November 2020

Transport Locality Assessments

Introductory Note and Assessments – Rochdale allocations

GMSF 2020

GREATER MANCHESTER
DOING THINGS DIFFERENTLY

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1. Background

1.1 Greater Manchester Spatial Framework (GMSF)

1.1.1 The GMSF is a joint plan of all ten local authorities in Greater Manchester, providing a spatial interpretation of the Greater Manchester Strategy which will set out how Greater Manchester should develop over the next two decades up to the year 2037. It will:

- identify the amount of new development that will come forward across the 10 Local Authorities, in terms of housing, offices, and industry and warehousing, and the main areas in which this will be focused;
- ensure we have an appropriate supply of land to meet this need;
- protect the important environmental assets across the conurbation;
- allocate sites for employment and housing outside of the urban area;
- support the delivery of key infrastructure, such as transport and utilities;
- define a new Green Belt boundary for Greater Manchester.

1.1.2 The Plan focuses on making the most of Greater Manchester's brownfield sites, prioritising redevelopment of town centres and other sustainable locations. The Plan is required to demonstrate that Greater Manchester has enough land to deliver the homes and jobs people require up until 2037, and whilst there is an expectation that the focus of development will be on brownfield sites in the early years, it is recognised that some land will need to be released from the green belt to fully meet Greater Manchester's housing and employment requirement.

1.1.3 The comments from the Draft GMSF 2019, together with local and national policy, have helped to inform the Locality Assessments methodology for the Draft GMSF 2020. More information on the consultation comments can be found in the Consultation Statement and within each of the Allocation Locality Assessments.

1.1.4 This document has been prepared as evidence for the GMSF and is part of a suite of documents that examine the implications of the GMSF on transport in Greater Manchester. The other documents are:

- Greater Manchester Transport Strategy 2040 and supporting Five Year Transport Delivery Plan. These documents together set out our strategic aspirations for transport in Greater Manchester and articulate our plan for delivery.
- Greater Manchester Transport Strategy 2040 'Right Mix' Technical Note. This note describes the 'Right Mix' transport vision and sets out a pathway to achieving this vision.
- GMSF Existing Land Supply and Transport Technical Note. This describes the distribution and quantity of the Existing Land Supply, identified key growth areas, and considers the relationship of these growth areas to the transport schemes proposed within the Greater Manchester Transport Strategy Delivery Plan.
- GMSF Allocations Strategic Modelling Technical Note. This provides analysis of the potential strategic impact of growth on our transport network in a "policy-off" scenario.

1.2 Policy Context – The National Planning Policy Framework

1.2.1 The National Planning Policy Framework sets out the Government's planning policies for England and Wales and how these are to be applied. It provides a framework for which locally prepared plans for housing and development, such as the GMSF, can be produced.

1.2.2 The NPPF makes it clear that transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

- the potential impacts of development on transport networks can be addressed;
- opportunities from existing or proposed transport infrastructure, and changing transport technology and usage, are realised – for example in relation to the scale, location or density of development that can be accommodated;
- opportunities to promote walking, cycling and public transport use are identified and pursued;
- the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and
- patterns of movement, streets, parking and other transport considerations are integral to the design of schemes, and contribute to making high quality places.

1.2.3 The NPPF makes clear that when assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- safe and suitable access to the site can be achieved for all users; and
- any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

1.2.4 Importantly, NPPF states that: 'development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe'. (NPPF, Chapter 9, Para 109).

1.2.5 In order to ensure that the requirements of the NPPF were fully met and that that these allocations can be brought forward and operate sustainably within the context of the wider transport network, Transport for Greater Manchester (TfGM), on behalf of the ten Greater Manchester Local Planning Authorities, appointed SYSTRA Ltd to oversee the development of Locality Assessments for each site.

1.2.6 These Locality Assessments forecast the likely level and distribution of traffic generated by each Allocation and assess its impact on the transport network. Where that impact is considered significant, possible schemes to mitigate that impact and reduce it back to the reference level of operation have been developed, tested and costed. Potential mitigations could include the introduction of new public transport schemes, cycling and walking routes, as well as highway engineering solutions. Where suitable mitigations could not be identified, a decision to either reduce the level of development at the Allocation such that it had a lesser impact on the transport network, or to remove the site from the GMSF completely were considered.

1.2.7 It is important to note that the mitigation schemes developed are intended to demonstrate only that significant transport impacts of the Allocation can be appropriately ameliorated. As such they are indicative only, and are not intended to

act as a definitive proposal for the mitigation of any Allocation, which would be developed as part of a Transport Assessment submitted as part of a planning application at a later date.

1.2.8 The Locality Assessments are one of a number of pieces of evidence developed in order to assess and evaluate the impact of the GMSF proposals on the transport network and focus only on the sites being allocated in the Plan. The majority of sites proposed for development are actually contained within the existing land supply (ELS) and have been split into three subcategories; Homes (both houses and apartments), Offices, and Industry and Warehousing. A separate "Existing Land Supply and Transport Technical Note" describes the quantity and distribution of the ELS, the key growth areas and the relationship between areas and the transport schemes proposed to serve them.

1.2.9 Transport for Greater Manchester has also worked closely with Highways England to understand the impact that the Allocations may have on the Strategic Road Network (SRN). SYSTRA Ltd was asked to carry out an exercise to assign the 'with GMSF' traffic flows to an representation of an empty SRN network and to produce network stress maps which identified areas of significant delay on the network, as well as providing detailed breakdowns of GMSF Allocation traffic for key sections of the SRN. This exercise has enabled all parties to move towards a common understanding of where the most significant traffic impacts are likely to occur, and provides a common basis to enable Highways England to make investment decisions as part of future Road Investment Strategy (RIS) planning discussions.

1.3 Policy Context – Greater Manchester Transport Strategy 2040

1.3.1 It is important to recognise that the GMSF has been developed with the benefit of an adopted Local Transport Plan – the Greater Manchester Transport Strategy 2040 (hereafter referred to as the 2040 Transport Strategy). The 2040 Transport Strategy has an established long-term vision for transport, of providing *world class connections that support long-term, sustainable economic growth and access to opportunity for all*. The four key elements of this vision are:

- Supporting sustainable economic growth;
- Protecting the environment;
- Improving quality of life for all; and,
- Developing an innovative city region.

1.3.2 The 2040 Transport Strategy was first published in February 2017. The Strategy has undergone a 'light touch' refresh to reflect work undertaken and the changed context, since 2017. As well as refreshing the 2040 Transport Strategy, to support the GMSF an updated Five Year Transport Delivery Plan has also been prepared. It sets out the practical actions planned to deliver the 2040 Transport Strategy and achieve the ambitions of the GMCA and the Mayor, providing a coordinated approach to transport investment. It is also intended to inform the development of the Greater Manchester Infrastructure Programme (GMIP).

1.3.3 Covid-19 has had a massive health and economic impact on our city region, affecting every person and every business in our city-region. The impact from the pandemic has not been equal or fair, highlighting inequalities across Greater Manchester. Travel demand remains well below levels prior to the pandemic and, although it is increasing, it is clear that Greater Manchester's plans for transport and other policy areas will need to be adaptive as the recovery continues.

1.3.4 The aim will be to "lock in" some of the benefits our neighbourhoods, communities, towns and cities have experienced from lower vehicle traffic levels and embracing the opportunities to be more productive through flexible working and accessing services through high quality digital systems. The vision is for a future where walking and cycling are the obvious choice for shorter journeys and where the past dependency on the car is superseded by a reliable and responsive public transport system. Our Five Year Transport Delivery Plan sets out those first steps, from a transport and place making perspective to support leading the recovery and creating a stronger, sustainable and resilient Greater Manchester.

1.3.5 The Our Network policies in the GMSF and in Our Five Year Transport Delivery Plan support the implementation of "Our Network", a ten-year plan to create an integrated, modern and accessible transport network for Greater Manchester. The Delivery Plan brings together different modes of public transport –- bus, tram, rail,

tram-train and cycling and walking in an integrated, easy-to-use system with seamless connections, and simplified ticketing and fares.

1.3.6 The Five Year Delivery Plan has been prepared to respond to the transport opportunities and challenges facing Greater Manchester, in parallel with the development of the Greater Manchester Spatial Framework (GMSF). Together, these documents provide an integrated approach to transport and land use planning by identifying the strategic transport interventions required to deliver the scale of growth set out in the GMSF. It also supports the priorities of the Greater Manchester Strategy (2018).

1.3.7 A key ambition is to improve our transport system so that, by 2040, 50% of all journeys in Greater Manchester are made by public transport or active travel, supporting a reduction in car use to no more than 50% of daily trips. This will mean one million more sustainable journeys every day in Greater Manchester by 2040, enabling us to deliver a healthier, greener and more productive city-region – this is known as the "Right Mix". Achieving the Right Mix is expected to lead to zero net growth in motor vehicle traffic in Greater Manchester between 2017 and 2040.

1.3.8 Fundamental to delivering the Right Mix will be the adoption of a "Streets for All" framework – to enable more people to walk, cycle and use public transport, and improve reliability for, in particular, buses and freight vehicles on the key route network serving our towns and Regional Centre.

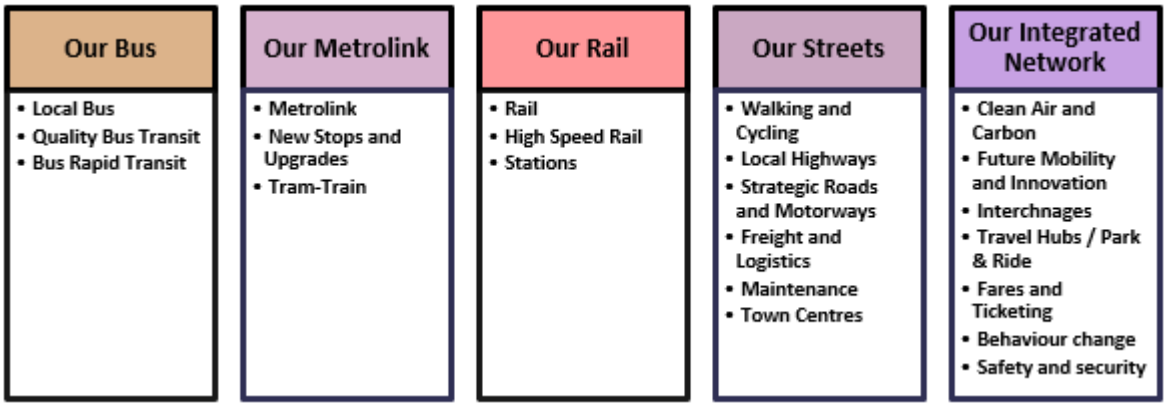
1.3.9 This will be one of the mechanisms used to grow bus patronage alongside:

- Bus Reform
- Integrated Ticketing
- Quality Bus Transit and Bus Corridor Upgrades
- Bus Rapid Transit

1.3.10 Following the introduction of the Bus Services Act (2017), the GMCA asked TfGM to carry out an assessment of a bus franchising scheme, have that assessment reviewed by an independent audit organisation, and carry out a consultation on a proposed franchising scheme which ran from 14 October 2019 to 8 January 2020. The Covid-19 pandemic has had a significant impact on Greater Manchester's bus market, including timetables, revenues, passenger numbers and the public's attitudes to public transport. Due to this, further work will be undertaken to assess the impact of coronavirus on the bus reform process.

1.3.11 Greater Manchester is also delivering the Bee Network - the UK's largest cycling and walking network as a key element in delivering the Right Mix vision. The Combined Authority has allocated £160m between 2018-2022 to fund the first phase of the Bee Network. The network has at its core a programme of new and upgraded pedestrian and cycling crossing points of major roads and other sources of severance, connected by a network of signed cycling and walking routes – known as Beeways – on existing quiet streets. These will be complemented by a number of routes on busier roads where Dutch style cycle lanes protected from motor traffic will be constructed.

1.3.12 Our Five Year Transport Delivery Plan sets out a comprehensive programme of work across all modes and in all Local Authorities which are focused on ensuring the realisation of the 'Right Mix' vision. It contains explanatory text and a summary of the interventions and their stage in the development and delivery process. These include committed, unfunded priorities for the next five years and our longer-term development priorities. The Delivery Plan sections are:



1.3.13 Many of these interventions support the GMSF Allocations directly, whilst others are intended to provide alternatives to private car travel more generally. The schemes demonstrate a clear plan for delivering strategic transport interventions for the first five years of the GMSF plan period, whilst also laying the foundations for longer term investment in sustainable transport across the length of the plan period.

1.3.14 Where relevant, each of the individual Locality Assessments will highlight elements of the Delivery Plan that are particularly relevant to each Allocation or the local area.

1.3.15 Our Five Year Transport Delivery Plan is supported by ten Local Implementation Plans (LIPs) covering the period 2020 to 2025. Each of the ten councils that make up Greater Manchester has its own LIP. The LIPs are designed to ensure local priorities are articulated in the Delivery Plan. The LIPs are included as an appendix to the Delivery Plan. They will be 'live' documents for a period of time and will be updated as councils develop and publish transport plans and strategies, or as new schemes are developed or delivered.

1.3.16 For more detail on the Greater Manchester Transport Strategy 2040 and Our Five Year Transport Delivery Plan visit the TfGM website.

1.4 Structure of this Note

1.4.1 This note sets out the process that was implemented to identify the sites considered as suitable for inclusion in the draft GMSF. It also sets out a summary of the Greater Manchester Accessibility Level (GMAL) model which is TfGM's tool for

assessing the accessibly of sites in public transport terms and which was used in assessing the transport requirements of the Allocations.

1.4.2 An associated exercise was carried out to assess the potential to introduce or extend bus services to the Allocations, and this note sets out the process implemented to assess the likely demand and revenue implications of these new services.

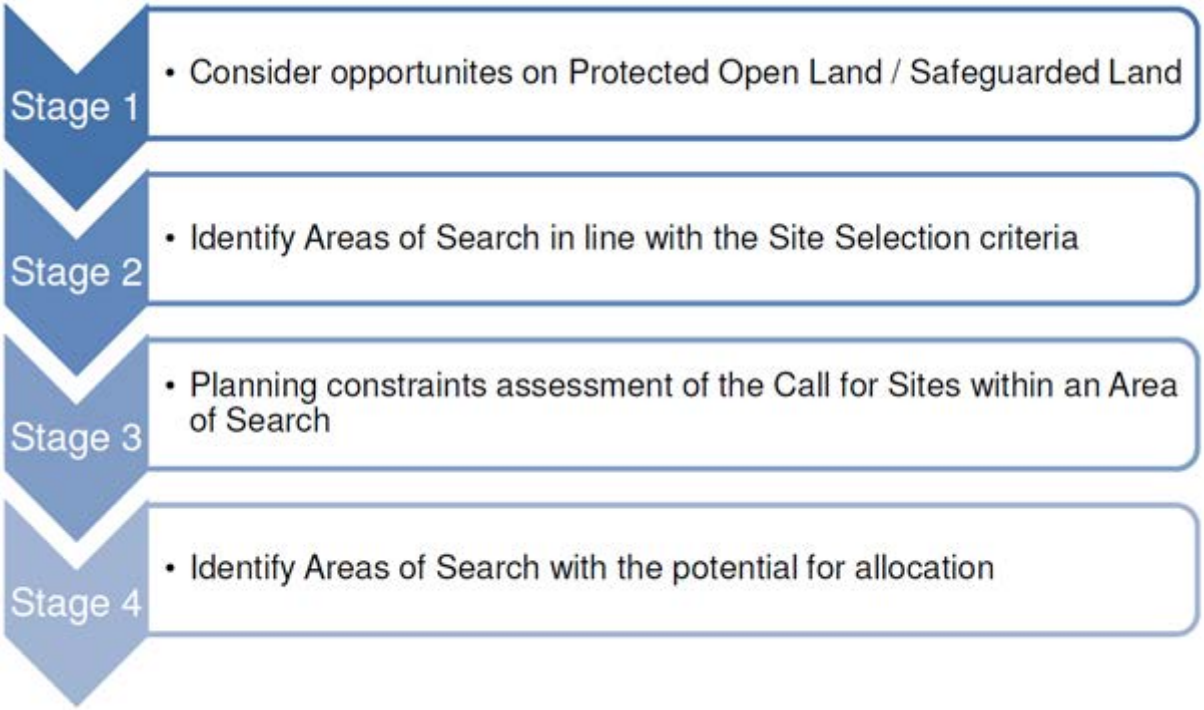
1.4.3 It then explains the approach to strategic modelling which was used to highlight the transport impacts of the Allocations on the transport network, and the process to identify, develop and categorise suggested mitigation schemes.

2. Site Selection

2.1 The Process

1.1.1 The process of identifying and selecting site allocations for the draft GMSF was led by the 10 Greater Manchester Authorities and provided the starting point for further investigation of the preferred sites through the Locality Assessments. It should be noted at the outset that a wide range of planning issues are considered when identifying sites for release, and transport is just one important aspect of this. A Site Selection methodology was developed that included seven criteria informed by the Vision, Objectives and Spatial Strategy in the GMSF 2019, and was used to guide the selection of sites for development within the green belt. A key objective for the process was to demonstrate a clear, consistent and transparent approach to the selection of sites in the GMSF.

1.1.2 The following stages set out the process used to identify the proposed allocations in the GMSF:



1.1.3 Stage One relates to land which is outside of the existing urban area but which is not in the green belt. This includes land which has been identified in Local Authority Local Plans as safeguarded land and/or protected open land (POL). This land is considered to be sequentially preferable to green belt. If stage one does not identify sufficient land to meet the need then it will be necessary to consider sites which are currently in the green belt as part of Stage two.

1.1.4 Stage Two is the identification of broad "Areas of Search" based on the Site Selection Criteria within which call for sites could be assessed. The Site Selection criteria reflect the priorities of the GMSF Spatial Strategy and objectives. The broad Areas of Search approach was chosen because of the volume of call for sites submitted and therefore it was necessary to undertake an initial high level sift to identify only those sites with the potential to meet the GMSF strategy. Sites which did not fall within an Area of Search were not considered to meet the strategy and were therefore excluded from the Site Selection process and not subject to any further assessment.

1.1.5 Based on the GMSF Spatial Strategy, plan objectives and guidance in the NPPF on green belt release, seven Site Selection Criteria were developed to identify the most sustainable sites in the green belt.

- Criterion 1 – Land which has been previously developed and/or land which is well served by public transport.
- Criterion 2 – Land that is able to take advantage of the key assets and opportunities that genuinely distinguish Greater Manchester from its competitors.
- Criterion 3 – Land that can maximise existing economic opportunities which have significant capacity to deliver transformational change and / or boost the competitiveness and connectivity of Greater Manchester and genuinely deliver inclusive growth.
- Criterion 4 – Land within 800 metres of a main town centre boundary or 800m from the other town centres' centroids.
- Criterion 5 – Land which would have a direct significant impact on delivering urban regeneration.
- Criterion 6 – Land where transport investment (by the developer) and the creation of significant new demand (through appropriate development densities), would support the delivery of long-term viable sustainable travel options and deliver significant wider community benefits.
- Criterion 7 – Land that would deliver significant local benefits by addressing a major local problem/issue.

1.1.6 Stage Three is an assessment of the sites within the identified Areas of Search to determine whether development in the Areas of Search would be appropriate, weighing the likely benefits against key planning constraints.

1.1.7 Stage four of the assessment identified proposed allocations within the Areas of Search. These Areas of Search were those which were considered to have no other significant constraints precluding development. Because the Areas of Search were derived from the Site Selection Criteria, it is considered that allocations within them represent the best fit for delivering the GMSF Spatial Strategy.

1.1.8 The Locality Assessments are not proposed to take the place of Transport Assessments (TA) which are a required part of individual Planning Applications. The Locality Assessments are intended to give a high-level assessment of how the site may impact on the surrounding transport network, in the absence of any detailed proposals for the configuration and phasing of a site. As such, they are intended to

highlight any significant 'show stoppers' that would suggest the site was not suitable for further consideration.

2.2 Greater Manchester Accessibility Levels

1.2.1 In order to support analysis of public transport accessibility and to assist in service development, TfGM has developed the Greater Manchester Accessibility Levels (GMAL) model, which provides a detailed and accurate measure of accessibility for any given location in the City Region for public transport (bus, rail and Metrolink), as well as flexible transport services such as Local Link.

1.2.2 GMAL provides a score of a location of between 1 to 8, where 1 represents the lowest level of accessibility and 8 represents the highest.

1.2.3 The GMAL measure reflects:

- Walking time from the point-of interest to the public transport access points;
- The number of services (bus, Metrolink and Rail) available within the catchment;
- The level of service at the public transport access points - i.e. average waiting time; and
- The operating areas of Local Link (flexible transport) services.

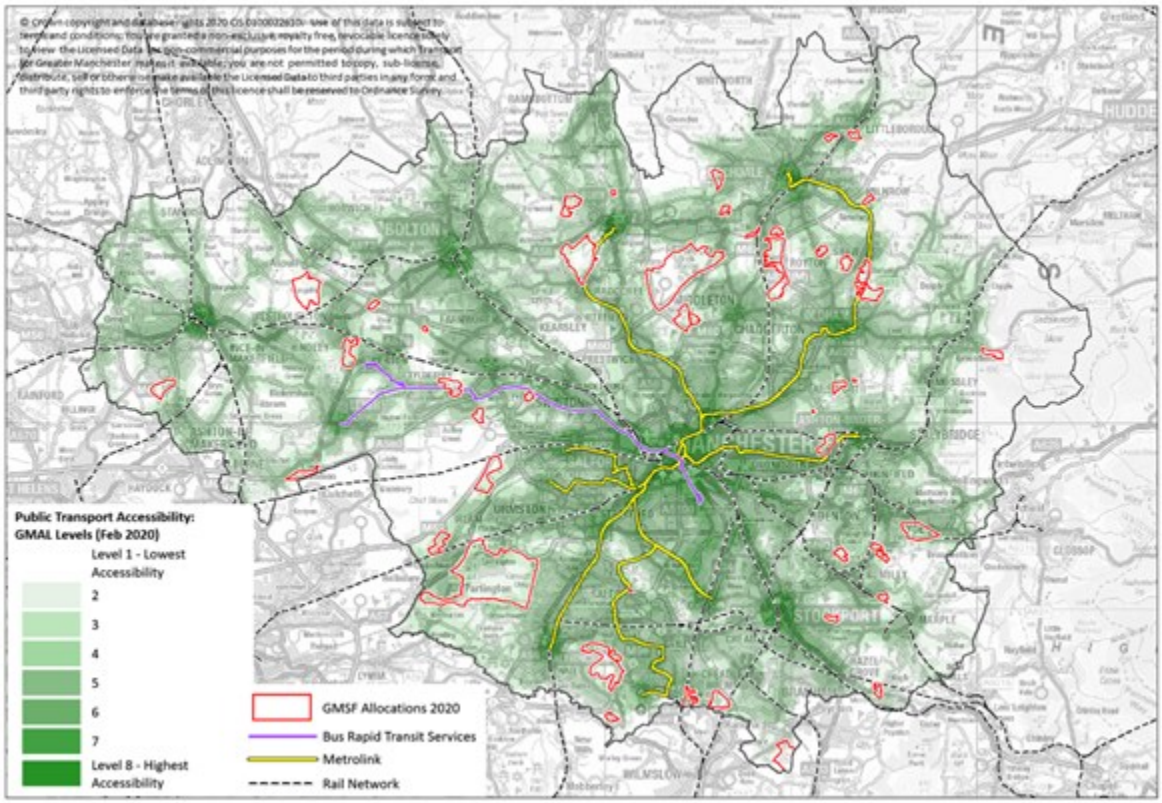
1.2.4 It does not consider:

- The speed or utility of accessible services;
- Crowding, including the ability to board services; or,
- Ease of interchange.

1.2.5 The map below displays the public transport accessibility of allocations within the Greater Manchester Spatial Framework. A representation of the Rail, Metrolink (including the Trafford Park Line completed in March 2020) and Bus Rapid Transit (Vantage bus services) corridors are provided for reference, as well as an indication of public transport accessibility through GMAL.

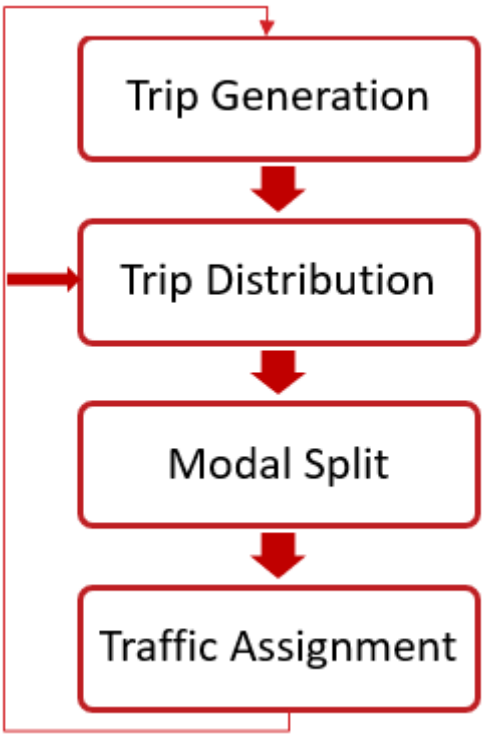
1.2.6 This accessibility data should be considered correct as of February 2020, providing a stable representation of the public transport network before changes in services associated with Covid-19. Since March 2020, public transport services have been under continuous review subject to the requirements of demand, social distancing

and funding. There have been a range of changes made regarding service frequencies across public transport networks, and while there was an initial reduction in services, much of this has now been restored, and this would still represent the areas best served by public transport within a stable service pattern.



3. Approach to Strategic Modelling

2.1 The GMSF Locality Assessments have been produced using data provided from TfGM's Variable Demand Model (GMVDM). This model is a mathematical representation of the transport network, which works by determining all of the origins and destinations of trips within a given area, matching these two together in order to generate a set of journeys, assigning these journeys to a mode (for example, car, bus, or cycling) and then assigning these trips to a route. The model runs numerous 'loops' in order to identify the best path (by generalised cost). This approach is summarised in the diagram below.



2.2 For this project, SYSTRA updated the model in order to produce a number of different scenarios to permit comparison and evaluation.

2.3 TfGM provided the Base Model to SYSTRA representing how the transport network operates at present (in 2017). SYSTRA made some refinements to the Base Model to add detail in the vicinity of some allocations. GMVDM is a strategic model and, as such, does have limitations in terms of investigating localised transport issues.

2.4 SYSTRA then produced a Reference Scenario, including the Existing Land Supply and committed transport infrastructure for two assessment years – 2025 and 2040. This facilitated an understanding of how the transport network was likely to operate in

the future, with the existing land supply identified in the GMSF, but without the introduction of the Allocations proposed in the plan.

2.5 Future trip generation to/from the site (i.e. how many people and vehicles will enter or leave the site) was estimated by applying a set of Greater Manchester-wide trip rates derived from an industry database known as TRICS (Trip Rate Information Computer System) to the agreed development quantum for each site. TRICS is a national system for trip generation analysis which allows users to establish potential levels of trip generation for a wide range of development types and scenarios. Trip rates were based on the Trafford Park Metrolink business case and were given for three periods, AM(0700-1000), Inter-Peak (1000-1600) and PM (1600-1900), different rates were also used for town centre and out-of-centre areas. Where Office or Industry and Warehouse was a part of the land use mix, floorspace was converted into a number of jobs, using densities derived from the Homes and Community Agency Employment Density Guide.

