Macclesfield Movement Strategy

ATKINS

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1. Introduction

1.1. The preparation and implementation of a multi-modal Movement Strategy for Macclesfield was a commitment outlined in the recent report of traffic modelling undertaken for the draft Local Plan Strategy development proposals. In recognition that new development in the town will add additional pressure to the highway network, the Movement Strategy is being prepared to examine all modes of transport and seeks to encourage increased use of public transport, walking and cycling. The strategy also includes a phased strategy for the implementation of localised highway infrastructure and capacity improvements at key locations.

1.2. The strategy draws upon the findings of the Macclesfield S-Paramics Traffic Modelling reported in May 2014. In addition, consideration is given to the requirements of individual and phased developments which may impact on the scope and timing of identified infrastructure improvements.

1.3. Strategy elements have been developed in line with a series of objectives and evaluated in terms of deliverability and level of impact. Measures to encourage sustainable travel have also been discussed with Cheshire East Council's bus travel and cycling officers.

Existing Travel Patterns

1.4. Macclesfield serves as an important service and employment centre for its own residents and those in its surrounding hinterland. Historically, it has diversified from silk manufacturing to develop new financial and business services, and IT and creative industries. The town benefits from its proximity to Greater Manchester and its airport, a direct rail link to London, and the attractive high quality environment that surrounds the town. Highway links to the Motorway network are relatively poor.

1.5. Macclesfield has a number of business parks and industrial estates which provide accommodation for businesses. Hurdsfield Industrial Estate, located to the east of the Silk Road to the north of the town centre, is the largest traditional industrial estate in Cheshire East and is home to a number of local, national and international companies including Astra-Zeneca. Further to the north, Tytherington Business Park offers primarily office accommodation with some light industrial units. Lyme Green Business Park is located to the south of the town on London Road, and provides light industrial units, car showrooms and a retail park / bowling alley. Smaller scale industrial estates include the Heapy Street / Gunco Lane employment area and the Fence Avenue Industrial Estate closer to the town centre.

1.6. 2011 Census data in respect of car or van availability has been extracted from Table KS404EW for Macclesfield, the Cheshire East authority and England as a whole. The data is summarised in Table 1-1 and shows that car ownership levels in Macclesfield and the Cheshire East area are higher than the average values for England.

Table 1-1 2011 Census Car or Van Availability

Car or Van Availability	Macclesfield*	Cheshire East	England
No cars or vans in household	19.5%	16.1%	25.8%
1 car or van in household	43.3%	41.1%	42.2%%
2 cars or vans in household	29.8%	32.8%	24.7%%
3 or more cars or vans in household	7.4%	10.0%	7.4%
Total	100.0%	100.0%	100.0%

* statistics for Macclesfield built-up area which includes Macclesfield, Bollington and Prestbury

1.7. 2011 Census data in respect of the method of travel to work for the resident population aged 16-74 has been extracted from Table QS701EW for Macclesfield, the Cheshire East authority and England as a whole. The data is summarised in Table 1-2 and shows that Macclesfield has

higher levels of the resident population travelling to work by car compared to England as a whole. Correspondingly the town has lower levels of residents travelling to work by train and bus. Nevertheless, the town has higher levels of residents travelling to work on foot, with the Census identifying that 10% of residents walk to work.

Table 1-2 2011 Census Method of Travel to Work

Method of Travel to Work	Macclesfield*	Cheshire East	England
Work mainly at or from home	4.1%	5.0%	3.5%
Underground, tram, light rail	0.1%	0.1%	2.6%
Train	2.0%	1.9%	3.5%
Bus	1.6%	1.2%	4.9%
Taxi	0.4%	0.2%	0.3%
Motorcycle or moped	0.4%	0.4%	0.5%
Driving a car or van	44.8%	45.8%	36.9%
Passenger in a car or van	3.7%	3.4%	3.3%
Bicycle	1.4%	1.8%	1.9%
On foot	10.0%	6.6%	6.9%
Other method of travel	0.4%	0.4%	0.4%
Not in employment	31.1%	33.1%	35.3%
Total	100.0%	100%	100%

* statistics for Macclesfield built-up area which includes Macclesfield, Bollington and Prestbury

1.8. At the time of the 2001 Census, around 60% of residents in employment worked within the town, with 40% travelling to work outside of the town. Common destinations for Macclesfield residents commuting to work include Manchester, Stockport, Wilmslow and Alderley Edge.

Macclesfield Transport Challenges

1.9. The town currently experiences peak period congestion around the town centre and on key commuter routes. Whilst a town centre Urban Traffic Control system has been implemented on Silk Road, Churchill Way and Park Lane within the last 5-10 years, congestion still occurs due to the volume of traffic not only entering and exiting the town centre, but also traversing the core area using Silk Road, Park Lane, and Cumberland Street/ Hibel Road.

1.10. Long delays occur in the morning peak period on Congleton Road as commuters enter the town from the south, and on Chelford Road as commuters leave the town. Similarly, long evening peak delays occur on Silk Road on approach to the roundabout junction with Hibel Road and the signalised junction with Buxton Road, and on Park Lane on approach to the Flowerpot signalised junction. Likewise, the Cumberland Street and Hibel Road route that traverses the northern side of the town centre and provides an important access route into and across the town, generates delays throughout the day with knock-on impacts on Prestbury Road.

1.11. Therefore, Macclesfield already experiences a number of highway challenges which, without effective mitigation measures in place, will worsen due to new development proposed in the town. The draft Local Plan Strategy proposes development within the town of up to 3,500 new residential units, 15 hectares of employment land, and 5,000 sqm of convenience retail, in addition to a range of community facilities. The highway impacts of development proposals have been assessed using Cheshire East Council's (CEC) S-Paramics traffic model for the town.

1.12. With future development in the town, almost all routes will experience an increase in traffic during the morning and evening peak periods. The greatest traffic flow increases are shown to occur in the A536 Congleton Road corridor, the A523 London Road / Silk Road corridor, and the A537 Chester Road / Chelford Road corridor. It is acknowledged that the town currently experiences peak period congestion, and development is predicted to increase average journey times across the town. Whilst drivers would be expected to notice some peak hour increases in journey times

as they experience additional delay at selected locations, the increases will take a number of years to occur, and may well be further mitigated as drivers retime their journeys to avoid peak congestion or increase the amount of time they work from home. Nevertheless, significant highway infrastructure improvements have been proposed and are discussed in this report.

1.13. The town benefits from a mainline rail station served by Virgin and Northern Rail services. The station is well located for access to the town centre and is popular for commuters travelling into Manchester. Bus services within the town provide adequate coverage but low level frequencies that do not encourage use for commuting purposes.

1.14. Critical challenges facing the town can be summarised as follows:

- Town centre routes and isolated junctions suffer peak period congestion resulting in delays and air quality problems;
- Bus service provision within the town and to key employment destinations outside of the town are limited and do not encourage high levels of residents travelling to work by bus;
- Rail services to Manchester, Stockport and Birmingham are good, with direct and quick connections. However, bus service access to the rail station is limited, and existing station car parking is in limited supply;
- Cycle routes do not provide comprehensive linkages across the town;
- Local Plan Strategy development proposals within the town will further increase traffic volumes and peak hour journey times despite the introduction of recommended highway infrastructure improvements; and
- Some of the new development in the town is located on peripheral sites that will require integration into existing sustainable travel networks and linkages to employment and services.

Strategy Objectives

1.15. The Macclesfield Movement Strategy has been prepared in response to the existing and future transport challenges facing the town. The following objectives have been identified to guide the scope and emphasis of future strategy elements:

- Promote and improve sustainable travel;
- Reduce traffic congestion, delays and air quality issues on key routes through a reduction in vehicular trip making and implementation of localised infrastructure improvements;
- Integrate new development sites with established communities to increase travel choice, based on comprehensive networks and linked facilities;
- Create the conditions to support local employment opportunities which can be accessed by sustainable modes; and
- Improve accessibility through the town to encourage walking and cycling and improve health and wellbeing.

