as the TfGM Metrolink extension to the Airport, supporting sustainability of employment, for example through the Greater Manchester Construction Training Association.
- To support the development of young people, their education, careers aspirations and understanding of the range of opportunities in the construction sector.

The Plan set out a minimum outcome commitment, which is summarised in **Table 3-2**. This identifies 14 different employment and skills areas and the minimum employment and skills targets that were agreed prior to the scheme construction.

The CMS Project Manager will meet with the Employment Development Manager in SMBC on a regular basis. A monthly performance report will be incorporated in the Contract Board progress report submitted monthly. The performance measures will include progress to meet the planned targets and cumulative expenditure and staff hours spent developing Skills and Employment.

This information will be reviewed as part of the planned Monitoring and Evaluation six monthly desktop reviews. It will be fully summarised and the actual employment and skills outcomes will be compared with the targets in the Year One Post Opening Report.

A full copy of the Employment and Skills Plan can be found in **Appendix B** of this report.

3.1.5.2. CEEQUAL

A CEEQUAL assessment was undertaken to examine the sustainability of the scheme. At the time of Full Approval, an 'excellent' CEEQUAL rating was awarded for both Project Strategy and Sustainability Performance. The final CEEQUAL score will be reviewed following scheme opening, and the outcome reported in the Year One Post Opening Report.

3.1.5.3. Considerate Constructors Scheme

The Considerate Constructors Scheme is a non-profit-making, independent organisation founded by the construction industry to improve its image. Construction sites, companies and suppliers can voluntarily register with the Scheme and agree to abide by the Code of Considerate Practice, designed to encourage best practice beyond statutory requirements. It is concerned about any area of construction activity that may have a direct or indirect impact on the image of the industry as a whole. This includes five main areas, including:

- Care about appearance;
- Respect the community;
- Protect the environment;

- Secure everyone's safety; and
- Value their workforce.

The final Considerate Constructor score will be reviewed following scheme opening, and the outcome reported in the Year One Post Opening Report.

Table 3-2 A6MARR Employment and Skills Plan (ESP) Minimum Outcome Commitment

Employment and Skills Areas	2015 Q1	2015 Q2	2015 Q3	2015 Q4	2016 Q1	2016 Q2	2016 Q3	2016 Q4	2017 Q1	2017 Q2	2017 Q3	2017 Q4	Summary
1. Work Experience Placements - Students in Education (school, college)		2 0				2				2			6 0
2. Work Experience Placements - Pre-employment and other Pathways (The number in parenthesis indicates No. of experience placements for the economically inactive)		2 (0)	1	1		1	1			1	1		6 2 (0)
3. Construction Curriculum Support Activities		1 2		1	1	1		1	1				6 2
4. Graduates - Persons		1	2				1						3 1
5. Apprentice Starts - Persons			4			2							6
6. Existing Apprentices - Persons		1	2				3						5 1
7. Apprentice Completions – Persons												2	2
8. Jobs Created on Construction Projects			3			1	1						5
9. NVQ Starts for Subcontractors - Persons		1 1	2	1	1	2	2	2	1	1			13 1
10. NVQ Completions for Subcontractors – Persons		1				1	2	1	1	2	2	2	11 1
11. Training Plans for Subcontractors – Number							2						2
12. Supervisor Training for Subcontractors - Persons				2				2					4
13. Leadership and Management Training for Subcontractors – Persons					2				4				6
14. Advanced Health and Safety Training for Subcontractors – Persons		2	3			3	3						9 2

3.1.6. Risk Management

Throughout the development stage of the scheme, risks were identified, recorded and actively managed. Where appropriate, risk owners were allocated and tasked with eliminating risks as far as possible, or identifying mitigation measures for residual risks.

A copy of the latest risk register² is included in **Appendix C** of this report.

During the delivery phase of the scheme the assumptions that were made about the project risks will be compared with the manifestation of these risks and any change in risk, new risks and the risk mitigation measures adopted/ proposed will be assessed to determine which risks were the most significant to the scheme delivery and how effectively these were addressed (i.e. How effective was the risk management strategy).

The six monthly desktop reviews will summarise if there are any new risks that have emerged during construction, or if any identified risks have been mitigated.

The key questions that the evaluation of the risk management seeks to address are:

- What were the main risks identified at the outset? What risks emerged during the process? Were identified risks relevant? What risks were missed at the outset?
- What actions were identified in the risk management strategy? How effective were risk mitigation measures? Did these have any unintended consequences?

This will be reported in the Year One Post Opening Report.

3.1.7. Stakeholder Engagement & Management

The Stakeholder Communications Action Plan is presented in **Appendix D** of this report. For each stakeholder group, this Plan outlines the audience, key message, timing and the associated person responsible for ensuring this occurs.

The six monthly desktop reviews will summarise the activities that have been undertaken in the preceding six months.

At the end of the scheme delivery, the evaluation aims to be able to address the following:

- What stakeholder management and communications approaches were actually adopted, and why?
- How effective were these, and are there any lessons learnt from the various approaches?

This will be reported in the Year One Post Opening Report.

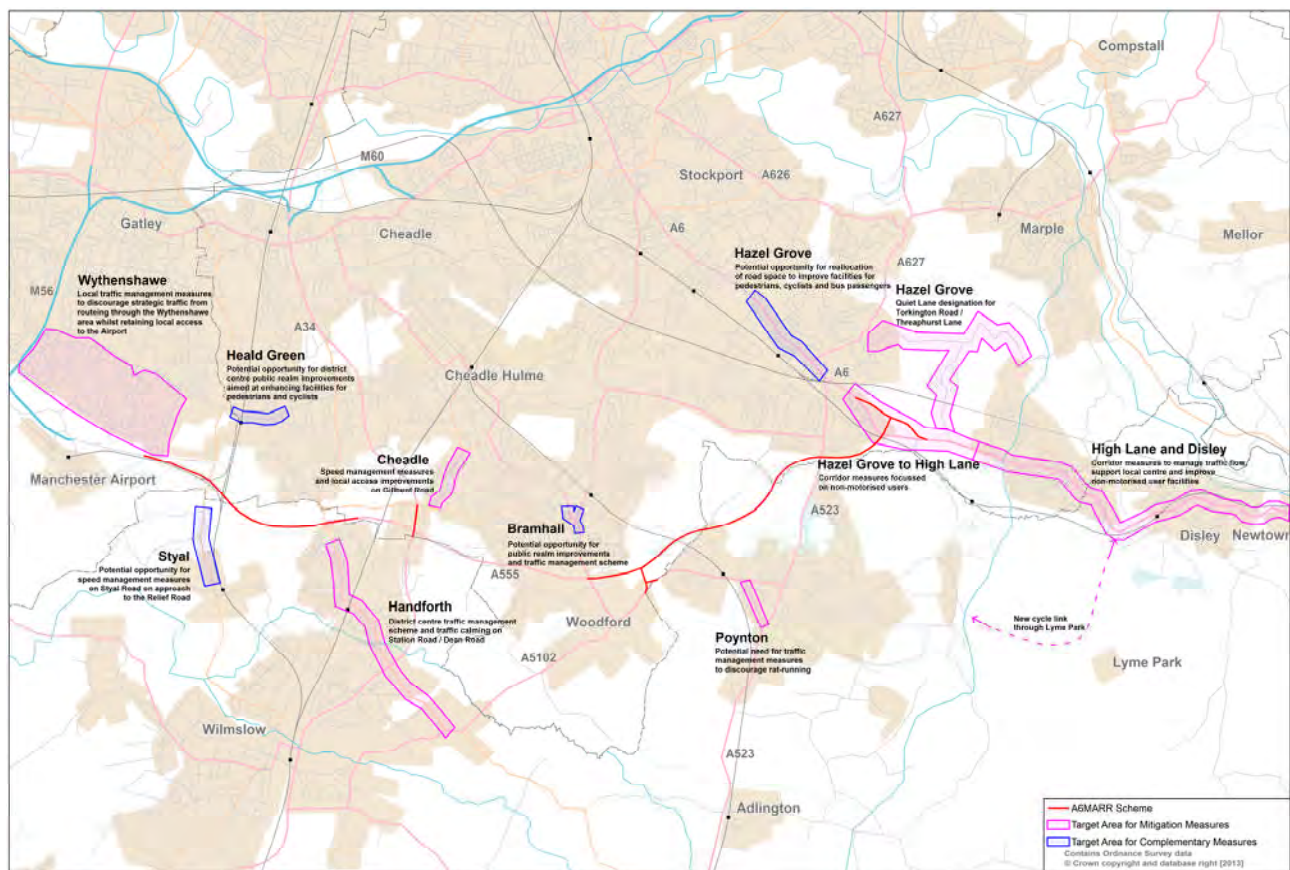
3.1.8. Mitigation Measures

A package of measures, known as Complementary and Mitigation Measures (CMM), were developed 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. A form of agreement was signed by the relevant local authorities to confirm commitment to develop the design, consult and implement the agreed measures in line with the relevant planning conditions and budget allocations for these measures.

The locations of the CMMs as set out at Full Approval are indicated in **Figure 3**. These are described in more detail in **Appendix E**. It is noted that the final design of each of the measures will be subject to a separate consultation.

² A6MARR SMBC Risk Register (30 June 2015) Rev 1

Figure 3. A6MARR: Priority Areas for Complementary and Mitigation Measures (CMM)



The Year One Post Opening Report will provide a summary of the CMMs that have been implemented. This will review how the outturn measures differ from those that were outlined at Full Approval, with consideration given to the impact of any change in design.

3.1.9. Environmental Measures during Construction

The Construction Environmental Management Plan³ for the scheme was prepared to help ensure that construction activities are planned and managed in accordance with the environmental requirements identified within the ES, produced as part of the planning process, planning conditions, plus other requirements such as from protected species licences and Employee Requirements. The CEMP will be further developed to incorporate appropriate detailed design information and construction requirements as the project progresses.

As part of the CEMP process, a project internal audit schedule will be undertaken. This will include audits of the implementation of the CEMP and audits of key sub-contractor and key supplier environmental performance by the Environmental Manager. For the purposes of the A6MARR evaluation and monitoring, particular attention will be paid to the following activities that will be undertaken by the environmental manager:

- Monitoring and auditing site environmental issues detailed in the CEMP; and -
- Monitor the implementation of the environmental mitigation measures, such as noise barriers. -

This audit information will be requested and reviewed as part of the six monthly desktop reviews, and fully summarised in the Year One Post Opening Report.

³ A6MARR CEMP Pursuant to the Discharge of Planning Conditions 21 (SMBC) Planning Condition 34 (CEE) & Planning Condition 22 (MCC), October 2014. *Reference A6MARR-0-W-30-001-RE-005 P2*

4. Impact Evaluation

4.1. Introduction

The '*impact evaluation*' will focus on demonstrating and quantifying the difference made by the scheme. Specifically, the A6MARR impact evaluation will focus on measuring outcomes relating to:

- Changes in traffic flows across the network and the associated impacts; -
- Changes in journey time reliability; -
- Changes in safety (number and severity of road traffic accidents); -
- Changes in air quality emissions and noise impacts; -
- Regeneration and wider economic benefits. -

However, the evaluation will also consider other issues, such as: is the scheme encouraging more low carbon travel e.g. more cyclists, public transport users? The following section provides a summary of the baseline/pre-construction data, which will ultimately be compared with identical post opening data to assist with understanding the impact of the scheme.