2.6 The distribution of trips (i.e. where they are going to or coming from) was derived by selecting nearby zones with similar land use characteristics as a proxy and using the existing distribution in the model.

2.7 In order to assess the cumulative impact of Greater Manchester allocations on the network, two test model scenarios were undertaken, a 'constrained' and 'high side' assessment. The constrained forecasts could reduce the number of future highway trips due to congestion on the highway network. This constraining process is undertaken by the GMVDM.

2.8 In simple terms, the GMVDM takes the unconstrained input demand and adjusts it to reflect changes in the costs of travel over time, due to:

- increased congestion due to the underlying increase in car trips forecast by the National Trip End Model (NTEM) a UK wide forecast of population, employment, car ownership and trip rates, produced by the Department for Transport
- the inclusion of significant new developments causing additional local congestion
- changes in values of time and vehicle operating costs
- changes in public transport fares

- introduction of new public transport services or changes to journeys times / headways for existing services
- introduction of new road infrastructure

2.9 The model adjusts the input demand based on how the cost of travel changes from the base year to the future. For example, for a shopping trip undertaken by car which becomes more congested in future, changes might be:

- travel via a different route
- travel via a different mode, e.g. walk/cycle, bus, Metrolink
- travel to some different shops
- travel at a different time of day
- some combination of the above

2.10 The 'standard' development planning approach would generally not assume that future highway trips are constrained by congestion on the highway network. Discussions between SYSTRA and TfGM pointed towards a need to also look at such a 'high-side' scenario with the GMSF development scenario which does not take account of future congestion on the road network.

2.11 The outputs of these four Test Cases ("GMSF Constrained" and "GMSF High Side", for both 2025 and 2040) were used to assess and mitigate the impact of the GMSF Allocations on the Greater Manchester transport network.

2.12 Further iterations of the above process were necessary in the case of some sites. When the process was completed, a comparison was made of the input TRICS trip rates and the output GMVDM development traffic flows, to confirm that both were broadly comparable.

4. Approach to Technical Analysis

4.1 Background

3.1.1 For each of the Site Allocations originally examined, SYSTRA worked with representatives of the ten Greater Manchester Local Authorities, TfGM and site promoters to identify key parts of the transport network (e.g. key road links and

junctions) likely to be impacted by the site. This was achieved by a combination of both professional judgement and local knowledge.

3.1.2 In almost all cases the junctions in a road network reach capacity before the road links. Hence, much of the analysis focused on the identified critical junctions. For each of these, a local junction model was built which replicated the current operation of the junction. Signalised junctions were assessed in detail using industry-standard modelling software 'LINSIG Version 3'. Where possible, traffic signal information (i.e. signal phasing and timings) and lane geometry (alignment, profile and lane position) were provided by TfGM to ensure that the local junction models reflected (as far as possible), the operation of the junctions on the ground. 'Junctions 9' software was used to assess priority and roundabout junctions.

3.1.3 Junction performance was tested for the "Reference", "GMSF Constrained" and "GMSF High Side" scenarios for both 2025 and 2040. Site traffic impacts were measured relative to the Reference scenario. Where these impacts were considered to be significant, transport mitigation schemes were developed to address these. Through discussions with TfGM and the Combined Authority, it was agreed that where mitigation was required, it should mitigate the impacts back to the Reference Case scenario – i.e. the allocations should mitigate their own cumulative impact rather than seek to mitigate the impact of general traffic growth arising from the Existing Land Supply. It should be noted that mitigating back to this level of operation may not mean that the junction operates within capacity by 2040.

4.2 Approach to identifying Public Transport schemes

3.2.1 Public transport interventions have been identified which could support non-car trips to and from the draft Allocation. In some instances sites have been proposed close to current or planned Metrolink stops or current rail stations, and for a majority of sites the introduction of new or extended bus services have been proposed and outline costs developed.

3.2.2 In order to develop these proposals, SYSTRA Ltd's bus service experts and TfGM's Operational Planning team held a workshop to identify potential new and improved services for each site, including any existing proposals identified during the early stages of the planning process. The identified services were then defined in more

detail to understand the likely catchments and patronage levels. Patronage was based on TRICS outputs moderated in line with the actual levels of services proposed (e.g. slow and/or low frequency services are unlikely to achieve the patronage implied by the raw TRICS outputs). The patronage forecasts were used to estimate the likely revenue levels to be generated by the new or improved bus service associated with each site.

3.2.3 Services were also costed using detailed costing information available to TfGM through its specification of current socially necessary bus services, to establish whether they could operate without subsidy, and, where subsidy was likely to be necessary, to understand the likely cost per passenger. Services with an unacceptably high cost per passenger subsidy were reviewed in order to understand if any changes could be made that would reduce the subsidy, which led to a reduction in the specification of some services.

3.2.4 Services which, following review, still had an unacceptably high cost per passenger subsidy were deemed to be unviable and were not included in the Locality Assessments.

3.2.5 It should be noted that the working environment for buses is likely to be substantially different in the future, and this exercise was intended to be indicative of the type of bus service that may be possible when an Allocation is developed. The opportunity for bus service improvements will need to be reviewed at the time of submission of the planning application (within the Transport Assessment) as circumstances and opportunities for service improvement may have changed.

4.3 Mitigations and Scheme Development

3.3.1 A number of the site allocations have a body of pre-existing planning information associated with them. This body of work includes consideration of how they could best be linked into the transport network. Therefore, for some sites, there were pre-existing proposals for interventions in the form of link roads, new rail or Metrolink stations, or extensions to existing or proposed bus, cycle and walking routes. Where these schemes had a base level of detail (which would allow them to be coded into the model), they could be examined to consider the level of relief they provided to the traffic impacts. In other instances, it was for the Locality

Assessment technical teams to identify possible interventions and off-site mitigations. Typical local mitigations that were considered included:

- priority junctions (both new priority junctions and modification of existing junctions)
- signalised junctions (both new signalised junctions, modification of existing signalised junctions and conversion of priority junctions to signalised arrangement)
- roundabouts (both mini and standard, modification of existing roundabouts and signalisation of standard roundabouts)
- carriageway construction (single and dual carriageway)
- installation of pedestrian / cycle crossings (pelican, toucan, puffin and zebra).

3.3.2 In addition, the team considered the introduction of new bus services, extensions to or increases in frequency for existing bus services, and the possible introduction of Demand Responsive Transport.

3.3.3 In parallel to the identification and costing of local mitigations, a costing exercise was undertaken to identify broad costs for each intervention to understand how these could be delivered and the extent to which they offered value for money. SYSTRA and other third-party consultants have pro-actively engaged with the Local Authorities and other stakeholders such as TfGM and Highways England throughout the assessment process and based on their inputs the list of transport interventions has been refined and consolidated.

3.3.4 In the case of certain allocations, it was necessary to undertake the process described above more than once. In the case of some larger and/or more complex sites, it was necessary to test the effectiveness of the identified mitigations via the GMVDM and to further check that traffic reassignment did not generate additional problems.

3.3.5 Each of the Locality Assessments has considered the full range of mitigations and interventions, from public transport, to highway schemes, to sustainable modes. Some of the sites allocated for development have proven to be more complex than others; due either to their size and composition, their proximity to other sites or their interaction with congested sections of the Strategic Road Network. In these instances, is has been necessary to complete several iterations of the process set out above. For example, mitigations developed for a site may not fully address the

issues identified, and further mitigations and/or reductions in development quantum have been considered in order to identify the correct level of scale. This has in some cases necessitated several rounds of strategic modelling.

3.3.6 In some instances, it was not possible to full identify interventions which could suitably mitigate the impact of the site on the network. Where this is the case, this became a contributing factor in decisions to either reduce the scale or remove the site completely from the GMSF (Appendix 1 gives a full list of the final GMSF Allocations). In other instances, the proposed intervention made a contribution to mitigating the site, but could not fully ameliorate the impact. In these instances, care has been taken to ensure that the Allocation is not proposed for delivery in the early part of the Plan period, in order to allow further work to be done to improve the transport network, and ensure that the Allocation can be brought forward safely and sustainably.

3.3.7 Mitigations have been grouped in one of four categories depending on their size and significance:

Necessary strategic interventions

3.3.8 These comprise significant interventions that have potential to have strategic benefits – i.e. benefits to the wider network not just the local network. There is a consensus that the intervention is required to support the implementation of a specific site and that the site could not come forward without it

Supporting strategic interventions

3.3.9 These comprise significant interventions; similar in magnitude to those defined in the previous category. These interventions are considered highly desirable and may be required in order to deliver the GMSF at a Plan level but are not necessarily linked to the delivery of any one Allocation.

Necessary local interventions

3.3.10 These are essential for a site to come forward, but do not have a wider strategic impact on the transport network. They are comprised of three main types:

- Site Access – Direct connections between the external road network and the site.

- Local Mitigation – Local transport mitigation measures proposed to address direct impacts of the site. These might comprise road network improvements, localised public transport improvements and measures to support the use of active modes.
- SRN Mitigation – Highway mitigation measures specifically intended to address identified issues on the Strategic Road Network arising from an Allocation.

Supporting local interventions

3.3.11 Site Access, Local Mitigation and SRN mitigation which are considered highly desirable but are not essential to the delivery of any one Allocation.

3.3.12 It is important to note that the interventions developed are intended to demonstrate only that significant transport impacts of the Allocation can be appropriately ameliorated. As such they are indicative only and are not intended to act as a definitive proposal for the mitigation of any Allocation, which would be developed as part of a Transport Assessment submitted as part of a planning application at a later date.

3.3.13 All of the interventions set out in the Locality Assessments are included in Greater Manchester's Five Year Transport Delivery Plan (or are covered within the associated Local Implementation Plans (LIP) for each local authority). This sets out those transport schemes which will be implemented or developed further across the next five-years in order to deliver on Greater Manchester's wider economic, social and environmental objectives for transport as set out in 2040 Transport Strategy.

3.3.14 The focus of the main Transport Delivery Plan is on those GMSF schemes that have strategic benefits, while the LIP documents enable the local interventions to be incorporated into the local sustainable transport and highway programmes.

3.3.15 In all cases, we would expect significant developer funding to enable the delivery of both the strategic and local schemes, and where appropriate other sources of public funding will be sought to help ensure delivery over the plan period. Funding and delivery priorities of the Delivery Plan, over the next 3-5 years, will be reflected in the Greater Manchester Infrastructure Programme (GMIP).

3.3.16 Further iterations of the Delivery Plan will be published at regular intervals, and as sites come forward for development, we would expect to see interventions necessary to ensure new Allocations can be delivered sustainably to be reflected in those iterations. TfGM, the Local Authorities, Highway England and site promoters will work together to ensure that schemes which are brought forward support the City Region's commitment to the Right Mix vision and the ambition to enable more people to walk, cycle and use public transport.

5. Conclusion

4.2 The completion of Locality Assessments on the proposed GMSF Allocations has ensured that each site has been subject to a thorough, robust and consistent evaluation of its likely contribution to transport impacts in Greater Manchester. The sites that have been selected for inclusion in the latest version of the GMSF have been found to be suitable from a transport perspective, and satisfy the requirements of National Planning Policy Framework in that they do not place an unacceptable impact on highway safety or severe impact on the road network. Where necessary, illustrative mitigation schemes have been developed, and their effectiveness in reducing traffic impacts has been demonstrated. Those schemes which have a strategic benefit and are likely to be needed in the next five-year period have been referenced in Our Five Year Transport Delivery Plan and form part of GMIP.

4.3 Nonetheless, it is clear that for some Allocations there is further work to be done in order to develop a solution that fully mitigates the site's impact on the transport network. In these instances care has been taken to ensure that the Allocation is not identified for delivery in the first five years of the Plan, to enable more work to be undertaken to ensure that the site can be delivered in a safe and sustainable matter at a later point in time.

6. GMSF Allocations List

Local Authority	2019 Ref	2019 Title	2020 Ref	2020 Title
Cross Boundary	GMA01.1	Northern Gateway Heywood Pilsworth	GMA1.1	Northern Gateway Heywood Pilsworth
Cross Boundary	GMA01.2	Northern Gateway Simister and Bowlee	GMA1.2	Northern Gateway Simister and Bowlee
Cross Boundary	GMA01.3	Whitefield	Withdrawn	Withdrawn
Cross Boundary	GMA02	Stakehill	GMA2	Stakehill
Cross Boundary	GMA03	Kingsway South	Withdrawn	Withdrawn
Bolton	GMA04	Bewshill Farm	GMA4	Bewshill Farm
Bolton	GMA05	Chequerbent North	GMA5	Chequerbent North
Bolton	GMA06	West of Wingates	GMA6	West of Wingates
Bury	GMA07	Elton Reservoir	GMA7	Elton Reservoir
Bury	GMA08	Seedfield	GMA8	Seedfield
Bury	GMA09	Walshaw	GMA9	Walshaw
Manchester	GMA10	Global Logistics	GMA10	Global Logistics
Manchester	GMA11	Roundthorn MediPark Extension	GMA3.1	Roundthorn MediPark Extension
Manchester	GMA12	Southwick Park	GMA11	Southwick Park
Oldham	GMA13	Ashton Road Corridor	GMA18	Land south of Coal Pit Lane (Ashton Road)
Oldham	GMA14	Beal Valley	GMA12	Beal Valley

Local Authority	2019 Ref	2019 Title	2020 Ref	2020 Title
Oldham	GMA15	Broadbent Moss	GMA14	Broadbent Moss
Oldham	GMA16	Cowlishaw	GMA16	Cowlishaw
Oldham	GMA17	Hanging Chadder	GMA17	Hanging Chadder
Oldham	GMA18	Robert Fletchers	GMA15	Chew Brook Vale (Robert Fletchers)
Oldham	GMA19	South of Rosary Road	GMA19	South of Rosary Road
Oldham	GMA20	Spinners Way	Withdrawn	Withdrawn
Oldham	GMA21	Thornham Old Road	Withdrawn	Withdrawn
Oldham	GMA22	Woodhouses	GMA13	Bottom Field Farm (Woodhouses)
Rochdale	GMA23	Bamford and Norden	GMA20	Bamford and Norden
Rochdale	GMA24	Castleton Sidings	GMA21	Castleton Sidings
Rochdale	GMA25	Crimble Mill	GMA22	Crimble Mill
Rochdale	GMA26	Land north of Smithy Bridge	GMA23	Land north of Smithy Bridge
Rochdale	GMA27	Newhey Quarry	GMA24	Newhey Quarry
Rochdale	GMA28	Roch Valley	GMA25	Roch Valley
Rochdale	GMA29	Trows Farm	GMA26	Trows Farm
Salford	GMA30	Land at Hazelhurst Farm	GMA27	Land at Hazelhurst Farm

Local Authority	2019 Ref	2019 Title	2020 Ref	2020 Title
Salford	GMA31	East of Boothstown	GMA28	East of Boothstown
Salford	GMA32	North of Irlam Station	GMA29	North of Irlam Station
Salford	GMA33	Port Salford Extension	GMA30	Port Salford Extension
Stockport	GMA34	Bredbury Park Extension	GMA31	Bredbury Park Extension
Stockport	GMA35	Former Offerton High School	GMA32	Former Offerton High School
Stockport	GMA36	Gravel Bank Road/Unity Mill	Withdrawn	Withdrawn
Stockport	GMA37	Heald Green	GMA33	Heald Green 1 (West)
Stockport	GMA38	High Lane	GMA35	High Lane
Stockport	GMA39	Hyde Bank Meadows	GMA36	Hyde Bank Meadows
Stockport	GMA40	Griffen Farm/Stanley Green	GMA34	Heald Green 2 (East)
Stockport	GMA41	Woodford Aerodrome	GMA37	Woodford Aerodrome
Tameside	GMA42	Ashton Moss West	GMA38	Ashton Moss West
Tameside	GMA43	Godley Green Garden Village	GMA39	Godley Green Garden Village
Tameside	GMA44	South of Hyde	GMA40	South of Hyde

Local Authority	2019 Ref	2019 Title	2020 Ref	2020 Title
Trafford	GMA45	New Carrington	GMA41	New Carrington
Trafford	GMA46	Timperley Wedge	GMA3.2	Timperley Wedge
Wigan	GMA47	Land South of Pennington	Withdrawn	Withdrawn
Wigan	GMA48	M6 Jctn 25	GMA42	M6 Junction 25
Wigan	GMA49	North of Mosley Common	GMA43	North of Mosley Common
Wigan	GMA50	Pocket Nook	GMA44	Pocket Nook
Wigan	GMA51	West of Gibfield	GMA45	West of Gibfield

Greater Manchester Spatial Framework

Locality Assessment:

Bamford Norden (GMA20)

Publication Version 2: November 2020

Identification Table	
Client	Rochdale Metropolitan Borough Council and TfGM
Allocation	Bamford Norden
File name	GMA20 Bamford Norden Locality Assessment 021020
Reference number	GMA20 (2020 GMSF) previously GMA23 (2019 GMSF) TTHC Ref: M16002-24-03B

Approval					
Version	**Role**	**Name**	**Position**	**Date**	**Modifications**
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Allocation Data	
Allocation Reference No.	GMA20 (2020 GMSF) previously GMA23 (2019 GMSF)
Allocation Name	Bamford Norden
Authority	Metropolitan Borough of Rochdale
Ward	Norden
Allocation Proposal	450 residential units
Allocation Timescale	0-5 years ✓ 6-15 years ✓ 16 + years ✓

Glossary

"2025 GMSF Constrained" - is the 2025 forecast case in which the model adjusts the input demand based on how the cost of travel changes from the base year to the future. For example, for a shopping trip undertaken by car which becomes more congested in future, changes might be travel via a different route, mode, location or time of day.

"2040 GMSF Constrained" - as above, but for a 2040 forecast year

"2025 GMSF High-Side"- is the 2025 forecast case in which the model does not adjust the input demand based on how the cost of travel changes. In this scenario congestion does not lead to a reassignment of traffic, and therefore road traffic flow will generally be higher.

"2040 GMSF High-Side" - as above, but for a 2040 forecast year

"2025 Reference Case" - is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2025

"2040 Reference Case"- is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2040

AADT - Annual average daily traffic, is a measure used in transportation planning to quantify how busy the road is

Bee Network - is a proposal for Greater Manchester to become the very first city-region in the UK to have a fully joined-up cycling and walking network: the most comprehensive in Britain covering 1,800 miles.

Bus Rapid Transit - a bus-based public transport system designed to improve capacity and reliability relative to a conventional bus system. Typically, a BRT system includes roadways that are dedicated to buses, and gives priority to buses at junctions where buses may interact with other traffic

Existing Land Supply - these are sites across the county that have been identified by each local planning authority across Greater Manchester and are available for development

Greater Manchester Variable Demand Model (GMVDM) - the multi-modal transport model for Greater Manchester. This transport model provides estimates of future year transport demand as well as the estimates of travel behaviour changes and new patterns that the Plan is likely to produce. These include changes in choices of routes, travel mode, time of travel and changes in journey destinations for some activities such as work and shopping.

“LRN” (Local Road Network) All other roads comprise the Local Road Network. The LRN is managed by the local highways authorities

National Trip End Model (NTEM) - is a Department for Transport forecast that ensures that measures of population, jobs and trips made by various mode are consistent across the whole of Great Britain.

Rapid transit services - refers to high frequency, high capacity metro style transport services including Metrolink and Bus Rapid Transit.

“SRN” (Strategic Road Network) The Strategic Road Network comprises motorways and trunk roads, the most significant ‘A’ roads. The SRN is managed by Highways England.

“TfGM” - Transport for Greater Manchester, the Passenger Transport Executive for Greater Manchester

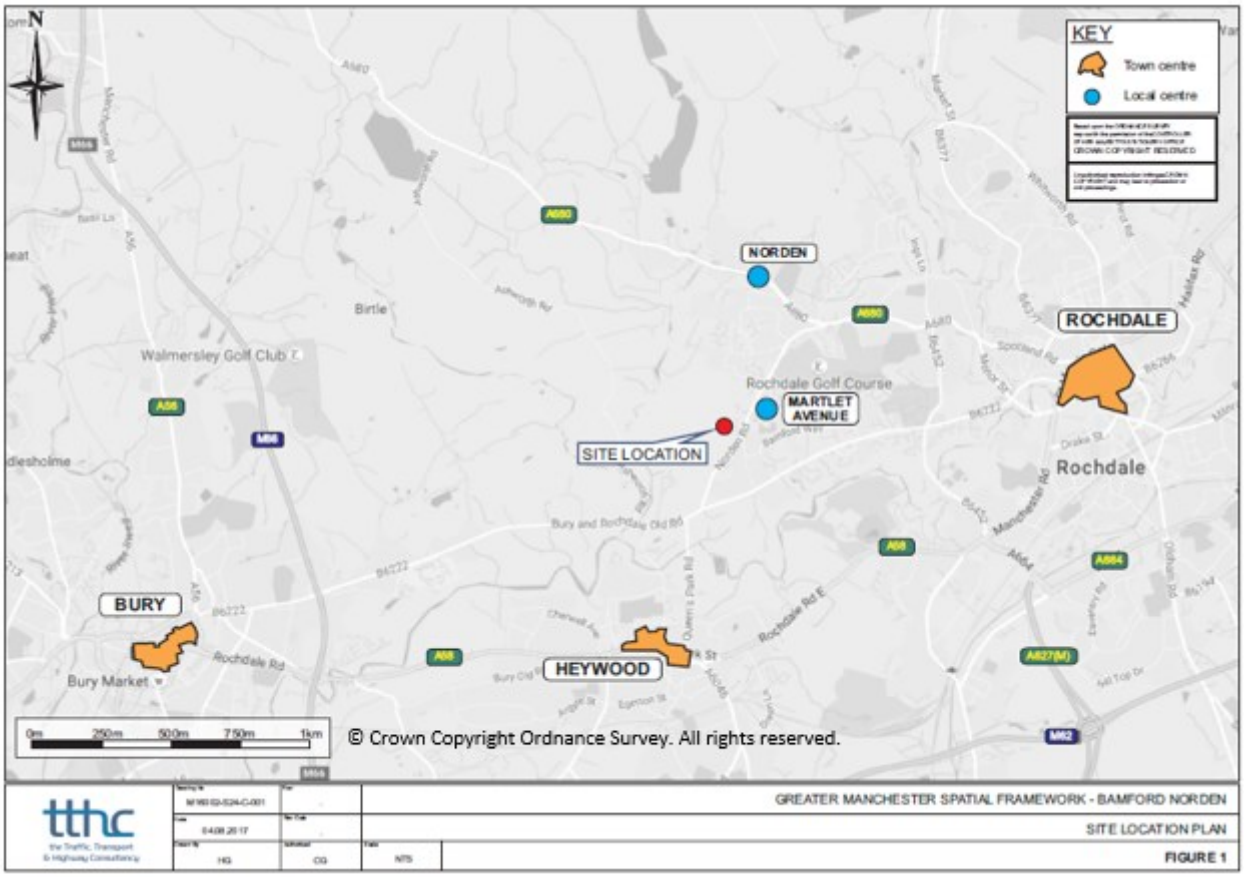
Urban Traffic Control (UTC) - is a specialist form of traffic management that, by coordinating traffic signals in a centralised location, minimises the impact of stop times on the road user.

1. Allocation Location and Overview

1.1.1 The Bamford Norden allocation is located in the Greater Manchester borough of Rochdale and would provide an urban extension of around 450 dwellings, with an opportunity to provide some early delivery of housing as part of a phased development.

1.1.2 The allocation is situated between Rochdale and Heywood, as shown in **Figure 1** below. It is located approximately 16km north of Manchester City Centre and the Regional Centre.

Figure 1. Allocation location map: Bamford Norden



1.1.3 Within a transport context, the Regional Centre is highly accessible from its surrounding areas by an extensive public transport network which supports Greater Manchester. This includes local rail, Metrolink and bus services. Within the Regional Centre, there are extensive interchange facilities including connections to destinations on the West Coast Mainline, Trans-Pennine routes and Manchester Airport.

1.1.4 The M66 motorway is situated approximately 6km to the west, and the A627(M) approximately 4km to the south-east of the allocation. These Strategic Roads provide onward connections to the M60 and M62.

1.1.5 More locally the allocation is largely surrounded by residential dwellings including the areas of Bamford, Norden, Cutgate, Wolstenholme and Crimble.

1.1.6 There are two designated local centres within walking distance of the allocation: Martlet Avenue (100m from the allocation) and Norden village centre (1.1km from the allocation). These provide a range of shops and facilities including convenience food stores, a pharmacy, a Post Office, pubs and restaurants.

1.1.7 In addition to these local centres, a larger range of shops and amenities can be accessed at two nearby town centres: Rochdale 3.8km to the east and Heywood is 3.1km to the south.

1.1.8 These local and town centres are all shown in **Figure 1**.

1.1.9 There are also a number of primary schools to the north, east and south of the allocation and also secondary schools towards Rochdale.

1.1.10 The allocation is bounded to the north by a cricket club, playing fields and public open space, and to the east and south by Norden Road. To the west, the allocation is bounded by Jowkin Lane.

2. Justification for Allocation Selection

2.1.1 Norden and Bamford are well-established residential areas to the west of Rochdale town centre and there is a strong market demand for housing within the area. The allocation currently has good access to a number of local bus services serving Rochdale and Bury town centres. There is a proposal, linked to the development at Northern Gateway 1, to provide a bus rapid transit service linking Heywood and Manchester city centre. There is potential to extend some of these services to Norden which could serve this development and the wider western part of the town.

2.1.2 This allocation was selected under Criterion 7, as it offers an excellent opportunity to expand on this area to deliver a type of housing which is in short supply across the borough and the conurbation as a whole. It also provides an opportunity to deliver a high-quality recreational hub serving the wider area.

2.1.3 Detail of the Site Selection process, including the criteria used to identify the sites, and how this was used to select the most sustainable sites is considered within the GMSF Spatial Strategy and accompanying Topic Papers.

3. Key Issues from Consultation

3.1.1 The Greater Manchester Plan for Homes, Jobs and Environment (Spatial Framework) consultation ran from 14 January to 18 March 2019. The comments made during the 2019 GMSF consultation relate to the following key transport themes:

- There is heavy traffic congestion locally, particularly during peak times on Norden Road and Bury Road;
- There is a perception that public transport links and capacity in this area are poor; and
- There is an Air Quality Management Area (AQMA) on Bury Road. Emissions here already exceed air pollution guidelines.

3.1.2 A full summary of all consultation responses is available on the GMCA GMSF website.

4. Existing Network Conditions and Allocation Access

4.1 Access and Local Highway Network

4.1.1 Norden Road runs north east to south west past the allocation boundary, becoming Bagslate Moor Road and then connecting with A680 Edenfield Road to its north, and connecting with B6222 Bury & Rochdale Old Road to its south. Norden Road has a 30mph speed limit, with street lighting and footways on both sides and is approximately 6m in width.

4.1.2 The junction to the north with A680 Edenfield Road is a three-arm mini roundabout.

4.1.3 To the south, Norden Road forms a signalised T-junction with B6222 Bury & Rochdale Old Road. This junction is linked with the adjacent signal junction to the west, Queen's Park Road, which in combination form a large staggered right-left crossroads. The two junctions are separated by a distance of around 150m.