2. Highway Network Performance

Existing Highway Network Performance

2.1. The Macclesfield S-Paramics model was first developed by the former Cheshire County Council before being applied by Atkins to assess the impacts of town centre development and the introduction of highway improvements. Atkins was commissioned in 2011 to update the model to provide an appropriate tool for forecasting the impacts of potential Local Plan Strategy sites, and to support the review of Planning applications within the town centre. As part of the update process the model was extended to improve coverage of potential Local Plan sites located on the periphery of the town.

2.2. During 2012, further model updates were undertaken to improve model definition in the vicinity of the South Macclesfield Development Area (SMDA) and land between Congleton Road and Chelford Road. Additional traffic survey data collected in Autumn 2012 was used to update the model matrices and produce a 2012 Base model. A Model Validation Report was produced by Atkins in October 2012 to demonstrate that the model was fit for purpose. The 2012 weekday models have been validated to industry standards using traffic flow and journey time data for key corridors.

2.3. The S-Paramics model covers the following weekday time periods in detail - AM peak period (07:00-10:00) and PM peak period (16:00-19:00), enabling assessment of impacts during the peak hours of 08:00-09:00 and 17:00-18:00.

2.4. The model replicates existing morning peak congestion issues at the Broken Cross roundabout and the Flowerpot signals, and evening peak queuing problems on the Silk Road, Hibel Road and Cumberland Street. Overall the model demonstrates that areas of the existing network are operating at capacity during peak periods, and long queues occur as a result.

Existing Sustainable Transport Networks

2.5. The town benefits from a mainline rail station served by Virgin and Northern Rail services. The station is well located for access to the town centre and is popular for commuters travelling into Manchester. Bus services within the town provide adequate coverage but low level frequencies do not encourage use for commuting purposes.

2.6. National Route 55 (NCN55) of the National Cycle Network runs through Macclesfield and currently links Marple in the north and Congleton in the south. When complete the route is intended to run from Telford to Preston. The route runs along Byron's Lane and Gunco Lane to the south-east of the town centre before continuing through the town centre along Sunderland Street before running parallel to the Silk Road north of the town towards Bollington.

2.7. An existing local route connects the town centre and NCN55 route with southern areas of the town and extending to Moss Lane which abuts the SMDA development site. A further cycle route runs north-south along the western side of the town, extending between Moss Lane and Chester Road via the Flowerpot junction and utilising sections of off-street routes.

Predicted Future Travel Demands and Highway Network Performance

2.8. With proposed development to be delivered through the life-time of the Local Plan, significant increases in traffic levels are projected to occur in the town. As part of the traffic modelling undertaken for Local Plan development proposals, the overall increase in traffic levels associated with proposed development allocations has been calculated. Table 2-1 presents the calculated increase in traffic levels in the town, as modelled in the S-Paramics traffic model for the town.

Table 2-1 Predicted Traffic Growth

Scenario	AM Peak Hour	PM Peak Hour
2012 Base model	16201	16039
Future Year Base model (including committed development)	16479 (+1.7%)	16376 (+2.1%)
Local Plan Strategy model	18646 (+15.1%)	18907 (+17.9%)

2.9. The level of development is predicted to lead to a 15% increase in traffic in the town during the morning peak hour, and an 18% increase in traffic in the evening peak hour. This level of increase necessitates significant highway infrastructure improvements, but will nevertheless lead to a worsening of peak period congestion in the town.

2.10. Following the inclusion of proposed highway improvements within the traffic model, the level of development is predicted to result in journey times increasing by 15%. In other words, an average journey made during either the morning or evening peak period is predicted to last 15% longer. Therefore, a journey in the morning rush-hour into the town centre which may theoretically take 7 minutes in the absence of development would take just over 8 minutes following the completion of all proposed development in 2030. Similarly, a journey through the town in the evening peak from north to south may theoretically take 12 minutes to complete in the absence of development, but following the completion of all proposed development in 2030 would take almost 14 minutes to complete.

2.11. Predicted journey time increases assume no change in working practices and retiming of journeys. In reality, drivers may well respond to increased journey times by retiming their journeys, for instance leaving for work earlier in the morning to avoid the peak in congestion.

2.12. Whilst impacts on individual routes would vary according to the level of traffic flow increases and the delivery of individual highway improvements, the broad level of journey time increase and traffic impact across the town is not considered to be severe. Whilst drivers may well notice increases in journey times as they experience additional delay at selected locations, the increases will take a number of years to occur (over the life of the Local Plan), and may well be further mitigated as drivers retime their journeys to avoid peak congestion or increase the amount of time they work from home. Whilst it is acknowledged that the town currently experiences peak period congestion, in many cases the highway infrastructure improvements are intended to address existing problems in addition to catering for additional development traffic. CEC is committed to deliver this Movement Strategy and necessary highway improvements, and on this basis the modelling suggests that traffic flow increases associated with the proposed level of development in the town can be mitigated to avoid severe impacts to the operation of the highway network.

3. Highway Infrastructure Requirements

Locations for Infrastructure Improvements

3.1. Traffic modelling undertaken as part of the draft Local Plan Strategy assessment identified a range of locations for infrastructure improvements required over the Local Plan period to deliver the proposed level of growth in Macclesfield. Identified improvement locations and potential schemes identified as part of the modelling process are included in Table 3-1.

Table 3-1 Infrastructure Requirements

Location	Potential Scheme Description
Silk Road	• Silk Road / Hibel Road junction and Hibel Road improvements • A523 Silk Road and Mill Lane minor lining and widening improvements, and coordination of signals
Chester Road	• A537 Chester Road / Ivy Road roundabout improvements • A537 Chester Road / Fieldbank Road junction improvements • Broken Cross roundabout improvements
Cumberland Street	• Cumberland Street corridor capacity improvements
Churchill Way	• Provision of right-turn filter at junction with King Edward Street
Congleton Road	• Flowerpot junction improvements
Park Lane	• A536 Park Lane / Churchill Way roundabout improvement and Park Lane widening
Prestbury Road	• Prestbury Road / Cumberland Street roundabout improvements
Byron's Lane	• Signal optimisation and/or upgrade

3.2. Whilst not detailed in Table 3-1, the modelling assumes that delivery of the SMDA development will provide a new link road between the A536 Congleton Road and the A523 London Road, with new signalised junctions provided where the new road meets with Congleton Road and at the junction of London Road / Winterton Way.

Interim Infrastructure Requirements

3.3. The assessment of the draft Local Plan Strategy development proposals has been undertaken for a future year scenario in which all development and mitigation is constructed. In reality, certain development sites will come forward earlier than others, with associated mitigation requirements which may impact on the overall package of infrastructure improvements summarised in Table 3-1 and the prioritisation and timing of schemes.

3.4. As an example, the Council is aware there are several planning applications pending on sites to the south of the town. As a result, these developments could potentially result in a higher / earlier level of impact on Congleton Road and Moss Lane than the wider draft Local Plan Strategy proposals assessed in the Macclesfield traffic model, which included the proposed SMDA link road between the A536 Congleton Road and A523 London Road.