4.2. Traffic Flow Data

A set of baseline traffic volume surveys were conducted across the study area, against which post-scheme results will be compared during the One Year and Five Year Post Opening stages. Automatic Tube Counters (ATCs) were laid at 66 sites across the study area, outside of the school holidays in September/ October 2014. A further 16 sites were identified as having existing traffic count data which was suitable for use. This data has been collated and is presented as the baseline traffic volume surveys. They are summarised in **Table 4-1**. AADT values are rounded to the nearest 100. Similarly, the annual average daily traffic flow (AADT) at each of the surveyed sites are presented on **Figure 4**. These are compared to the modelled traffic flows that were used in the MSBC.⁴ Equivalent plots showing AM peak, inter-peak and PM peak flows are presented in **Appendix F** of this report.

The baseline, or pre-construction traffic volumes provide a starting point enabling an assessment of the impact of the scheme on traffic flows and their assignment across the network. In particular, a comparison of the baseline traffic flows with the post opening surveys will highlight the impact of the scheme on traffic volumes through the mitigation areas and the local centres, such as Bramhall, Hazel Grove, Heald Green and Cheadle Hulme.

The proportion of HGVs are included within the summary in **Table 4-1**, providing the opportunity to monitor any changes in the HGV flows. This is especially important given the focus of the scheme on providing improved access to Manchester Airport and the strategic road network for freight trips, while reducing both the local centre traffic volumes and the proportion of HGVs through these areas, with the aim of providing a better environment for the local communities.

Furthermore, the outturn traffic volumes (those collated at the One Year and Five Year Post Opening stages) will be compared with forecast traffic volumes to provide an understanding of how the actual scheme impact on traffic volumes differ from the forecast impact.

4.2.1. A6MARR Transport Model

The building of a traffic model is both an expensive and time consuming process. For this reason, existing traffic models and in particular regional traffic models, are often subject to further expansion/ more detail in particular geographical locations, such that they offer a more refined representation in the study area/ area of interest, which may not have previously been at a sufficient level of detail to accurately support decision making.

The A6MARR transport model was developed from the variable demand modelling framework that was originally developed for the Greater Manchester Transport Innovation Fund (GMTIF) work. The model was updated specifically for the A6MARR scheme and it captured origin-destination trip and cost data across the

⁴ Modelled traffic flows are equivalent to TR2 model outputs

extent of the UK, with detailed simulation modelling across Greater Manchester, Cheshire and the surrounding environs. The A6MARR model was representative of 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. It was this 'TR1' A6MARR model which was used to inform and prepare the A6MARR MSBC as submitted in September 2012 at the 'Programme Entry' stage of the A6MARR scheme.

In autumn 2013, Cheshire East Council, (CEC), undertook additional data collection (origin-destination surveys and traffic counts) in the southeast quadrant of the A6MARR scheme area to inform consideration of transport issues and, in particular, to support scheme development for the proposed Poynton Relief Road.

In this instance, the new 2013 travel demand data was used, along with additional zoning and network detail, to re-build the base A6MARR model to support Stockport MBC's work for the Full Approval of the A6MARR and Cheshire East Council's work on the Poynton Relief Road economic case. Since the two schemes are inter-linked, using a consistent base model is clearly more efficient, but it is also important to avoid uncertainty whereby two traffic models – which are different – have the potential to forecast slightly conflicting traffic flows.

In February 2014, HFAS incorporated the new data on traffic patterns and volumes into the validated base year Saturn model, effectively updating it to:

- Revise the base year trip matrix to include the new RSI data and Count Data; -
- Create additional zones in the Cheshire East area and extend the area of detailed "simulation" coding; -
- Update model parameters to the revised WebTAG values from January 2014. -

The result was an 'updated' base model, which was subsequently referred to a TR2. The forecast traffic flows from this model were used within the A6MARR Business Case as submitted to the DfT in December 2014 as part of the Full Approval.

A more detailed summary on the updated modelling process, and the associated changes is provided in a technical note in **Appendix G** of this report.

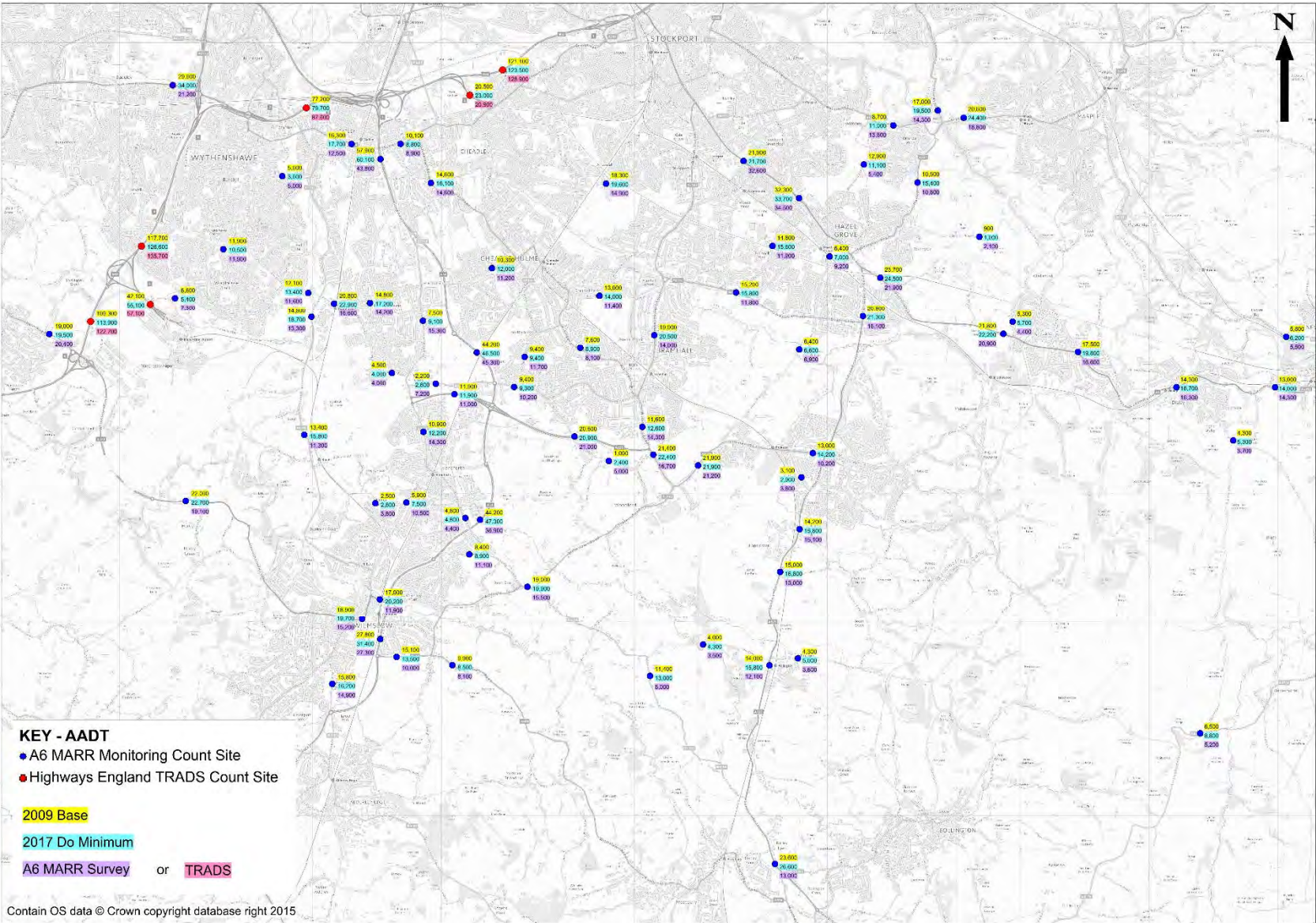
Table 4-1 A6MARR: Baseline Traffic Count Summary

Site Ref	Description	AADT	AADT HGV %	AM Peak	AM Peak HGV %	IP	IP HGV %	PM Peak	PM Peak HGV %
3	A560 Altrincham Road	22,000	0.8%	1,300	1.0%	1,400	1.0%	1,300	0.8%
4	Hollyhedge Road, Sharston	5,000	0.1%	400	0.1%	400	0.1%	400	0.0%
5	Simonsway, Heald Green	11,600	0.2%	1,100	0.3%	800	0.2%	800	0.5%
6	A6 Buxton Road	21,900	1.9%	1,200	2.0%	1,400	2.6%	1,500	1.0%
7	A523 Macclesfield Road	16,100	0.7%	1,000	0.7%	1,100	1.0%	1,000	0.6%
8	A523 London Road North	15,100	0.7%	800	0.8%	1,000	1.1%	1,100	0.5%
9	A538 Altrincham Road	19,100	0.5%	1,800	0.8%	1,100	0.6%	1,900	0.4%
10	A560 Gatley Road - West of Kingsway	12,500	0.3%	600	0.4%	900	0.3%	600	0.4%
11	A560 Gatley Road - East of Kingsway	8,900	0.2%	500	0.1%	600	0.2%	500	0.2%
12	A626 Marple Road	13,600	0.4%	800	0.7%	1,000	0.5%	700	0.4%
13	A626 Stockport Road, Marple	18,800	0.3%	1,100	0.9%	1,300	0.4%	1,500	0.3%
14	A5102 Bramhall Lane South	14,000	0.1%	900	0.2%	1,000	0.1%	1,200	0.1%
15	A5102 Woodford Road	14,300	0.2%	1,400	0.2%	900	0.2%	1,200	0.3%
16	A5102 Woodford Road - south of A555	16,700	0.8%	1,400	0.6%	1,100	0.9%	1,300	0.7%
17	A5143 Jacksons Lane	11,800	0.2%	600	0.3%	800	0.3%	1,000	0.1%
18	A5149 Wilmslow Road, Cheadle	14,600	0.1%	1,200	0.2%	1,000	0.1%	1,200	0.2%
19	A5149 Chester Road, Poynton	10,200	1.1%	800	0.9%	600	1.6%	500	0.7%
20	B5094 Stanley Road, Handforth	7200	0.1%	700	0.1%	500	0.1%	600	0.1%
21	B5094 Grove Lane, Cheadle Hulme	10,200	0.1%	300	0.2%	700	0.1%	1,000	0.2%
22	B5166 Hollin Lane, Styal	11,300	0.1%	1,200	0.1%	600	0.1%	1,200	0.1%
23	B5358 Wilmslow Road, Heald Green	15,300	0.1%	1,100	0.2%	1,000	0.2%	1,200	0.2%
24	B5358 Handforth Road, Handforth Dean	4,400	0.1%	600	0.0%	300	0.1%	500	0.0%
25	B5358 Bonis Hall Lane	8,000	0.2%	900	0.1%	500	0.3%	900	0.1%
26	Manor Road, Bramhall	11,400	0.1%	500	0.3%	800	0.1%	1,000	0.1%
27	Adswood road, Cheadle Heath	14,900	0.2%	1,000	0.4%	1,000	0.2%	1,300	0.2%