4.1.4 TfGM have recently installed SCOOT here, which will improve the coordination of the two junctions.

4.1.5 War Office Road is a connecting road between Norden Road and B6222 Bury & Rochdale Road to the south-east of the allocation. This link connects to Norden Road and B6222 Bury & Rochdale Old Road via large priority T junctions. The B6222 Bury & Rochdale Old Road junction with War Office Road includes ghost-island provision.

4.1.6 Jowkin Lane runs along the western edge of the allocation from north west to south east, connecting to Lower Jowkin Lane and then continuing onto Furbarn Road to the north. There is a priority junction with Norden Road to the south.

4.1.7 With the exception of the southern section of Jowkin Lane, which is a wide surfaced carriageway, the majority of Jowkin Lane and Furbarn Road are narrow country lanes spanning approximately 4m at their widest points. There are no footways on these narrow sections and, with the exception of Jowkin Lane to the south of Moorgate Cottages, there is no street lighting.

4.1.8 The existing public transport services are covered in **Section 5**.

4.2 Accidents and Collision Overview

4.2.1 Crashmap official accident data has been obtained for the five years from 2015 to 2019. This is summarised by route in **Table 1** below.

Table 1. Accident Data

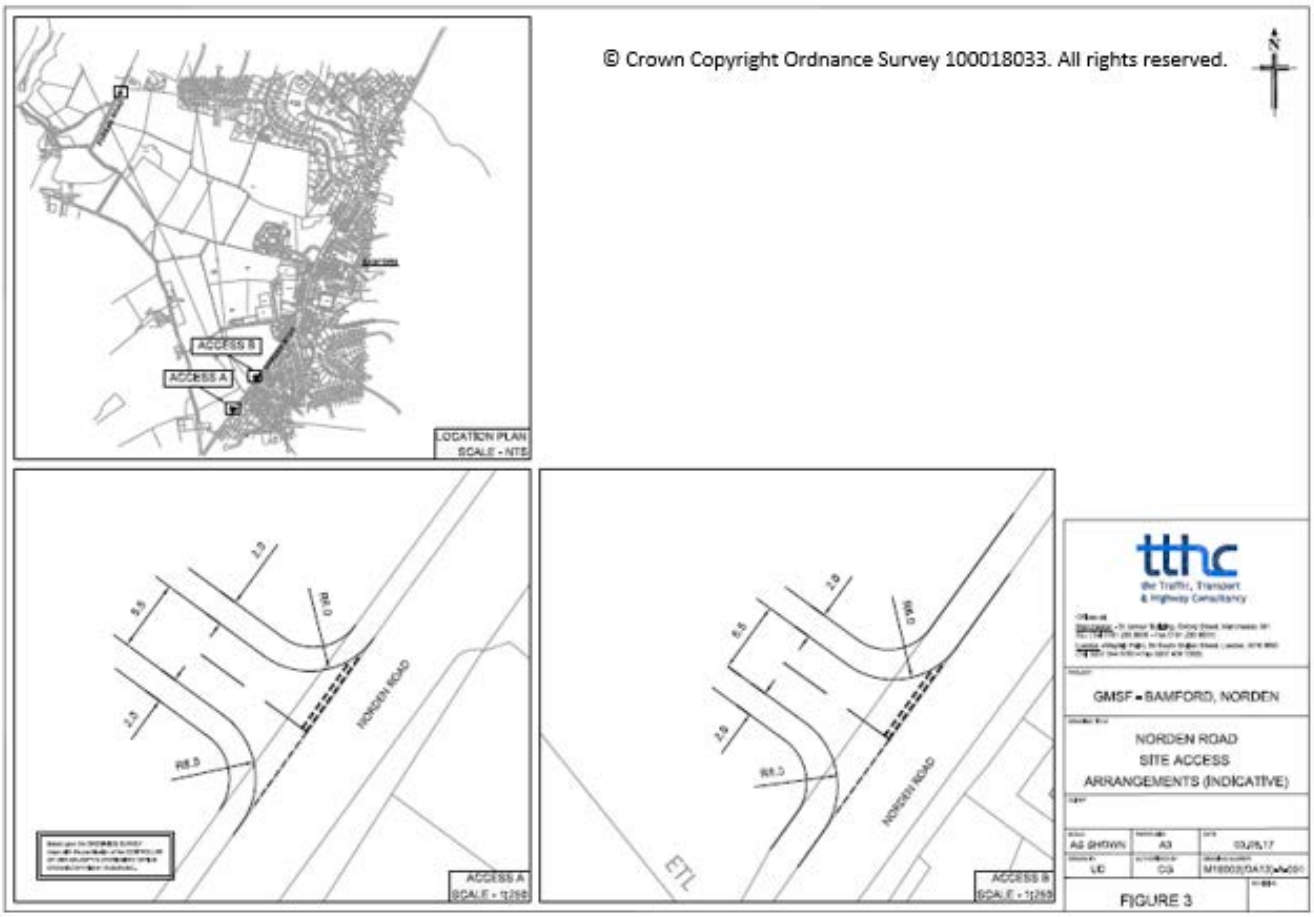
Total Accidents 2015 2019	Distance (Miles)	Slight	Serious	Fatal
A680 from Shawfield Lane to Ings Lane / Sandy Lane junction	1.2	7	1	0
Norden Road / Bagslate Moor Road	1.4	8	3	0
B6222 Bury & Rochdale Old Road from Grislehurst Lane to Broadhalgh Road	2.0	7	2	1
War Office Road	0.3	1	0	0

4.2.2 The accident locations are evenly distributed over the above routes, and there are no clusters to suggest that any locations are particularly hazardous.

4.3 Proposed Allocation Access

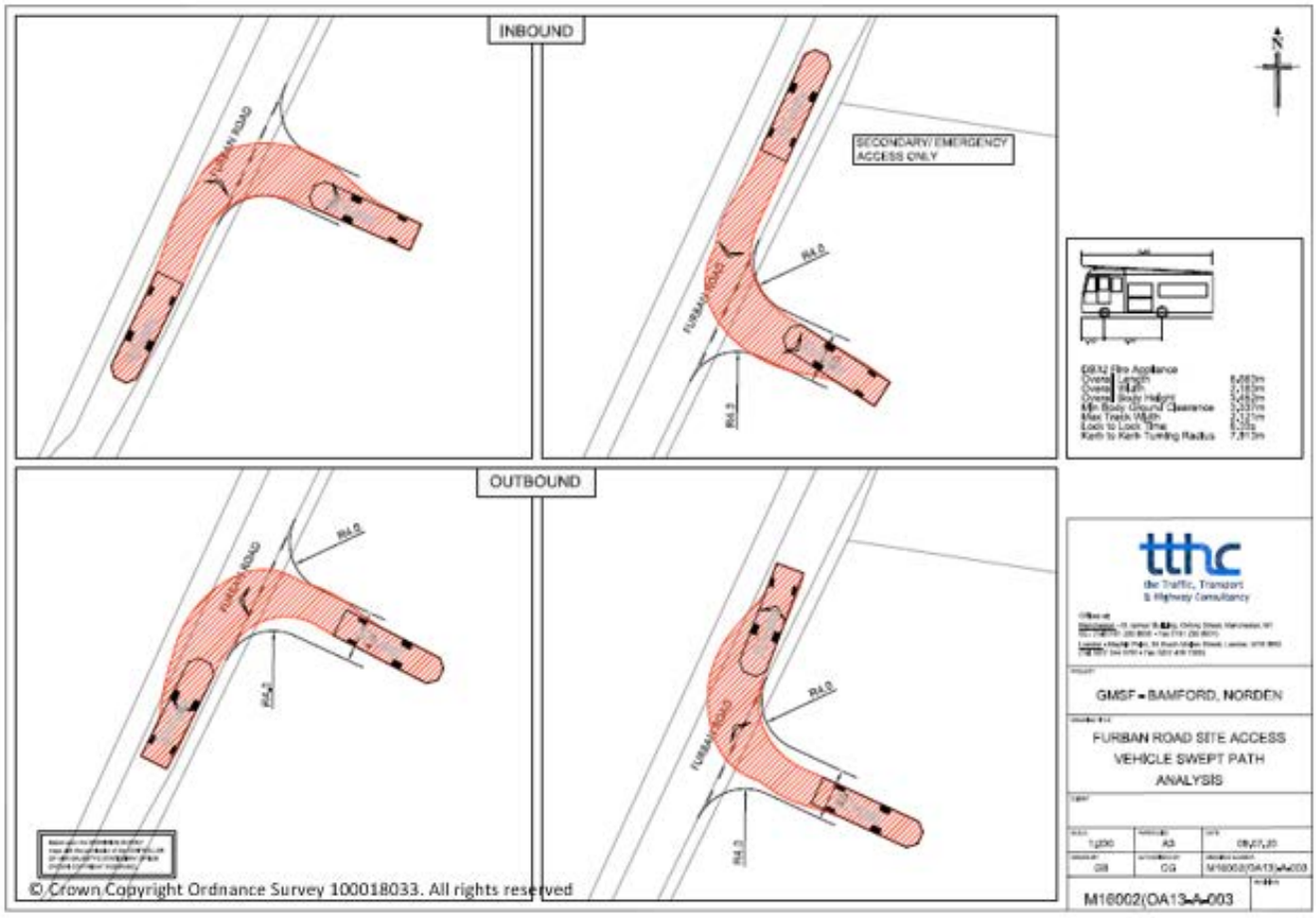
4.3.1 The main vehicle access would be via Norden Road. There would be either one or two priority access junctions, as shown on the plans in **Figure 2** below.

Figure 2. Norden Road access – Illustrative/Typical Layout



4.3.2 The masterplan also includes a pedestrian, cycle and emergency vehicle access from Furbarn Road to the north. Illustrative swept paths for an emergency vehicle are shown in **Figure 3** below.

Figure 3. Furbarn Road Access – Illustrative/Typical Layout



4.3.3 The developer will explore whether improvements can be made to the condition of Furbarn Road in order to improve access for pedestrians and cyclists. The requirements for a 'greenway' following the alignment of Jowkin Lane along the western edge of the allocation will also be considered. Details for any surface improvements and associated funding will be confirmed at the planning application stage, should the allocation be approved.

4.3.4 A 'greenway' will also be incorporated into the masterplan for the allocation, providing a north-south link.

5. Multi-modal accessibility

5.1 Current

5.1.1 The current accessibility of the Bamford Norden allocation, using Greater Manchester's Accessibility Level model (GMAL), has been identified as comprising areas of level 3 and 4, giving it a low to average rating with the south-eastern side of the allocation benefitting from a slightly higher score. Note that the GMAL rating is based on pre-COVID-19 pandemic figures and therefore may not be representative of the latest transport accessibility rating.

5.1.2 Greater Manchester Accessibility Levels are a detailed and accurate measure of the accessibility of a point to both the conventional public transport network (i.e. bus, Metrolink and rail) and Greater Manchester's Local Link (flexible transport service), taking into account walk access time and service availability. The method is essentially a way of measuring the density of the public transport provision at any location within the Greater Manchester region. The GMAL methodology is derived from the Public Transport Accessibility Level (PTAL) approach developed by the London Borough of Hammersmith and Fulham but modified to consider flexible transport service provision (Local Link) and to reflect local service provision levels (different accessibility levels) within Greater Manchester.

5.1.3 The accessibility index score is categorized into eight levels, 1 to 8, where level 8 represents a high level of accessibility and level 1 a low level of accessibility.

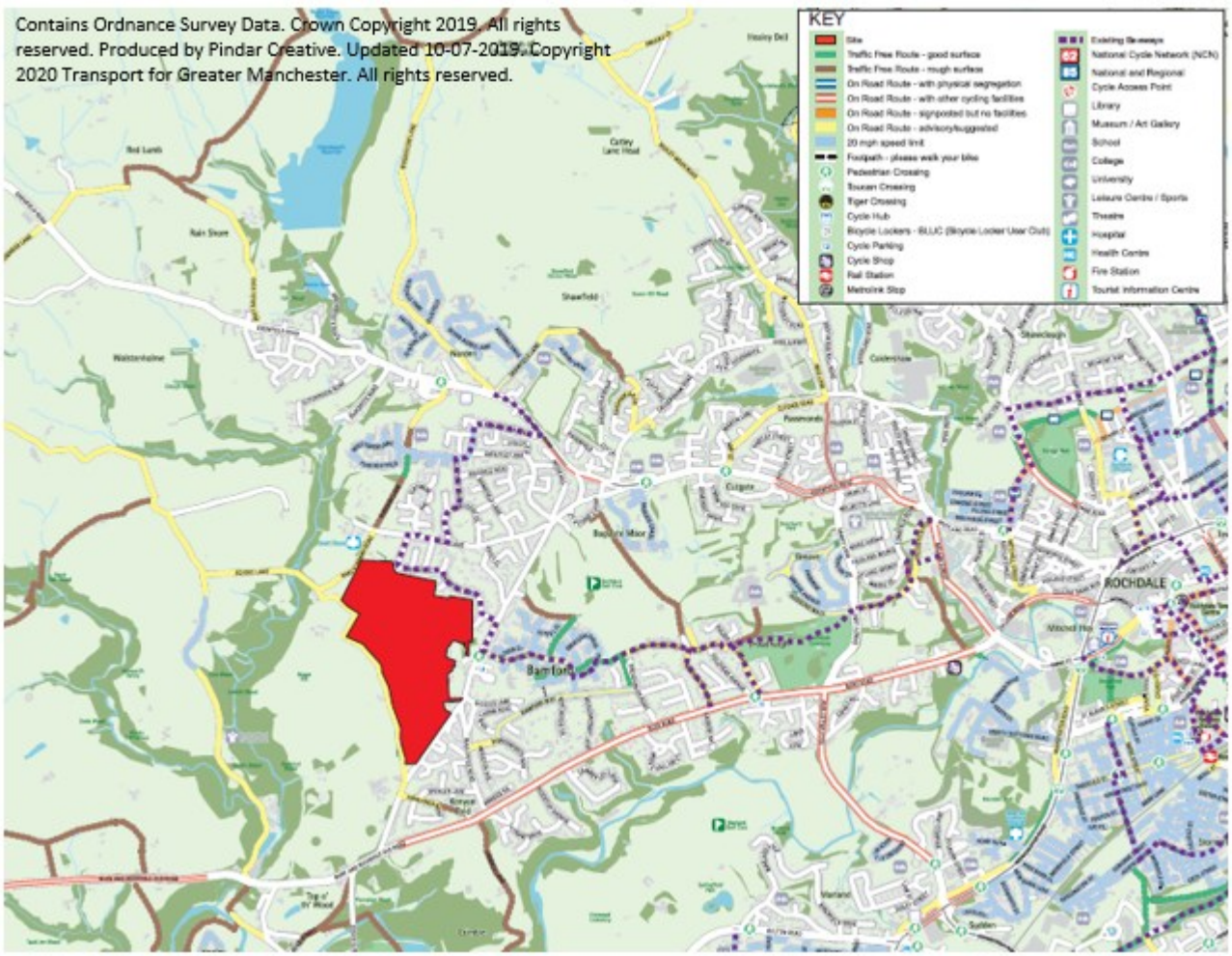
5.1.4 The allocation will include street lighting and footways throughout the layout. These will connect to Norden Road, which also benefits from street lighting and footways on both sides, allowing residents of the allocation to walk north to the amenities around Edenfield Road, or south to the amenities around the B6222 corridor. There is a signalised crossing at the B6222 / Queen's Park Road junction which connects to St Michael's Primary School.

5.1.5 Furbarn Road is designated as a Quiet Lane and provides a walking route to Whittaker Moss Primary School and the amenities in Norden.

5.1.6 **Figure 4** below shows an extract from the TfGM cycle map showing cycle routes in the vicinity of the allocation. Note that the allocation boundaries shown in the figure were correct at the time of writing for definitive boundary information refer to the GMSF allocation maps.

5.1.7 Martlet Avenue is a 'Beeway' route providing a connection on quiet streets to Rochdale town centre. The lanes to the west of the allocation are highlighted as suitable on-road routes. In addition, there are on-street cycle facilities on the B6222 route between Bury and Rochdale. Overall, provision in the area is good and provides opportunities for access to/from the allocation by cycle.

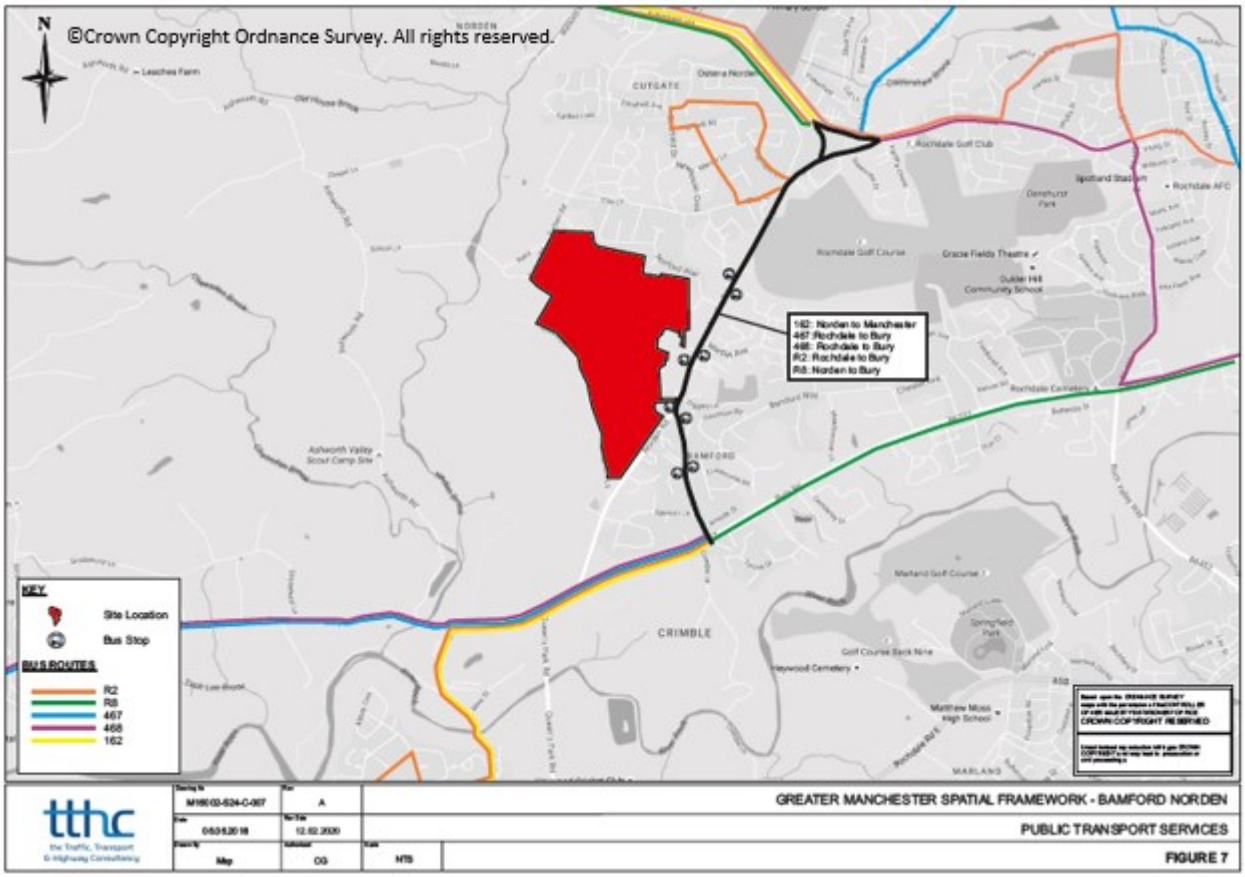
Figure 4. Local Cycle Network



5.1.8 Five bus routes serve Norden Road and War Office Road close to the allocation, as shown in **Figure 5** below. Note that the allocation boundaries shown in the figure were correct at the time of writing for definitive boundary information refer to the GMSF allocation maps.

5.1.9 The bus stops on Norden Road and War Office Road are approximately 200m from the closest allocation access point. These routes connect the allocation to destinations including Rochdale, Bury and Tottington. There is also a morning service to Manchester and an evening service from Manchester.

Figure 5. Public Transport Connections



5.1.10 Two of these routes, the 467 and 468 'Trax' services, provide a combined 10-minute frequency (Monday to Friday) between the centres of Bury and Rochdale. Both routes call at Bury Interchange and Rochdale Interchange.

5.1.11 There are also daily school services 887, 967, 968 and 998 between Bamford, Norden and Bacup & Rawtenstall Grammar School, St Cuthbert's High School, St Gabriel's School and schools in Bury.

5.1.12 Bury and Rochdale Interchanges are both served by Metrolink services to the Regional Centre, with a 6-minute frequency service between Bury and Manchester city centre at peak times and a 12-minute frequency between Rochdale and Manchester city centre.

5.1.13 From Rochdale station there are also National Rail services to Manchester Victoria, Leeds, Wigan and Blackburn.

5.2 Proposed

5.2.1 At this stage, the accessibility of the allocation has been reviewed at a relatively high level, but this would be addressed in more detail at planning application stage.

5.2.2 A new pedestrian crossing would be provided on Norden Road in the vicinity of the priority junction with War Office Road, to enable residents to walk to the amenities to the south.

5.2.3 The surfacing on Furbarn Road will be improved where possible. Some wayfinding signage and street lighting may also need to be installed to improve safety for pedestrians and cyclists.

5.2.4 Although there are on-carriageway cycle lanes on the B6222 corridor, there are currently no Advanced Stop Line markings at the B6222/Norden Road and B6222/Queen's Park Road junctions. These could be easily added at these junctions to improve provision for cyclists.

5.2.5 The two bus stops at the Norden Road / War Office Road junction would be upgraded to Quality Bus Transit standard to maximise their appeal to residents in the allocation and the wider community. The northbound stop currently has no shelter. Due to land constraints, the stop may need to be relocated slightly to enable the provision of a shelter.

5.2.6 Details for these improvements would be confirmed at application stage.

5.2.7 TfGM are also considering the provision of future express bus services between Heywood and Manchester city centre, with a possible extension of some journeys north to Bamford and Norden to serve new development in this area. New bus infrastructure could also be provided to facilitate reduced journey times.

5.2.8 Future bus provision may increase in relation to the **'**South Heywood**'** major mixed-use development located to the south of the allocation, which was granted planning permission by Rochdale Metropolitan Borough Council (RMBC) in April 2018. A financial contribution has been secured towards the funding of bus services as and when the development comes forward.

6. Parking

6.1.1 The Council's Parking Standards are set out in Appendix 5 of the Rochdale Borough Core Strategy.

6.1.2 A maximum of 1.25 car spaces should be provided for single-bedroom units, and a maximum of 2 car spaces (not including garages) should be provided for dwellings of 2 bedrooms or more.

6.1.3 There are currently no standards for cycle parking for houses outside town centres.

6.1.4 Parking space for cars and cycles will be provided in accordance with Rochdale Council's standards in place at the time any future planning application is made.

7. Allocation Trip Generation and Distribution

7.1.1 For the purposes of the testing the impact of the allocation through the strategic model, a total of 450 dwellings have been assumed to be built out by 2040. The GM transport modelling suite has a 2040 forecast year, as such it uses 2040 trajectory data as proxy for 2037 full build-out, this is not considered to materially impact on the analysis or conclusions of this report.

7.1.2 Future trip generation to/from the site (i.e. how many people and vehicles will enter or leave the allocation) was estimated by applying a set of GM-wide trip rates to the agreed development quantum for each allocation. The distribution of trips (i.e. where they are going to or coming from) was derived by selecting nearby zones with similar land use characteristics as a proxy and using the existing distribution in the model.

7.1.3 **Table 2** shows the trajectory for the 2025 and 2040 assessment years as modelled. Note that the GM modelling suite has a 2040 forecast year, as such it uses 2040 data as proxy for 2037 full build out, this will not materially impact on the analysis.

Table 2. Cumulative Development Quantum

Use	Use Sub Category	Development Quantum 2025	Development Quantum 2040
Residential	Houses	27	405
Residential	Apartments	3	45
Total		**30**	**450**

7.1.4 This would generate the vehicle trips shown in **Table 3** below. As this is a residential development, there will be very few heavy vehicle movements.

Table 3. Allocation Traffic Generation*

Year	AM Peak Hour 0800 0900 Departures	AM Peak Hour 0800 0900 Arrivals	PM Peak Hour 1700 1800 Departures	PM Peak Hour 1700 1800 Arrivals
2025 GMSF High-Side	10	4	6	10
2040 GMSF High-Side	149	59	91	144

*Units are in PCU (car passenger units/hr)

7.1.5 The distribution of allocation trips onto the surrounding highway network is undertaken on a GMSF consistent basis (based on the distribution of trips from nearby residential zones). Traffic is assigned to the network within the GMVDM taking account of the proposed new access arrangements as well as the background operating conditions.

7.1.6 The modelled assignment of trips varies by time of day. For the peak direction of travel (outbound from the allocation in AM peak hour; and inbound in PM) the impacts on the key routes are shown below in **Table 4**.

7.1.7 The GMVDM distribution has been adjusted slightly to remove traffic from Ashworth Road, which is a minor road not suitable for large volumes of traffic.

Table 4. Allocation Traffic Distribution, 2040 GMSF High-Side (Origin/Destination Combined)

Route	AM Peak Hour 0800 0900	PM Peak Hour 1700 1800
B6222 (West) Bury & Rochdale Old Road	29%	32%
B6222 (East) Bury Road	18%	22%
Queen's Park Road	27%	23%
A680 (West) Edenfield Road	21%	18%
A680 (East) Edenfield Road	5%	5%

8. Current Highway Capacity Review

8.1.1 The B6222 corridor is a single carriageway road to the south of the allocation. It forms a secondary traffic route between Bury and Rochdale, whereas the main route is the A58 further to the south which is a wider single carriageway allowing overtaking opportunities.

8.1.2 The following junctions have been examined in more detail:

- B6222 / Queens Park Road / Norden Road
- A680 / Edenfield Road / Moorland Avenue
- A680 / Ings Lane / Sandy Lane
- B6222 / Sandy Lane / Roch Valley Way

8.1.3 With reference to the signalised junctions at B6222 / Queen's Park Road and B6222 / Norden Road. From site observations, there is some peak period queuing on the approaches to these signal-controlled junctions, but the queues do not regularly block back between the junctions. However, the junctions operate on relatively long cycle times (100 seconds) which results in some inefficiency during the AM peak hour in particular. There are periods of green time on the approach arms where there are significant gaps in traffic and full saturation is not achieved.

8.1.4 However, as set out in **Section 12**, TfGM have recently installed SCOOT which will improve performance at this location.

8.1.5 Further information on junction capacity is provided in **Section 11**.

9. Treatment of Cumulative Impacts

9.1.1 The 2025 and 2040 model flows include the cumulative impact of all GMSF allocations.

10. Allocation Access Assessment

10.1.1 The access arrangements have been developed to illustrate that there are practical options for access in this location, and to develop indicative cost estimations. It is assumed that a detailed design consistent with Greater Manchester's best practice Streets for All highway design principles will be required at the more detailed planning application stage.