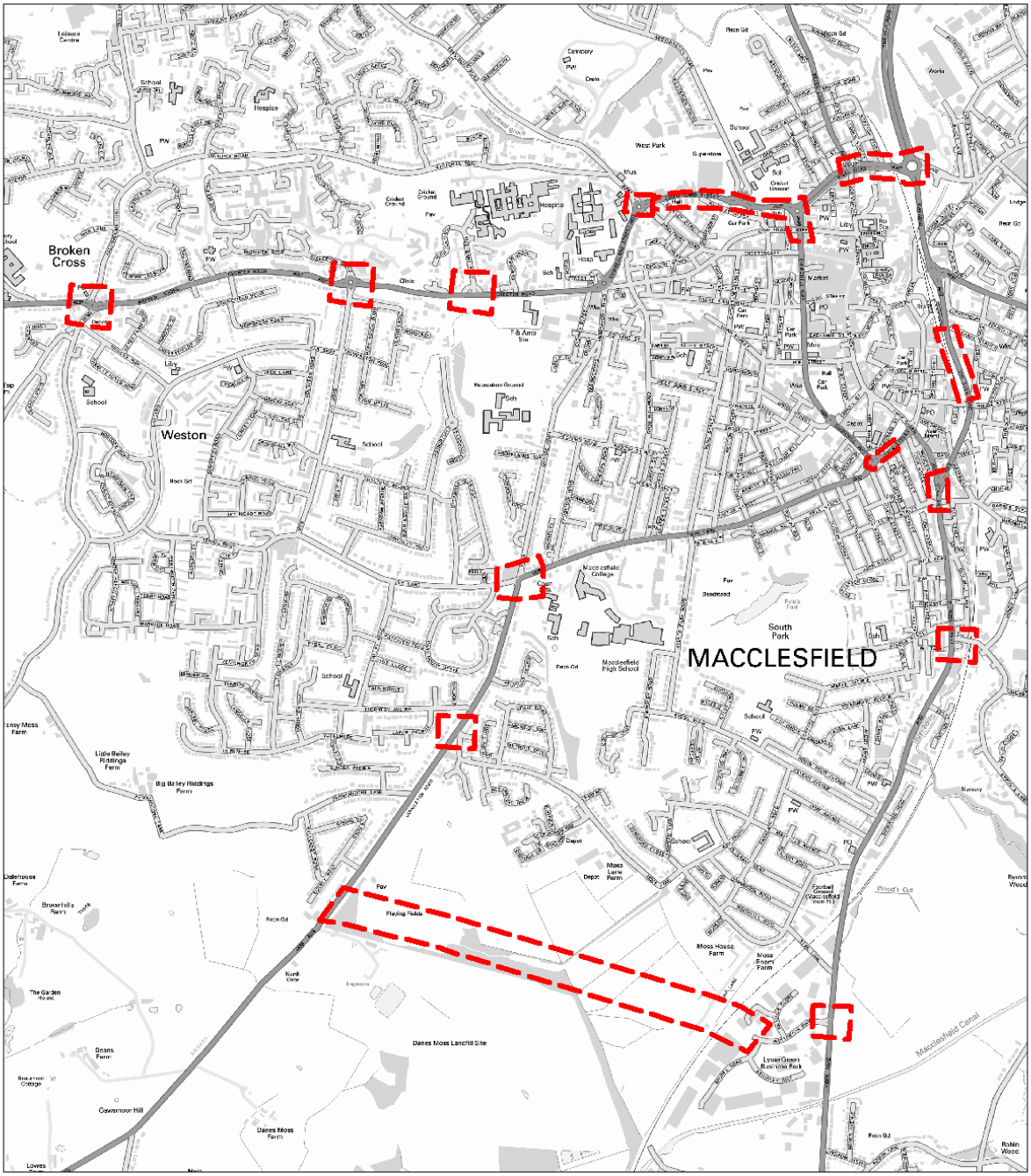
3.5. Whilst the proposal developed as part of the Local Plan Strategy traffic modelling is for improvements to the existing signalised junction, an alternative scheme to provide a new roundabout at this location is currently under consideration and will be further developed by the Council. A plan indicating land under the ownership of CEC around the Flowerpot junction is included in Appendix B.

3.6. In addition, an improvement scheme to signalise the junction of Moss Lane with Congleton Road is also under consideration. Whilst the traffic modelling undertaken to assess the impacts of the draft Local Plan Strategy demonstrates that queues will lengthen on Moss Lane due to increased traffic movements on Congleton Road, the modelling also shows overall flow reductions on Moss

Lane due to the provision of the SMDA link road. Consequently the signalisation of the Moss Lane junction with Congleton Road was not considered to be a priority. However, with the maturity of development proposals to the south of the town likely to come forward ahead of the full SMDA link road, impacts on queuing levels on Moss Lane will be increased during the early years of the Local Plan period. The signalisation scheme is therefore under consideration as an early priority.

3.7. A plan of the proposed locations for infrastructure improvements is provided in Figure 3-1. This includes infrastructure to be delivered as part of the SMDA development.

Figure 3-1 Proposed Locations for Infrastructure Improvements



4. Encouraging Sustainable Travel

Travel Planning Activities

4.1. The traffic modelling undertaken for the draft Local Plan Strategy development proposals made an allowance for the future implementation of Travel Plans at new residential development sites. Therefore, future traffic levels associated with new residential development assume that measures will be implemented to reduce car use.

4.2. With home-working and flexible-working becoming increasingly common, it is likely that a proportion of the assumed reduction in development traffic levels will be brought about by improvements in remote working technology and employment conditions. Nevertheless, travel planning measures will still be necessary to provide the required 'nudge' towards sustainable travel modes (car sharing, public transport, walking and cycling) for commuter journeys.

4.3. The Council will need to have resources in place to influence travel behaviour for new employment and residential premises. Whilst developers will be required to implement their own travel planning measures, the Council will need to lead and coordinate certain activities. This will ensure that travel planning activities are extended to the wider Macclesfield population rather than just concentrated on new development sites.

4.4. Travel planning initiatives should look towards the exemplar mechanisms adopted in the Sustainable Travel Towns, including workplace and school travel planning, personalised travel planning (as the Council is implementing in Crewe), public transport information provision and marketing, and cycling and walking promotion.

4.5. The Sustainable Travel Towns programme has been found to be successful in reducing travel by car, and increasing the use of other modes, and it has been concluded that the programme offered very high value for money. The widespread development and delivery of town-based Smarter Choice Programmes has been justified by the success of the three Sustainable Travel Towns (and elsewhere)[1], and it is recommended that travel planning activities in Macclesfield look to emulate this experience.

Public Transport Improvements

Opportunities for Bus Priority

4.6. With increased traffic levels in the town and knock-on impacts in terms of congestion and vehicular journey times, the Movement Strategy will investigate opportunities to provide greater priority for bus services within the town. The intention of bus priority measures is to reduce journey times and/or increase journey time reliability for bus passengers.

4.7. With new or remodelled junction layouts committed as part of future infrastructure delivery, implemented layouts and signalling equipment should enable priority to be given to bus services in the future. As an example, new signalling equipment could enable buses to trigger a green aspect, reducing bus passenger journey times through signalised junctions. Similarly, where land-take is required to provide new infrastructure, the additional benefits associated with potential provision of bus lanes will be considered as part of the design process. Bus-only links will also be considered as part of the Movement Strategy. New links could provide bus-only connections between the existing highway network and new development sites, whilst bus-only links may also warrant consideration within the town centre.

[1] *The Effects of Smarter Choice programmes in the Sustainable Travel Towns: full report - https://www.gov.uk/government/publications/the-effects-of-smarter-choice-programmes-in-the-sustainable-travel-towns-full-report*

Bus Service Improvements

4.8. With future development proposed through the Local Plan Strategy and the maturity of development proposals to the south of the town, new or improved bus links to serve new development (particularly that concentrated to the south of the town) will be required. Bus service provision to the south of Macclesfield town centre is currently concentrated along the A523 London Road corridor.

4.9. The number 38 bus service runs from Macclesfield to Congleton, Sandbach and Crewe, providing an hourly service along the A536 Congleton Road. Existing bus stops are provided on Congleton Road close to the junction with Penningtons Lane and near to the Rising Sun Public House.

4.10. Bus route 2 is a local hopper service connecting the town centre with the Weston residential area to the west of the Flowerpot junction. The service operates at 30 minute intervals from Monday to Saturday. Buses operate an anti-clockwise loop within the Weston area, routeing along Ivy Lane, Kendal Road, Thornton Avenue and Congleton Road in a northbound only direction. The service then continues into Macclesfield town centre along Park Lane.

4.11. Opportunities to strengthen bus service provision along Congleton Road will be reviewed as a priority of the Movement Strategy. This could involve extending the number 2 bus route to serve new development further along Congleton Road, and/or delivering further improvements to the number 38 service.