Site Ref	Description	AADT	AADT HGV %	AM Peak	AM Peak HGV %	IP	IP HGV %	PM Peak	PM Peak HGV %
28	Bean Leach Road, Offerton	5,400	0.1%	400	0.0%	400	0.1%	500	0.1%
29	Bramhall Moor Lane, Hazel Grove	11,900	0.2%	1,200	0.2%	800	0.2%	1,000	0.2%
30	Chester Road, Hazel Grove	9,200	0.1%	900	0.2%	600	0.1%	900	0.1%
31	Bolshaw Road, Heald Green	4,000	0.0%	500	0.1%	300	0.0%	400	0.0%
32	Finney Lane, Heald Green	14,200	0.1%	700	0.2%	900	0.1%	900	0.1%
33	Torkington Road, Hazel Grove	2,100	0.1%	300	0.0%	100	0.2%	400	0.1%
34	Clifford Road, Poynton	3,800	0.1%	400	0.1%	300	0.1%	500	0.1%
35	Woodford Road, Hazel Grove	6,900	0.1%	600	0.1%	500	0.1%	800	0.1%
36	Alderley Road, Wilmslow	14,900	0.3%	1,300	0.3%	1,000	0.3%	1,300	0.4%
37	Dean Row Road, Wilmslow	11,100	0.4%	1,100	0.4%	700	0.5%	1,000	0.5%
38	Manchester Road, Handforth	10,500	0.1%	800	0.1%	700	0.2%	900	0.1%
39	Stanneylands Road, Styal	3,800	0.1%	400	0.1%	200	0.1%	400	0.1%
40	Moor Lane, Woodford	5,000	0.1%	500	0.1%	400	0.1%	600	0.1%
41	Haguebar Road, New Mills	5,500	0.2%	500	0.2%	400	0.3%	500	0.2%
42	Buxton Road, New Mills	14,300	3.5%	900	3.6%	900	4.9%	1,100	1.8%
43	Buxton Road, High Lane	16,600	1.9%	800	1.8%	1,000	2.6%	1,300	0.9%
44	Buxton Road A6, Disley	16,300	2.1%	1,000	2.1%	1,000	2.8%	1,200	1.1%
45	Gillbend Road, Cheadle Hulme	11,700	0.1%	600	0.2%	800	0.1%	1,100	0.1%
46	Finney Lane, Heald Green	16,600	0.3%	1,000	0.5%	1,100	0.4%	900	0.7%
49	Windlehurst Road, High Lane	4,400	0.1%	400	0.1%	300	0.1%	400	0.1%
51	Prestbury Road, Wilmslow	10,000	0.2%	1,000	0.1%	600	0.3%	1,100	0.2%
54	Adlington Road, Woodford	15,500	0.5%	1,500	0.6%	1,000	0.5%	1,400	0.9%
55	A6 Buxton Road, High Lane	20,900	1.9%	1,500	2.0%	1,300	2.6%	1,300	0.9%
56	Simonsway, Wythenshawe	11,900	0.3%	900	0.2%	800	0.3%	1,000	0.3%
58	Offerton Road, Hazel Grove	10,800	0.6%	800	0.6%	700	1.0%	700	0.3%
60	Ack Land West, Cheadle Hulme	8,100	0.1%	800	0.2%	600	0.1%	700	0.2%
61	Styal Road, Heald Green	13,300	0.2%	1,000	0.3%	800	0.2%	1,000	0.3%

Site Ref	Description	AADT	AADT HGV %	AM Peak	AM Peak HGV %	IP	IP HGV %	PM Peak	PM Peak HGV %
62	Wilmslow Road, Handforth	14,300	0.2%	1,300	0.2%	1,000	0.2%	1,300	0.2%
65	Turves Road, Cheadle Hulme	11,200	0.1%	700	0.3%	800	0.1%	800	0.2%
68	A538, Wilmslow	11,900	0.5%	1,000	0.3%	800	0.5%	900	0.7%
69	Bailey Lane, Wythenshawe	7,300	0.2%	600	0.1%	400	0.1%	600	0.3%
70	London Road, Poynton	13,000	1.0%	1,200	0.7%	800	1.4%	1,200	0.6%
71	Mill Lane, Adlington	3,500	0.5%	400	0.4%	200	0.8%	400	0.4%
72	London Road, Adlington	12,100	1.1%	1,100	0.7%	800	1.4%	1,100	0.8%
73	Prestbury Road, Wilmslow	8,100	0.2%	800	0.2%	500	0.2%	900	0.1%
74	B5470 Macclesfield Road, West of Higher Lane	5,200	0.3%	700	0.2%	300	0.6%	700	0.1%
75	Buxton Old Road	3,700	0.1%	400	0.0%	200	0.1%	400	0.1%
76	Brookledge Lane, East of Wych Lane	3,600	0.2%	400	0.1%	200	0.3%	400	0.0%
77	A538 Hale Road / East of High Elm Road, Hale Barns	20,400	0.0%	1,856	0.0%	1,300	0.0%	1,900	0.0%
78	A5149 Chester Road / South of Lostock Hall Rd, Woodford	21,200	4.0%	1,900	3.9%	1,400	6.1%	2,000	2.0%
79	A34 Kingsway / South of Eden Park Road, Handforth	45,300	4.0%	3,800	4.0%	3,000	6.8%	3,800	1.7%
80	A555 Airport Eastern link Rd / Hall Ln overpass, Woodford	21,000	3.9%	1,900	3.7%	1,400	6.0%	1,900	1.7%
81	A6 Buxton Road, Stockport	32,600	5.1%	2,400	5.6%	2,100	7.9%	2,500	2.7%
82	A627 Dooley Lane	14,300	0.9%	600	0.9%	1,000	1.1%	900	0.6%
83	A523 Nr Bollington	13,000	0.5%	1,200	0.3%	800	0.7%	1,200	0.4%
84	A6 Buxton Rd / East of Poplar Grove, Hazel Grove	34,500	6.9%	2,300	9.6%	2,200	10.1%	2,500	4.5%
1+2	A34 Kingsway Northbound	43,800	2.3%	3,200	1.8%	2,700	2.1%	3,200	1.7%
47+48	A555, Handforth	11,000	0.3%	1,100	0.3%	700	0.2%	1,100	0.2%
52+53	A34, Handforth	36,900	1.4%	2,600	1.1%	2,500	1.2%	3,200	1.0%
63+64	A34, Wilmslow	27,300	1.0%	2,500	0.9%	1,800	0.9%	2,600	0.8%
66+67	A538 Alderley Road, Wilmslow	15,200	0.6%	1,300	0.5%	1,100	0.6%	1,200	0.5%

Figure 4. A6MARR: Baseline Annual Average Daily Traffic (Compared to Equivalent MSBC Modelled Flows, 2009 Base & 2017 Base without A6MARR)



4.3. Journey Time Analysis

4.3.1. Introduction

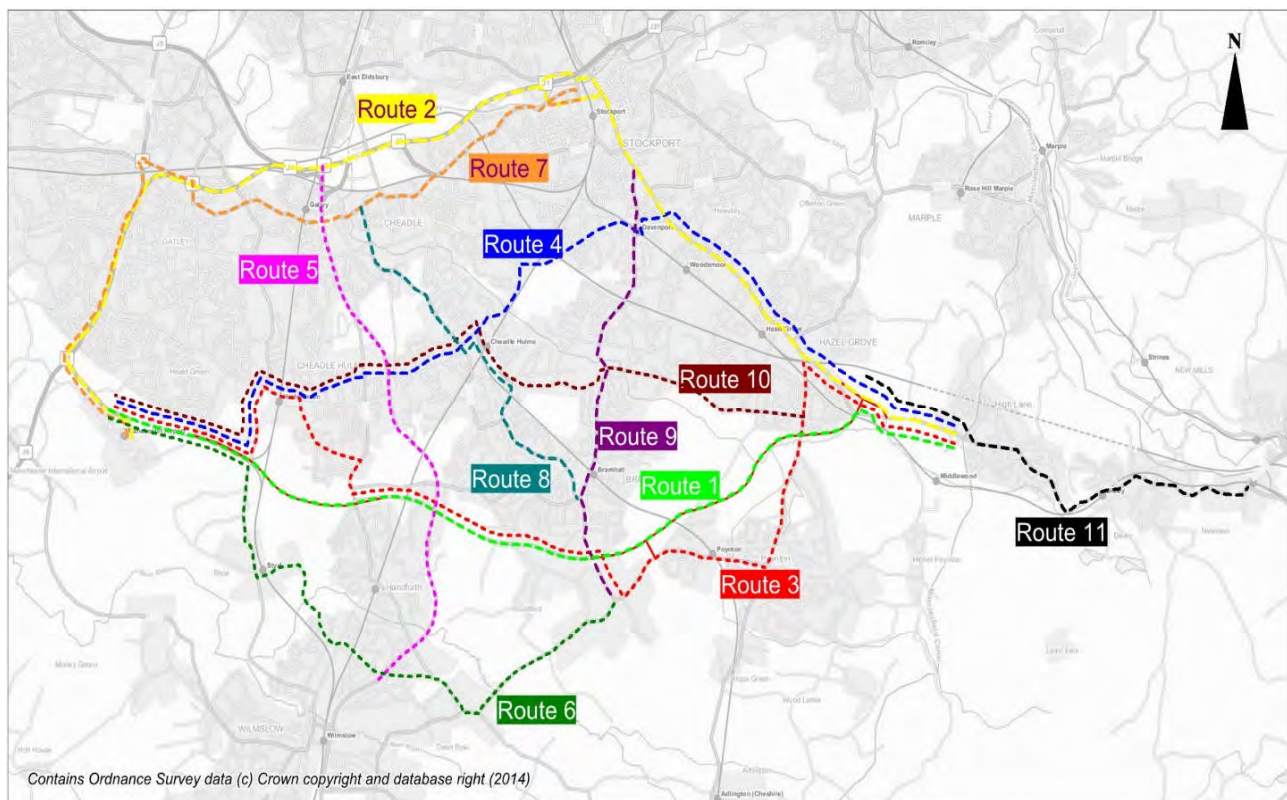
As identified in the MSBC, one of the existing problems across the study area is the congestion on the local and strategic network. Reduced journey times and improved reliability are envisaged to be a key outcome of the scheme implementation, ultimately impacting on business operating costs and potential employment opportunities and providing the platform for the region's economy to increase its GVA.

In order to understand the effect that the scheme has had on travel times, including their reliability and consistency, baseline journey time analysis was undertaken. **Figure 5** shows the routes on which journey time and reliability data has been collated as a basis for undertaking the monitoring of the observed impacts of the scheme, which include the following routes:

- 1 – A6 High Lane to Manchester Airport via the scheme
- 2 - A6 High Lane to Manchester Airport via the A6 and M60
- 3 - A6 High Lane to Manchester Airport via Poynton and A555
- 4 - A6 High Lane to Manchester Airport via Cheadle Hulme (Adswold Road and Ladybridge Road) and Heald Green
- 5 - A34/ Dean Row Road to M60
- 6 - Woodford to Manchester Airport via A5102 Wilmslow Road and Dean Row Road
- 7 - E/W route Stockport Town Centre (King Street West) to Manchester Airport via A560 and M56
- 8 – Cheadle to Bramhall via A5149 (A5102 to A560)
- 9 – A5102 (A6 to Woodford)
- 10 – Dean Lane (Hazel Grove) A523/ A5143 to Manchester Airport via Cheadle Hulme and Heald Green
- 11 – A6/ A6015 Albion Road to A6 from (between Mill Ln and Norbury Hollow Road)

The baseline journey time analysis will be compared with an equivalent journey time analysis in both the Year One and Five Post Opening Reports to understand the impact that the scheme has had on journey times.