10.1.2 Peel control all land required to deliver vehicle access from Norden Road and Furbarn Road.

10.1.3 The primary access arrangement at Norden Road has been designed in accordance with Manual for Streets.

10.1.4 For robustness, a single access arrangement has been tested using PICADY, the industry standard modelling tool for priority junctions. A summary of the operational performance is detailed below in **Table 5**.

10.1.5 The table shows the worst-case degree of saturation on any of the approach lanes at each junction. A degree of saturation of around 90% is generally taken as the practical 'design' capacity of a junction.

Table 5. Access Junction Performance (Run 2 After Mitigation Flows)

Junction	Run 2 2040 GMSF High Side Flows AM Peak Hour 0800 0900	Run 2 2040 GMSF High Side Flows PM Peak Hour 1700 1800
Norden Road access	35%	28%

10.1.6 The results show that a single access on Norden Road would be able to accommodate all the allocation traffic demand. To allow flexibility, the final layout may include two access points on Norden Road.

11. Impact of Allocation Before Mitigation on the Local Road Network

11.1.1 This section examines the impact on the network at the junctions highlighted in **Section 8**. Signalised junctions were assessed in detail using industry-standard modelling software LINSIG version 3. Where possible, traffic signal information was obtained from TfGM Urban Traffic Control (UTC) in order to ensure that the local junction models reflected (as far as possible), the operation of the junctions on the ground. Junctions 9 software was used to assess priority and roundabout junctions.

11.1.2 In order to understand the worst-case impact of the GMSF, the 'high side' runs from the GMVDM have been used to examine 'with GMSF development flows' for 2040. These flows were then entered into junction models for the junctions identified in **Section 8**. Flows from a 2040 reference case scenario (including approved Local Plan development from the respective local authorities) were also extracted to provide a comparison between the operation of those junctions in the 2040 Reference Case and the 2040 with GMSF development scenarios.

11.1.3 The 'with GMSF' scenario has been assessed against the Reference Case, which assumes background growth and includes the housing and employment commitments from the local authorities. These assessments were then used to identify the junctions where there is considered to be a substantial impact, relative to the operation of the junction in the 2040 Reference Case, and hence where mitigation was considered to be required in order to bring GMSF allocations forward.

11.1.4 For the purposes of GMSF, it has been agreed that where mitigation is required, it should mitigate the impacts so back to the Reference Case scenario. It should be noted that assessing back to this level of performance may not mean that the junction operates within capacity, but that the implications of the allocation would be mitigated.

11.1.5 **Table 6** below provides a comparison between the operation of the 'in-scope' local road network junctions in the 2040 Reference Case and the 2040 'high side' scenarios, as well as the allocation flows through each respective junction. The table compares the Ratio of Flow to Capacity (RFC) on the worst performing arm at each junction, as well as the total development flows through the junction.

11.1.6 For reference, a figure of between 85% and 99% illustrates that the junction is nearing its operational capacity, and a figure of 100% or over illustrates that flows exceed the operational capacity at the junction.

Table 6. Results of Local Junction Capacity Analysis Before Mitigation

Junction Worst Case V/C	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
B6222 / Queens Park Road / Norden Road	100%	104%	106%	105%	117	130
A680 / Edenfield Road / Moorland Avenue	102%	101%	104%	101%	65	64
A680 / Ings Lane / Sandy Lane	101%	102%	101%	102%	9	8
B6222 / Sandy Lane / Roch Valley Way	104%	100%	107%	101%	26	42

11.1.7 **Table 6** shows that most of the development traffic would route via the B6222 / Queens Park Road / Norden Road junction, with smaller proportions routing via the A680 corridor to the north. All of these junctions would reach their capacity in the Reference Case scenario.

11.1.8 However, apart from the B6222 / Queens Park Road / Norden Road junction, the traffic impact would be less than one vehicle per minute in the critical direction at the remaining junctions, and so these junctions have not been assessed further.

12. Transport Interventions Tested on the Local Road Network

12.1.1 The consultation stage identified local highway congestion as a problem. RMBC identified a junction improvement layout close to the allocation, which resulted in an overall mitigation scheme focused on the B6222 Road corridor (Bury and Rochdale Old Road). There are three junctions of interest as part of this scheme:

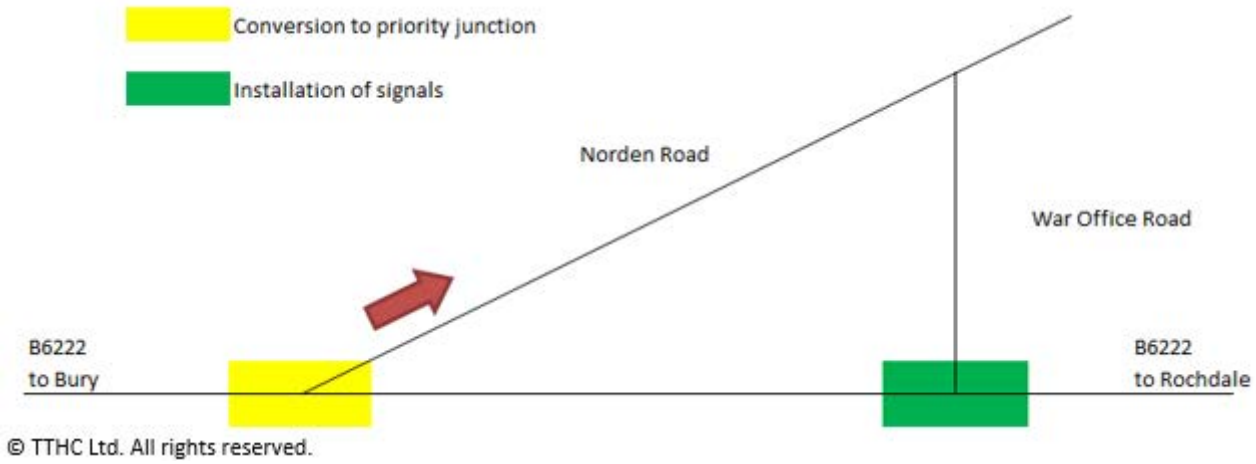
- B6222 / Queen's Park Road signalised junction
- B6222 / Norden Road signalised junction
- B6222 / War Office Road priority junction

12.1.2 Given the proximity of the two signalised junctions, they have been modelled as a single network in LINSIG. For robust testing purposes the traffic flows adopted are the 2040 Reference Case (without development flows) plus the straight add on of development flows (Sensitivity Test) i.e. without permitting any variable demand. This is a worst-case assumption against which to test the development. Pedestrians are called on demand. Observed pedestrian demand is relatively low (albeit concentrated in a short period in the AM peak due to school activity), and for testing purposes the 'All Red' stage has been assumed to be called on average every third cycle.

12.1.3 Exchanges with TfGM Urban Traffic Control (UTC) concluded that the junction operation could be improved through the implementation of SCOOT control, which detects the volume of traffic on each entry and adjusts the signal timings to maximise throughput of vehicles during the peak periods. TfGM have now installed SCOOT at the junctions.

12.1.4 Although SCOOT is expected to improve performance along the B6222 corridor, further discussions with RMBC led to investigation of an additional mitigation scheme as shown in **Figure 6**.

Figure 6. RMBC Norden Road and War Office Road scheme



12.1.5 Norden Road would become northbound-only from the B6222 junction, and the southbound left and right turns onto the B6222 would be removed. This junction would thus become a priority junction without signals. At the same time, the B6222 / War Office Road priority junction would be signalised, as shown in **Appendix 1.** These signals would be some 700m from the next signal-controlled junction of Queen's Park Road, which would operate independently without interference or restriction in arriving demand from another set of signals.

12.1.6 This scheme would result in some local diversion of traffic flows. Therefore, the junctions have not been tested with the Reference Case, but SYSTRA have provided 'one-way' traffic flows to reflect the diversions which would take place.

12.1.7 These mitigation approaches are summarised below in **Table 7**.

Table 7. Approach to Mitigation

Junction	Mitigation Approach
B6222 corridor	Introduction of 'one way' system on Norden Road, and additional traffic signals at the War Office Road junction

12.1.8 These interventions are not expected to be the definitive solutions and are considered here to demonstrate that the allocation has the potential to be implemented and also to enable the costing of mitigation measures to be ascertained. Further detailed examination of the scope, form and design of mitigation would be undertaken at the planning application stage should this allocation be approved.

13. Impact of interventions on the Local Road Network

13.1.1 Due to the level of delivery (approximately 30 units), there is expected to be minimal impact in 2025. The full impact of the allocation in 2040 on the local road network is summarised in **Table 8** below.

Table 8. Results of Local Junction Capacity Analysis After Mitigation

Junction	GMSF High AM with mitigation	GMSF High PM with mitigation
Existing Network with SCOOT mitigation		
B6222 /Norden Road / Queen's Park Road (linked)	96.6%	93.4%
Delay, PCU.Hour	49.5	36.7
Cycle time	90s	90s
Norden Road and War Office Road scheme (Figure 6 / Appendix 1)		
B6222 / Queen's Park Road	99.4%	93.7%
Delay, PCU.Hour	41.7	33.8
Cycle time	90s	90s
B6222 / War Office Road	90.0%	64.3%
Delay, PCU.Hour	19.1	7.6
Cycle time	90s	90s
Total delay, PCU.Hour	60.8	41.4

13.1.2 The two options for mitigation would be expected to result in similar overall performance.

14. Impact and mitigation on Strategic Road Network

14.1 Overview

14.1.1 Network (SRN). Junctions at the interface between the Local Road Network (LRN) and the SRN have been considered using a similar approach to that described in the preceding sections. Wider issues relating to the SRN mainline are being assessed separately as described below.

14.1.2 SYSTRA is currently consulting with Highways England on behalf of TfGM and the Combined Authority in relation to the wider impacts of the GMSF allocations on the SRN. This consultation is ongoing and will allow Highways England to gain a strategic understanding of where there is an interaction between network stress points and GMSF allocation demand. This will facilitate further discussion between TfGM and Highways England to reach agreement and/or common ground on GMSF allocations in advance of Examination in Public (EiP).

14.1.3 The Bamford Norden allocation will not have a material impact on the operation of the SRN. This allocation is not within close proximity to the SRN and the majority of trips generated by the allocation are likely to disseminate through the local road network before accessing the SRN via a number of possible locations.

15. Final list of interventions

15.1.1 It should also be noted that the interventions listed in **Table 9** may not be the definitive solution to addressing the impact of the allocation but have been developed to demonstrate that a solution is possible at the location. The exact form of the required mitigation will be confirmed, and its detailed design developed as part of the statutory planning process, should the allocation within GMSF be approved. Site promoters will need to develop detailed design solutions – consistent with Greater Manchester's best practice Streets for All highway design principles – at the planning application stage.

15.1.2 In addition to the interventions identified in this report, it will be necessary for investment in the wider transport network to continue in order to deliver the aspirations of the 2040 Transport Strategy and enable all new development to be supported by a robust and sustainable transport network.

15.1.3 The final interventions are summarised in **Table 9** below. These will address the concerns regarding congestion which were raised at the consultation stage.

Table 9. Final Interventions

Mitigation	Description
Allocation Access	
Norden Road	Priority access on Norden Road. The submitted layout includes two access points, but a single access with a 'boulevard' spine road would be sufficient.
Possible further access points	TBC
Necessary Strategic interventions	
None required	-
Supporting Strategic Interventions	
None required	-
Necessary Local Mitigations	
Norden Road pedestrian crossing	A puffin crossing on Norden Road, to the south of the junction with War Office Road.
Furbarn Road improvements	Secondary access point for pedestrian, cycle and emergency vehicle access. Potential surface improvements on Furbarn Road between the secondary site access and the A680 corridor.
Bus stop upgrades	Upgrade of the two bus stops at the Norden Road / War Office Road junction.
North-South Greenway	Creation of 'greenway' route following approximate alignment of Jowkin Lane, along west side of allocation.
Norden Road / War Office Road scheme	Introduction of 'one way' system on Norden Road, additional traffic signals at the War Office Road junction and provision of Advanced Stop Lines for cyclists.

16. Strategic Context – GM Transport Strategy Interventions

16.1 Rochdale

16.1.1 In addition to the allocation-specific interventions set out in this Locality Assessment, there are a number of other measures already planned by RMBC and TfGM to support sustainable travel, and

to contribute to the achievement of Greater Manchester's 'Right Mix' ambition. These are set out in the GM Transport Strategy 2040 and the 5-Year Transport Delivery Plan.

16.1.2 The Greater Manchester Transport Strategy 2040 includes a proposed extension of the Metrolink network to Middleton town centre, which currently has no rail services itself. This will provide a direct connection to and from the Regional Centre. There may also be a Metro/Tram-Train route from Castleton railway station.

16.1.3 The RMBC Transport Strategy recognises that Bamford and Norden currently have low bus use and high car ownership. They will review the bus network in conjunction with operators and TfGM to ensure that bus routes are attractive to existing and future residents in this area.

16.1.4 The 'South Heywood' major mixed-use development was granted planning permission by RMBC in April 2018. The developer has recently agreed with RMBC to contribute funding towards new express bus services. TfGM are exploring route options which would connect with the Regional Centre.

16.1.5 TfGM's 'Bee Network' project aims to increase walking and cycling across Greater Manchester. In Rochdale, 136 new or upgraded crossings are proposed for pedestrians and cyclists. Six miles of Beeway routes are proposed on busier roads in Rochdale, including a corridor scheme to connect Rochdale and Castleton.

17. Phasing Plan

17.1.1 The initial Locality Assessments were based on information on allocations consolidated by TfGM based on inputs from each of the local authorities. This initial exercise focused on the development quanta to be delivered at the end of the plan period.

17.1.2 All phasing plan information contained in this Locality Assessment is indicative only and has only been used to understand the likely intervention delivery timetable. Final trajectory information and the final allocation proposal is contained in the GMSF Allocation Topic Paper.

17.1.3 During the Locality Assessment work in late 2019 / early 2020, the local authorities provided input on their expected phasing of the allocations focusing on the milestone years of 2025 and 2040. The expected 2025 development quanta were tested along with those for 2040 to assess their deliverability in terms of transport network capacity. In some cases, the development phasing was amended by the local authorities as a result of the technical analysis undertaken.

17.1.4 The dwellings will be delivered as set out below in **Table 10**.

Table 10. Allocation Phasing Used in the Modelling

Allocation Phasing	2020 25	2025 30	2030 2037	2038+	Total
Total	30	300	120	-	**450**

17.1.5 **Table 11** below shows the timetable for delivery of the interventions.

Table 11. Indicative intervention delivery timetable

Mitigation	2020 2025	2025 2030	2030 2037
Site Access			
Priority access on Norden Road	✓		
Possible further access points	✓		
Necessary Local Interventions			
Norden Road pedestrian crossing	✓		
Furbarn Road improvements		✓	
Bus stop upgrades	✓		

North-South Greenway		✓	
Norden Road / War Office Road scheme, including Advanced Stop Lines for cyclists		✓	

17.1.6 The costs of the necessary infrastructure assessed within this report are subject to further consideration through the GMSF process and are being considered with regards to the overall viability of the necessary supporting requirements.

18. Summary & Conclusion

18.1.1 The Bamford Norden allocation is located in Rochdale Borough and is situated between Rochdale and Heywood. Bamford Norden is a residential allocation consisting of 450 dwellings.

18.1.2 The allocation is adjacent to Norden Road, which is an existing bus corridor, so residents will have sustainable transport alternatives to the private car.

18.1.3 Modelling work has been undertaken using the Greater Manchester Variable Demand Model (GMVDM) with a constrained and high side scenario. The constrained and high side model runs take account of traffic associated with all GMSF allocations. This report has considered the allocation in isolation, and in context with nearby allocations.

18.1.4 A 'with GMSF' scenario has been assessed against a Reference Case which assumes background growth and includes the housing and employment commitments from the local authorities.

18.1.5 A highway mitigation scheme has been identified and costed for the B6222 Bury & Rochdale Old Road junctions to the south of the allocation.

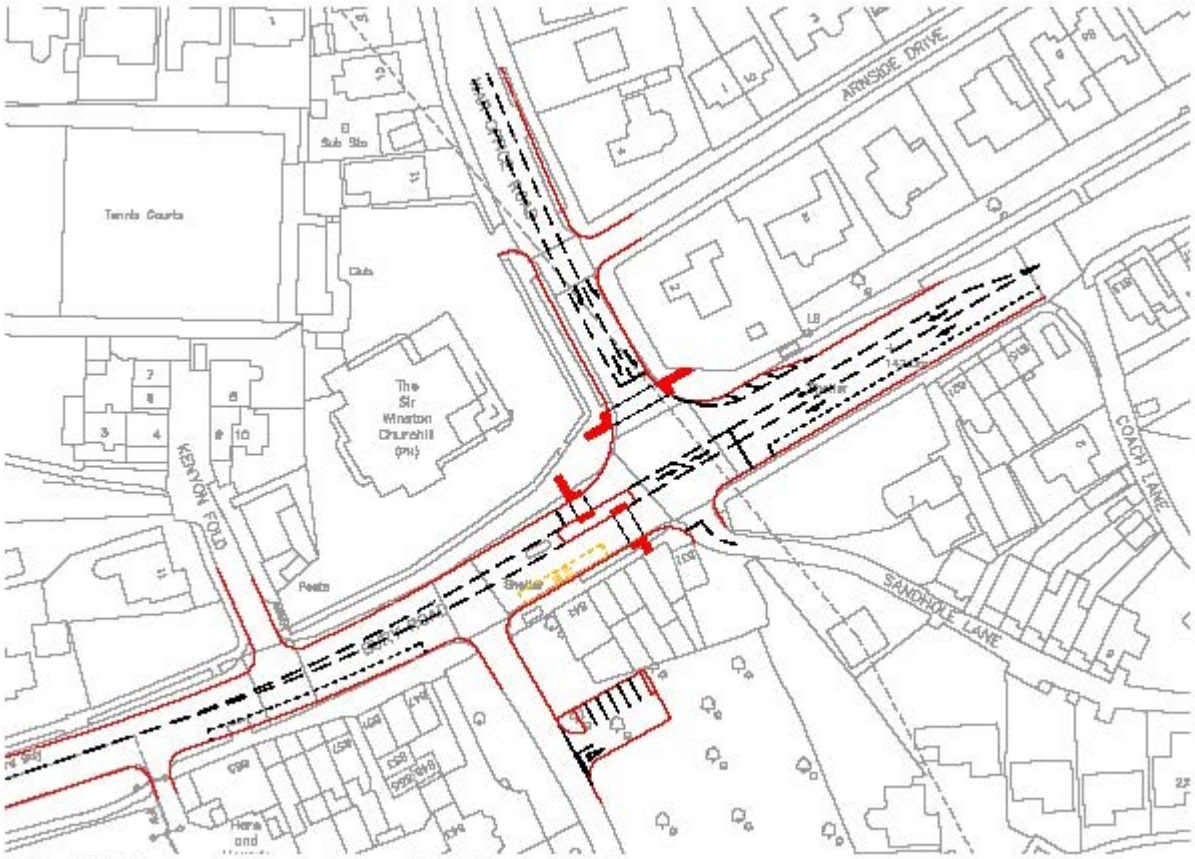
18.1.6 Based on the information contained within this report, we conclude that the traffic impacts of the allocation would not be severe. Whilst the modelling work does indicate that some junctions will experience capacity issues, they are not significantly worse than those experienced in the Reference Case situation and are not directly attributable to the Bamford Norden allocation.

18.1.7 Further detailed work will be necessary to identify the specific interventions required to ensure the network works effectively based on transport network conditions at the time of the planning application. All final design solutions for road traffic and active travel should be consistent with Greater Manchester's best practice Streets for All highway design principles.

18.1.8 In summary, this assessment gives an initial indication that the allocation is deliverable. However, significant further work will be needed to verify and refine these findings if the allocation is approved and it moves forward through the planning process. The allocation would need to be supported by continuing wider transport investment across Greater Manchester.

Appendix 1 – RMBC War Office Road Alternative Mitigation Scheme

[Illustrative/Typical Layout]



Greater Manchester Spatial Framework

Locality Assessment:

Castleton Sidings (GMA21)

Publication Version 2: November 2020

Identification Table	
Client	Rochdale Council / TfGM
Allocation	Castleton Sidings
File name	GMA21 Rochdale -Castleton Sidings LA 201020
Reference number	GMA21 (2020 GMSF) previously GMA24 (2019 GMSF)

Approval					
Version	**Role**	**Name**	**Position**	**Date**	**Modifications**
0	Author	Peter Evans Partnership Ltd	PEP		Base report
	Checked by	Peter Evans Partnership Ltd	PEP		
	Approved by	Peter Evans Partnership Ltd	PEP		
1	Author	D Nixon	TfGM	30/09/20	Consistency edits
	Checked by	R Chapman	RBC	30/09/20	
	Approved by	P Moore	RBC	02/10/20	

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Allocation Data	
Allocation Reference No.	GMA21 (2020 GMSF) previously GMA24 (2019 GMSF)
Allocation Name	Castleton Sidings
Authority	Rochdale
Ward	Castleton
Allocation Proposal	125 houses
Allocation Timescale	0-5 years **X** 6-15 years ☐ 16 + years ☐

Glossary

"2025 GMSF Constrained" - is the 2025 forecast case in which the model adjusts the input demand based on how the cost of travel changes from the base year to the future. For example, for a shopping trip undertaken by car which becomes more congested in future, changes might be travel via a different route, mode, location or time of day.

"2040 GMSF Constrained" - as above, but for a 2040 forecast year

"2025 GMSF High-Side"- is the 2025 forecast case in which the model does not adjust the input demand based on how the cost of travel changes. In this scenario congestion does not lead to a reassignment of traffic, and therefore road traffic flow will generally be higher.

"2040 GMSF High-Side" - as above, but for a 2040 forecast year

"2025 Reference Case" - is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2025

"2040 Reference Case"- is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2040

AADT - Annual average daily traffic, is a measure used in transportation planning to quantify how busy the road is

Bee Network - is a proposal for Greater Manchester to become the very first city-region in the UK to have a fully joined-up cycling and walking network: the most comprehensive in Britain covering 1,800 miles.

Bus Rapid Transit - is a bus-based public transport system designed to improve capacity and reliability relative to a conventional bus system. Typically, a BRT system includes roadways that are dedicated to buses, and gives priority to buses at junctions where buses may interact with other traffic

Existing Land Supply - these are sites across the county that have been identified by each local planning authority across Greater Manchester and are available for development

Greater Manchester Variable Demand Model (GMVDM) - the multi-modal transport model for Greater Manchester. This transport model provides estimates of future year transport demand as well as the estimates of travel behaviour changes and new patterns that the Plan is likely to produce. These include changes in choices of routes, travel mode, time of travel and changes in journey destinations for some activities such as work and shopping.

“LRN” (Local Road Network) All other roads comprise the Local Road Network. The LRN is managed by the local highways authorities

National Trip End Model (NTEM) - is a Department for Transport forecast that ensures that measures of population, jobs and trips made by various mode are consistent across the whole of Great Britain.

Rapid transit services - refers to high frequency, high capacity metro style transport services including Metrolink and Bus Rapid Transit.

“SRN” (Strategic Road Network) The Strategic Road Network comprises motorways and trunk roads, the most significant ‘A’ roads. The SRN is managed by Highways England.

“TfGM” - Transport for Greater Manchester, the Passenger Transport Executive for Greater Manchester

Urban Traffic Control (UTC) - is a specialist form of traffic management that, by coordinating traffic signals in a centralised location, minimises the impact of stop times on the road user.

1. Allocation Location and Overview

1.1.1 The Castleton Sidings allocation is located to the south-west of Castleton and is bounded by the old rail line between Castleton and Heywood to the east and south of the allocation, with Castle Hawk Golf Course and residential units to the north. The residential units to the north are on a road called Fairway, which includes three cul-de-sacs that extend down toward the boundary of the allocation. Two of these roads extend all the way to the allocation boundary and the adopted highway directly adjoins the allocation boundary. The eastern end of the allocation is currently within the settlement boundary and the remainder of the site is currently within the Green Belt.

1.1.2 Castleton Centre and Castleton railway station are c.700m from the centre of the allocation. The allocation already benefits from good pedestrian connectivity to these facilities and the different aspects of the allocation can link into this existing provision. This includes an existing pedestrian crossing over Manchester Road to provide access to Castleton train station. The proposed Bee Network would see improvements to Manchester Road, creating a more friendly environment for pedestrians and cyclists. Junction 20 of the M62 is an approximate 3.4km drive from the allocation.

1.1.3 The allocation is a previously developed site. It is currently vacant and was previously used as a railway siding by Tata Steel (UK) Limited and Tata Steel is still the owner of the allocation. The allocation consists of a sequence of rail tracks that allowed for the manoeuvring of goods around the site. Associated with this are large areas of hard standing, vehicular circulation areas and some industrial style buildings which are now in a poor state of repair. The main focus of the site was for the storage and distribution of goods.

1.1.4 The allocation is identified to comprise 125 dwellings and to allow for works to facilitate the East Lancashire Railway (ELR) line extension to Castleton. The residential development would be mainly to the central part of the allocation and would use the existing residential closes, to the north, to secure access. The land at the eastern end of the allocation is proposed to facilitate the ELR line extension and land at the western end is proposed to be a Public Open Space / Wildlife area. There has been a lot of interest from different housebuilders in relation to this allocation already and the landowner is currently selecting a housebuilder to progress a planning application for the allocation.

1.1.5 The mix of housing will be determined at the application stage when a developer has been identified.

1.1.6 The ELR line extension has been subject to significant work by Rochdale Council, ELR and Network Rail. Tata Steel has engaged in this process and has been in consistent discussions with the principal parties. This has included the work on the Castleton Masterplan, which has been commissioned by Rochdale Council and currently identifies the ELR line extension as the main catalyst for securing the regeneration objectives for Castleton. Tata Steel has also been involved in the options review undertaken by Network Rail for the ELR line extension. Through this process of engagement between the principal parties a strategy has been derived that will allow for the delivery of all the potential ELR line extension options being considered, whilst allowing the residential component to be progressed in the short term. By extension, the latest masterplan for the allocation will not conflict with the proposed Metro/Tram-Train project.

1.1.7 The site location and local area plans are shown in **Figure 1** and **Figure 2** respectively. Note that the allocation boundaries shown in the figures were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps.