4.12. A wider review of bus service provision and accessibility across the town will then be undertaken as the Movement Strategy is further developed and implemented. Accessibility assessments should be undertaken for all new development sites coming forward, with opportunities for new or enhanced service provision associated with new development sites used to bolster existing accessibility for established communities.

Walking and Cycling Infrastructure

4.13. Existing cycle route infrastructure within Macclesfield predominantly caters for north-south movements across the town. An existing route links Moss Lane with the town centre utilising lightly trafficked residential routes. Further routes will be developed as part of the Movement Strategy, again utilising lightly trafficked routes wherever possible.

4.14. The needs of pedestrians and cyclists will need to be incorporated into the ongoing design of highway infrastructure improvements. New infrastructure provides significant opportunities to deliver improvements for vulnerable road users, and in the case of the Cumberland Street improvements could offer the chance to deliver new east-west cycle facilities.

4.15. Key entry points to the town centre will also need to be reviewed in terms of provision for pedestrians and cyclists. As traffic levels increase on key routes around the town centre, careful consideration will need to be given to the entry and crossing points for both pedestrian and cyclists.

4.16. Development proposals to the south of the town will improve footway provision along the A536 Congleton Road. Many new infrastructure proposals include the provision of signalised junctions, which offer the opportunity for new or enhanced pedestrian crossing facilities. Opportunities to maximise the permeability of development sites and enhance accessibility to surrounding areas will also be reviewed with developers as part of the Movement Strategy.

5. Investment Programme and Delivery

5.1. Given the previously noted impacts of development phasing and third-party land requirements associated with individual mitigation locations, consideration has been given to the prioritisation of individual schemes and the identification of 'quick-wins' for early implementation.

Investment Priorities and Programme

5.2. A key priority to facilitate the scale of improvements required will be the identification and agreement of a formula for calculating developer contributions. Developments coming forward over the Local Plan period will be obliged to contribute to necessary improvements. In the absence of a local Community Infrastructure Levy (CIL), a formula will be required to share infrastructure costs between individual development sites. Traffic modelling will allow the identification of likely traffic routeing and impacts associated with individual development sites, or a more generic approach could be taken to apportion overall traffic flow increases and infrastructure costs based on development size. It is anticipated that any infrastructure delivery calculation will form a Supplementary Planning Document / Development Brief to apply to all forthcoming development proposals. The agreement of this calculation process will be a key requirement for the Movement Strategy.

'Quick-Wins' or Immediate Priorities

5.3. The Flowerpot junction is an existing network constraint. Operation of the junction is predicted to deteriorate with future development proposed through the Local Plan Strategy and the maturity of development proposals to the south of the town, including the phased delivery of the SMDA site. An improvement scheme for the junction has been developed as part of traffic modelling work for the Local Plan Strategy. The scheme does require third-party land-take in order to deliver a step-change in capacity and initial contact with landowners has been made.

5.4. Initial scheme costs have been estimated to be in the order of three-quarters of a million pounds. However, the proposed scheme (or a variation thereof) is vital to ensure that development to the south of the town avoids significant increases in congestion at this location.

5.5. To the south of the Flowerpot junction, Moss Lane links to the A536 Congleton Road at an existing priority junction. Queues currently form on Moss Lane during peak periods as vehicles seek gaps in the oncoming flow on Congleton Road. The SMDA first phase development will increase queues on Moss Lane by adding to traffic movements on Congleton Road. With potential future redevelopment of industrial premises along Moss Lane for residential uses, peak period delays on Moss Lane would increase further. Until the extension of the SMDA link road to meet with the A523 London Road, significant queuing will continue to occur on Moss Lane.

5.6. It is proposed that the existing Moss Lane priority junction is improved to deliver a signalisation scheme to reduce delays for traffic using Moss Lane. Whilst this would increase delays for traffic on Congleton Road, the junction could potentially be linked to the proposed new signalised junction for the SMDA link road, minimising additional delays for through-traffic. The signalisation scheme will impact on vehicular access to residential properties neighbouring the junction, but is important to avoid significant highway impact associated with the likely phasing of development. An initial budget estimate for the delivery of this scheme is £300,000.

5.7. Concept designs for early delivery schemes at the Flowerpot junction and Moss Lane junction are included in **Appendix A**. These will now be taken forward for further detailed design and stakeholder comment. As previously noted, an alternative scheme to provide a new roundabout at the Flowerpot junction is currently under consideration.

5.8. Traffic modelling undertaken for the Local Plan Strategy development proposals identified minor lining and widening schemes on the A523 Silk Road and Mill Lane that could also represent 'quick-win' schemes delivering small-scale localised benefits. Lining improvements are proposed to mark two northbound lanes on the Silk Road on approach to the signalised junction with Buxton Road. In addition, it is proposed that a flared northbound approach to the signalised

junction with Mill Lane / Silk Road is lengthened by reallocating road space and undertaking minor widening into highway land. Works to improve coordination between the Mill Lane / Silk Road signalised junction and the signalised pedestrian crossing to the south are also proposed. Both improvements seek to formalise existing behaviour and encourage more efficient use of the available highway capacity. Both schemes also offer low-cost opportunities with no significant deliverability issues. Whilst benefits would be localised and relatively low-level, the identified improvements still represent an important contribution to the wider package of highway infrastructure improvements proposed to support the Local Plan Strategy.

5.9. A review of opportunities for signalling improvements is also recommended to reduce delays at the junction of Byron's Lane and the A523 London Road, and at the junction of Churchill Way and King Edward Street. The junction of Churchill Way and King Edward Street could benefit from the provision of a right-turn filter for the southbound Churchill Way arm.

5.10. To integrate development with the rest of the town, and to offset additional delays generated by development traffic, opportunities will be reviewed for new infrastructure improvements for bus services and cyclists. Where possible, priority for buses and cyclists should be increased to encourage modal shift towards sustainable modes. Initially opportunities will be reviewed for improvements along the A536 Congleton Road and Park Lane as strategic links into the town centre from the SMDA and wider south Macclesfield area. Opportunities for new cycle links along lightly trafficked routes to the south of the town will also be reviewed. The proposals could also include pump-priming funding for new or improved bus services.

Short Term Investment Priorities

5.11. Following opportunities for 'quick-wins' or key investment priorities, three further short-term investment priorities have been identified.

5.12. The Silk Road / Hibel Road roundabout is an existing network constraint, particularly during the evening peak period when long queues form on Silk Road south. The junction is a key entry point to the town centre, and will impact on most development coming forward in the town. A concept design for a highway improvement scheme, affecting not only the existing roundabout junction but also Hibel Road to the junction with Beech Lane, has been developed and it is recommended that this is taken forward as a short-term priority. The concept design scheme is subject to high construction costs, likely to require third-party land take and will lead to significant disruption during construction. However, given the junction's importance in the town centre network, implementation of an improvement scheme is considered to be an important priority for the short to medium term.

5.13. With increased development to the south of the town centre, traffic levels will increase on Park Lane on approach to the town centre. The existing roundabout junction with Churchill Way is predicted to generate long delays in the future as traffic heads eastwards to access the town centre or Silk Road. Before completion of the full SMDA link road through to the A523 London Road, it is recommended that capacity improvements are implemented at this roundabout junction. Traffic modelling has assessed a scheme to provide two ahead lanes through the roundabout in a eastbound direction towards Sunderland Street and Mill Lane. Whilst there may be road safety issues associated with this scheme, a study is required to determine the most appropriate solution.

5.14. Investment in travel planning services and the development of a Smarter Choices Programme has also been identified as a short-term priority. With significant new development proposed in the town, travel planning will play an important role in limiting highway impacts and maximising sustainable travel. Adequate Council resources will be required to work with developers and influence travel behaviour.

Medium Term Investment Priorities

5.15. Proposed medium term investment priorities are focussed on the A537 Chester Road / Chelford Road corridor with junction improvements proposed at the Broken Cross junction, Ivy Road roundabout, and Fieldbank Road signals. The improvements are intended to reduce the impacts of future development on traffic congestion within this corridor.