Figure 5. A6MARR Baseline Journey Time and Journey Time Reliability Routes: Routes 1 to 11



4.3.2. Journey Time Data

The baseline journey time analysis was undertaken with TomTom data, which is collected from satellite navigation systems and has the advantage of large sample sizes, with data being available for all time periods from January 2008. The provision of the journey time data works by separating the road network into 'segments' of length between 1m and 1000m. Each car with a satellite navigation system in, which passes through a segment is recorded and its journey time, speed and date is logged anonymously against that segment. The TomTom webportal aggregates this segment data, to provide high sample sizes. A journey time route may contain 100s of 'segments', which each have their own sample and these are appended to create an overall journey time.

For each of the 11 key routes, journey time data has been assessed for seven time periods across the week, to provide an understanding of travel times during the weekday peak and inter peak periods, weekday counter peak periods, Saturday daytimes and free-flow conditions (overnight). The seven time periods are:

- Monday-Friday AM peak: 8am-9am
- Monday-Friday Inter peak: 10am-4pm
- Monday-Friday PM peak: 5pm-6pm
- Monday-Friday 7am-8am (shoulder AM peak)
- Monday-Friday 4pm-5pm (shoulder PM peak)
- Saturday 10am-4pm
- Monday-Sunday 10pm-6am (free-flow)

Journey time data for each of these time periods has been analysed for a 12 month period between 1st September 2013 and 31st August 2014. This represents the baseline journey time data, against which post-scheme results will be compared during the post opening stages. It is summarised in **Table 4-2 and 4-3**, which shows:

- Average journey times; and
- Journey time reliability, using the inter-quartile range journey times and the 5th to 95th percentile journey times.

Note: 'Route 1' is the journey from A6 High Lane to Manchester Airport via the scheme. Data is therefore not presented for the baseline, however this route will be reported during the One Year and Five Year Post Opening stages, and journey times compared to alternative travel routes which can be made between A6 High Lane and Manchester Airport (existing options are reported as Routes 2, 3 & 4). This will enable an understanding of the scheme's journey time improvements.

This baseline journey time reliability data is summarised for the AM Peak Hour (8am-9am) and the PM Peak Hour (5pm-6pm) in Table 4.3. The data for all seven time periods is presented in **Appendix H**.

Table 4-2 A6MARR Baseline Journey Time Summary

Ref	Route Description	Direction	Length (km)	Mon-Fri AM Peak 8am-9am	Mon-Fri Inter Peak 10am-4pm	Mon-Fri PM Peak 5pm-6pm	Mon-Fri 7am-8am	Mon-Fri 4pm-5pm	Sat 10am-4pm	Mon-Sun Free Flow 10pm-6am
1	A6 High Lane to Manchester Airport via the scheme	Eastbound								
		Westbound								
2	A6 High Lane to Manchester Airport via the A6, M60 and M56	Eastbound	20.3	32:40	29:05	45:04	27:13	40:54	28:21	22:56
		Westbound	19.8	39:21	30:31	35:33	32:50	34:41	30:50	23:29
3	A6 High Lane to Manchester Airport via Poynton, the A555 and Heald Green	Eastbound	19.2	31:49	30:00	41:37	28:39	37:29	30:09	24:57
		Westbound	19.3	40:24	30:15	33:45	31:22	31:49	31:09	24:29
4	A6 High Lane to Manchester Airport via Davenport, Cheadle Hulme and Heald Green	Eastbound	16.6	39:56	35:09	49:06	34:37	45:04	35:05	26:14
		Westbound	16.6	45:17	33:59	39:03	35:16	38:22	34:59	25:42
5	A34 from M60 to Dean Row Road (Wilmslow)	Northbound	8.5	13:57	09:50	15:56	13:35	13:17	10:44	07:50
		Southbound	8.5	11:31	09:46	15:52	09:57	13:28	10:19	07:48
6	Woodford to Manchester Airport via the A5102, Finney Green and Styal	Eastbound	11.7	20:04	17:18	22:26	18:30	19:11	17:08	15:14
		Westbound	11.8	22:22	17:49	19:45	18:42	19:00	18:12	15:43
7	King Street West (Stockport) to Manchester Airport via A560 and M56	Eastbound	13.1	29:06	22:56	33:51	22:15	29:01	25:12	17:26
		Westbound	12.3	30:29	22:30	31:40	24:52	30:56	23:25	16:39
8	Cheadle to Bramhall via Cheadle Road and Ack Lane West	Northbound	6.3	16:22	13:14	15:36	12:39	16:14	13:17	10:05
		Southbound	6.3	13:56	12:51	16:41	11:37	16:19	12:48	10:16
9	A6 (Cale Green) to Woodford via Bramhall	Northbound	6.5	16:22	13:36	14:49	13:28	15:10	13:29	09:48
		Southbound	6.5	17:46	13:06	17:14	12:30	15:22	13:50	09:41
10	Dean Lane (Hazel Grove) to Manchester Airport via Cheadle Hulme and Heald Green	Eastbound	12.7	28:50	24:51	35:04	24:25	30:50	25:28	19:08
		Westbound	12.6	31:57	23:44	27:16	25:11	26:50	24:24	18:25
11	A6 from (between Mill Ln and Norbury Hollow Road) to junction with A6015 Albion Rd	Eastbound	6.7	09:41	10:21	11:36	09:20	11:26	11:09	07:57
		Westbound	6.7	11:27	09:42	09:28	12:10	09:36	09:34	07:55
Journey Times are reported as mm:ss										

Table 4-3 A6MARR Baseline Journey Time Reliability Peak Periods Summary

Ref	Route Description	Direction	AM PEAK (Mon-Fri 8am-9am)					PM PEAK (Mon-Fri 5pm-6pm)				
			5%	25%	75%	95%	Mean	5%	25%	75%	95%	Mean
1	A6 High Lane to Manchester Airport via the scheme	Eastbound										
		Westbound										
2	A6 High Lane to Manchester Airport via the A6 and M60	Eastbound	18:15	21:51	33:06	51:45	32:40	21:24	31:09	50:30	01:15:41	45:04
		Westbound	20:33	26:29	42:53	01:03:45	39:21	19:31	23:40	37:01	57:46	35:33
3	A6 High Lane to Manchester Airport via Poynton, the A555 and Heald Green	Eastbound	19:57	24:07	34:23	51:30	31:49	21:37	28:07	46:19	01:10:42	41:37
		Westbound	20:27	25:39	45:19	01:10:28	40:24	20:21	24:47	35:09	50:19	33:45
4	A6 High Lane to Manchester Airport via Davenport, Cheadle Hulme and Heald Green	Eastbound	23:00	28:20	43:11	01:08:06	39:56	25:40	34:42	55:15	01:29:31	49:06
		Westbound	23:38	30:00	52:10	01:19:50	45:17	23:50	29:08	43:02	01:03:44	39:03
5	A34 from M60 to Dean Row Road (Wilmslow)	Northbound	07:11	09:13	17:17	25:59	13:57	08:21	12:03	19:04	27:25	15:56
		Southbound	07:19	08:28	11:34	18:43	11:31	07:45	09:54	17:07	27:09	15:52
6	Woodford to Manchester Airport via the A5102, Finney Green and Styal	Eastbound	13:34	15:48	21:22	33:14	20:04	14:10	16:46	24:19	38:46	22:26
		Westbound	13:51	16:05	22:13	31:08	22:22	13:55	15:56	21:08	29:38	19:45
7	King Street West (Stockport Town Centre) to Manchester Airport via M60	Eastbound	13:56	18:08	31:41	58:50	29:06	15:18	21:10	40:05	01:10:18	33:51
		Westbound	13:32	17:49	35:12	01:03:32	30:29	14:22	19:11	35:11	01:05:01	31:40
8	Cheadle to Bramhall via Chedle Road and Ack Lane West	Northbound	08:19	10:37	18:55	31:02	16:22	08:16	10:13	18:43	33:54	15:36
		Southbound	08:10	09:45	15:24	25:49	13:56	08:35	10:46	19:04	33:57	16:41
9	A6 (Cale Green) to Woodford via Bramhall	Northbound	08:57	11:12	18:14	27:58	16:22	09:13	11:09	15:49	24:18	14:49
		Southbound	09:11	11:30	21:03	33:16	17:46	09:27	11:39	19:30	32:18	17:14
10	Dean Lane (Hazel Grove) to Manchester Airport via Cheadle Hulme and Heald Green	Eastbound	17:25	21:21	32:23	49:56	28:50	19:00	24:31	39:33	01:07:58	35:04
		Westbound	17:19	21:24	37:03	59:34	31:57	17:30	21:05	30:42	45:00	27:16
11	A6 from (between Mill Ln and Norbury Hollow Road) to junction with A6015 Albion Rd	Eastbound	07:55	08:38	10:01	12:12	09:41	08:38	09:59	12:21	15:52	11:36
		Westbound	08:08	09:00	11:57	20:26	11:27	07:52	08:27	09:29	12:28	09:28

Journey Times are reported as (hh:)mm:ss

As agreed by the Programme Board, a number of additional routes between key local centres were highlighted as important to assess the impact of the scheme on average journey times. These are indicated on **Figure 6**, and include the following:

- **Manchester Airport and the Enterprise Zone** to/ from the following locations: Stockport town centre, Cheadle, Cheadle Hulme, Hazel Grove, Bramhall, and Poynton. The average journey times are summarised in **Table 4-4**.
- **Handforth Dean** to/ from the following locations: Wythenshawe, Cheadle, Cheadle Hulme, Hazel Grove, and Bramhall. The average journey times are summarised in **Table 4-5**.