Figure 1. Castleton Sidings – Allocation Location Plan

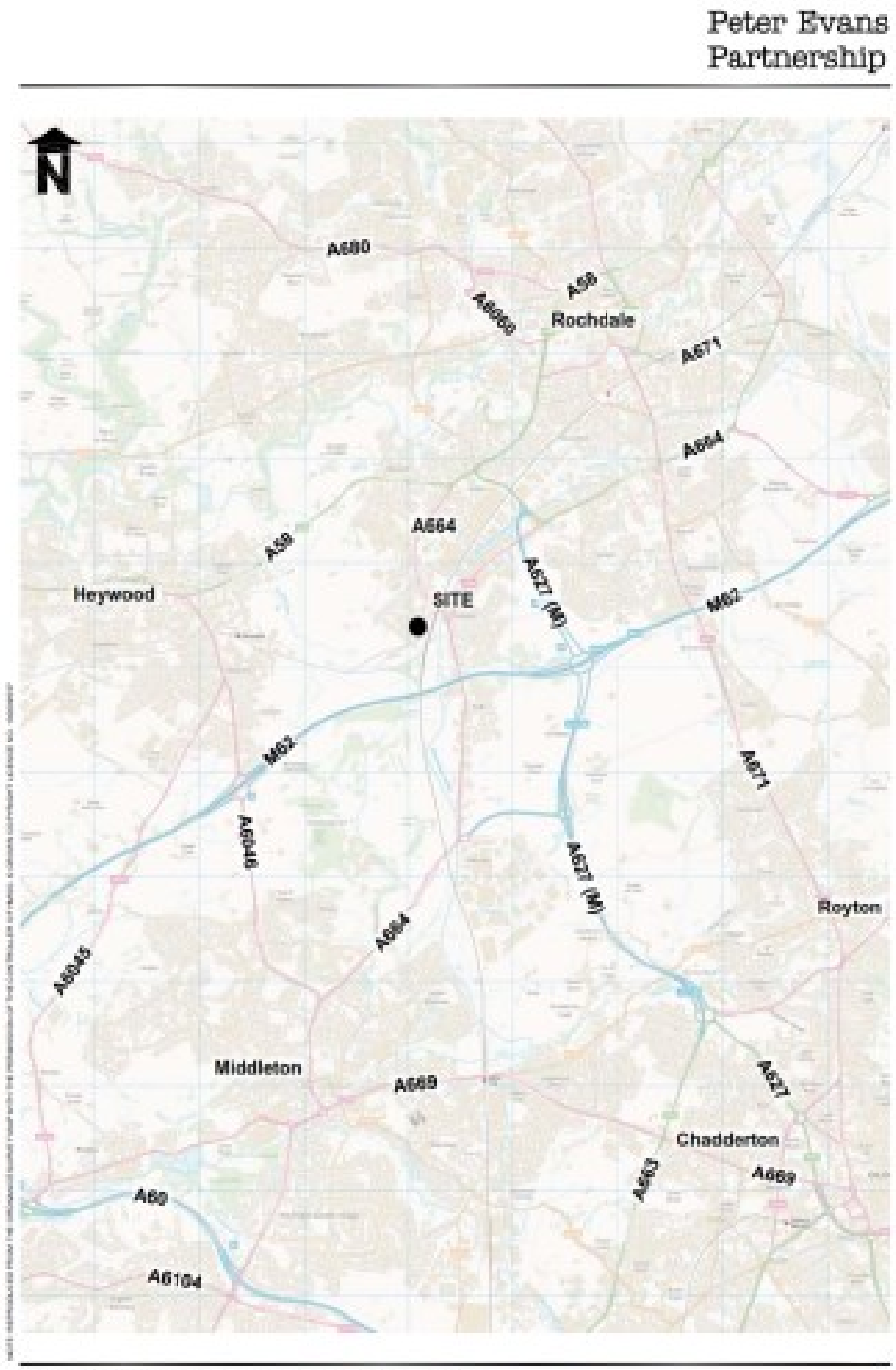


Figure 2. Castleton Sidings – Local Area Plan

2. Justification for Allocation Selection

2.1.1 This previously developed site is located close to the centre of Castleton and Castleton railway station. This offers the opportunity to deliver high quality housing on previously developed land in a sustainable and accessible location whilst helping to deliver the proposed extension to the East Lancashire Railway. It also offers further potential connectivity given that it provides a convenient link between the heritage line to mainline passenger services at Castleton station and in the longer term, there could also be potential for a Metro/Tram-Train pathfinder between Rochdale, Castleton and Heywood. The feasibility of Metro/Tram-Train technology in Greater Manchester is currently being studied by TfGM.

2.1.2 The sustainability of this allocation is further enhanced by significant proposed improvements to cycling in Castleton. As part of the Bee Network project, walking and cycling routes on the Rochdale Canal and a high frequency bus corridor on the A664 Manchester Road.

2.1.3 Given the availability of these public transport connections the allocation was selected for inclusion within the GMSF on the basis of Criterion 1 (land which has been previously developed and/or land which is well served by public transport).

2.1.4 Detail of the Site Selection process, including the criteria used to identify the sites, and how this was used to select the most sustainable sites is consider within the GMSF Spatial Strategy and accompanying Topic Papers.

3. Key Issues from Consultation

3.1.1 The Greater Manchester Plan for Homes, Jobs and Environment (Spatial Framework) consultation ran from 14 January to 18 March 2019. There were 103 consultation comments received with regards to this allocation.

3.1.2 Overall, there was general support for the redevelopment of this allocation. This was largely due to it being a brownfield site and located in a sustainable location. Some respondents have noted how Castleton, as an area, had declined and is in need of regeneration. It is considered that development of this allocation may help in contributing to the regeneration of Castleton and addressing some of these issues.

3.1.3 Objections were received to the release of Green Belt land. Some residents felt that additional housing is not needed in this area and the proposed allocation should remain as Green Belt. Concerns were raised that the loss of Green Belt will contribute to rising air pollution levels.

3.1.4 It has been assumed that the proposed housing will result in a large increase in traffic and many respondents raised concerns that the current road network would be unable to support this increase. If the proposal included improvements to the road network and transport links, however, they would be supported as these are needed.

3.1.5 Comments regarding cycling were limited, however, there were some reservations regarding the impact of a cycle lane on traffic capacity. Equally however, cycle lanes were also viewed as a positive addition.

3.1.6 Specifically, relative to transport, comments made during the 2019 GMSF consultation were:

- This site is in a sustainable location, near to existing transport and rail links, although some concerns were still raised regarding the effects additional housing will have on surrounding infrastructure;
- The train service is currently inadequate and in need of improvement;
- The infrastructure in this area is already congested. It cannot cope with increased traffic from the proposed housing; and
- The land should be allocated for a station car park instead of housing.

3.1.7 A full summary of all consultation responses is available on the GMCA GMSF website.

4. Existing Network Conditions and Site Access

4.1 Existing Road Network

4.1.1 Access for vehicles and pedestrians to the allocation is currently taken from the existing access from Heywood Road at the eastern end of the allocation. From the south, traffic travels along Manchester Road turning left into Heywood Road and then ahead into the allocation. From the north, traffic uses A664 Manchester Road and turns right into Heywood Road and then ahead into the allocation. Northbound, traffic leaving turns left from Heywood Road onto Manchester Road. However, the right turn ban from Heywood Road at the Manchester Road/Heywood Road junction means that southbound traffic leaving the allocation currently turns left onto Heywood Road and then travels via Hanover Street and Durban Street turning right on Manchester Road.

4.1.2 Manchester Road continues north and meets the A58 Bolton Road at a signalised junction. To the south it meets the A627(M) at a roundabout.

4.1.3 In the vicinity of the allocation, Manchester Road is a single carriageway road with footways on both sides and serves as a high street, as well as a through route and providing access to side roads and the station. A crossing is provided to the north of the junction with Heywood Road. There are existing and proposed facilities for cyclists. Right turn lanes are provided at some side road junctions.

4.1.4 Within the local residential area, a traffic management scheme of one-way roads, road humps, junction platforms and road narrowing are in place, particularly on the streets closest to Manchester Road. In this area, off-street parking is provided for some dwellings but there is a high proportion for which parking is accommodated on-street. Further from Manchester Road, in the newer part of this predominantly residential area, the roads are wider and off-street parking is more common. Footways are typically provided on both sides of the roads.

4.2 Existing Facilities

4.2.1 Local facilities include primary schools 600m to the north and 800m to the southeast, and a secondary school 1.6km to the north.

4.2.2 A range of food and non-food retail outlets on Manchester Road are within 200m and 800m of the allocation. These include takeaways, convenience stores, opticians and hairdressers. A Tesco Superstore is located 1.5km to the northeast.

4.2.3 Castleton Health Centre is located 900m to the north, off Manchester Road, and Rochdale Royal Infirmary is 4km to the north east.

4.2.4 Castleton railway station is 350m from the site, to the east, with access from Manchester Road, and bus stops are located on Manchester Road close to the junction with Heywood Road.

4.3 Accidents and Collision Overview

4.3.1 Within the study area, between Partington Street and east of Heywood Road, there was one fatal collision in the vicinity of the post office next to Milne Street, and one serious collision recorded on the A664 Manchester Road, to the west of Heywood Road, in the last 3 year period.

4.4 Proposed Allocation Access

4.4.1 The proposed allocation would be accessed from two local roads, both called Fairway, with the potential to operate a one-way circulation if required. From the main through route of the A664 Manchester Road, access to Fairway is via Heywood Road and Durban Street. Traffic routes from the allocation are via Durban Street and Partington Street, which is one-way, with access from Manchester Road prohibited. Heywood Road is not a feasible route for traffic from the allocation because of a section of one-way working.

4.4.2 The access points are shown in **Figure 3** and **Figure 4**. Note that the allocation boundaries shown in the figures were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps.

4.4.3 All of the above junctions onto the A664 Manchester Road are currently priority T-junctions. Right turn lanes are provided on the mainline at Durban Street and Heywood Road. These layouts are suitable to serve the allocation.

4.4.4 Active modes of travel would be accommodated in the access proposals with pedestrians and cyclist accommodated via Fairway for the residential component of the allocation and utilising the existing pedestrian facilities thereafter. The ELR component would be focused at the eastern end of the allocation and would provide pedestrian access either through the existing access onto

Heywood Road or alongside the railway line, under Manchester Road and directly into the Castleton Railway Station.

Figure 3. Castleton Sidings: Potential Access Strategy

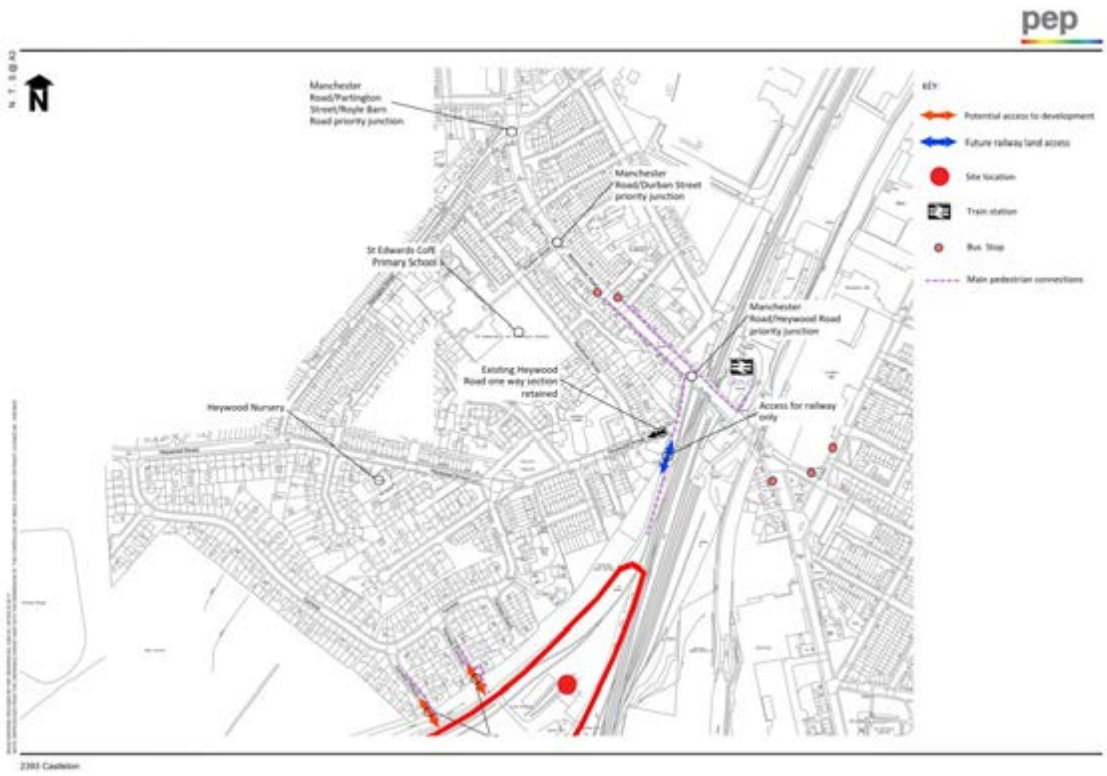
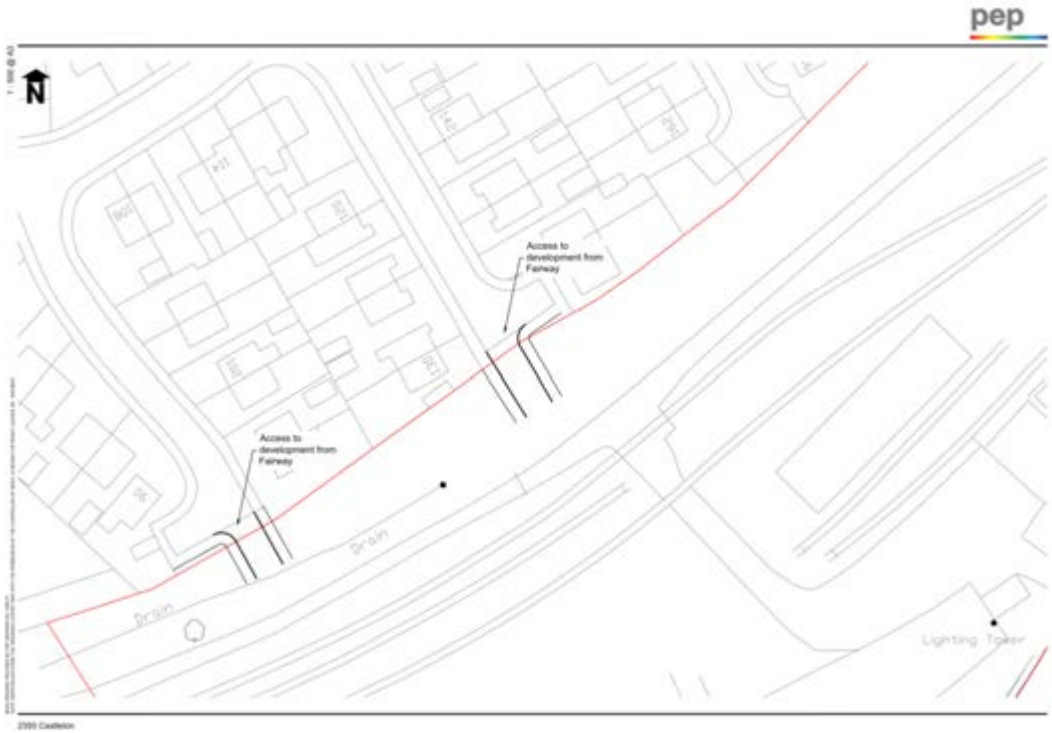


Figure 4. Castleton Sidings: Potential Accesses



5. Multi-modal accessibility

5.1 Current

5.1.1 The nearest railway station is at Castleton. This is located 0.7km from the centre of the allocation and is, therefore, within walking distance. The station provides regular services to Rochdale and Manchester Victoria, and over the Greater Manchester boundary to Clitheroe, Blackburn and Leeds.

5.1.2 The nearest bus stops are located on the A664 Manchester Road, 700m from the centre of the allocation. A service between Rochdale and Manchester Shudehill stops in this location and operates at a ten-minute daytime frequency. Being high frequency, this service should be attractive to residents of properties within the allocation and is within walking distance.

5.1.3 Footways are provided in the local area including on Heywood Road and Manchester Road providing access from the allocation to local facilities and the railway station. A Pelican crossing is already available on the Manchester Road in the optimal position to provide this connectivity. This crossing might be upgraded as part of the Bee Network scheme, although this is upgrade is not essential for the allocation to proceed.

5.2 Proposed

5.2.1 Pedestrian routes will be provided within the allocation to connect to the existing footways on Fairway to allow journeys on foot for the residential component. For the ELR component, pedestrian routes will be linked into existing provision adjoining the allocation. It is not anticipated that the existing network of walking and cycling routes outside of the allocation will need to be significantly upgraded to facilitate the proposed allocation, but the potential for such mitigation is reflected in the identified mitigation at this stage; the need for this will be explored further at planning application stage, should the allocation be approved. Cycling will be accommodated on street within the allocation. A Bee Network scheme on Manchester Road is at an advanced stage and this will encourage journeys by cycle to/from the allocation.

5.2.2 All pedestrian and cycle provision will be designed to the standards in Greater Manchester's best practice Streets for All Design principles.

5.2.3 In addition to the existing provision, the redevelopment of the allocation will be undertaken in a way which facilitates the proposed Metro/Tram-Train programme, which will link Castleton with Heywood and Rochdale. Appropriate land will be safeguarded in order to facilitate this.

6. Parking

6.1.1 A maximum of 2 car parking spaces per dwelling (not including garages) will be provided in accordance with the Council's Parking Standards as set out in Appendix 5 of the Rochdale Borough Core Strategy.

6.1.2 Cycle parking will be provided for all dwellings. For flats/apartments this will comprise 1 secure cycle parking space per 5 dwellings.

7. Allocation Trip Generation and Distribution

7.1.1 For the purposes of the testing the impact of the allocation through the strategic model, a total of 125 dwellings have been assumed to be built out by 2040. The GM transport modelling suite has a 2040 forecast year, as such it uses 2040 trajectory data as proxy for 2037 full build-out, this is not considered to materially impact on the analysis or conclusions of this report.

7.1.2 The strategic modelling component of the GMSF Locality Assessments have been produced using data provided from the Greater Manchester Variable Demand Model (GMVDM).

7.1.3 Future trip generation to/from the site (i.e. how many people and vehicles will enter or leave the site) was estimated by applying a set of GM-wide trip rates to the agreed development quantum for each site. The distribution of trips (i.e. where they are going to or coming from) was derived by selecting nearby zones with similar land use characteristics as a proxy and using the existing distribution in the model.

7.1.4 **Table 1** shows that the residential component of the allocation would be built out in one phase by a single developer with completion anticipated by 2025.

7.1.5 Four Test Cases ("GMSF Constrained" and "GMSF High Side", for both 2025 and 2040) were used to assess and mitigate the impact of the GMSF Allocations on the Greater Manchester transport network. As set out in **Table 2**, the allocation is forecast to generate around 55 - 60 two-way vehicle trips during each of the morning and evening peak hours based on the strategic traffic model data.

7.1.6 The Greater Manchester strategic traffic model identifies that the majority of the allocation-generated traffic is forecast to travel to/from the north of the allocation with ~30% to the A58 Rochdale Road East, ~20% to the A58 Manchester Road and ~15% to the B6452 Roch Valley Way. A total of ~10% of forecast trips are expected to travel to the M62 Junction 20. More localised traffic analysis, based upon census data, suggests that the distribution of traffic north and south on the A664 Manchester Road may be more evenly distributed. However, as the traffic generation from the allocation will be fairly limited, the differences in the predicted distribution will not give rise to any material difference in the effect of the allocation. **Table 3** summarises the allocation traffic distribution.

Table 1. Cumulative Development Quantum

Use	Use Sub Category	Development Quantum 2025	Development Quantum 2040
Residential	Houses	100	100
Residential	Apartments	25	25
Total		**125**	**125**

Table 2. Allocation Traffic Generation *

Year	AM Peak Hour 0800 0900 Departures	AM Peak Hour 0800 0900 Arrivals	PM Peak Hour 1700 1800 Departures	PM Peak Hour 1700 1800 Arrivals
2025 GMSF Constrained	38	11	19	42
2025 GMSF High-Side	40	15	24	42
2040 GMSF Constrained	33	10	18	38
2040 GMSF High-Side	40	15	24	38

*Units are in PCU (passenger car units/hr)

Table 3. Allocation Traffic Distribution: 2040 GMSF High-Side (Origin/Destination Combined)

Route	AM Peak Hour 0800 0900	PM Peak Hour 1700 1800
A58 Rochdale Rd East	8%	9%
B6452 Roch Valley Way	7%	7%
A58 Manchester Rd	5%	5%
A664 Queensway	35%	23%
A627(M)	37%	38%
A664 Manchester Road	8%	18%

8. Current Highway Capacity Review

8.1.1 An initial review of the likely impact of the allocation on the local road network has identified that it is necessary to consider traffic impacts at two local junctions; these are:

- Manchester Road/Heywood Road; and
- Manchester Road/Queensway.

8.1.2 A survey undertaken in June 2019 identified the two-way 'ahead' flow on Manchester Road as 1,605 vehicles in the morning peak hour and 1,792 vehicles in the evening peak hour. Traffic turning into Heywood Road, towards the allocation, was 175 vehicles (64% from the south) during the morning peak and 142 vehicles (66% from the south) during the evening peak hour. Traffic from Heywood Road to Manchester Road was all left turning because of movement restrictions and was 2 vehicles in each peak hour.

8.1.3 The Manchester Road/Heywood Road junction was tested for existing traffic flows using Junctions 9 software. This identified that the junction performs with 20% volume to capacity in the morning peak hour and 24% in the evening peak hour.

8.1.4 Existing flows for the Manchester Road/Queensway junction were obtained from the strategic traffic model Reference Case. Further information is provided in the following section.

9. Treatment of Cumulative Impacts

9.1.1 The transport impacts of the allocation need to be considered cumulatively with the GMSF, particularly, in this instance, with the nearby Trows Farm allocation.

9.1.2 Whilst the access strategy, identified in the draft policy for Trows Farm, suggests that the majority of the allocation trips are unlikely to pass the Castleton Sidings allocation via Manchester Road, the cumulative impacts of both developments has been considered at the Manchester Road/Heywood Road junction and at the Manchester Road/Queensway junction. Given the relative distance of the Castleton Sidings allocation and limited traffic generation, it is considered unnecessary to consider the impact of the allocation at other junctions, in particular the M62 Junction 20 and the A627M.

10. Allocation Access Assessment

10.1.1 As set out in **Section 4**, access to the residential component of the allocation will be via two existing side roads off Fairway, each of 5.5m width and with footways on each side. Each road is adopted to the boundary of the allocation. Access will be via a continuation of these existing roads and are suitable to provide access.

10.1.2 The access arrangements have been developed to illustrate that there are practical options for access in this location, and to develop indicative cost estimations. The detailed design of the connections will be undertaken at the planning application stage and will be consistent with Greater Manchester's best practice Streets for All highway design principles.

11. Impact of Allocation Before Mitigation on the Local Road Network

11.1.1 This section examines the impact on the network at the junctions highlighted in **Section 8**. Signalised junctions were assessed in detail using industry-standard modelling software LINSIG version 3. Where possible, traffic signal information was obtained from TfGM Urban Traffic Control (UTC) in order to ensure that the local junction models reflected (as far as possible), the operation of the junctions on the ground. Junctions 9 software was used to assess priority and roundabout junctions.

11.1.2 In order to understand the worst-case impact of the GMSF, the 'high side' model runs, from the GMVDM, were used to derive 'with GMSF' development flows for 2040. These flows were then entered into local junction based models for the relevant study area. Flows from the 2040 Reference Case scenario (including approved Local Plan development from the respective local authorities) were also extracted to provide a comparison between the operation of those junctions in the 2040 Reference Case and the 2040 'with GMSF' development scenarios.

11.1.3 The 'with GMSF' scenario has been considered against a Reference Case which assumes background growth and includes the housing and employment commitments from the districts. These assessments were then used to identify the junctions where there was considered to be a substantial impact, relative to the operation of the junction in the 2040 Reference Case and, hence, where mitigation was considered to be required in order to bring the GMSF allocations forward.

11.1.4 For the purposes of GMSF, it has been agreed that, where mitigation is required, it should mitigate the impacts back to the Reference Case scenario. It should be noted that mitigating back to this level of impact may not mean that the junction operates within capacity, but that the implications of the allocation would be mitigated.

11.1.5 **Table 4** below provides a comparison between the operation of the 'in-scope' junctions in the 2040 Reference Case and in the 2040 'high side' scenarios, as well as summarising the allocation flows through each respective junction. The table compares the Ratio of Flow to Capacity (RFC) on the worst performing arm at each junction, as well as the total development flows through the junction.

11.1.6 For reference, a figure of between 85% and 99% illustrates that the junction is nearing its operational capacity, and a figure of 100% or over illustrates that flows exceed the operational capacity at the junction.

11.1.7 Whilst the allocation would be completed by 2025, the 2040 figures have also been provided as a comparison to the Reference Case assessed at the Manchester Road/Queensway junction.

11.1.8 The strategic model predicts that the total allocation flows through the Manchester Road/Heywood Road junction would be 56 two-way in the AM Peak and 60 two-way in the PM Peak. The actual number of trips likely to pass through this junction may be much lower because of restricted turning movements at the junction which are not reflected in the strategic model. In any event, with the GMSF high side scenario, the junction would operate satisfactorily with these forecast flows, as shown below.

11.1.9 The total allocation flows through the Manchester Road/Queensway junction would be 15 two-way in the AM Peak and 26 two-way in the PM Peak.

11.1.10 Despite a limited increase in traffic through the A664 Queensway/Manchester Road signalised junction an assessment has been undertaken.

Table 4. Results of Local Junction Capacity Analysis Before Mitigation 2040

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
1. Manchester Road / Heywood Road.	20%	24%	38%*	30%*	56*	60*
2. Manchester Road / Queensway Junction.	76%	91%	96%	117%	15	26

% indicates the ratio of volume to capacity

* assumes that all allocation traffic will use this junction, which will not be the case.

11.1.11 **Table 4** shows that the Manchester Road/Queensway junction the Manchester Road Northbound arm has the worst performance in both the AM and PM peak periods. The performance of the junction would deteriorate significantly in the cumulative GMSF High Side scenarios. In the PM peak, the v/c would be well over 100%.

12. Transport Interventions Tested on the Local Road Network

12.1.1 It is considered that alterations to the staging of the signals, to allow additional time for left turning traffic from Queensway, will improve the performance of the Manchester Road/Heywood Road junction. The details, and the responsibility for implementation of the improvements, will be a matter for further discussion with the highway authority at the planning application stage.

12.1.2 The strategy is for the same improvement as proposed by the promoters of the Trows Farm allocation.

Table 5. Approach to Mitigation

Junction	Mitigation Approach
Manchester Road / Queensway Junction	Alterations to staging to provide additional time for left turning traffic from Queensway.

13. Impact of interventions on the Local Road Network

13.1.1 The modelling results for the 2040 GMSF High Side scenarios indicate that with minor improvements to the staging, and the inclusion of a left filter on Queensway, the junction will operate satisfactorily, and performance will be comparable to the Reference Case.

Table 6. Results of Local Junction Capacity Analysis After Mitigation

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM
2. Manchester Road / Queensway Junction.	71%	90%	96%	96%

14. Impact and Mitigation on Strategic Road Network

14.1 Overview

14.1.1 This chapter covers those impacts where traffic generated by the GMSF allocations meets the Strategic Road Network (SRN). Junctions at the interface between the Local Road Network (LRN) and the SRN have been considered using a similar approach to that described in the preceding sections. Wider issues relating to the SRN mainline are being assessed separately as described below.

14.1.2 SYSTRA is currently consulting with Highways England on behalf of TfGM and the Combined Authority in relation to the wider impacts of the GMSF allocations on the SRN. This consultation is ongoing and will allow Highways England to gain a strategic understanding of where there is an interaction between network stress points and GMSF allocation demand. This will facilitate further discussion between TfGM and Highways England to reach agreement and/or common ground on GMSF allocations in advance of Examination in Public (EiP).