5.16. A further investment priority is for the continued investment in improvements for bus services and cycling across the town to further encourage sustainable travel on a town-wide basis. This will extend the early-stage improvements recommended for delivery in areas to the south of the town.

Long Term Investment Priorities

5.17. Longer term investment priorities focus on improving capacity on the key east-west Cumberland Street corridor. The route is used by traffic accessing the town centre and circulating around the town, and will experience large increases in traffic flow with the level of development proposed in the town. Opportunities for consideration will include widening (with associated third-party land requirements) as was assessed in the Local Plan Strategy traffic modelling.

5.18. Associated improvements would seek to reduce delays on Prestbury Road through widening on approach to the junction with Cumberland Street. Again, this scheme would be subject to neighbouring land take, scheme development and consultation with affected parties.

Summary

5.19. A programme of investment priorities is summarised in Table 5-1, with locations and potential schemes classified in terms of deliverability (with high numbers indicating more challenging delivery), and level of impact. It should be noted that the list of potential schemes does not include infrastructure to be delivered as part of the SMDA development which includes a link road between the A536 Congleton Road and the A523 London Road, along with new signalised junctions at either end. The Council is confident that over the life of the Local Plan infrastructure improvements at all of these locations can be delivered.

Table 5-1 Programme of Scheme Priorities

Focus	Location / Scheme	Deliverability	Level of Impact	Priority
'Quick-Wins' or Immediate Priorities				
Highway	Flowerpot junction improvements	2 – third-party land requirements	High	Key priority for investment to facilitate SMDA and future Local Plan development
Highway	A536 Congleton Road / Moss Lane junction signalisation	1 – available highway land. Potential issues with neighbouring residents but likely to be generally acceptable	Medium	Important priority for the development of the SMDA.
Highway	A523 Silk Road minor lining improvements	1 – minor lining changes	Low	Formalises existing behaviour but a low-cost and straightforward 'quick-win'.
Highway	A523 Mill Lane lining and widening improvements	1 – uses highway land and inexpensive	Low	Maximises localised highway capacity by encouraging efficient use of available road space.
Sustainable Modes	South Macclesfield improvements to increase priority for bus services and cyclists. Potential pump-priming for bus service improvements.	2 – developer funding contributions required subject to opportunities for prioritisation schemes	Medium – potential reduction in traffic generation associated with SMDA development and important for accessibility	Priority to integrate SMDA with town centre opportunities
Short Term Investment Priorities				
Highway	A536 Park Lane / Churchill Way roundabout improvement and Park Lane widening	2 – subject to road safety audit process	Medium	Medium / High – additional delays forecast on Park Lane approach following SMDA and wider Local Plan proposals.
Highway	Silk Road / Hibel Road junction and Hibel Road improvements	3 - remodelling of the junction and third-party land requirements. Potentially significant disruption during construction.	High – significant existing network constraint in the town	High
Travel Planning	Development of a Smarter Choices Programme and negotiation and implementation of appropriate travel plans for all new development, requiring Council resource to inform, monitor and review travel outcomes.	1 – developer funding contributions required	Medium – potential to impact future travel behaviour and deliver modal shift	Medium – linked to delivery of new development

Medium Term Investment Priorities				
Highway	Broken Cross roundabout improvements	3 - remodelling of the junction and potential third-party land requirements. Potentially significant disruption during construction.	High impact to improve existing network constraint in the town	Medium – required to facilitate proposed level of development in the town and to cater for commuter movements to/from the A34 and M6.
Highway	A537 Chester Road / Fieldbank Road junction improvements	2 – likely requirement for earthworks to provide proposed widening	Medium - localised impact to reduce delays on approach to junction	
Highway	A537 Chester Road / Ivy Road roundabout improvements	1 – subject to road safety audit process.	Medium - localised impact to reduce delays on approach to roundabout	
Highway	Provision of right-turn filter on Churchill Way at the junction with King Edward Street.	1 – subject to amendment of UTC system and signalling equipment	Medium – localised reduction of queuing but associated knock-on benefits for westbound traffic on Hibel Road.	Medium - localised benefit but impacting on corridor through Macclesfield
Highway	Review of opportunities to reduce delays at Byron's Lane signalised junction with A523 London Road	1 - subject to opportunities	Medium - junction causes existing delays but further deterioration linked to provision of full SMDA link road to A523 Mill Lane	Medium – localised benefit but impacting on corridor through Macclesfield
Sustainable Modes	Extension of priority improvements for bus services and cycling to consider additional improvements throughout the town	2 - developer funding contributions required subject to opportunities for prioritisation schemes	Potential reduction in traffic generation associated with new and existing development and important for town linkages and accessibility	Medium
Longer Term Investment Priorities				
Highway	Cumberland Street corridor capacity improvements	2 – subject to detailed proposals	High	Medium but subject to scope of improvements and scale of any potential land-take required.
Highway	Prestbury Road roundabout improvements	2 – possible land take requirement	Medium	Medium – localised benefit to reduce delays on Prestbury Road

6. Recommendations

Smarter Choices

6.1. It is recommended that travel planning and the development of a Smarter Choices programme is necessary to provide the required 'nudge' towards sustainable travel modes (car sharing, public transport, walking and cycling) for commuter journeys. Whilst developers will be required to implement their own travel planning measures, the Council will need to lead and coordinate certain activities. This will ensure that travel planning activities are extended to the wider Macclesfield population rather than just concentrated on new development sites.

6.2. The widespread development and delivery of town-based Smarter Choice Programmes has been justified by the success of the three Sustainable Travel Towns (and elsewhere), and it is recommended that travel planning activities in Macclesfield look to emulate this experience.

Highway Infrastructure Requirements

6.3. Traffic modelling undertaken as part of the draft Local Plan Strategy assessment identified a range of infrastructure improvements required over the Local Plan period to deliver the proposed level of growth in Macclesfield without significant harm to the operation of the local highway network.

6.4. Given the impacts of development phasing and potential third-party land requirements associated with individual mitigation locations, consideration has been given to the prioritisation of individual mitigation schemes and the identification of 'quick-wins' for early implementation. A programme of investment priorities has been presented, with locations classified in terms of timescales for deliverability and level of impact.

6.5. It is recommended that the package of highway infrastructure improvements identified within this report are further developed by the Council and implemented to mitigate the impacts of future development proposals in terms of traffic congestion and air quality. The Council is confident that over the life of the Local Plan infrastructure improvements at all of these locations can be delivered.

Improvements for Sustainable Transport

6.6. The Macclesfield Movement Strategy must provide multi-modal improvements to facilitate increased use of public transport, walking and cycling. Delivering modal shift will be vital to the achievement of the strategy objectives of reducing congestion and delays and improving accessibility. Opportunities for bus priority measures, new or enhanced bus services, and pedestrian / cycle route improvements will be reviewed as part of the strategy in order to provide the best possible conditions for sustainable growth.

Securing Developer Contributions

6.7. A key priority to facilitate the scale of improvements required will be the identification and agreement of a formula for calculating developer contributions. Developments coming forward over the Local Plan period will be obliged to contribute to necessary improvements. In the absence of a local Community Infrastructure Levy (CIL), a formula will be required to share infrastructure costs between individual development sites. Traffic modelling will allow the identification of likely traffic routeing and impacts associated with individual development sites, or a more generic approach could be taken to apportion overall traffic flow increases and infrastructure costs based on development size. It is anticipated that any infrastructure delivery calculation will form a Supplementary Planning Document to apply to all forthcoming development proposals. The agreement of this calculation process will be a key requirement for the Movement Strategy.