Figure 6. Additional Journey Time Routes between Key Local Centres

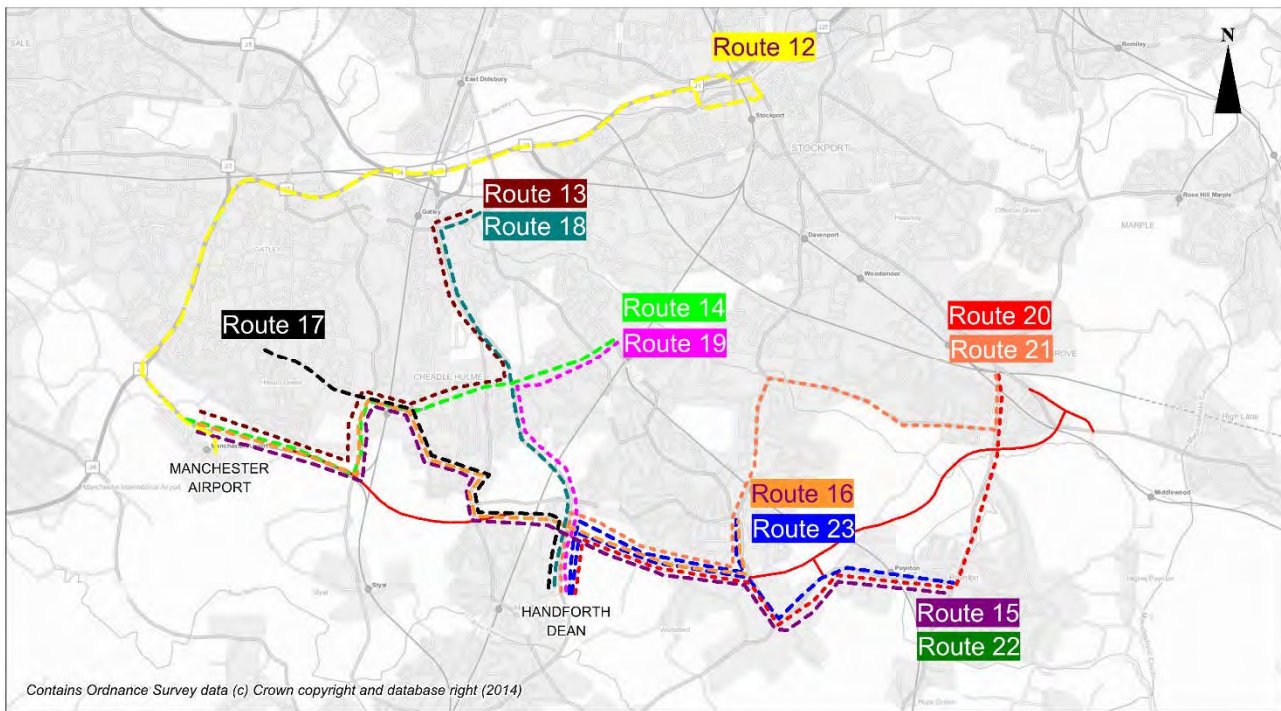


Table 4-4 A6MARR Baseline Average Journey Times to/ from Manchester Airport and the Enterprise Zone

Ref	Route Description: Manchester Airport to / from	Direction	Length (km)	Mon-Fri AM Peak 8am-9am	Mon-Fri Inter Peak 10am-4pm	Mon-Fri PM Peak 5pm-6pm	Mon-Fri 7am-8am	Mon-Fri 4pm-5pm	Sat 10am-4pm	Mon-Sun Free Flow 10pm-6am
12	Stockport town centre, A6/Exchange Street via M60 and M56	Eastbound	12.4	14:38	11:34	21:17	11:40	17:31	11:44	10:15
		Westbound	11.9	15:46	11:37	15:02	13:49	13:43	11:44	10:33
13	Cheadle via the A34 and Heald Green	Eastbound	8.4	18:50	15:11	23:49	16:37	18:57	15:45	11:23
		Westbound	8.4	20:27	15:29	21:01	16:34	22:28	16:25	11:09
14	Cheadle Hulme via Heald Green	Eastbound	6.9	18:13	14:16	21:33	14:59	17:56	14:37	10:18
		Westbound	6.8	17:15	13:22	15:05	14:23	15:13	13:44	10:16
	Hazel Grove	A comprehensive summary of this can be found in table 4.2								
15	Poynton via the A555 and Heald Green	Eastbound	13.2	22:07	20:41	28:18	19:45	25:22	21:02	17:19
		Westbound	13.3	22:28	19:22	20:38	19:51	20:37	19:39	16:57
16	Bramhall via the A555 and Heald Green	Eastbound	10.6	17:39	16:16	21:25	16:11	19:05	17:02	13:57
		Westbound	10.8	18:23	16:10	17:41	16:34	17:24	16:29	13:58
Journey Times are reported as mm:ss										

Table 4-5 A6MARR Baseline Average Journey Times to/ from Handforth Dean

Ref	Route Description: Handforth Dean to/ from	Direction	Length (km)	Mon-Fri AM Peak 8am-9am	Mon-Fri Inter Peak 10am-4pm	Mon-Fri PM Peak 5pm-6pm	Mon-Fri 7am-8am	Mon-Fri 4pm-5pm	Sat 10am-4pm	Mon-Sun Free Flow 10pm-6am
17	Wythenshaw (Simonsway/ Rowlandsway) via Heald Green and the A555.	Eastbound	6.6	13:34	12:26	15:58	11:57	14:13	13:03	10:10
		Westbound	6.6	14:45	12:07	14:19	13:35	13:55	12:27	09:48
18	Cheadle via A34	Northbound	6.2	12:33	08:32	14:42	12:23	12:07	09:31	06:25
		Southbound	6.2	11:25	09:07	16:04	09:00	16:36	09:35	06:13
19	Cheadle Hulme via Turves Road and the A34	Northbound	4.7	11:56	07:37	12:26	10:45	11:07	08:23	05:20
		Southbound	4.7	08:12	07:00	10:08	06:49	09:22	06:54	05:20
20	Hazel Grove via the A555/ Poynton A523	Eastbound	10.0	16:02	14:24	21:22	15:01	19:32	14:21	11:22
		Westbound	9.8	21:31	14:04	16:10	14:09	14:18	14:29	10:41
21	Hazel Grove via the A555/ Bramhall A5102 and A5143 Jacksons Lane	Eastbound	10.5	17:57	15:42	21:15	16:31	20:03	16:12	13:01
		Westbound	10.2	19:57	15:18	15:50	15:20	15:56	16:10	12:08
22	Poynton via the A555	Eastbound	7.0	10:30	09:27	14:46	10:07	13:21	09:28	07:26
		Westbound	6.8	09:13	07:49	07:42	08:02	07:42	07:50	06:53
23	Bramhall via the A555	Eastbound	4.4	06:02	05:02	07:53	06:33	07:04	05:29	04:04
		Westbound	4.3	05:11	04:40	04:49	04:48	04:33	04:43	03:58
Journey Times are reported as mm:ss										

4.4. Cycling and Pedestrian Data

A key component of the scheme is the provision of the segregated cycle/pedestrian route along the scheme and the existing A555, and the complementary measures that have been proposed to make efficient use of the road space that will be released when traffic is removed from existing roads. Baseline pedestrian and cycling data was collected across the study area, in the vicinity of the scheme and on approaches to the scheme. This will allow a direct comparison to be undertaken when similar counts are undertaken after the scheme is opened.

In 2010, counts were undertaken along a number of public footpaths and 'Rights of Way' in the vicinity of the scheme. The SEMMMS Footpath Monitoring Report GMTU Report 1621 (July 2010) summarised the number of footpath users at 17 sites along the length of the scheme. These surveys were undertaken on three days, a Saturday, Sunday and a weekday to provide an indication of a typical day between 07:00 – 21:00. These counts included horse riders, wheelchair users and pushchairs, all of which were recorded separately. For the purposes of this report, these have been categorised as 'other' users.

These counts were supplemented in September 2014 with an additional eight sites collecting pedestrian and cycle data. These surveys were undertaken on three days, a Saturday, Sunday and a weekday to provide an indication of a typical day between 07:00 – 19:00.

The following plan indicates the locations of these sites. The count data is summarised in Table 4.6.

Figure 7. A6MARR Baseline Pedestrian & Cyclist Count Locations

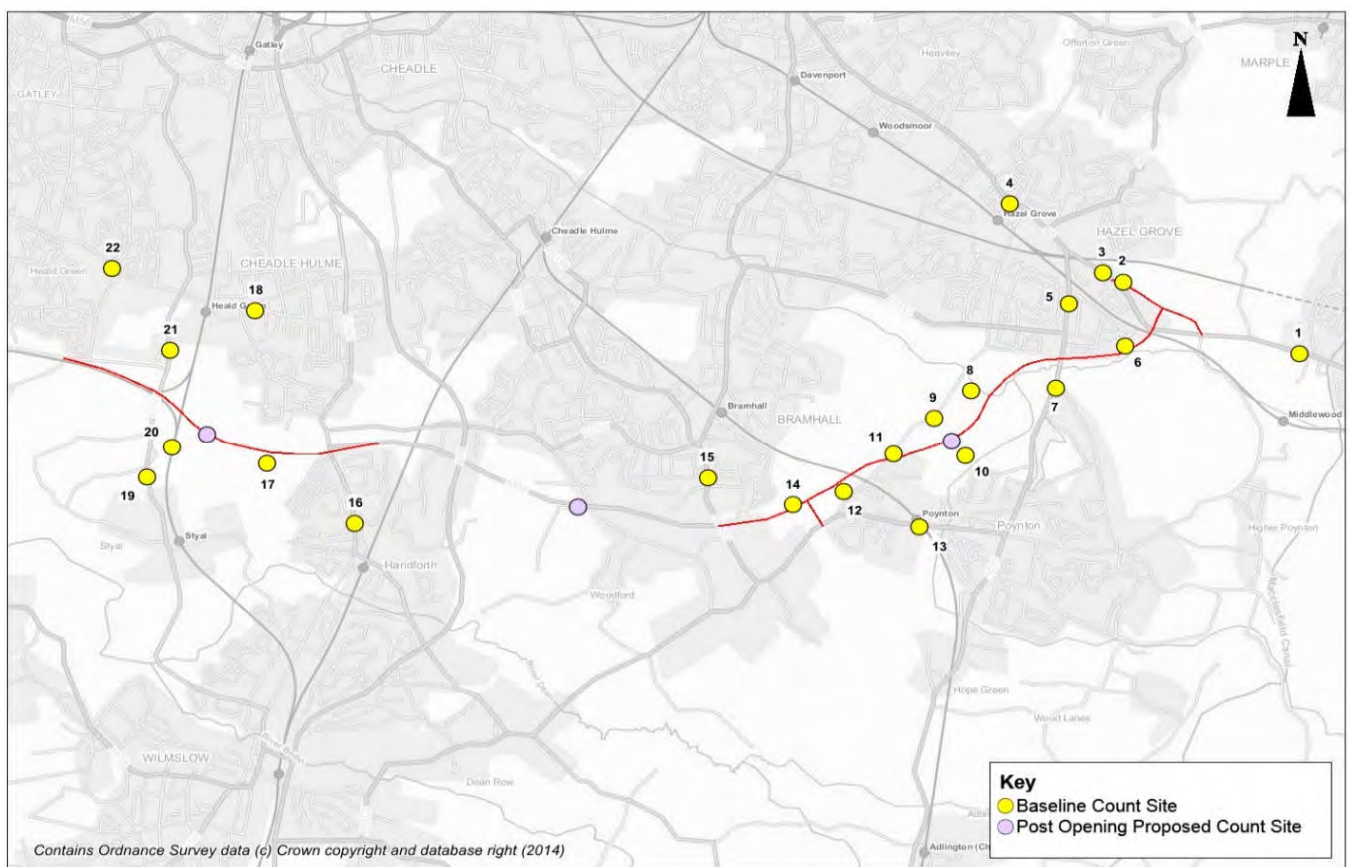


Table 4-6 A6MARR Baseline Pedestrian and Cycle Counts

Site Ref	GMTU/ (Atkins) Site Ref	Description	Pedestrian	Cyclist	Other	Total
1	(6)	A6 Buxton Road, Btwn Threaphurst Lane & Middlewood Road	166	245	N/A	412
2	2	Road into Hazel Grove Golf Club, at bridge over the stream	61	20	0	81
3	1	Toucan crossing on the A6 Buxton Rd in Hazel Grove	111	16	13	140
4	(3)	A6 London Road, Btwn Lever Street & Hatherlow Lane, Hazel Grove	1,905	211	N/A	2,116
5	(8)	A523 Macclesfield Road, Btwn A5143 Dean Lane & Haddon Road, Hazel Grove	295	164	N/A	459
6	3	Footpath 76 at the bottom of Old Mill Ln	193	75	6	274
7	4	A523 Macclesfield Rd, just north of the car park entrance	379	342	34	755
8	5	Footpath 3 at the end of Mill Hill Hollow	53	1	0	54
9	7	Footpath 31 at the gate/footpath sign on Woodford Rd	5	0	0	5
10	6	Footpath 37, just north of Park House Farm	4	1	0	5
11	8	Footpath 21 on Woodford Rd	48	145	2	198
12	9	Footpath 19 off Woodford Rd, which starts opposite house no.32.	0	0	0	0
13	(7)	A5149 Chester Road, Btwn Lostock Hall Road & Hazelbadge Road, Poynton	437	318	N/A	755
14	10	Intersection of footpaths 14a, 15 & 16	35	0	0	35
15	(5)	A5102 Woodford Road, Btwn Holly Road & Patch Lane, Bramhall	386	190	N/A	576
16	(4)	B5358 Wilmslow Road, Btwn Henbury & Meriton Roads, Handforth	376	274	N/A	650
17	11	Intersection of footpaths northwest of The Grange	62	1	1	64
18	(2)	Finney Lane, Btwn Preesall Avenue & Freshfield, Heald Green	895	181	N/A	1,076
19	13B	Hollin Lane approximately 100m north of Moss Lane	119	265	7	391
20	12	Footbridge over the railway at the back of Beech Farm in Styal	10	0	0	10
21	13A	Entry to footpath which accesses footbridge over the railway on Styal Rd	7	1	0	8
22	(1)	Simonsway, Btwn Haslington Road & Peel Hall Road, Wythenshawe	394	180	N/A	574