14.1.3 Castleton Sidings allocation will not have a material impact on the operation of the SRN as the allocation is a small generator of traffic and is located some distance from the SRN.

15. Final List of Interventions

15.1.1 It should be noted that the interventions listed in **Table 7** may not be the definitive solution to addressing the impact of the allocation but have been developed to demonstrate that a solution is possible at the location. The exact form of the required mitigation will be confirmed, and its detailed design developed as part of the statutory planning process, should the allocation within GMSF be approved. Site promoters will need to develop detailed design solutions – consistent with Greater Manchester's best practice Streets for All highway design principles – at the planning application stage.

15.1.2 In addition to the interventions identified in this report, it will be necessary for investment in the wider transport network to continue in order to deliver the aspirations of the 2040 Transport Strategy and enable all new development to be supported by a robust and sustainable transport network.

15.1.3 The proposed final list of interventions is summarised in **Table 7.** The specific details of the interventions would be identified at a planning application stage, but work undertaken to date has

identified that the proposed intervention will mitigate the cumulative impact of the Castleton Sidings and Trows Farm allocations.

Table 7. Final List of Interventions

Mitigation	Description
Necessary Local Mitigations	
Alterations to signals at the Manchester Roads/Queensway junction	Alterations to staging to provide additional time for left turning traffic from Queensway.
Active travel links beyond allocation boundary	Enhancements/improvements to routes beyond the boundary – any requirements to be determined at planning stage.

15.1.4 Comments at consultation related to the effect of the development traffic and links to public transport. Analysis has demonstrated that, in the local areas, there is adequate capacity to accommodate the limited road traffic from the Castleton Sidings allocation.

15.1.5 There will be good pedestrian connections to bus stops on Manchester Road and the railway station, and the allocation would facilitate the expansion of the ELR and introduction of Metro/Tram-Train in the future. The facilities provided within the allocation would complement the proposed cycle facilities on Manchester Road and would enhance future resident's opportunity to cycle. Overall, sustainable travel routes would be accessible, and the use of sustainable modes would be encouraged.

16. Strategic Context – GM Transport Strategy Interventions

16.1 Rochdale

16.1.1 In addition to the allocation specific interventions set out in this Locality Assessment, there are a number of other measures already planned by RMBC and TfGM to support sustainable travel, and to contribute to the achievement of Greater Manchester's 'Right Mix' ambition. These are set out in the GM Transport Strategy 2040 and the 5-Year Transport Delivery Plan.

16.1.2 The Greater Manchester Transport Strategy 2040 includes a proposed extension of the Metrolink network to Middleton town centre, which currently has no rail services itself. This will provide a direct connection to and from the Regional Centre. There may also be a Metro/Tram-Train route from Castleton railway station.

16.1.3 The 'South Heywood' major mixed-use development was granted planning permission by RMBC in April 2018. The developer had recently agreed with RMBC to contribute funding towards new express bus services. TfGM are exploring route options that would connect with the Regional Centre.

16.1.4 TfGM's 'Bee Network' project aims to increase walking and cycling across Greater Manchester. In Rochdale, 136 new or upgraded crossings are proposed for pedestrians and cyclists. Six miles of Beeway routes are proposed on busier roads in Rochdale, including a corridor scheme on Manchester Road to connect Rochdale and Castleton.

17. Phasing Plan

17.1.1 The initial Locality Assessments were based on information on allocations consolidated by TfGM based on inputs from each of the local authorities. This initial exercise focused on the development quanta to be delivered at the end of the plan period.

17.1.2 All phasing plans information contained in this Locality Assessment is indicative only and has only been used to understand the likely intervention delivery timetable. Final trajectory information and the final allocation proposal is contained in the GMSF Allocation Topic Paper.

17.1.3 During the Locality Assessment work in late 2019 / early 2020, the local authorities provided input on their expected phasing of the allocations focusing on the milestone years of 2025 and 2040. The expected 2025 development quanta were tested along with those for 2040 to assess their

deliverability in terms of transport network capacity. In some cases, the development phasing was amended by the local authorities as a result of the technical analysis undertaken.

17.1.4 It is anticipated that one housebuilder will deliver the allocation in one phase, over a 3-year period from commencement to occupation of the last dwelling, hence completion is anticipated by 2025 (Table 8).

Table 8. Allocation Phasing Used in Modelling

Allocation Phasing	2020 25	2025 30	2030 2037	2038+	Total
Residential	125	0	0	0	**125**

17.1.5 **Table 9** provides an indicative delivery timetable for the identified mitigation measures. The road network mitigation identified is required for impacts forecast in 2040, however, the impact of the allocation is not the direct cause of the junction operating as it does at this time. The allocation may therefore contribute to the improvements, but the final delivery of the local road network mitigation will be dependent on the timing of the Trows Farm allocation coming forward. It is expected that a more precise implementation timeframe for these schemes will be determined as part of the planning application process.

Table 9. Indicative intervention delivery timetable

Mitigation	2020 2025	2025 2030	2030 2037
Necessary Local Interventions			
Alterations to signals at the Manchester Roads/Queensway junction	✓		
Active travel links beyond allocation boundary	✓		

18. Summary & Conclusion

18.1.1 The allocation is accessible by non-car modes of transport, is in walking and cycling distance of local facilities and is in close proximity to bus and train services. The allocation will provide safe and attractive walking and cycling routes to Castleton centre and the Castleton railway station, which will connect to and complement the proposed cycling improvement scheme on Manchester Road.

18.1.2 There is no record of road safety issues which would be exacerbated by the allocation and which should not affect the suitability of development at the allocation.

18.1.3 The allocation would allow delivery of the extension of the East Lancashire Railway and facilitate delivery of Metro/Tram-Train.

18.1.4 Suitable vehicle access can be achieved from the local road network which would be consistent with Greater Manchester's best practice Streets for All highway design principles.

18.1.5 The allocation would not have a material effect on traffic flows on the local or strategic road network.

18.1.6 Cumulative effects of the allocation with the much larger allocation at Trows Farm at the Manchester Road/ Queensway junction can be mitigated by changes to the staging of the traffic signals. Mitigation as a consequence of the allocation is not required elsewhere on the local highway network.

18.1.7 In summary, this assessment gives an initial indication that the traffic impacts of the allocation are less than severe and that the allocation is deliverable, however, significant further work will be needed to verify and refine these findings as the allocation moves through the planning process should the allocation be approved. All final design solutions will be consistent with Greater Manchester's best practice Streets for All highway design principles. The allocation would need to be supported by continuing wider transport investment across Greater Manchester.

Greater Manchester Spatial Framework

Locality Assessment:

Crimble Mill (GMA22)

Publication Version 2: November 2020

Identification Table	
Client	Rochdale/TfGM
Allocation	GMA22 Crimble Mill
File name	GMA22 Rochdale - Crimble Mill LA 021020
Reference number	GMA22 (2020) previously GMA25 (2019)

Approval					
Version	**Role**	**Name**	**Position**	**Date**	**Modifications**
0	Author	M Thompson	Transport Planner		Base report
	Checked by	A Khan	Director of Transport		
	Approved by	A Khan	Director of Transport		
1	Author	M Crowther	TfGM	16.09.20	Consistency edits
	Checked by	R Chapman	TfGM	28.09.20	
	Approved by	P Moore	RBC	29.09.20	

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Allocation Data	
Allocation Reference No.	GMA22 (2020) previously GMA25 (2019)
Allocation Name	Crimble Mill
Authority	Rochdale
Ward	Heywood North
Allocation Proposal	250 Dwellings & Land for School - including re-use of Crimble Mill (Grade II Listed Building)
Allocation Timescale	0-5 years ☑ 6-15 years ☐ 16 + years ☐

Glossary

"2025 GMSF Constrained" - is the 2025 forecast case in which the model adjusts the input demand based on how the cost of travel changes from the base year to the future. For example, for a shopping trip undertaken by car which becomes more congested in future, changes might be travel via a different route, mode, location or time of day.

"2040 GMSF Constrained" - as above, but for a 2040 forecast year

"2025 GMSF High-Side"- is the 2025 forecast case in which the model does not adjust the input demand based on how the cost of travel changes. In this scenario congestion does not lead to a reassignment of traffic, and therefore road traffic flow will generally be higher.

"2040 GMSF High-Side" - as above, but for a 2040 forecast year

"2025 Reference Case" - is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2025

"2040 Reference Case"- is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2040

AADT - Annual average daily traffic, is a measure used in transportation planning to quantify how busy the road is

Bee Network - is a proposal for Greater Manchester to become the very first city-region in the UK to have a fully joined-up cycling and walking network: the most comprehensive in Britain covering 1,800 miles.

Bus Rapid Transit - is a bus-based public transport system designed to improve capacity and reliability relative to a conventional bus system. Typically, a BRT system includes roadways that are dedicated to buses, and gives priority to buses at junctions where buses may interact with other traffic

Degree of Saturation (Deg Sat %) - a ratio of demand to capacity on each approach arm of a junction. A degree of saturation of 100% indicates that the junction is operating at its capacity. Degree of Saturations presented in this report are related to signalised junctions modelled using discrete junction analysis software.

Existing Land Supply - these are allocations across the county that have been identified by each local planning authority across Greater Manchester and are available for development

Greater Manchester Variable Demand Model (GMVDM) - the multi-modal transport model for Greater Manchester. This transport model provides estimates of future year transport demand as well as the estimates of travel behaviour changes and new patterns that the Plan is likely to produce. These include changes in choices of routes, travel mode, time of travel and changes in journey destinations for some activities such as work and shopping.

"LRN" (Local Road Network) All other roads comprise the Local Road Network. The LRN is managed by the local highway authorities

National Trip End Model (NTEM) - is a Department for Transport forecast that ensures that measures of population, jobs and trips made by various mode are consistent across the whole of Great Britain.

Rapid transit services - refers to high frequency, high capacity metro style transport services including Metrolink and Bus Rapid Transit.

Ratio of Flow to Capacity (RFC) - a ratio of demand to capacity on each approach arm of a junction. An RFC of 1 indicates that the junction is operating at its capacity. Ratio of Flow to Capacity is related to priority junctions modelled using discrete junction analysis software.

"SRN" (Strategic Road Network) The Strategic Road Network comprises motorways and trunk roads, the most significant 'A' roads. The SRN is managed by Highways England.

"TfGM" - Transport for Greater Manchester, the Passenger Transport Executive for Greater Manchester

Urban Traffic Control (UTC) - is a specialist form of traffic management that, by coordinating traffic signals in a centralised location, minimises the impact of stop times on the road user.

Volume / Capacity Ratio (V/C) - a ratio of demand to capacity on each approach arm of a junction. A volume / capacity ratio of 100% indicates that the junction is operating at its capacity. Volume / Capacity ratios presented in this report are related to junctions modelled using the Greater Manchester Variable Demand Model.

1. Allocation Location & Overview

1.1 Introduction

1.1.1 WYG has been commissioned by Prescot Business Park Limited (PBP) to provide traffic and transport advice relating to an emerging proposed residential development allocation, which is currently being promoted through the Greater Manchester Spatial Framework (GMSF) on land off Crimble Lane, Heywood, in the borough of Rochdale.

1.1.2 Following the initial "Call for Allocations Assessment" undertaken as part of the GMSF, the allocation was considered suitable for further assessment.

1.1.3 This report, written on behalf of the local authority, provides a Locality Assessment for the Greater Manchester Allocation – Crimble Mill, in support of a 250-unit residential development. The Locality Assessment is essentially a high-level Transport Assessment.

1.1.4 The purpose of this report is to identify the anticipated transport and highways impacts of the development proposals and design suitable mitigation, if required, to support the allocation of the Crimble Mill allocation as part of the GMSF.

1.2 Allocation Location

1.2.1 Eight location plans have been produced and are contained within **Appendix A**. The eight location plans comprise:

- **Plan 1**: Allocation's Location in Relation to Other Local GMSF Allocations
- **Plan 2**: Allocation's Location in Relation to the Wider Area
- **Plan 3**: Allocation's Location in Relation to the Local Highway Network
- **Plan 4**: Walk Catchments from the Allocation
- **Plan 5**: Cycle Catchment from the Allocation
- **Plan 6**: An Extract from Rochdale Council's Cycle Map
- **Plan 7:** Extract from 'Made to Move': Rochdale's Permeability Pre-implementation of the 'Made to Move' Proposals
- **Plan 8**: Extract from 'Made to Move': Rochdale's Permeability Post-implementation of the 'Made to Move' Proposals

1.2.2 All boundaries shown were correct at time of writing – for definitive boundary information refer to the GMSF allocation maps.

1.2.3 An excerpt of Plan 3 is provided as **Figure 1.**

Figure 1. Allocation Location and Existing Access Points: Crimble Mill

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2. Justification for Site Selection

2.1.1 This allocation provides an opportunity to deliver a sustainable urban extension to the north east of Heywood whilst safeguarding and preserving a Grade II heritage asset, which is the existing Crimble Mill. The sustainable attributes of the allocation would be enhanced by the creation of new and improved pedestrian and cycle access. The allocation also has the potential to deliver convenient access to Heywood town centre, to the south west of the allocation, as well as destinations further afield via the Rochdale Way, which is a circular 72 km walking route around the Metropolitan Borough of Rochdale. To the south of the allocation is a high frequency bus corridor along the A58 which links Rochdale to Bury via Heywood.

2.1.2 This allocation provides an opportunity to deliver high quality homes in an attractive location which also secures the regeneration of the Grade II Listed Building (Crimble Mill).

3. Key Issues from Consultation

3.1.1 The Greater Manchester Plan for Homes, Jobs and Environment (Spatial Framework) consultation ran from 14 January to 18 March 2019.

3.1.2 In all, just over 67,000 comments on the draft GMSF were received.

3.1.3 The allocation received 197 directly related comments.

3.1.4 The comments are summarised in the GMSF report "Greater Manchester's plan for homes, jobs and the environment. Consultation: summary report, October 2019".

3.1.5 The key concerns expressed and comments regarding highways and transport are as follows:

- Concern that access to the allocation will have to be off Crimble Lane. This is not suitable for construction vehicles during development, increased traffic or emergency vehicle access to potential residents. It is also a single vehicle lane with no way of making the entrance/exit wider due to existing houses.
- If any development does go ahead, another access route into the allocation may need to be identified.
- Some residents raised concerns about the existing congestion on the roads surrounding the allocation, especially the A58 Rochdale Road East and Barley Hall Street. The proposed development will result in a large increase of cars making the congestion much worse. There is also an issue with cars speeding on the local roads, which is a danger to pedestrians.
- The allocation has poor public transport access. A poor bus service and it is not in close proximity to a railway station or Metrolink stop.
- Any supporting road infrastructure needs to be addressed first, before development.
- It is desirable that existing bridleways, such as Crimble Lane, are not used as access routes to new housing. If this is unavoidable, a new multi-user Public Right of Way (PRoW) should be constructed as a separate entity from vehicular traffic using the former route to access housing.

3.1.6 This document addresses each of the above comments.

3.1.7 A full summary of all consultation responses is available on the GMCA GMSF website.

4. Existing Network Conditions and Allocation Access

4.1 Introduction

4.1.1 The location of the allocation in relation to the wider area is shown on **Plan 2 (Appendix A)**, whilst the location of the allocation in relation to the local highway network is shown on **Plan 3 (Appendix A)**.

4.1.2 As shown on **Plan 2**, the allocation is located 1.1km to the north-east of the town of Heywood. It is located 4km from Rochdale town centre to the east, 6km from Bury town centre to the west, and 13km from the city centre of Manchester to the south.

4.1.3 As shown on **Plan 3**, the allocation is bounded to the north and east by open fields, to the south by the residential units fronting Harold Lees Road, Woodland Road and Mutual Road, as well as by All Souls Church of England Primary School situated on Rye Street, and to the west by Heywood Cricket Club and Queen's Park.

4.1.4 The River Roch runs east to west through the allocation. The north east part of the allocation comprises the existing Crimble Mill, a Grade II Listed Building which is currently subject to low levels of industrial activities. The Mill is in a poor state of repair and it will be refurbished as part of the proposals for residential use.

4.2 Existing Allocation Access

4.2.1 The allocation can be accessed through Crimble Lane. As shown on **Plan 2 (Appendix A)**, Crimble Lane runs from the A58 Rochdale Road East in the south for 1.5km to the B6222 Bury Road in the north, through the proposed allocation.

4.2.2 Adjacent to its junction with the A58 Rochdale Road East, Crimble Lane provides access to two dwellings and access to the rear of a further five dwellings. It would appear that this rear access is the vehicular access and parking area for these five dwellings.

4.2.3 Continuing 700m north of its junction with the A58 Rochdale Road East, Crimble Lane provides access to Crimble Mill, via a bridge over the River Roch. Throughout this extent, Crimble Lane comprises a single lane road with poor quality road surfacing. Whilst the width of Crimble Lane varies throughout, its typical width is around 4m.

4.2.4 The 600m of Crimble Lane between Crimble Mill in the south and the access to Crimble Hall, see **Plan 3 (Appendix A)** in the north comprises a narrow single gravel track. Throughout this extent the typical width of Crimble Lane is reduced to 3m.

4.2.5 Between the access to Crimble Hall in the south and the B6222 Bury Road in the north, Crimble Lane comprised around 200m of tarmacked carriageway with a typical width of 4m.

4.2.6 Throughout its extent, Crimble Lane is a Public Right of Way (PRoW) with vehicular access permitted. Furthermore, two additional public footpaths connect to the allocation, one to the south east of the allocation connecting to Crimble Lane and the second the east of the site which runs alongside the River Roch before connecting the Crimble Lane, **Plan 3**. These PRoW combine to form part of the Rochdale Way which comprises a circular 72km walking route around the Metropolitan Borough of Rochdale. This is an existing benefit to the allocation in that leisure walks are easily accessible from this location.

4.3 Local Highway and Sustainable Transport Network

4.3.1 The key roads of interest comprise Crimble Lane, the A58 Rochdale Road East and Mutual Street as these will provide access to the allocation. A review of Barley Hall Street, Orchard Street and Aspinall Street has also been undertaken. These roads and their relation to the allocation are shown on **Plan 3 (Appendix A).**

4.3.2 Crimble Lane in its existing form is a narrow single lane. Its narrow width and untarmacked surface restrict vehicles speeds. It serves as an access for less than 10 residential units in addition to Crimble Mill, which is currently subject to low levels of industrial activity. It forms part of a PRoW. In the existing situation pedestrians and vehicles are not segregated from each other.

4.3.3 The A58 Rochdale Road East is a wide single carriageway road subject to a 30mph speed limit. In the vicinity of Crimble Lane it has a hatched central area. From Barley Hall Street to Heywood Town Centre, the A58 Rochdale Road East does not feature a hatched central area, except in locations where a ghost island lane is provided to assist turning movements off the A58 Rochdale Road East. It features footways on both sides of the carriageway, in addition to street lighting. The A58 Rochdale Road East is a bus route. The bus stops closest to the allocation are sheltered. In the vicinity of its junctions with Crimble Lane, Barley Hall Street and Orchard Street the carriageway has no parking restrictions on either side, however, in the vicinity of its junction with Aspinall Street, 'No Waiting at Any Time' restrictions are present on both sides of the carriageway.

Between Crimble Lane and Heywood Town Centre a number of pedestrian crossing points are provided. These are a mixture of uncontrolled dropped kerb crossing points and signalised crossing points. Whilst no cycle lanes are present on Rochdale Road East, the wide hatched area to the centre of the road provides vehicles with the opportunity to give cyclists plenty of clearance whilst passing. Given the above, Rochdale Road East is highly conducive to journeys on foot and by bus, as well as for cyclists who are experienced at cycling on roads with higher traffic flows.

4.3.4 Mutual Street is a single carriageway road subject to a 20mph speed limit. It also has traffic calming measures in the form of speed bumps and short sections of carriageway narrowing. Mutual Street has footways on both sides of the carriageway. It features street lighting and is a bus route. There are no parking restrictions present on either side of the carriageway. Given this, Mutual Streets provides safe and suitable walking and cycling provision.

4.3.5 Orchard Street is a single carriageway road subject to a 20mph speed limit. It also has traffic calming measures in the form of speed bumps. It has footways on both sides of the carriageway. Orchard Street features street lighting and is a bus route. With the exception of its junctions with side roads, where No Waiting at Any Time restrictions are in place, there are no parking restrictions present on either side of the carriageway. Between the A58 Rochdale Road East and Fold Street, off carriageway parking is provided for residents who live along this section. Accordingly, Orchard Street is conducive to walking and cycling.

4.3.6 Barley Hall Street is a single carriageway road subject to a 20mph speed limit. It also has traffic calming measures in the form of speed bumps. Barley Hall Street has footways on both sides of the carriageway and features street lighting. With the exception of its junctions with side roads, where No Waiting at Any Time restrictions are in place, there are no parking restrictions present on either side of the carriageway. In view of this, Barley Hall Street provides a suitable environment for walking and cycling.

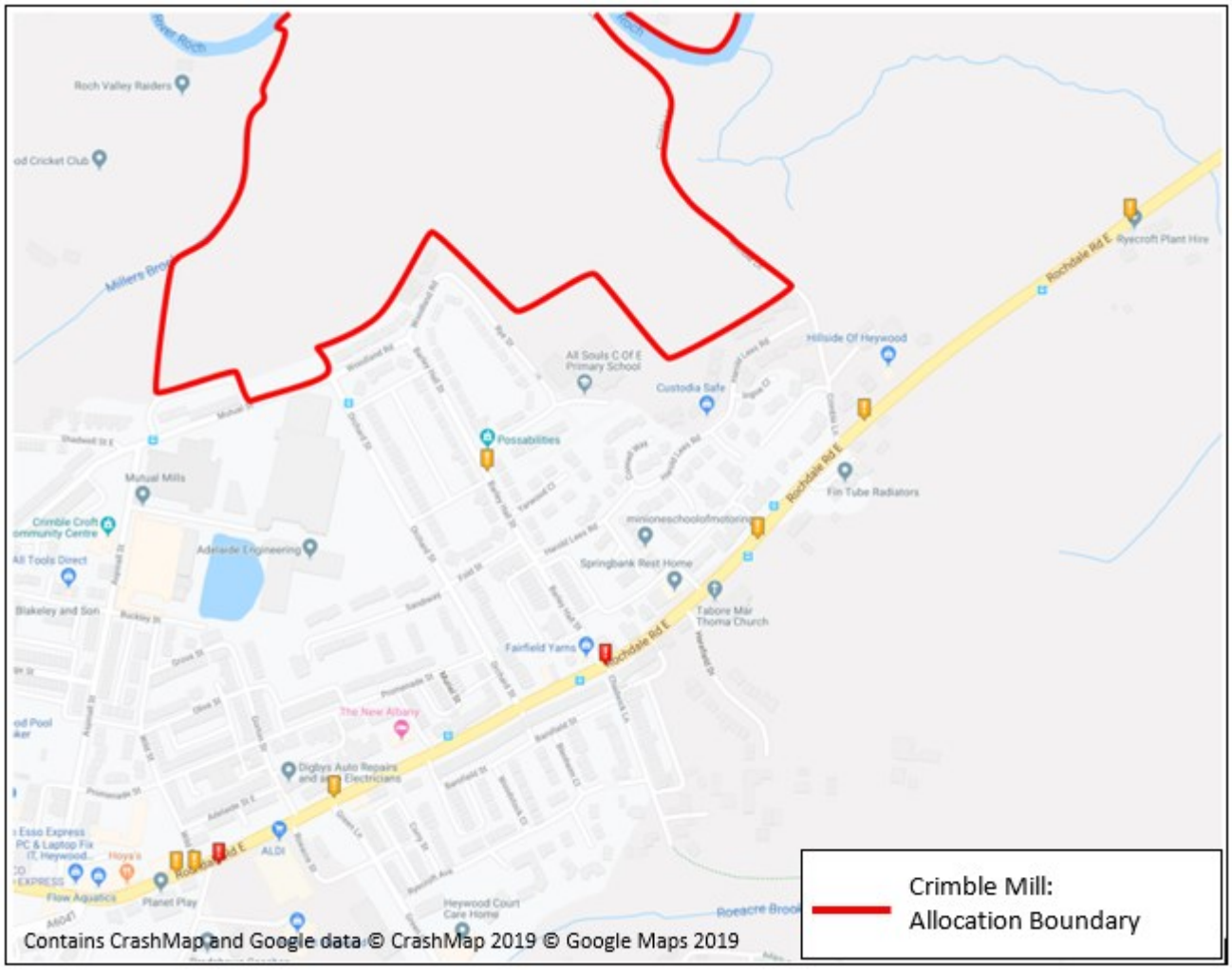
4.3.7 Aspinall Street is a single carriageway route subject to a 30mph speed limit. It has footways on both sides of the carriageway and features street lighting. Adjacent to Mutual Mills and at its junction with the A58 Rochdale Road East, No Waiting at Any Time restrictions are in place. Along the remainder of its extent, there are no parking restrictions present on either side of the carriageway. Again, Aspinall Street is conducive to both walking and cycling.

4.4 Personal Injury Accident Assessment

4.4.1 An interrogation of the CrashMap website has been undertaken to determine whether there are any existing highway safety issues in the vicinity of the allocation on the adjacent adopted local highway network.

4.4.2 Personal Injury Accidents (PIAs) that occurred in the vicinity of the allocation have been reviewed for the most recent five-year period between 2014 and 2018. It was found that a total of eight PIAs were recorded on the local highway network within the study area during this period. The locations at which the accidents occurred, and the extent of the study area are shown in **Figure 2**. The yellow flags in **Figure 2** indicate the severity of the accident was "slight" whilst a red flag indicates the severity of the accident was classified as "serious".

Figure 2. Location of Personal Injury Accidents: Crimble Mill



4.4.3 Note that the allocation boundaries shown in **Figure 2** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps.

4.4.4 The PIAs are summarised by year and severity in **Table 1.**

Table 1. Summary of Accident Data

Severity	2014	2015	2016	2017	2018	Total
Slight	1	0	0	3	2	6
Serious	0	0	0	2	0	2
Fatal	0	0	0	0	0	0
Total	**1**	**0**	**0**	**5**	**2**	**8**

4.4.5 **Figure 2** and **Table 1** show that of the eight recorded PIAs, six were classified as 'slight' and two were classified as 'serious'. No fatal accidents were recorded in the study area. It is also worth noting that in two of the years, no accidents occurred within the study area.

4.4.6 The first serious PIA occurred on 21/04/17 at the junction of Barley Hall Street and the A58 Rochdale Road East, which involved two cars and incurred two casualties. The second serious PIA occurred on 22/04/17 at the junction of Bradshaw Street and the A58 Rochdale Road East, it involved a pedestrian and a motorcycle and incurred two casualties.

4.4.7 The data shows that over the five-year period, only eight accidents occurred within the study area. This equates to less than two accidents per year, which is considered to be low taking into account the extent of the area and the level of traffic flows. Furthermore, there are no clusters of accidents and hence no evidence of an existing highway safety issue that could be exacerbated by the proposed development.