Appendices

Appendix A. Concept Scheme Designs

Rev A

Drawing Number 5108479/100/001

Status P

DO NOT SCALE

100 0 10

A1

EXISTING SECONDARY SIGNAL RE-LOCATED TO RE-ALIGNED BACK OF SHARED USE CYCLEWAY

EXISTING 3.5m SHARED USE CYCLEWAY RE-ALIGNED AROUND NEW FLARE LANE

15.3m

3.5m

6m

3.12m

IVY LANE

LAND ACQUISITION ON PRIVATE PROPERTY REQUIRED TO ALLOW CONTINUATION OF CYCLEWAY AROUND FLARE. TO AVOID LAND ACQUISITION FLARE COULD BE SHORTENED OR DELETED OR SHORT SECTION OF NARROW CYCLEWAY COULD BE INTRODUCED

CARRIAGEWAY WIDENED FOR LEFT AND AHEAD FLARE TO IMPROVE JUNCTION OPERATION AND TRAFFIC FLOW

FLARE LANE EXTENDED TO IMPROVE JUNCTION TRAFFIC FLOW AND OPERATION

DROP KERB ACCESS TO FLOWERPOT CAR PARK MAINTAINED

BOUNDARY WALL RECONSTRUCTED AT BACK OF RE-ALIGNED FOOTWAY

CONGLETON ROAD

6.58m

2m

22.44m

6m

The Flower-Pot (PH)

23.04m

PARK LANE

6m

1.5m

CARRIAGEWAY WIDENED TO ACCOMMODATE NEW LEFT TURN FLARE WITH LEFT FILTER SIGNAL

EXISTING SECONDARY SIGNAL RE-LOCATED TO RE-ALIGNED BACK OF FOOTWAY

EXISTING PROPERTY ACCESSES MAINTAINED

LAND ACQUISITION ON PRIVATE PROPERTIES (NO 360 AND 358) REQUIRED TO ALLOW LEFT TURN FLARE AND CONTINUATION OF EXISTING 1.5m FOOTWAY

Path

439 441 435 437 433 425 360 358 356

File: P-5108479-100-001-A.dwg Date: May 13, 2013 - 3:22pm Plotted by: shei3643

P:\GBMRB\TP\HB\Projects\5108479-Macclesfield LDF Paramics-BEEL5397\40 Technical\40.2 CAD\40.2.3 Working\Flowerpot Junction\P-5108479-100-001-A.dwg

ATKINS

NOTES:

1. IT IS THE CONTRACTORS RESPONSIBILITY TO CHECK THE LOCATION OF THE EXISTING STATUTORY SERVICES PRIOR TO CONSTRUCTION, PARTICULAR ATTENTION IS DRAWN TO THE "NEW ROADS AND STREET WORKS ACT 1991"
2. THIS DRAWING IS A GENERAL ARRANGEMENT DRAWING ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES.
3. THIS DESIGN HAS BEEN UNDERTAKEN ON OS BASE MAPPING. PRIOR TO THE DESIGN BEING DEVELOPED FURTHER A FULL TOPOGRAPHICAL SURVEY SHOULD BE UNDERTAKEN.
4. SWEPT PATH ANALYSIS UNDERTAKEN FOR ALL TURNING MOVEMENTS USING MAX ARTICULATED VEHICLE AS THE WORST CASE SCENARIO DESIGN VEHICLE. TRACKING DRAWING AVAILABLE UPON REQUEST.
5. STOPPING SIGHT DISTANCES (SSD) APPLIED ARE AS RECOMMENDED IN TD 9/93 TABLE 3 OF THE DMRB FOR A 50kph (30mph) ROAD.

GENERAL KEY:

- RE-LOCATED LAMP COLUMN
- SIGN ARRANGEMENT
- RED BLISTER TACTILE PAVING
- PRE-CAST CONCRETE EDGING
- PROPOSED KERBS
- HIGHWAY BOUNDARY

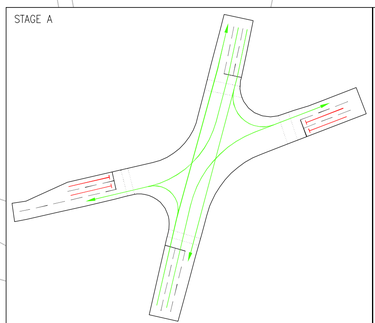
SIGNALS KEY:

- INDICATIVE PRIMARY SIGNAL
- INDICATIVE SECONDARY SIGNAL
- PUSH BUTTON UNIT

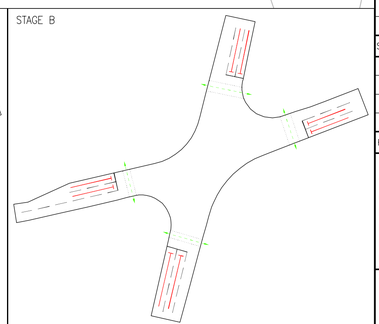
SSD KEY:

- DESIRABLE MINIMUM SSD OF 70m FOR A 50kph ROAD IN LINE WITH TD 9/93 TABLE 3.
- 'ONE STEP BELOW' DESIRABLE MINIMUM SSD OF 50m FOR A 50kph ROAD IN LINE WITH TD 9/93 TABLE 3.

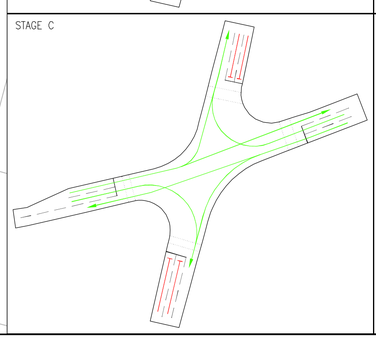
STAGE A



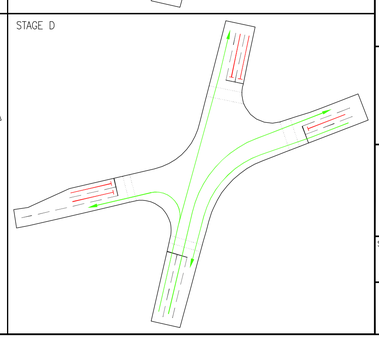
STAGE B



STAGE C



STAGE D



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS

CONSTRUCTION	
REFER TO DESIGNER'S RISK ASSESSMENT	
MAINTENANCE/CLEANING	
REFER TO DESIGNER'S RISK ASSESSMENT	
USE	
REFER TO DESIGNER'S RISK ASSESSMENT	
DECOMMISSIONING/DEMOLITION	
REFER TO DESIGNER'S RISK ASSESSMENT	

Stat	Purpose of Issue	Date	Auth
P	FIRST ISSUE	25/04/13	AB

Rev	Description	By	Date	Chk'd	Auth
A	FIRST ISSUE	DS	13/05/13	PW	AB

Atkins Limited ©
Consulting Engineers,
Bank Chambers
Faulkner Street
Manchester, England,
M1 4EH
Tel: (0161) 245 3400
Fax: (0161) 245 3500
www.atkinsglobal.com