4.4.1. Consultation with the Vulnerable Road Users Group

Throughout the planning process, a number of consultations have been undertaken with the Vulnerable Road Users Group (VRUG). Furthermore, as part of the design process, both an independent concise pedestrian and cycle audit review was undertaken as part of the preferred scheme, and a preliminary design stage non-motorised user audit was undertaken, which incorporated comments from the consultations.

A full summary of the consultations, *the Independent Concise Pedestrian and Cycle Audit (COPECAT) (Transport Initiatives LLP, Sept 2013)* and the *A6MARR Non-Motorised Users Audit (Aecom, April 2014)* is included within **Appendix I** of this report.

It is proposed that as part of the Year One Post Opening evaluation, consultation be undertaken with the 'Vulnerable Road Users Group' to capture their views and opinions on the impact of the scheme. This will attempt to gauge perceptions in pedestrian and cycling safety and how this may have changed due to the scheme.

4.5. Bus Data

Baseline bus data was requested from Stagecoach to enable a comparison for with a consistent set of post opening data to assist in understanding if the scheme has resulted in a change in bus patronage levels or service reliability. The following data was requested:

- Bus patronage data on Stagecoach services 368 & 369 which operate between Stockport town centre and Wythenshawe/ Manchester Airport in Autumn 2014;
- Patronage data for local bus services connecting Stockport town centre to provide an understanding of underlying bus passenger number trends in the local area in Autumn 2014;
- Timetabled journey times on these services and reliability data to understand the actual running times during the week for the following time interval: 7am-10am, 10am-3pm and 3pm-7pm.

Patronage data has also been requested from High Peak buses for service 199, Buxton to Manchester Airport.

4.6. Air Quality Assessment

4.6.1. Introduction

Pre-development air quality monitoring was undertaken by AECOM for a six month period, from 14 August 2014 to 12 February 2015. A full summary of the air quality monitoring assessment, including the methodology, monitoring locations, the results and conclusions is provided in **Appendix J** of this report, *A6 to Manchester Airport Relief Road: Pre-development Air Quality Monitoring, October 2014 (AECOM, April 2015)*.

The monitoring was undertaken using passive diffusion tubes to measure monthly concentrations of nitrogen dioxide (NO₂) in order to determine an average NO₂ concentration over the period of the monitoring. Passive NO₂ diffusion tubes were installed in pairs (duplicates) to increase the quality of the data recorded and overall data capture. Diffusion tubes are subject to possible sources of interference which can cause under, or over, estimation (bias) compared to a reference method. Therefore, duplicate co-location of diffusion tubes with a continuous reference method analyser was used to derive a local bias adjustment factor in accordance with the methodology defined in LAQM.TG(09) and the most recent version of the tool published on line on the Defra LAQM website.

The air quality monitoring was undertaken for a six month period, but due to the fact that concentrations typically vary throughout the year, to derive an 'annual' average the data was 'seasonally adjusted' by comparison with a number of regional background continuous monitoring stations operated by Defra as part of the Automatic Urban and Rural Network (AURN). An adjustment factor to determine an annual mean value was calculated in accordance with the methodology defined in LAQM.TG(09).

The diffusion tubes were placed at approximately 2.5 m height in order to represent human exposure whilst being out of reach to avoid vandalism.

4.6.2. Air Quality Monitoring Locations

Monitoring of nitrogen dioxide (NO₂) was undertaken at 86 locations near the route of the proposed road. Of these:

- 64 were at the same locations as the monitoring undertaken in 2009 which was used to support the modelling for the Environmental Statement (ES);
- 7 were at the same locations as the monitoring undertaken in 2013 at the St James School in Cheadle; and
- A further 15 additional locations were also identified as a result of the consultation process, where it was considered that monitoring data would be useful.

Where possible, monitoring was undertaken at the same sites as the 2009 surveys used to support the ES work. However five of these sites were no longer accessible, and minor amendments to the site locations were made.

Plans indicating the locations of each of the survey sites are shown in the Air Quality Pre-Construction Monitoring Report.

4.6.3. Baseline Air Quality Monitoring Results

The fully adjusted annual mean NO₂ concentrations at each of the survey sites are presented in **Table 4-7**. The raw six month mean, bias-adjusted six month mean, along with the monthly diffusion tube results are summarised within the Air Quality Pre-Construction Monitoring Report. -

Eight sites exceeded the annual mean objective of 40 µg/m³: These are presented in bold in the following table, and summarised below as: -

- MO59, MO60 and MO62 on the A34 near Cheadle; -
- STJ1 at the A34 roundabout near St James School; -
- HG1 and HG3 in Hazel Grove, at the junction of Stockport Road and Macclesfield Road; -
- HL1 in High Lane; and -
- N1 in Newtown. -

Table 4-7 NO₂ Diffusion Tubes Monitoring Results, µg/m³

Site ID	Name	Bias & Seasonally Adjusted, 2014 Mean
MO1	Bleasdale Road N.	26.8
M02	Bleasdale Road S.	24.5
M03	Cranham Road W.	29.9
M04	Cranham Road E.	27.6
M05	Hucklow Drive	31.5
M06	Hucklow Drive	26.2
M07	Selstead Road.	29.9
M08	Roxholme Walk	20.3
M09	Woodhouse Road	21.5
M010	Swithin Road	21.5
M011	Wynfield Avenue	33.7
M012	Tedder Drive Transect S 9m	27.0
M013	Tedder Drive Transect S 17m	24.5
M014	Tedder Drive Transect S 32m	23.0
M015	Tedder Drive Transect S 41m	22.0
M016	Emerald Road	22.1

Site ID	Name	Bias & Seasonally Adjusted, 2014 Mean
M017	Cunningham Drive	23.0
M018	Styal Road N.	26.0
M019	Styal Road S.	23.1
M020	Manchester Road (steep hill)	30.7
M021	Handforth Road S.	19.4
M022	Handforth Road S.	19.4
M024	Wilmslow Road/ Spath Lane	20.8
M025	B5358/ A555 roundabout	19.9
M026	B5358 S of roundabout	25.2
M027	Pickmere Road	17.2
M028	Longsight Lane	22.0
M029	Ack Lane West – E	20.8
M030	Ack Lane West – W	20.4
M031	Spath Lane East	17.9
M032	Hall Moss Lane Transect	21.0
M033	Hall Moss Lane Transect	22.5
M034	Hall Moss Lane Transect	19.2
M035	Hall Moss Lane Transect	22.3
M038	Hall Moss Lane Transect	18.0
M039	Hall Moss Lane Transect	16.7
M040	Woodford Road S of roundabout N	30.2
M041	Woodford Road S of roundabout S	28.9
M042	Woodford Road N of roundabout N	27.7
M043	Woodford Road N of roundabout S	28.5
M044	Bramhall Lane South S	32.8
M045	Bramhall Lane South N	24.9
M046	Bramhall Lane South N	25.9
M047	Bramhall Lane South N	32.3
M048	Albany Road (school parking nearby)	14.3
M049	Meadway Urban BG	14.9
M050	Longnor Road Urban BG	13.6
M051	Macclesfield Road N	29.0
M052	Macclesfield Road S	23.1
M053	Ashbourne Road	13.0
M054	A6 Buxton Road N	35.9
M055	A6 Buxton Road S	31.0
M056	Buxton Road, High Lane E	34.1
M057	Buxton Road, High Lane W	31.4
M058	Torkington Road	27.4
M059	A34 SB N	47.1
M060	A34 SB S	41.5
M061	A34 NB S	31.0

Site ID	Name	Bias & Seasonally Adjusted, 2014 Mean
MO62	A34 NB Centre near Gatley Road jct	50.6
MO63	A34 NB near M60 jct	35.3
MO64	Acre Lane E	21.4
MO65	Acre Lane W	25.0
MO66	A523/ Clifford Road (Poynton)	20.9
MO67	A6 London Road (Hazel Grove)	24.9
STJ1	St James' School – No 1	41.3
STJ2	St James' School – No 2	36.1
STJ3	St James' School – No 3	22.8
STJ4	St James' School – No 4	22.0
STJ5	St James' School – No 5	23.6
STJ6	St James' School – No 6	19.9
STJ7	St James' School – No 7	22.9
QPS1	Queensgate Primary School – No 1	14.1
QPS2	Queensgate Primary School – No 2	13.4
P1	Glastonbury Drive, Poynton	12.3
P2	Residential Location on Chester Road (A5149)	29.3
P3	Residential Location on London Road (A523)	27.9
P4	Residential Location on Mill Hill Hollow	13.4
HG1	Hazel Grove (A6/ A523 junction)	48.8
HG2	Hazel Grove (A6/ A523 junction)	38.1
HG3	Hazel Grove (A6/ A523 junction)	41.4
A6-1	Greater Manchester AQMA A6 Eastern End	28.2
A6-2	Greater Manchester AQMA A6 Eastern End	27.5
HL1	High Lane (A6)	43.1
HL2	High Lane (A6)	18.7
D1	Disley (A6)	29.2
N1	Newtown (A6)	42.1

4.7. Noise Assessment

4.7.1. Introduction

Pre-development noise monitoring for the scheme was undertaken in October 2014 by AECOM. A full summary of the noise monitoring assessment, including the methodology, monitoring locations, the results and conclusions is provided in **Appendix K** of this report, *A6 to Manchester Airport Relief Road: Pre-development Noise Monitoring, (AECOM, March 2015)*.

The noise monitoring followed the shortened measurement procedure described in Calculation of Road Traffic Noise (CRTN)⁵.