4.5 Proposed Allocation Access

4.5.1 There are two proposed vehicular access routes to the site, namely Crimble Lane (from Rochdale Road East) and Mutual Street, see **Figure 3**. Note that the allocation boundaries shown were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. **Figure 4** is a photograph of Crimble Lane allocation access.

Figure 3. Proposed Access Points: Crimble Mill

4.5.2 In this report the following two potential emerging access strategies are considered which have been discussed with RBC.

- Scenario 1: 250-dwellings served via a widened Crimble Lane (from Rochdale Road East). Emergency access would be off Harold Lees Road and/or Mutual Street.

- Scenario 2: 150-dwellings served via a widened Crimble Lane with the provision of a footway. The remaining 100 units served via a new access off Mutual Street. Emergency access would be off Harold Lees Road and Mutual Street.

4.5.3 The allocation's main vehicular access is proposed via Crimble Lane (from Rochdale Road East). Crimble Lane will be subject to significant improvement works from the allocation boundary through to and including its junction with Rochdale Road East. These improvement works will facilitate development at the allocation. Further details on the allocation vehicular access

improvements are provided in Section 10, together with associated future year capacity assessments.

4.5.4 In both scenarios Crimble Lane (from Rochdale Road East and from Bury Road), Harold Lees Road and Mutual Street will provide pedestrian / cycle connections. Additionally, there are two further pedestrian connections via the existing PRoW. Therefore, in total there are 6 pedestrian access points and 4 cycle access points, see **Figure 3**.

4.5.5 Based on the technical work undertaken by WYG for this LAR, RBC have confirmed sufficient work has been undertaken at this stage to demonstrate that access can be achieved for the allocation. Detailed access arrangements will be the subject of further work and agreement at the planning application stage.

4.5.6 The design of the access strategy will be based on the principles laid out in Manual for Streets (MfS), and the emerging Greater Manchester "Streets for All" design guidance.

Figure 4. Crimble Lane Allocation Access, to be Significantly Upgraded

5. Multi-modal accessibility

5.1 Introduction

5.1.1 An assessment of the accessibility of the allocation by all modes of transport has been carried out to establish if the allocation would meet the sustainable transport policies of the National Planning Policy Framework (NPPF).

5.1.2 The proposals and their relation to multi-modal accessibility have been summarised in this section.

5.2 On Foot

5.2.1 It is generally accepted that walking is the most important mode of travel at local level and offers the greatest potential to reduce short car trips, particularly those under 2km (Manual for Streets).

5.2.2 The implication of this is that 2km is a distance that some people are typically prepared to walk to access an amenity/facility. 2km is also the Institution for Highways and Transportation (IHT) guidance preferred maximum suggested walking distance to schools and for commuting. It should be noted that IHT guidance pre-dates MfS and therefore greater weight should be given to MfS.

5.2.3 **Plan 4 (Appendix A)** shows the 1 and 2km walking catchments from the allocation, which confirm that within a 1km walk of the allocation the key facilities include:

- Educational Facilities (schools)
- Employment
- Retail (food and non-food)
- Leisure
- Public Transport Provision (bus stops)

5.2.4 In addition to the above facilities and amenities available within a 1km walk**, Plan 4** shows that within a 1-2km walk of the allocation is Heywood Town Centre which includes further retail, leisure, education and employment land uses, as well as other facilities and amenities in the wider Heywood area.

5.2.5 In terms of infrastructure, as shown on **Plan 4**, Crimble Lane is a definitive PRoW which passes through the allocation. Additionally, a further PRoW runs alongside the River Roch within the allocation as shown on **Plan 4**.

5.2.6 Furthermore, there are also a number of PRoW's that run though adjacent fields. Two additional public footpaths connect to the site, one to the south east of the site connecting to Crimble Lane and the second to the east of the site which runs alongside the River Roch before connecting the Crimble Lane. These PRoW combined form part of the Rochdale Way which comprises a circular 72km walking route around the Metropolitan Borough of Rochdale. This is an existing benefit to the site in that leisure walks are easily accessible from this location.

5.2.7 Additionally, to the south of the allocation, a bridleway links Chadwick Lane (Heywood) with Chadwick Lane (Castleton). This route provides pedestrian (and cycle) access to Castleton Rail Station. Via this route (shown as a pink dashed line on **Plan 4**) Castleton Rail Station is a 2.6km (30 minutes) walk from the allocation. Given the frequency and destinations of services at this station (described later in this section) it is not unreasonable to think that a linked trip on foot and by rail may be an option for future resident at the proposed development.

5.2.8 The most direct route to Heywood Town Centre from the allocation on foot is via Mutual Street and Millar Street. It is proposed that this route will be linked to the allocation via a pedestrian connection off Mutual Street. The most direct route to the nearest bus stop served by the B4 is via Mutual Street and Orchard Street or Barley Hall Street. Additionally, the route on foot to the bus stops on the A58 Rochdale Road East comprises either Mutual Street and Orchard Street or Barley Hall Street or via Harold Lees Road. These stops on Rochdale Road East are served by a high frequency bus service.

5.2.9 The characteristics of Mutual Street, Millar Street, Orchard Street, Barley Hall Street and Harold Lees Road include high quality footways with dropped kerbs at crossing points and street lighting. Additionally, vehicles travelling along these roads are subject to a 20mph speed limit, which is aided by the traffic calming features such as speed bumps which create a safe walking environment. These characteristics mean that the routes on foot to key local facilities are conducive to walking.

5.2.10 Given the above positive findings, it is evident that the allocation would be accessible on foot in line with NPPF and Rochdale's local transport policies.

5.3 By Cycle

5.3.1 It is generally accepted that cycling has the potential to substitute short car trips, particularly those less than 5km and to form part of a longer trip by public transport modes. To demonstrate the

allocation's accessibility by cycle, a 5km cycle catchment has been prepared and is shown in **Plan 5 (Appendix A).**

5.3.2 It can be seen that the entirety of Heywood can be reached within the 5km catchment. Rochdale Town Centre is also accessible within the 5km catchment, in addition to the nearby areas of Castleton, Norden, Bamford, Broadhalgh, Marland, and Caldershaw.

5.3.3 The employment areas of Phoenix Park Industrial Estate, Junction 19 Industrial Estate, Roeacre Business Park, Astra Centre and Heywood Distribution Park fall within the 5km catchment. It is therefore conceivable that residents of the new development could commute by cycle to all of these places from the allocation.

5.3.4 It can be seen that Castleton and Rochdale Rail Stations are within the catchment. Castleton Rail Station is accessible via the aforementioned bridleway connecting Chadwick Lane (Heywood) with Chadwick Lane (Castleton). Additionally, cyclists have the alternative option to access this rail station through a 3.6km cycle via Rochdale Road East and Manchester Road (which is identified as a Busy Beeway, see **Plan 8, see Appendix A)**. This station features 10 cycle parking spaces with CCTV coverage.

5.3.5 Additionally, Rochdale Rail Station is accessible via a 4.3km cycle route using the local highway network and features 16 sheltered cycle parking spaces with CCTV coverage.

5.3.6 The TfGM's Metrolink's Rochdale stop is also within the catchment and as such is accessible via a 4.3km cycle route.

5.3.7 Details on services operating from the above rail/metrolink stations are set out below.

5.3.8 TfGM provide cycle maps for each borough in the Greater Manchester, including Rochdale. An extract of the TfGM cycle map for Rochdale is shown on **Plan 6 (Appendix A)**. The plan shows recommended cycle routes and low speed roads within the vicinity of the allocation which provide every opportunity for future residents to travel safely by cycle.

5.3.9 TfGM are promoting the Bee Network under the 'Made-to-Move' scheme. The proposal is a vision for Greater Manchester to become the very first city region in the UK to have a fully joined up cycling and walking network, the most comprehensive in Britain, covering 1,800 miles. This network is in its early stage of development.

5.3.10 The vision is to connect every neighbourhood and community in Greater Manchester, as well as a clear strategy for effective delivery of a network that will make cycling and walking a viable choice for those that don't do so now.

5.3.11 Crucially, the proposed network is not for people who already cycle or walk for the majority of their journeys. Its focus is to enable the two thirds of people who currently use their car as their main mode of transport, to walk or cycle.

5.3.12 **Plans 7** and **8 (Appendix A)** are excerpts from the TfGM 'Made-to-Move' Bee Network proposals, in the vicinity of the allocation.

5.3.13 **Plan 7** shows the existing permeability of the areas around Rochdale, by bike. This plan shows that the allocation is located in an area TfGM classify as being a neighbourhood partially open to cycling, with one good access point.

5.3.14 **Plan 8** shows the proposed 'Made to Move' Bee Network infrastructure and the future permeability of the areas around Rochdale, by bike. This plan shows that following the introduction of a number of crossing points, a number of bee network routes and a busy bee network route to the west of Heywood, the allocation will be located in an area that is classified as a neighbourhood that is accessible by bike. The A58 to the west of the allocation is identified as a 'Busy Beeway', whilst Manchester Road to the south of the allocation is identified as a 'Beeway' as part of the 'Made to Move' proposals.

5.3.15 Based on the above, it can be concluded that the allocation will be very accessible by cycle in line with the NPPF and Rochdale's local transport policies.

5.4 By Public Transport

5.4.1 Bus stops on the A58 Rochdale Road East, approximately 520m from the centre of the allocation via Crimble Lane and 660m from the centre of the allocation via Mutual Street, are also accessible within a comfortable walking distance.

5.4.2 These stops on Rochdale Road East are served by the 471 which is a high frequency route between Rochdale and Bury. The location of these stops is illustrated on **Plan 4 (Appendix A)**.

5.4.3 Additionally, the pedestrian connection to Mutual Street will provide access to the closest bus stop. The nearest bus stop is located on Orchard Street, 300m from the centre of the allocation via Mutual Street. This stop is served by the B4.

5.4.4 The bus routes and the frequency of the bus services which service the above stops are detailed in **Table 2**.

Table 2. Existing Bus services, routes, and frequencies accessible from the allocation

Service	Route	Mon Fri AM Peak	Mon Fri Inter Peak	Mon Fri PM Peak	Mon Fri Evening	Sat	Sun
471	Bury - Rochdale	6	6	6	2	6	2
B4	Bury - Heywood	0	1	1	0	1	0

Note: table records average one way frequency per hour.

5.4.5 **Table 2** shows that there are two services accessible on foot from the allocation including the high frequency Rochdale to Bury service.

5.4.6 In total there are six accessible buses in the AM peak hour, seven accessible buses in the PM peak hour and seven buses an hour accessible on a Saturday.

5.4.7 It should be noted that the proposed development of the allocation will generate additional bus patronage, which in turn may allow bus operators to further improve the existing bus service frequencies on a commercial basis.

5.4.8 The nearest rail station is Castleton, which is located 2.6km from the allocation. It can be accessed on foot (30 minutes' walk) and by cycle (10-15 minutes') via the bridleway linking Chadwick Lane (Heywood) with Chadwick Lane (Castleton) or via the local highway network. It should be noted that this road is currently unlit and unsurfaced in parts, and as such the level of use is likely to be somewhat limited without improvements.

5.4.9 Rochdale Rail Station is located 4.3km from the allocation and therefore is accessible by cycle as part of a linked trip.

5.4.10 Castleton Rail Station is serviced by trains to / from Rochdale, Blackburn, Clitheroe, Leeds, Manchester Victoria and Chester. In addition to the services provided at Castleton Rail station, Rochdale Rail Station is served by trains to / from Wigan Wallgate and Southport. The station is served by 4-6 trains an hour.

5.4.11 Metrolink's Rochdale Stop is the closest tram stop to the allocation. It is located adjacent to Rochdale Rail Station at 4.5km from the allocation and therefore can be accessed by cycle. Services operate between Rochdale Town Centre and East Didsbury, with an average frequency of one service every 12 minutes in each direction.

5.4.12 Given the above, it can be stated that the allocation would be accessible by public transport and hence would comply with NPPF and local transport polices.

5.5 Proposed Development Accessibility

5.5.1 On allocation, the street network of the proposed development will be designed in line with Manual for Streets (MfS) guidance which places "a high priority on meeting the needs of pedestrians, cyclists and public transport users".

5.5.2 The proposals include two high quality pedestrian / cycle connections, namely via Harold Lees Road and via Mutual Street. Additionally, the proposals include the widening of Crimble Lane to provide a continuous footway on the western side of the carriageway. It should be noted that the desire line along Crimble Lane south of its junction with Harold Lees Road is very limited and there are no houses proposed on this section of Crimble Lane. Therefore, the use of this section of Crimble Lane by pedestrians will be limited, accordingly one footway is more than adequate. The proposed footway at this location will maintain the existing PRoW, for details see Section 10.

5.5.3 The on-site PRoWs, are shown on **Plan 4 (Appendix A)**, will be retained and enhanced.

5.5.4 The walking and cycling routes will be enhanced where applicable, to encourage sustainable access to Heywood Town Centre and the wider areas to enhance connectivity.

5.5.5 High levels of connectivity will be provided between the allocation and Queens Park, Heywood Town Centre, All Souls Church of England Primary School and St Luke's Church of England Primary School to integrate the allocation with the surrounding area.

5.6 Proposed Access via Sustainable Modes Improvements

5.6.1 The allocation is planned to comprise circa 250 dwellings, delivering homes within an attractive riverside setting, including the provision of apartments within the converted Grade II Listed Crimble Mill.

5.6.2 At this stage, there is no indication of the type of housing that is to be provided at this allocation, but would most likely comprise single occupancy detached dwellings, with luxury apartments within the Mill.

5.6.3 Land will also need to be reserved to enable the potential expansion of the adjoining All Souls Church of England Primary School.

5.6.4 To create an 'organic' extension to Heywood, the development will be integrated into the existing environment in terms of its design and layout, including pedestrian and cycle accessibility.

5.6.5 The street network of the proposed development will be designed in line with Manual for Streets (MfS) guidance which places "a high priority on meeting the needs of pedestrians, cyclists and public transport users". To do this, the proposals will include high quality infrastructure designed to ensure the safe movement of traffic and other road users. The layout will ensure self-enforcing 20mph speeds are maintained. It is acknowledged that GM Streets for All Design Guidance is being developed. This document would be used to inform the development of the on-site layout at the planning application stage.

5.6.6 Overall, the layout will create a movement network that is safe, desirable, healthy and inclusive through the provision of accessible streets, open places and inclusion of desire lines in the design.

5.6.7 The high frequency bus stops on Rochdale Road East feature bus shelters however currently they are not to Quality Bus Corridor (QBC) standards. As part of the proposals it is proposed that the developer will fund the upgrading of the nearest two bus stops on Rochdale Road East to QBC standards. This funding can be secured through a S106 agreement.

5.6.8 Subject to detailed review of the existing infrastructure at the planning application stage, it may well be appropriate for a contribution to be provided towards provision of further sustainable off-site transport measures in the local area, such as improving links to the Bee Network.

6. Parking

6.1.1 At this early stage it is not necessary to provide parking details. Vehicular parking and cycle parking provision for the proposed development will be in line with the parking standards set out in Appendix 5 of the Rochdale Adopted Core Strategy (2016) or any subsequent standards applicable at the time of application.

7. Allocation Trip Generation and Distribution

7.1.1 For the purposes of the testing the impact of the allocation through the strategic model, a total of 250 dwellings have been assumed to be built out by 2040. The GM transport modelling suite has a 2040 forecast year, as such it uses 2040 trajectory data as proxy for 2037 full build-out, this is not considered to materially impact on the analysis or conclusions of this report.

7.1.2 Future trip generation to/from the allocation (i.e. how many people and vehicles will enter or leave the allocation) was estimated by applying a set of GM-wide trip rates to the agreed development quantum for each allocation. The distribution of trips (i.e. where they are going to or coming from) was derived by selecting nearby zones with similar land use characteristics as a proxy and using the existing distribution in the model. The development quantum for the allocation is provided in **Table 3**.

Table 3. Development Quantum

Use	Use Sub Category	Development Quantum 2025	Development Quantum 2040
Residential	Houses	144	225
Residential	Apartments	16	25
Total		**160**	**250**

7.1.3 The figures above are those assumed for modelling purposes. It should be noted that at this stage the number of apartments to be included in the accommodation schedule has not been finalised. The great majority of the site will be houses. The total number of houses and apartments will be approximately 250 dwellings.

7.1.4 The allocation traffic generation is provided in **Table 4.**

Table 4. Allocation Traffic Generation

Year	AM Peak Hour Departures	AM Peak Hour Arrivals	PM Peak Hour Departures	PM Peak Hour Arrivals
2025 GMSF Constrained	65	11	27	71
2025 GMSF High-Side	83	32	50	74
2040 GMSF Constrained	65	11	27	71
2040 GMSF High-Side	83	32	50	74

Units are in PCU (passenger car units/hr)

7.1.5 **Table 4** shows that the development is forecast to generate a total of 115 and 124 vehicle trips, in the AM and PM peaks respectively, which equates to just two additional vehicles on the local highway network per minute.

7.1.6 **Table 4** also shows that the development is forecast to generate a maximum of 83 one-way trips in the peak hours. This one-way trip of 83 occurs in the AM peak departures. This equates to just one vehicle every 43 seconds being added to the allocation access link (egressing the allocation). The impact on a single link (one-way) of the existing highway network will be even less again once the trip distribution has been applied.

7.1.7 The development traffic distribution has been extracted from the GMVDM. The development traffic distribution is provided in **Table 5**.

Table 5. Allocation Traffic Distribution, 2040 GMSF High-Side (Origin/Destination Combined)

Route	AM Peak Hour	PM Peak Hour
A6046 Manchester Road (South)	38	41
A58 Bury Road (West)	29	31
Queens Park Road (North)	21	22
A58 Manchester Road (North East)	17	19
Manchester Road (South East)	10	11

7.1.8 **Table 5** shows that the majority of the development traffic is forecast to travel to/from the south via the A6046 Manchester Road. This route provides access to Junction 19 of the M62.

7.1.9 At the A58 Rochdale Road East / Crimble Lane allocation access junction, trips to the south, west and north will travel to / from the western arm of the A58 Rochdale Road. The percentage of development traffic on this arm of the junction totals 76% of the development traffic. This link, namely the A58 Rochdale Road East between Barley Hall Street and Crimble Lane will therefore be subject to the largest increase in traffic due to the development. The largest two-way traffic increase on any link of the existing highway network will be 94 trips in the PM peak hour. The largest one-way traffic increase on any link of the existing highway network will be 62 vehicles on to the A58 Rochdale Road East heading westbound between Crimble Lane and Barley Hall Street. This is an additional one vehicle a minute to stream of traffic that totals approximately 800 vehicles/hr (one-way) background traffic in 2025.

8. Current Highway Capacity Review

8.1.1 This section reviews the current highway capacity in the near vicinity of the allocation. The network of interest, along with a number of junctions of interest are shown in **Figure 5.** Note that the allocation boundaries shown in Figure 8 were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps.

Figure 5. Location of assessed junctions

8.1.2 The junctions of interest, as identified in **Figure 5** are as follows:

- Junction 1: Rochdale Road East / Crimble Lane: Priority Controlled
- Junction 2: Mutual Street Allocation Access: Priority Controlled
- Junction 3: A58 Rochdale Road East / Barley Hall Street: Priority Controlled
- Junction 4: A58 Rochdale Road East / Orchard Street: Priority Controlled
- Junction 5: A58 Rochdale Road East / Green Lane: Signalised
- Junction 6: A58 Rochdale Road East / Aspinall Street / A6046 Rochdale Road: Priority Controlled
- Junction 7: Green Lane / A6046 Manchester Road / A6046 Middleton Road: Priority Controlled
- Junction 8: A58 York Street / Queens Park Road: Priority Controlled
- Junction 9: A58 York Street / Bamford Road: Signalised
- Junction 10: A6046 Middleton Road arm of the M62 J19 Interchange: Priority Controlled

- Junction 11: A58 Bolton Road / Manchester Road Interchange: Signalised

8.1.3 A basic review has been carried out using Google traffic to establish the existing operational characteristic of the local highway network.

8.1.4 In terms of existing highway capacity, the A58 Rochdale Road is a busy road which carries approximately 1,600 vehicles an hour in the peak hours (two-way flow). This high traffic flow is expected as the A58 is a distributor road carrying traffic between the towns of Rochdale and Bury.

8.1.5 Junctions 1, 3, 4 and 6 are all priority junction with no known capacity issues.

8.1.6 Junction 5 is signalised and experiences some queuing in the peak hours, but this is not unusual given its edge of town centre location.

8.1.7 Junction 7 is priority controlled which operates well within capacity in the peak hours in the existing situation.

8.1.8 Junction 8 and 9 are signalised and experience some queueing in the peak hours.

8.1.9 Junction 10 is signalised and operates within capacity in the peak hours.

8.1.10 Junction 11 is signalised with minor queueing in the peak hours.

9. Treatment of Cumulative Impacts

9.1.1 The GMSF allocations are assessed in terms of cumulative impacts. This is important as it allows the potential apportionment of the cost of the mitigation.

9.1.2 The Constrained and High Side model runs take account of all traffic associated with GMSF allocations; nonetheless, there are other GMSF allocations that are more local to Crimble Mill. Particularly, within a 2km isoline are the allocations at Castleton Sidings and Bamford Norden allocations. The Crimble Mill allocation is forecast to generate approximately 115 & 124 two-way trips during the morning and evening peak hours. The Bamford Norden allocation is forecast to generate approximately 208 & 236 two-way trips during the morning and evening peak hours, whilst Castleton Sidings is forecast to generate in the order of 55 & 62 in the same periods respectively.

9.1.3 Furthermore, the combined AM and PM peak hour flows on Rochdale Road East includes 248 trips associated with allocation sites at Northern Gateway (Heywood / Pilsworth); Northern Gateway (Simister and Bowlee); Stakehill; and Trows Farm.

9.1.4 In any one location, therefore, the combined impact of these trips could have a more significant impact on the operation of the network than that of the allocation alone; hence the combination of impacts has been assessed.

9.1.5 Equally, as the traffic impact at any one location on the local road network, to a greater or lesser extent, will be as a result of a combination of GMSF allocations, the cost of potential works to mitigate traffic impacts may also be borne by a combination of allocations proportional to its impact.

10. Allocation Access Assessment

10.1.1 These allocation access arrangements have been developed to illustrate that there is a practical option for allocation access in this location and to develop indicative cost estimates for the illustrative access design.

10.2 Proposed Allocation Access

Allocation Access Scenarios

10.2.1 The allocation is proposed to be accessed from the A58 Rochdale Road East, via a route along Crimble Lane, with secondary access proposed on to Mutual Street. The two accesses would include access for active modes of travel. A pedestrian access is also proposed from Harold Lee Road.

10.2.2 The main access onto the A58 Rochdale Road East would likely be a priority T-junction, with the potential need for a right turn lane on the A58.

10.2.3 Two potential vehicular access scenarios have been tested, as follows:

- **Scenario 1:** 250-dwellings served via a widened Crimble Lane (from Rochdale Road East). Emergency access would be off Harold Lees Road and/or Mutual Street.

- **Scenario 2:** 150-dwellings served via a widened Crimble Lane with the provision of a footway. The remaining 100 units served via a new access off Mutual Street. Emergency access would be off Harold Lees Road and Mutual Street.

10.2.4 The allocation's main vehicular access is proposed via Crimble Lane (from Rochdale Road East). Crimble Lane will be subject to significant improvement works from the allocation boundary through to and including its junction with Rochdale Road East. These improvement works will facilitate development at the allocation.

10.2.5 In both scenarios the primary access to the proposed development will be from Crimble Lane, to minimise traffic routing through the existing residential streets.

10.2.6 Based on the technical work undertaken by WYG for this LAR, RBC have confirmed sufficient work has been undertaken to demonstrate that access can be achieved for the allocation.

Proposed Significant Improvements to Crimble Lane and its Junction with the A58

10.2.7 It is acknowledged that the existing layout of Crimble Lane is substandard for serving the proposed development. A potential improvement scheme has been considered for Crimble Lane including its junction with the A58 Rochdale Road East to provide a safe and suitable access to the allocation for all modes.

10.2.8 Under the improvement scheme, Crimble Lane will be significantly improved by widening to provide a carriageway with a typical width varying between 4.8m - 5.5m and a continuous footway with a minimum width of 1.5m. The improvements are contained within the existing Crimble Lane corridor and land within the developer's control.

10.2.9 The total length of Crimble Lane from its junction with the A58 Rochdale Road East is approximately 160m – Initial concepts designs for the lane would suggest that of the 160m length, 66m (41%) would have a 5.5m carriageway and the remaining 94m (59%) length would have a typical minimum width of 4.8. However, over a very short localised length the carriageway would be 4.6m. Manual for Streets (MfS) confirms that carriageway width in residential areas does not need to be constant. MfS also states that wider the carriageway higher the speeds. The proposed carriageway width will assist in reducing speeds and hence increasing highway safety.

10.2.10 It should be noted that MfS states that in residential areas the typical maximum road width should be 5.5m and design speed should be 20mph or less. MfS also confirm that a 4.1m wide carriageway

can allow two cars to pass each other and a 4.8m carriageway allows a car and a heavy goods vehicle (HGV) to pass each other. Given that the proposed development will be residential, it will generate a negligible number of HGVs. Accordingly, the proposed carriageway width is more than adequate to cater for the proposed development.

10.2.11 A continuous footway on the west side of the carriageway is proposed, with a minimum width of 1.5m. However, a significant length of improved road, in the concept design work, could have a 2m wide footway. MfS confirms that a 1.5m footway is wide enough to permit a couple travelling next to each other with a pram. MfS also confirms that a wheelchair user requires a minimum width of 0.9m footway.

10.2.12 Between the allocation's southern boundary and Harold Lees Road the proposed footway on Crimble Lane can be 2m wide. The proposed footway on Crimble Lane, south of Harold Lees Road is 1.5m. The desire line for travelling over this 1.5m wide footway is minimal. Therefore, the great majority of the future residents of the development travelling on foot would only use the section of Crimble Lane which has a 2m wide footway because they would be able to use Harold Lees Road to access community amenities and services, given their locations.

10.2.13 The connection to Harold Lees Road would be improved so that a double pram or mobility scooter can use the connection, details of this will be agreed at the planning application stage.

10.2.14 The proposed footway on Crimble Lane, south of the access to the existing 5 dwellings served off Crimble Lane on the west side, would benefit from the proposed 2m footway from their access to Rochdale Road East, likewise the existing dwellings on the east side of Crimble Lane in this locality will also benefit from the new footway.

10.2.15 Given the above, the proposed footway will provide safe and suitable access on foot to future residents and existing residents in this locality.

10.2.16 To enhance safety and keep speeds typically below 20mph, as per MfS advice, traffic calming is also proposed on Crimble Lane in the form of long raised speed tables.

10.2.17 Retaining walls are provided where necessary and adequate forward stopping sight distance along Crimble Lane can be achieved in accordance with MfS.

10.2.18 The existing PRoW on Crimble Lane would be maintained and enhanced with the improvement scheme.

10.2.19 In addition to the road widening improvements on Crimble Lane, the A58 Rochdale Road East/Crimble Lane junction would be improved. The mouth of the junction has the capacity to be widened significantly with 6m radii and more than adequate lateral visibility splays are provided in both directions.

10.2.20 The concept design work of the improvements to Crimble Lane has been carried out in discussions with RBC. The improvements are in line with MfS.