Client

CHESHIRE COUNTY COUNCIL

Project

FLOWERPOT JUNCTION
MACCLESFIELD

Title

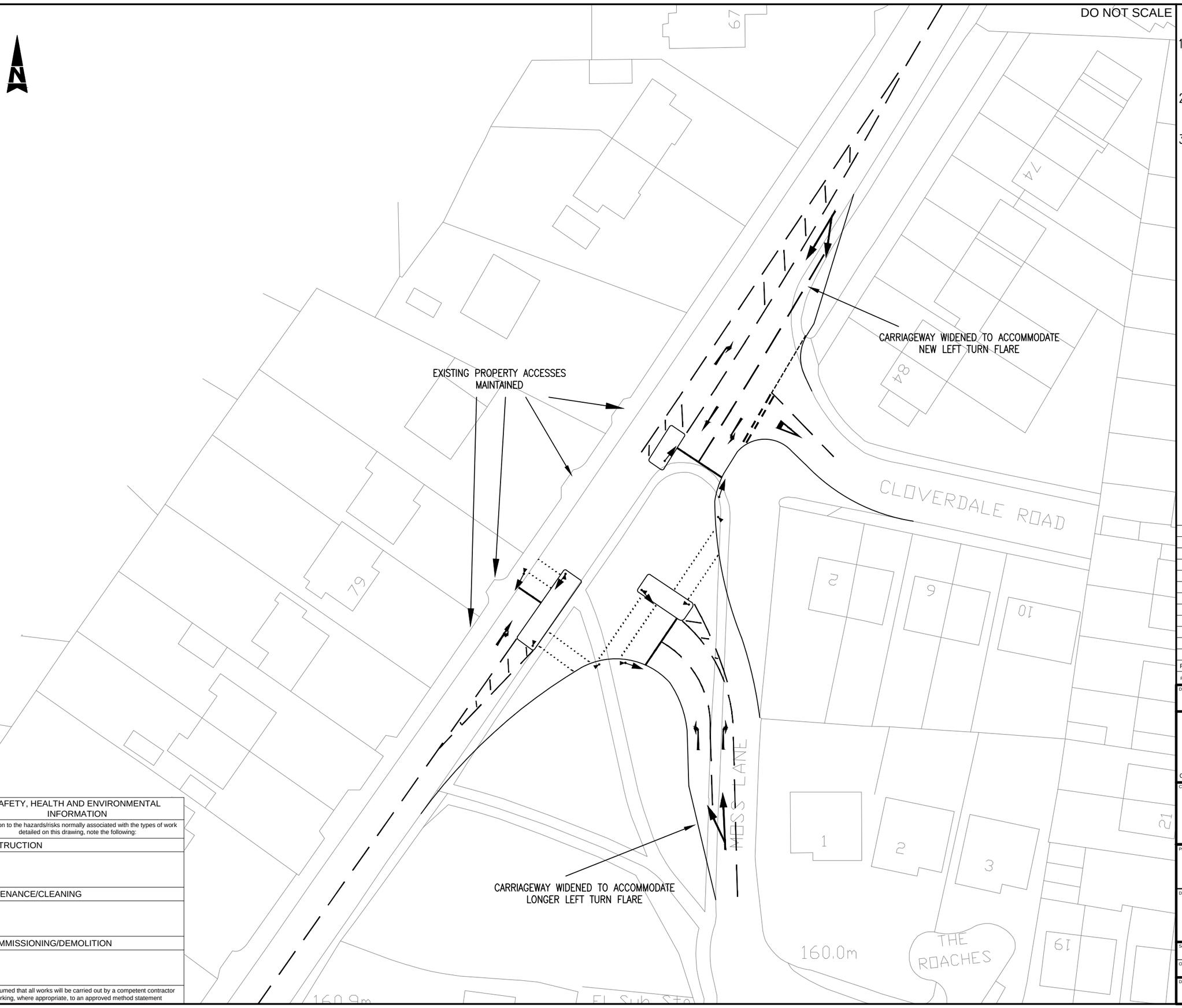
JUNCTION CAPACITY IMPROVEMENTS

Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised
A1	1:250	DS Date 13/05/13	PW Date 13/05/13	AB Date 13/05/13

Status	Drawing Number	Rev
P	5108479/100/001	A

DO NOT SCALE

Millimetres 0 10 100



NOTES:

1. THIS DRAWING IS A GENERAL ARRANGEMENT DRAWING ONLY, AND IS NOT FOR CONSTRUCTION PURPOSES.
2. THE DRAWING IS BASED ON ORDNANCE SURVEY MAPPING.
3. NO CONSIDERATION HAS BEEN GIVEN TO THE IMPACTS ON STATUTORY UNDERTAKERS PLANT & EQUIPMENT.

Rev.	Date	Description	By	Chk'd	Appr'd
P01	27-Jun-14	FOR DISCUSSION	MJ	PW	AB

Drawing Status: FOR INFORMATION

Suitability: S0

ATKINS
Bank Chambers
Faulkner Street
Manchester
M1 4EH

Tel: +44 (0)161 245 3400
Fax: +44 (0)161 245 3500
www.atkinsglobal.com

Client: CHESHIRE EAST COUNCIL

Project Title: MACCLESFIELD MOVEMENT STRATEGY

Drawing Title: MOSS LANE / CONGLETON ROAD JUNCTION IMPROVEMENT SCHEME

Scale	Designed	Drawn	Checked	Authorised
1:500	MJ	MJ	PW	AB
Original Size	**Date**	**Date**	**Date**	**Date**
A3	25/06/14	25/06/14	25/06/14	26/06/14

Drawing Number: 5108479-014-TP-GA-DR-D-0001

Revision: P01

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:
CONSTRUCTION
MAINTENANCE/CLEANING
DECOMMISSIONING/DEMOLITION
It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

DO NOT SCALE

EXISTING 2NO. 3.0M LANES

TIE INTO EXISTING ROAD MARKINGS

LANE MARKINGS REPOSITIONED TO PROVIDE 3NO. 3.0M LANES

CARRIAGEWAY WIDENED TO PROVIDE 4.0M LANE WIDTH

LANE MARKINGS REPOSITIONED TO PROVIDE 3NO. 2.8M LANES

REALIGNED FOOTWAY

EDGE OF CARRIAGEWAY MARKING REPOSITIONED

TIE INTO EXISTING ROAD MARKINGS

Works

PH

Waterside House

WATERSIDE

River Bollin

Scrap Me

136.6m

138.0m

142.0m

1 to 3

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

In addition to the hazards/risks normally associated with the types of work detailed on this drawing, note the following:

CONSTRUCTION

MAINTENANCE/CLEANING

DECOMMISSIONING/DEMOLITION

It is assumed that all works will be carried out by a competent contractor working, where appropriate, to an approved method statement

NOTES:

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2. THIS DESIGN HAS BEEN UNDERTAKEN ON OS BASE MAPPING. PRIOR TO THE DESIGN BEING DEVELOPED FURTHER A FULL TOPOGRAPHICAL SURVEY SHOULD BE UNDERTAKEN TO ENSURE PROPOSED LANE WIDTHS CAN BE ACHIEVED.
3. NO CONSIDERATION HAS BEEN GIVEN TO THE IMPACT ON STATUTORY UNDERTAKERS PLANT AND EQUIPMENT.

Rev.	Date	Description	By	Chk'd	App'd
P01	1-Jul-14	FOR DISCUSSION	MJ	PW	AB

Drawing Status: FOR INFORMATION

Suitability: S0

ATKINS
Bank Chambers
Faulkner Street
Manchester
M1 4EH
Tel: +44 (0)161 245 3400
Fax: +44 (0)161 245 3500
www.atkinsglobal.com