Daytime measurements were carried out between 10:00 and 17:00 hours during October 2014. The measurements consisted of ambient, maximum, and statistical sound level indicators over three consecutive one hour periods (made up of continuous five minute samples). The monitoring was undertaken during normal working weekdays (e.g. outside of school holidays), mostly during calm weather conditions (wind speeds less

⁵ Department of Transport/Welsh Office, (1988); Calculation of Road Traffic Noise.

than 5 metres per second (m/s), no precipitation). Any noise contribution from sources other than road traffic (e.g. aircraft noise) was excluded from the measurements.

The results of the measurements were used to calculate the L_{10} (18-hour) dB(A) level at each location. These levels will be used to validate the baseline road traffic noise prediction models, which in turn will be used to identify any locations which may be eligible under the Noise Insulation Regulations, 1975 (NIR).

The NIR criteria is summarised as follows:

- That within 15 years of the date of the new or altered highway being first opened noise levels reach 68 dB $LA_{10,18h}$;
- That noise levels within a 15 year period are at least 1 dB(A) higher in comparison to levels prior to scheme opening; and
- The contribution of the increase in noise level must be at least 1 dB(A) within the 15 year period.

4.7.2. Noise Monitoring Locations

Noise measurements were undertaken in October 2014, prior to the construction works beginning for the A6 MARR scheme, in order to determine pre-development noise levels at 23 receptor positions as per **Table 4-8** and illustrated on **Figure 7**.

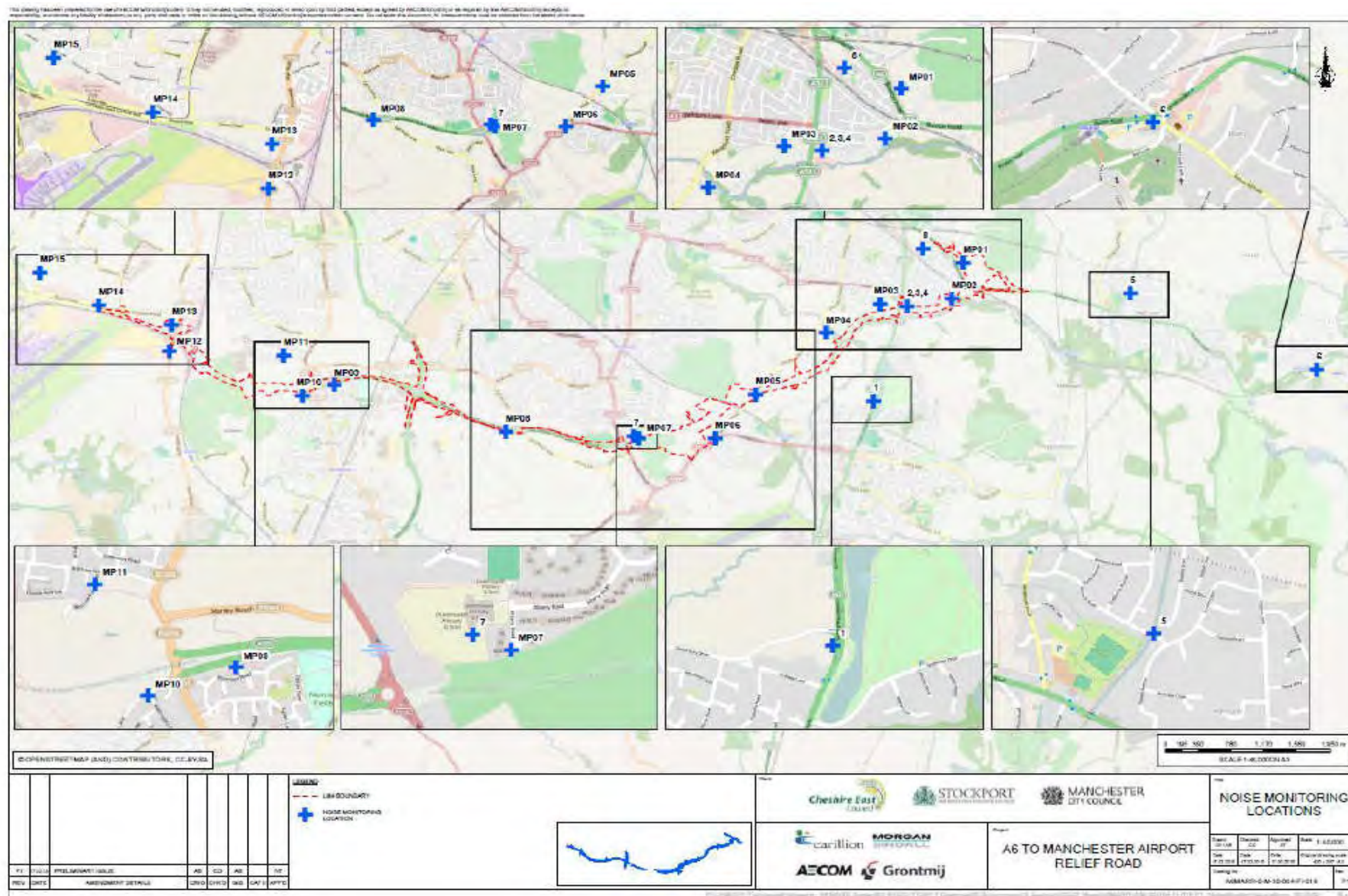
Table 4-8 Noise Monitoring Locations

ID	Source	Area/ Junction
1	Additional Consultation	Glastonbury Drive estate, Poynton
2		Residential areas east of Macclesfield Road, near proposed junction
3		Residential areas west of Macclesfield Road, near proposed junction
4		Macclesfield Road.
5		High Lane
6		Disley
7	SEMMMS Phase 2 Consultation	(Reference #22) Queensgate Primary School, Albany Road, Stockport, Cheshire SK7 1NE
8		Reference #295) Macclesfield Road Junction
MP01	2013 ES Noise Chapter / Atkins Report	Cranleigh Drive
MP02		Opposite no 12 Old Mill Lane
MP03		Between 12 and 19 Sheldon Road
MP04		Mill Hill Hollow
MP05		Woodford Road
MP06		Opposite no 173 Chester Road
MP07		Albany Road – between nos 83 and 86 and adjacent to field.
MP08		Dairy House Lane
MP09		10 Swettenham Road
MP10		Clay Lane
MP11		Bolshaw Farm Lane
MP12		Styal Road
MP13		Tedder Drive
MP14		Carsdale Road
MP15		Felskirk Road / Thaxted Walk

It is noted that where there were clusters of receptors, measurements were carried out at a single representative location in order to reduce duplication of measurements e.g. locations 2, 3, and 4 along Macclesfield Road were carried out using a single location.

Any noise insulation that will be required as part of the regulations will be reported within the Year One Post Opening Report.

Figure 8. Noise Monitoring Locations



4.7.3. Baseline Noise Monitoring Results

Table 4-9 presents a summary of the L_{10} (18-hour) dB(A) levels at each monitoring location (derived from the survey results and the CRTN shortened measurement procedure). Locations that may be eligible under the NIR (e.g. 1, 6, MP05, MP06 and MP12) will be identified and considered during the updated noise modelling.

Table 4-9 Summary of Noise Monitoring Results

ID	Area/ Junction	Road Traffic Noise Level dB $LA_{10,18h}$
1	Glastonbury Drive estate, Poynton	77.2
2	Residential areas east of Macclesfield Road, near proposed junction	58.8
3	Residential areas west of Macclesfield Road, near proposed junction	58.8
4	Macclesfield Road.	58.8
5	High Lane	51.6
6	Disley	69.9
7	(Reference #22) Queensgate Primary School, Albany Road, Stockport, Cheshire SK7 1NE	59.5
8	Reference #295) Macclesfield Road Junction	56.1
MP01	Cranleigh Drive	53.7
MP02	Opposite no 12 Old Mill Lane	53.4
MP03	Between 12 and 19 Sheldon Road	51.3
MP04	Mill Hill Hollow	46.0
MP05	Woodford Road	74.3
MP06	Opposite no 173 Chester Road	76.8
MP07	Albany Road – between nos 83 and 86 and adjacent to field.	53.5
MP08	Dairy House Lane	66.7
MP09	10 Swettenham Road	54.9
MP10	Clay Lane	56.5
MP11	Bolshaw Farm Lane	53.7
MP12	Styal Road	73.1
MP13	Tedder Drive	59.5
MP14	Carsdale Road	64.3
MP15	Felskirk Road / Thaxted Walk	56.4

4.8. Ecology

A suite of ecology surveys were undertaken by AECOM/ Grontmij in 2014 to inform the mitigation required for the scheme. Specific mitigation strategies for each of the species found along the route have subsequently been prepared. The following Mitigation Strategies set out the detailed mitigation for each species: -

- Badger Mitigation Strategy (A6MARR-0-W-30-003-RE-014-P3); -
- Barn Owl Mitigation Strategy (A6MARR-0-W-30-003-RE-019-P2); -
- Bat Mitigation Strategy (A6MARR-0-W-30-003-RE-015-P2); -
- Breeding Bird Mitigation Strategy (A6MARR-0-W-30-003-RE-016-P3); -
- Brown Hare Mitigation Strategy (A6MARR-0-W-30-003-RE-017-P3); -
- Great Crested Newt Mitigation Strategy (A6MARR-0-W-30-003-RE-013-P3); -
- Kingfisher Mitigation Strategy (A6MARR-0-W-30-003-RE-023-P3); -
- Otter Mitigation Strategy (A6MARR-0-W-30-003-RE-018-P3); and -
- Reptile Mitigation Strategy (A6MARR-0-W-30-003-RE-029-P2). -

An overview of the mitigation strategies is provided in an additional AECOM/ Grontmij document entitled *A6MARR: Overview of Ecology Mitigation Strategy*⁶.

These reports included a series of best practice mitigation principles which are recommended throughout construction, including the need for the relevant Natural England development licences.

The ecological mitigation that is required during construction will be monitored as part of the CEMP audits. However, the need and scope of post opening surveys has not yet been agreed.

The Environmental Statement (ES) proposed habitat mitigation measures, which are summarised in **Table 4-10**. As part of the Year One Post Opening Evaluation, it is recommended that the survival rates of these habitats be monitored.

Table 4-10 Proposed Habitat Monitoring

Habitat Type	Mitigation Measure
Norbury Brook SBI	Re-introduction of new woodland within SBI boundary equivalent to 1% of total woodland area (19.86ha mixed habitat)
Semi-natural broad-leaved woodland	14.5ha of mixed native woodland
Semi-improved grassland	15.6ha species rich grassland
Open water (ponds)	34 new open water ponds
Running water	Diverting 70m Norbury Brook to reflect existing profiles & associated vegetation. The online bridging of 60m section of Lady Brook
Hedgerows	5825m species rich hedgerow planted
Schedule 9 plants	None proposed

4.9. Greenhouse Gas Emissions Assessment

As part of the MSBC, the greenhouse gases (GHGs) sub-objective appraisal was undertaken in accordance with the methodology described in TAG Unit 3.3.5. GHGs are taken to be carbon dioxide equivalent emissions as carbon dioxide is considered the most important greenhouse gas and is therefore used as a key indicator of the influence on transport projects. Emissions were calculated for the do-minimum (DM) and do-something (DS) scheme opening year, design year (2030) and over a 60 year period following opening.

As part of the Year One Post Opening Evaluation, the outturn DS traffic model will be used to calculate greenhouse gas emissions, and compare them with the opening year emissions forecasts.