Client: CHESHIRE EAST COUNCIL

Project Title: MACCLESFIELD MOVEMENT STRATEGY

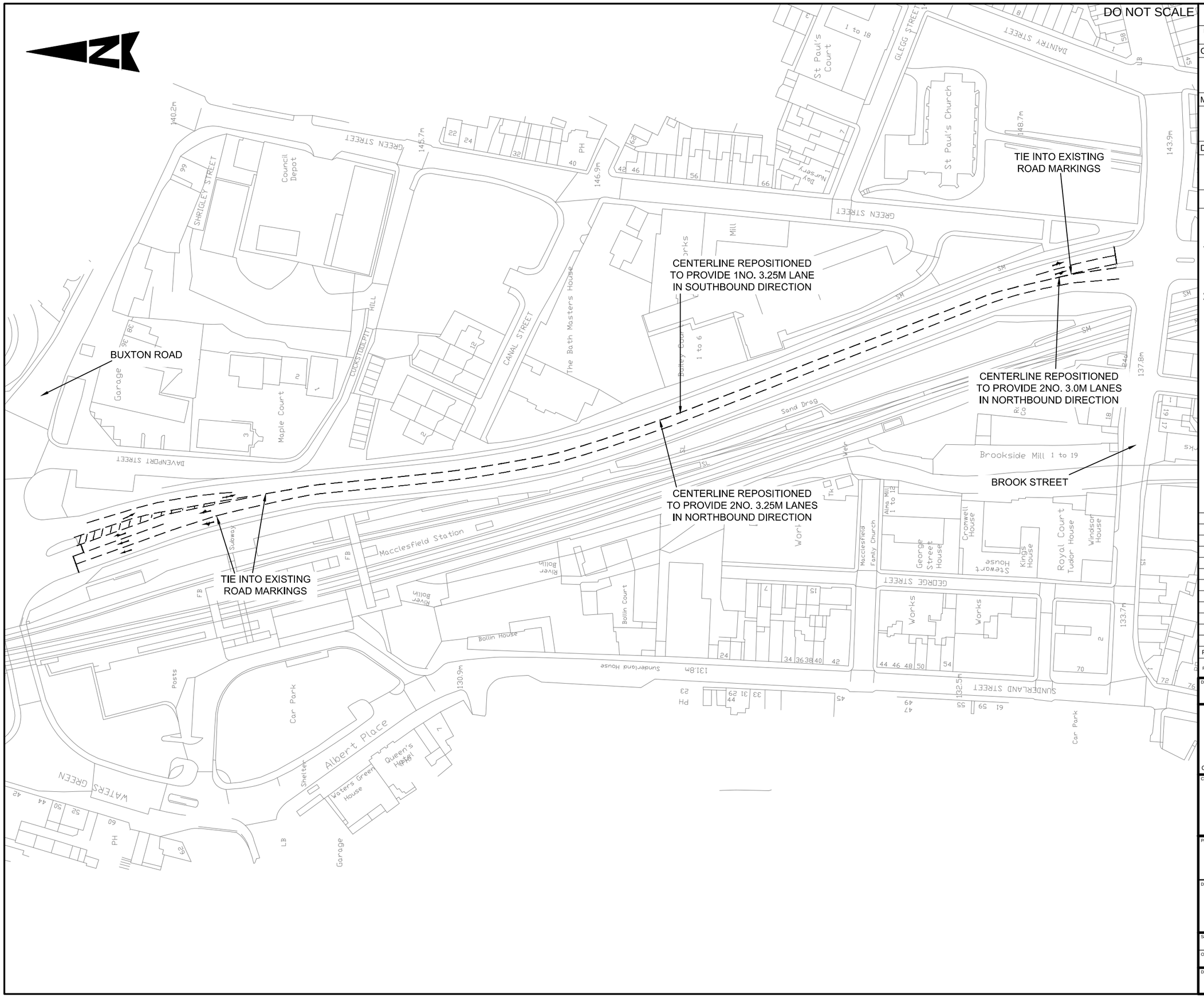
Drawing Title: PROPOSED MILL LANE NORTHBOUND CAPACITY IMPROVEMENTS

Scale	Designed	Drawn	Checked	Authorised
1:500	MJ	MJ	PW	AB
Original Size: A3	Date: 01/07/14	Date: 01/07/14	Date: 01/07/14	Date: 01/07/14

Drawing Number: 5108479-014-TP-GA-DR-D-0003

Revision: P01

Millimetres 0 10 100



DO NOT SCALE

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION
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CONSTRUCTION
MAINTENANCE/CLEANING
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Rev.	Date	Description	By	Chk'd	App'd
P01	June 14	FOR DISCUSSION	MJ	PW	AB

Drawing Status: FOR INFORMATION

Suitability: S0

ATKINS
Bank Chambers
Faulkner Street
Manchester
M1 4EH

Tel: +44 (0)161 245 3400
Fax: +44 (0)161 245 3500
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Project Title: MACCLESFIELD MOVEMENT STRATEGY

Drawing Title: THE SILK ROAD PROPOSED LANE MARKINGS

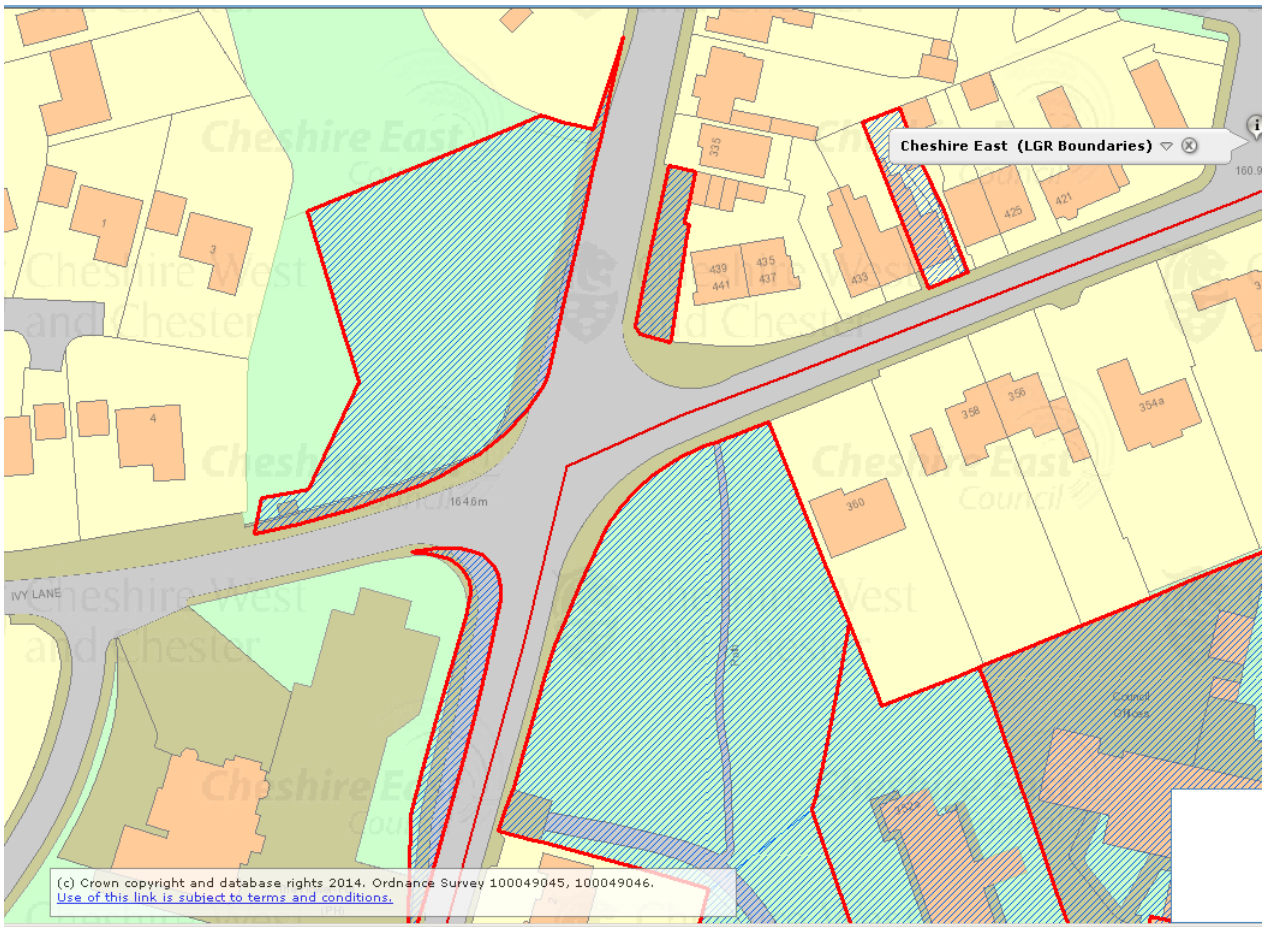
Scale	Designed	Drawn	Checked	Authorised
1:1250	MJ	MJ	PW	AB
Original Size	Date	Date	Date	Date
A3	30/06/14	30/06/14	30/06/14	01/07/14

Drawing Number: 5108479-014-TP-GA-DR-D-0002

Revision: P01

Millimetres: 0 10 100

Appendix B. CEC Land Ownership around the Flowerpot Junction



Andy Beel
Atkins
Bank Chambers
Faulkner Street
Manchester
M1 4EH

andy.beel@atkinsglobal.com
0161 245 3420