4.10. Economy

4.10.1. Introduction

The Economic Baseline was prepared to ensure that an appropriate dataset was available which reflected the existing local and sub-regional economic conditions, prior to the implementation (and construction) of the scheme.

Monitoring socio-economic changes in the vicinity of the scheme enables a better understanding of its economic impact and how the scheme contributes to wider economic growth. The Economic Baseline provides a foundation for any changes in the economy to be assessed against, allowing subsequent economic additionality from the scheme to be set out. The Economic Baseline captured information on the local economy, setting out the socio-economic character of south-east Manchester using a variety of secondary data sets

⁶ A6MARR: Overview of Ecology Mitigation Strategy – Pursuant to the Discharge of Planning conditions 15 (SMBC) and Planning conditions 15 (MCC), April 2015. *Reference A6MARR-0-W-30-003-RE-022 P3*

along with information from local businesses through a series of surveys and consultation that were undertaken in September/ October 2014.

The following sections provide a broad overview of the Economic Baseline. A full summary of this is provided in the *A6MARR: Impacts on the Economy – Baseline Report (Atkins, Jan 2015)* contained within **Appendix L** of this report.

4.10.2. Socio-Economic Profile

In order to understand the impacts of the scheme on the economy, it is important to set out the broader socio-economic character of the locality within which the scheme will be delivered. A range of socio-economic indicators have been identified, using data from secondary sources, in order to understand the context of the area. Indicators have been selected based on their relevance to the scheme and locality. These include: -

- Population; -
- employment and economic structure; -
- housing, rental markets and employment land – including retail occupancy levels; -
- car ownership and congestion; and -
- social factors. -

The key points that were highlighted as part of this analysis include the following, all of which are based on the 2011 Census data: -

- The population of the Study Area was 119,984 in 2011, a population decrease of 0.9% between 2001 and 2011. 61% of the population are of working age. The population of the Study Area accounts for 10% of the population across the three local authority areas through which the scheme passes.
- The level of economic activity, often referred to as the available workforce, is the sum of the population aged between 16 and 74 who are either employed, seeking employment or a full time student. Economic inactivity refers to those who are not engaged in the labour market including those who are retired, caring for dependants, permanently sick or disabled, or students. The rates of economic activity in Study Area (69.7%) in 2011 was broadly in line with the national average, however it was lower than the rate in both Cheshire East (70.6%) and Stockport (71.3%). Manchester had the least economically active population at 63.5%.
- The unemployment rate is the proportion of those economically active who are out of work. In 2011 unemployment in the Study Area stood at 3.4%, second lowest behind Cheshire East at 3.2%. The area of highest unemployment was Manchester at 5.7% compared to 3.9% in Stockport and 4.4% nationally.
- The Study Area had the lowest proportion of people with no qualifications at 18.8% and the highest proportion of people with Level 4 qualifications at 33%, compared to 22.5% with no qualifications and 27.4% with Level 4 nationally.
- In the Study Area, Professional Occupations accounted for the largest share of all occupations (at 21% of the total), a trend repeated across all benchmark areas. The Study Area had the second highest proportion of residents employed in the highest occupation category (managers, directors and senior officials 13.2%) and the lowest proportion, of all areas, of people engaged in elementary occupations (8.1%).
- The level of retail vacancy rates in the centres close to the A6MARR scheme route indicated that vacancy rates were highest in Handforth, at 12.7% and lowest in Bramhall at 4.6%.
- The Manchester City Council Authority Monitoring Report 2013 outlines target development of employment land in key areas close to the A6MARR route, including targets at Manchester Airport of 30ha and Wythenshawe 55ha.
- Travel by car or van is the dominant mode of travel to work across the Study Area at 72.2%. The Study Area has a low proportion of households with no cars or van (17%), which is lower than the national and regional averages of 26% and 28% respectively. It also has a higher proportion of households with two or more cars at 42%, compared to 32% nationally.

4.10.3. Business Consultation

Consultation with businesses was undertaken within the locality of the scheme as well as the wider area (Greater Manchester and Cheshire East). This consultation drew on information from online and telephone surveys as well as more detailed telephone interviews/ consultations with a small number of businesses in the vicinity of the scheme route.

4.10.3.1. Online Business Survey

An online survey was conducted with businesses across the local authority areas of Manchester, Stockport and Cheshire East. The survey was designed to provide contextual information relating to business operations in these areas. In particular it provides an insight into current issues of businesses relating to transport and accessibility and their importance to business operation and future potential.

The questions covered a range of topics including an overview of the overall operation of the business, an overview of the performance and growth plans of organisations, transport and connectivity issues and details relating to the A6MARR scheme. The survey was advertised on the SEMMMS website and was distributed to members of the business community through newsletters from Stockport Council and the GM Chamber of Commerce.

The following summary provides an overview of the online business survey findings:

- The online survey was open to businesses from all industrial sectors. The responses split by sector showed that 19.1% of businesses responding were within the production and manufacturing sector, with a further 17.6% within the construction sector and 13.2% within the professional, scientific and technical services.
- More than half of the businesses were located within in Stockport.
- More than half of the businesses had been operating for more than 20 years, with approximately another 30% operating between 6 – 20 years.
- Almost 60% of responses were from small businesses (employing between 1 – 49 staff). 60% of businesses envisaged that they would experience a change in staff numbers over the next 12 months, of these more than 80% thought the change would be an increase in staff numbers.
- Approximately half of all of the responding businesses customers and suppliers were located in the local (Manchester/ Stockport/ Cheshire East) or sub-regional areas (Manchester, Merseyside, Lancashire, Cheshire). A further 30% of both customers and suppliers were located nationally.
- Businesses were asked to highlight which factors were most important to the competitiveness of their business operation. Access was a key theme, with access to customers, skilled workforce and transport all rated highly by businesses (each at 20% of responses). Location was also noted as important with 13% of responses.
- Businesses were asked to indicate the importance of location as a factor of their business operation and performance. 67% of respondents identified location as being very important or important to their operations.
- Similarly, over 80% of respondents identified transport and connectivity as either very important or important to the operation and performance of their business.
- Almost 80% of businesses responding indicated that congestion negatively affects the operation of their business. Whilst the locations of congestion problems varied, the areas mentioned most often included the strategic road network routes including the A6 and A34; Motorway network including the M60, M56 and M62; and areas of Poynton, Hazel Grove and Manchester Airport.
- Businesses were asked to consider the importance of various strategic road network routes to their business operation. Of those responding, 46% stated the M60, 43% the M56 and 41% the A6 as being very important or important to their operations.
- All of the businesses responding were familiar with the A6MARR scheme, with more than 70% of them indicating that the scheme would benefit their business.

4.10.3.2. Telephone Survey

The telephone survey was conducted with a cross-section of businesses in the areas of Manchester Airport / Airport Enterprise Zone, Handforth Dean, Stanley Green and Hazel Grove. The survey was designed to provide business specific details to form a baseline position against which a future assessment of economic impacts of the A6MARR scheme would be considered. In particular it provides an insight into current issues of businesses relating to transport and accessibility and their importance to business operations and future potential. Overall 100 businesses were surveyed, with these businesses all being located within the key business areas that are most likely to be affected by the implementation of the scheme.

- A range of businesses were consulted which operate across a variety of industrial sectors. The majority of businesses surveyed operated in the Retail and Wholesale (27%), with Transport & Storage (19%) being the second highest.
- 43% of the businesses were located in the Manchester Airport Enterprise Zone, with a further 39% in Hazel Grove.

- Of the responding businesses, the average number of years trading was 16 years, with more than 80% of businesses classified as a small/ micro-business (employing between 1-49 employees)
- A total of 41% of customers and 30% of suppliers are located in 'very local' or 'local' areas – very local are defined as Manchester Airport, Airport City Enterprise Zone, Handforth Dean, Stanley Green Industrial Estate and Hazel Grove. Local is defined as the broad local authority areas of Manchester, Cheshire East and Stockport.
- 76% of businesses indicated that transport and connectivity were either very important or important to their operations. Only 3% indicated it was unimportant.
- 67% of businesses indicated that their business operations were negatively affected by congestion, with a number of locations identified as the focus of congestion – including the key strategic road network routes of the A6 (22%), M60 (18%), M56 (16%), A34 and M62 (10% each).
- While 85% of the businesses consulted were familiar with the A6MARR scheme, with 69% responding that the scheme would benefit the operation of their business – with improved journey times and reliability being the most quoted benefits.

4.10.3.3. In-depth Telephone Interviews

The time restrictions of business operators resulted in a total of nine in-depth telephone interviews with businesses, just short of the target of 10-15.

The key outcomes of these discussions are summarised as follows:

- One of the prime benefits for businesses locating within the study area (SE Manchester) was the motorway network. However, access to the motorway network was highlighted as a key issue by businesses, in particular longer and unreliable journey times on the local road networks when accessing the motorway network.
- The majority of the businesses' customers and suppliers were located across the areas of Greater Manchester and Merseyside. For those businesses involved in delivery of goods to customers the proximity to their customer base was critical as it directly impacts business costs and performance. The unreliability of access to the motorway network was also identified as a key impact on business performance, resulting in a need to deploy more vehicles to deliver the same volume of work due to delays and unreliable journey times.

Businesses identified the main benefits of the scheme to be faster and more reliable journey times which would enable them to better balance the capacity on the network with customer needs. Investment in the scheme was seen as very positive for the area and was likely to provide improved business confidence, attract new businesses and business growth. The more reliable journey times across the area, to the motorway network and to Manchester Airport was seen as providing business benefits in terms of expanding markets and attracting new investment and development to local businesses. The implementation of the scheme was thought to support business expansion and make recruitment of staff easier due to improved accessibility. In addition those businesses reliant on the road network also indicated the implementation of the scheme would provide access to a wider catchment of potential customers due to improved journey times and greater network reliability.

4.11. Health Impact Assessment

A Health Impact Assessment (HIA) was undertaken for the scheme in 2013⁷. The report provides a baseline assessment against which the post-scheme impacts will be assessed. The HIA is particularly concerned with the distribution of effects within a population, as different groups are likely to be affected in different ways. It therefore looked at how health and social inequities/inequalities might be reduced or widened by the scheme.

The HIA identified a number of indicators against which the actual and perceived positive and negative health and wellbeing impacts on local residents living near the A6MARR can be monitored and evaluated. The majority of these indicators are already the subject of monitoring, for example the impacts on Local Air Quality, Noise, Accidents, and Pedestrians and Cyclists, traffic flow changes and the implementation of appropriate mitigation and complementary measures, and promote the adoption of Travel Plans for new and existing development. The Monitoring and Evaluation Plan recommended additional public consultation is undertaken

⁷ A6MARR: IOM Centre for Health Impact Assessment: HIA (October 2013)

via the 'Local Liaison Forum' in a bid to determine the impact the scheme has had on other indicators of health and wellbeing.

5. Next Steps

This report forms the first stage of the A6MARR's Monitoring and Evaluation. At the time of writing it is envisaged that the scheme will be fully opened and operational in Autumn 2017. Based on these timeframes, the next stages of the monitoring will be as follows:

- One Year Post Opening Outcome Evaluation Report, commencing Autumn 2018; and
- Five Year Post Opening Impact Evaluation Report, commencing Autumn 2022.

However, it is proposed to undertake a desktop review of each of the process evaluation metrics that are summarised within this Baseline Report at intervals during the scheme delivery. The first of these is currently programmed for January 2016.