10.2.21 At the planning application stage, the access strategy will be reviewed, concept designs will be developed more fully and options to see if further improvements are possible will be reviewed in correspondence with RBC.

10.3 Potential Emergency / Secondary Access via Mutual Street

10.3.1 The Mutual Street access would operate:

- Under Scenario 1 as a potential emergency access.
- Under Scenario 2 as a secondary access serving up to 100 dwellings.

10.3.2 Mutual Street is subject to a 20mph speed limit and features traffic calming in the form of speed bumps. A visibility splay of 2.4 x 25m is achievable at the proposed allocation access in both directions, which is appropriate for the speed limit.

10.4 Proposed Vehicular Access Capacity Assessments

10.4.1 Both accesses have been assessed using discrete junction analysis software. To ensure a robust assessment, both the Crimble Lane site access and the Mutual Street site access have been assessed for traffic associated with 250-dwellings.

10.4.2 The results in **Table 6** show that the site access junction is forecast to operate with significant spare capacity in 2040 even in the scenario that assesses the 'high side' development flows before mitigation. However, following the implementation of the combined GMSF highway mitigations the background traffic on Rochdale Road East are forecast to increase from approximately 1,800pcu/hr two-way in the peak hours to 2,100pcu/hr two-way. This significant increase in background traffic causes a Ratio of Flow to Capacity (RFC) of 1.19 in the AM peak, this is due to the lack of gaps in traffic on the major arm for development traffic to use to egress from the allocation.

Table 6. Site Access Junction Assessments – Highest RFC on any arm of the junction

Junction	GMSF 'High Side' 2040 (Before Mitigation) AM Peak	GMSF 'High Side' 2040 (Before Mitigation) PM Peak	GMSF 'High Side' 2040 (After Mitigation) AM Peak	GMSF 'High Side' 2040 (After Mitigation) PM Peak
J1. A58 Rochdale Road East / Crimble Lane	0.48	0.29	1.19	0.68
J2. Mutual Street / Allocation Access	0.20	0.12	0.21	0.31

10.4.3 As these flows are long term forecasts, in the first instance the priority junction which works with significant spare capacity in the before mitigation scenario is proposed.

10.4.4 In the unlikely event that the significant forecast traffic increases do in fact materialise, then an upgrade to signalisation for the Crimble Lane / Rochdale Road East junction can be implemented by signalisation of the junction. The capacity results of the signals for the GMSF 'High Side' 2040 (after mitigation), i.e. including 2,100pcu/hr on Rochdale Road East are provided in **Table 7.** The table shows the highest degree of saturation on any arm of the junction.

Table 7. Site Access Junction Assessments – Potential Signal Arrangement Capacity Results

Junction	GMSF 'High Side' 2040 (After Mitigation) + Signalisation AM Peak	GMSF 'High Side' 2040 (After Mitigation) + Signalisation PM Peak
J1. A58 Rochdale Road East / Crimble Lane	76.0%	78.2%

10.4.5 **Table 7** shows that the signalised junction arrangement is forecast to accommodate all the traffic generated by the proposed development with sufficient spare capacity in the forecast year 2040 even with the significant higher traffic flows on Rochdale Road East that are forecast in the High Side mitigation scenario which is unlikely to materialise.

10.4.6 The proposed Crimble Lane/Rochdale Road East proposed priority junction is appropriate, and it meets the principles laid out in MfS. However, if further minor refinements are considered

necessary then these would be considered at the planning application phase. It is expected that the simple priority junction will be more than adequate to be promoted as part of this proposal in 2040. The signalised option is only considered to demonstrate that a high capacity access junction is also feasible, if required.

10.4.7 The current ongoing coronavirus pandemic (Covid-19) has resulted in a major shift to home working. Initial indications are that homeworking is feasible for a significant proportion of the national workforce, especially office workers. This homeworking arrangement has significant benefits for the both employers and employees. It maybe that post pandemic many employees will continue to work from homes, this means there may be less traffic on the roads. The GMSF traffic forecasts do not reflect the positive impacts of this likely reduction in traffic in the future due to Covid-19. Accordingly, the assessment results reported in this LAR overestimate RFCs/DOS, queuing and delays.

11. Impact of Allocation Before Mitigation on the Local Road Network (LRN)

11.1 Introduction

11.1.1 In order to understand a worst-case impact of the GMSF, the 'high side' runs from the GMVDM were used to derive with GMSF development flows for 2040. These flows were then entered into junction-based models for the junctions identified in **Section 8**. Flows from the 2040 reference case scenario (including approved Local Plan development from the respective districts) were also extracted to provide a comparison between the operation of those junctions in the 2040 reference case and the 2040 with GMSF development scenarios.

11.1.2 The 'with GMSF' scenario has been assessed against a Reference Case which assumes background growth and includes the housing and employment commitments from the districts. Through discussions with TfGM and the Combined Authority, it has been agreed that where mitigation is required it should mitigate the impacts back to a reference case scenario. It should be noted that mitigating back to this level of impact may not mean that the junction operates within capacity.

11.1.3 These assessments were then used to identify the junctions where there was considered to be a substantial impact, relative to the operation of the junction in the 2040 reference case and, hence, where mitigation was considered to be required in order to bring GMSF allocations forward.

11.1.4 Signalised junctions were assessed in detail using industry-standard modelling software LINSIG version 3. Where possible, traffic signal information was requested from TfGM in order to ensure that the local junction models reflected (as far as possible), the operation of the junctions on the ground. Junctions 9 software was used to assess priority and roundabout junctions. **Table 8** provides a comparison between the operation of the in-scope junctions in the 2025 reference case and the 2025 'high side' scenarios, as well as the allocation development flows through each respective junction. **Table 9** provides a comparison between the operation of the in-scope junctions in the 2040 reference case and the 2040 'high side' scenarios, as well as the allocation development flows through each respective junction. The table shows a comparison between the ratio of flow to capacity on the worst-case arm at each junction.

Table 8. 2025 Results of Local Junction Capacity Analysis Before Mitigation

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
3. A58 Rochdale Road East / Barley Hall Street	46%	29%	59%	34%	33	54
4. A58 Rochdale Road East / Orchard Street	47%	29%	60%	36%	33	54
5. A58 Rochdale Road East / Green Lane	101%	101%	102%	102%	28	27
6. A58 Rochdale Road East / Aspinall Street / A6046 Rochdale Road	52%	41%	56%	45%	14	3
7. Green Lane / A6046 Manchester Road / A6046 Middleton Road	62%	58%	68%	60%	40	44
8. A58 York Street / Queens Park Road	107%	106%	108%	107%	22	33
9. A58 York Street / Bamford Road	53%	58%	55%	57%	7	18
10. A6046 Manchester Road arm of the M62 J19 Interchange	62%	60%	67%	61%	36	28
11. A58 Bolton Road / Manchester Road Interchange	71%	75%	71%	76%	14	24

Table 9. 2040 Results of Local Junction Capacity Analysis Before Mitigation

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
3. A58 Rochdale Road East / Barley Hall Street	62%	39%	97%	61%	58	67
4. A58 Rochdale Road East / Orchard Street	62%	40%	96%	63%	58	67
5. A58 Rochdale Road East / Green Lane	104%	105%	104%	105%	21	29
6. A58 Rochdale Road East / Aspinall Street / A6046 Rochdale Road	66%	51%	83%	71%	2	6
7. Green Lane / A6046 Manchester Road / A6046 Middleton Road	67%	70%	86%	74%	32	31
8. A58 York Street / Queens Park Road	111%	110%	114%	110%	21	21
9. A58 York Street / Bamford Road	62%	63%	70%	71%	10	17
10. A6046 Manchester Road arm of the M62 J19 Interchange	72%	63%	77%	68%	28	27
11. A58 Bolton Road / Manchester Road Interchange	74%	80%	84%	80%	37	38

11.1.5 **Tables 8** and **9** show that four of the junctions of interest, namely Green Lane / A6046 Manchester Road, A6046 Manchester Road Arm of the M62 J19 Interchange, A58 York Street / Bamford Way

and A58 Bolton Road / Manchester Road interchange work well within capacity, even in the future year of 2040 with the development traffic from all the GMSF allocations applied. The Green Lane / A6046 Manchester Road will be subject to an improvement scheme which is currently being developed by RBC.

11.1.6 The Green Lane / A58 Rochdale Road East junction is operating slightly above capacity in all assessed scenarios. The development is forecast to increase traffic flows at this junction by a maximum of 62 vehicles in either peak hour. This equates to just one vehicle a minute through the junction. One vehicle a minute is unlikely to have a material effect on this junction. This is confirmed through comparing the 2040 AM peak and PM peak V/C ratios, it can be seen the inclusion of the GMSF high-side flows do not have any impact on V/C ratio in either peak hour as they do not change.

11.1.7 The A58 York Street / Queens Park Road is operating above capacity in all assessed scenarios. The development is forecast to generate just 22 additional vehicular trips at this junction. A review of GMSF allocations in the surrounding area has found that to the north, located in Bamford, is GMSF allocation 23. A review of Google Traffic has found that all traffic routing west, south west and south (to the M62) from this allocation will route via this junction, therefore, slight increase in V/C ratio from 111 to 114% in the 2040 AM peak is likely to be a result of the traffic associated with the GMSF allocation 23.

11.1.8 **Table 9** shows that the Orchard Street and Barley Hall Street junctions with Rochdale Road East are forecast to operate close to capacity in the AM peak when assessed using the GMSF high side flows in 2040, however the application of development flows at these junctions has been undertaken using a very robust approach and therefore these high RFC's are unlikely to materialise.

11.1.9 Based on the capacity assessments, RBC have confirmed that WYG has sufficiently demonstrated that the allocation does not have significant / severe impacts at the off-site junctions and as such no improvement schemes are likely to be necessary. The only exception to this is the Rochdale Road East / Crimble Lane junction which is being improved as described earlier.

11.1.10 As already indicated in Section 10, Covid-19 may result in a long-term reduction in traffic flows on a permanent basis. Therefore, the traffic flows used in the above assessments are likely to overestimate both the background traffic and allocation traffic. Accordingly, the true traffic impacts at these junctions are likely to be lower than those reported in **Tables 8** and **9**.

11.2 Impact of Allocation Before Mitigation Summary

11.2.1 This section has provided a review of the GMVDM and a number of discrete junction analysis (in Junctions 9) assessments for the future years of 2025 and 2040. The assessment focused on the highway network in the vicinity of the allocation.

11.2.2 The review of the GMVDM has found that the cumulative impacts of the GMSF allocations are not significant even in the future year of 2040.

11.2.3 The discrete junction analysis assessment found that the cumulative impacts of the GMSF allocations are not significant even in the future year of 2040.

12. Transport Interventions Tested on the Local Road Network

12.1.1 The transport interventions associated with the allocation are provided in **Table 10.**

Table 10. Approach to Mitigation: Crimble Mill

Junction	Mitigation Approach
1. Rochdale Road East / Crimble Lane	Significant improvement works proposed
2. Mutual Street Allocation Access	New junction
3. A58 Rochdale Road East / Barley Hall Street	Junction forecast to operate within capacity – no mitigation proposed
4. A58 Rochdale Road East / Orchard Street	Junction forecast to operate within capacity – no mitigation proposed
5. A58 Rochdale Road East / Green Lane	Reference Flows and With GMSF Flows junction analysis results are comparable – no mitigation proposed
6. A58 Rochdale Road East / Aspinall Street / A6046 Rochdale Road	Junction forecast to operate with significant spare capacity – no mitigation proposed
7. Green Lane / A6046 Manchester Road / A6046 Middleton Road	Junction forecast to operate with significant spare capacity – no mitigation proposed (Note: location subject to an improvement scheme being developed by RBC – this scheme has not been tested as part of this assessment)
8. A58 York Street / Queens Park Road	Reference Flows and With GMSF Flows junction analysis results are comparable – no mitigation proposed

9. A58 York Street / Bamford Road	Junction forecast to operate with significant spare capacity – no mitigation proposed
10. A6046 Manchester Road arm of the M62 J19 Interchange	Junction forecast to operate with significant spare capacity – no mitigation proposed
11. A58 Bolton Road / Manchester Road Interchange	Junction forecast to operate with significant spare capacity – no mitigation proposed

12.1.2 In summary, mitigations tested in the GMVDM to support the allocation are:

- Rochdale Road East / Crimble Lane
- Mutual Street Allocations Access

13. Impact of interventions on the Local Road Network

13.1.1 As described in **Section 12**, the Crimble Mill proposals have identified the upgrading of Crimble Lane and its junction with A58 Rochdale Road East to provide an appropriate allocation access as a transport intervention.

13.1.2 As shown in **Figure 1** (**Section 1**), there are a number of GMSF allocations in the near vicinity of the Crimble Mill allocation. These allocations are proposing various mitigation measures on the wider local highway network and the strategic model outputs shown in the table below will reflect the changing patterns of traffic in the area in response to these changes.

13.1.3 The junction assessments undertaken in **Section 8** have been re-assessed using the GMSF Mitigation flow group outputs from the strategic model, the results of these additional assessments are provided in the next section.

13.1.4 The forecast operation of the junctions in 2040 with the GMSF 'High-Side' flows after mitigation are provided in **Table 11**.

Table 11. Results of Local Junction Capacity Analysis After Mitigation, 2040 Flows

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
3. A58 Rochdale Road East / Barley Hall Street	62%	39%	105%	82%	34	56
4. A58 Rochdale Road East / Orchard Street	62%	40%	105%	84%	34	56
5. A58 Rochdale Road East / Green Lane	104%	105%	104%	105%	20	34
6. A58 Rochdale Road East / Aspinall Street / A6046 Rochdale Road	66%	51%	104%	95%	33	40
7. Green Lane / A6046 Manchester Road / A6046 Middleton Road	67%	70%	83%	68%	35	49
8. A58 York Street / Queens Park Road	111%	110%	116%	110%	19	17
9. A58 York Street / Bamford Road	62%	63%	65%	72%	20	17
10. A6046 Manchester Road arm of the M62 J19 Interchange	72%	63%	60%	61%	31	41
11. A58 Bolton Road / Manchester Road Interchange	74%	80%	96%	76%	19	26

13.1.5 **Table 11** shows that the Aspinall Street, Orchard Street and Barley Hall Street junctions with the A58 are forecast to operate over capacity in the AM peak hours when assessed using the 2040 high side flows. It is also the case that these three junctions are forecast to operate over capacity in the no-development scenario. However, as set out earlier, the actual development traffic flows at these junctions is considered to be low and no improvements are considered to be needed as a direct result of the allocation.

14. Impact and Mitigation on Strategic Road Network

14.1 Overview

14.1.1 This section covers those impacts where traffic generated by the GMSF allocations meets the Strategic Road Network (SRN). Junctions at the interface between the Local Road Network (LRN) and the Strategic Road Network (SRN) have been assessed using a similar approach to that described in the preceding chapters. Wider issues relating to the SRN mainline are being assessed separately as described below.

14.1.2 SYSTRA is currently consulting with Highways England on behalf of TfGM and the Combined Authority in relation to the wider impacts of the GMSF allocations on the Strategic Road Network (SRN). This consultation is ongoing and it is expected that it will allow Highways England to gain a strategic understanding of where there is an interaction between network stress points and GMSF allocation demand which will facilitate further discussion and transfer of information between TfGM and Highways England (yet to be defined) in reaching agreement and/or common ground relating to the acceptability of GMSF allocations in advance of Examination in Public (EiP).

14.2 Impact of the Allocation before Mitigation on the Strategic Road Network

14.2.1 The SRN is a 2.5km drive from the allocation, therefore traffic will disperse before accessing it. A review of the Select Link Analysis plots provided by Systra has found that only 31 trips and 41 trips are forecast to route via the strategic road network in the AM and PM peak hours respectively. This is clearly very low level of impact, which would not be material.

14.2.2 As such it can be concluded that the traffic associated with the proposals will not have an impact on the strategic road network.

15. Final List of Interventions

15.1.1 The full list of interventions is provided in **Table 12.**

Table 12. Final List of Interventions: Crimble Mill

Options	**Scenario 1**: widened Crimble Lane (from Rochdale Road East). Emergency access would be off Harold Lees Road and/or Mutual Street. **Scenario 2**: widened Crimble Lane with the provision of a footway plus a new access off Mutual Street. Emergency access would be off Harold Lees Road and Mutual Street.
	Not required
Necessary Local Interventions	
Crimble Lane Improvements	Crimble Lane will be significantly upgraded and its junction with the A58 Rochdale Road East. There is also the potential for this junction to be upgraded to a signalised arrangement, if necessary.
Public transport improvements	The nearest two bus stops to the allocation on Rochdale Road East have been identified for upgrading to Quality Bus Corridor or equivalent standard.
Sustainable travel improvements	Subject to detailed review at the planning application stage, contribution towards provision of further sustainable off-allocation transport measures in the local area, such as improving links to the Bee Network.
SRN Interventions	
	Not required

16. Strategic Context – GM Transport Strategy Interventions

16.1 Introduction

16.1.1 In addition to the allocation-specific interventions set out in this Locality Assessment, there are a number of other measures already planned by RBC and TfGM to support sustainable travel, and to contribute to the achievement of Greater Manchester's 'Right Mix' ambition. These are set out in the GM Transport Strategy 2040 and Our 5-Year Transport Delivery Plan.

16.1.2 As part of this plan, TfGM are promoting the 'Made-to-Move' Bee Network scheme. The proposal is a vision for Greater Manchester to become the very first city region in the UK to have a fully joined up cycling and walking network; the most comprehensive in Britain covering 1,800 miles.

16.1.3 The proposed network is not for people who already cycle or walk for the majority of their journeys. Its focus is to enable the two thirds of people who currently use their car as their main mode of transport, to walk or cycle.

16.1.4 **Plan 8 (Appendix A)** shows that following the introduction of a number of crossing points, a number of bee network routes and a potential busy bee network route to the west of Heywood as part of the 'Made-to-Move' proposals, the allocation will be located in an area that is classified as a neighbourhood that is very accessible by bike.

16.1.5 Both the Rochdale Borough Transport Strategy and the GM Transport Strategy highlight the use of technology to reduce need to travel as an objective for reducing car trips. This may reduce future background traffic growth and may reduce the forecast vehicular trip generation of the proposed development.

17. Phasing Plan

17.1.1 All phasing plans information contained in this Locality Assessment is indicative only and has only been used to understand the likely intervention delivery timetable. Final trajectory information and the final allocation proposal is contained in the GMSF Allocation Topic Paper.

17.1.2 The phasing of the proposal is summarised in **Table 13,** whilst the phasing of the mitigation associated with the proposals is provided in **Table 14**.

Table 13. Allocation Phasing Used in Modelling

Total	250	n/a	n/a	n/a	**250**

Table 14. Indicative Intervention Delivery Timetable

Necessary Strategic interventions				
None	-			
Supporting Strategic Interventions				
None	-			
Necessary Local Mitigations				
Crimble Lane Improvements	✓			
Public transport improvements	✓			
Sustainable travel improvements	✓			
Supporting Local Interventions				
None				
SRN Interventions				
None	-			

18. Summary & Conclusion

18.1 Summary

18.1.1 The development proposals comprise circa 250 dwellings, delivering homes within an attractive riverside setting, including the provision of new homes within the converted Grade II Listed Crimble Mill.

18.1.2 Two potential vehicular access scenarios have been tested, as follows:

- **Scenario 1**: 250-dwellings served via a widened Crimble Lane (from Rochdale Road East). Emergency access would be off Harold Lees Road and/or Mutual Street.

- **Scenario 2**: 150-dwellings served via a widened Crimble Lane with the provision of a footway. The remaining 100 units served via a new access off Mutual Street. Emergency access would be off Harold Lees Road and Mutual Street.

18.1.3 In both scenarios the primary access to the proposed development will be from Crimble Lane, to minimise traffic routing through the existing residential streets.

18.1.4 It is acknowledged that the existing layout of Crimble Lane is substandard for serving the proposed development. A proposed improvement scheme has been considered for Crimble Lane including its junction with the A58 Rochdale Road East to provide a safe and suitable access to the allocation for all modes.

18.1.5 It has been demonstrated that the allocation is accessible on foot with numerous community amenities/services located within acceptable walking distance from the allocation. Similarly, it has been confirmed that the allocation would be highly accessible by cycle.

18.1.6 A number of bus stops are within easy walking distance from the allocation. In total there are six accessible buses in the AM peak hour, seven accessible buses in the PM peak hour, during weekdays, which would serve the allocation. The two nearest bus stops to the allocation on Rochdale Road East have been identified for upgrading to QBC standards.

18.1.7 Subject to consideration of requirements at the planning application stage, a contribution may be made towards provision of further sustainable off-allocation transport measures in the local area, such as improving links to the Bee Network.

18.1.8 The nearest rail station is Castleton. It can be accessed on foot and by cycle via the existing surfaced PRoW linking Chadwick Lane (Heywood) with Chadwick Lane (Castleton). Additionally, Rochdale Rail Station is located 4.5km from the allocation and therefore is accessible by cycle as part of a linked trip. Castleton Rail Station is serviced by trains to/from Rochdale, Blackburn, Clitheroe, Leeds, Manchester Victoria and Chester.

18.1.9 The Metrolink's Rochdale Stop is the closest tram stop to the allocation. It is located adjacent to Rochdale Rail Station at 4.5km from the allocation and therefore can be accessed by cycle. Services operate between Rochdale Town Centre and East Didsbury, with an average frequency of one service every 12 minutes in each direction.

18.1.10 It can be stated that the proposed development allocation will be accessible by sustainable travel modes, in line with NPPF.

18.1.11 The likely traffic impacts of the proposed development, along with the impacts of all the emerging GMSF allocations, on the local highway network have been assessed.

18.1.12 The GMSF 'High Side' assessment included a review of the GMVDM and a number of discrete junction analysis assessments for the future years of 2025 and 2040. The assessments focused on the highway network in the vicinity of the allocation, using the worst-case traffic flows provided from three sets of data. Accordingly, the assessments are very robust.

18.1.13 The review of the GMVDM has found that the cumulative impacts of the GMSF allocations on the local highway network are not significant even in the future year of 2025, let alone the impacts being 'severe' in NPPF terms.

18.1.14 Similarly, the discrete junction analysis assessment found that the cumulative impacts of the GMSF allocations are not significant even in the future year of 2040.

18.1.15 The mitigation schemes were developed and tested to address the network congestion impacts. The schemes have been shown to mitigate the impact of the allocation trips and to restore the network to a similar state as that found in the Reference scenario. However, these schemes have only been developed in outline detail to inform viability and allocations policy.

18.1.16 The only identified highway intervention associated with the allocation is the proposed upgrading of Crimble Lane and its junction with Rochdale Road East to provide an appropriate allocation access.

18.1.17 Further detailed work will be necessary to identify the specific interventions required to ensure the network works effectively based on transport network conditions at the time of the planning application, should this allocation be approved. All final design solutions should be consistent with Greater Manchester's best practice Streets for All highway design principles.

18.1.18 In summary, this assessment gives an initial indication that the allocation is deliverable, however, further work will be needed to verify and refine these findings as the allocation moves through a future planning process. The allocation would need to be supported by continuing wider transport investment across GM.

18.2 Conclusions

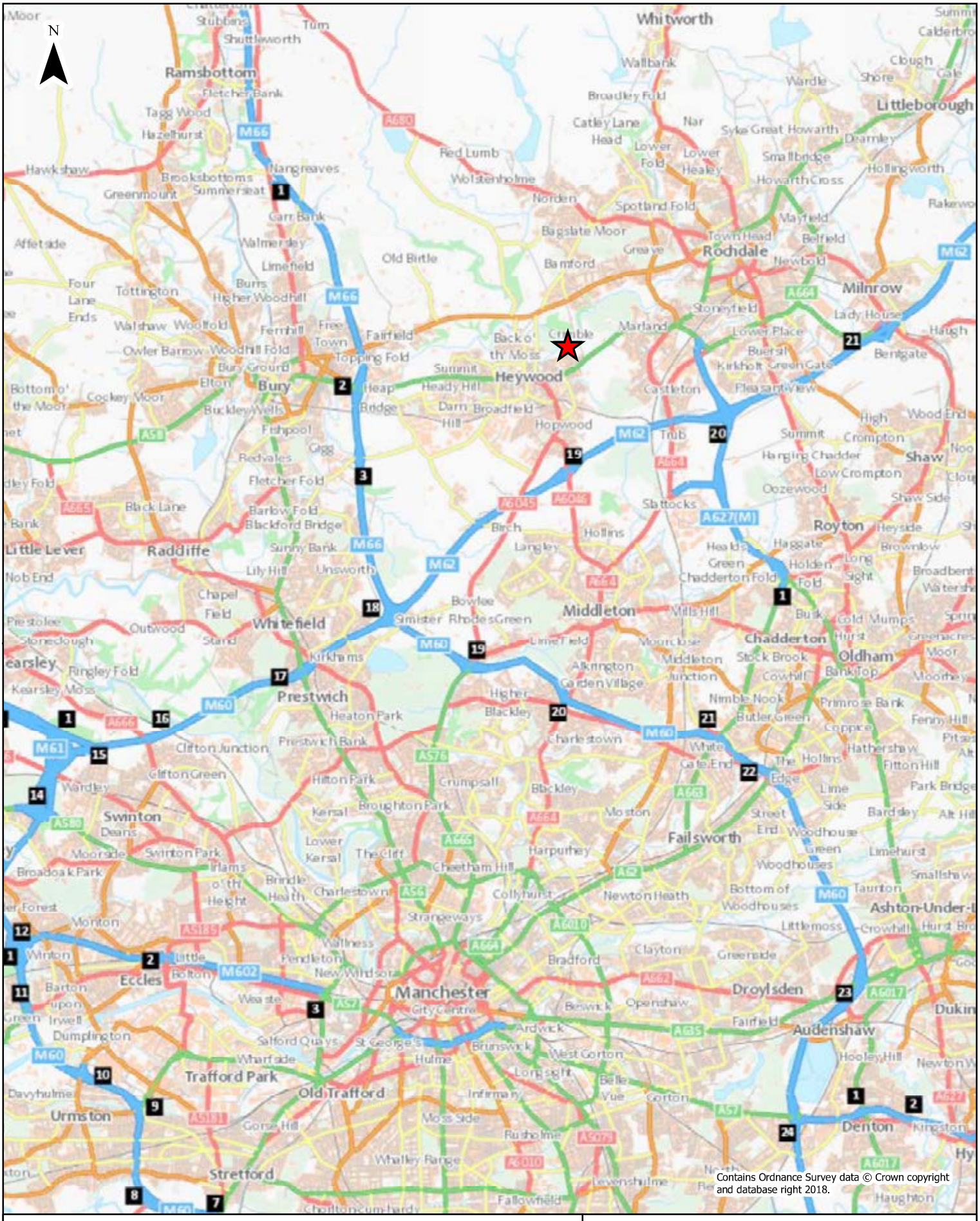
In conclusion, it has been demonstrated that:

- The allocation would be accessible by sustainable travel modes.
- A safe and suitable access can be provided for all users.
- There would be no significant traffic impacts on the local highway network after the proposed improvements.

Appendix A: Site Location Plans – Crimble Mill

- **Plan 1**: Allocation's Location in Relation to Other Local GMSF Allocations
- **Plan 2**: Allocation's Location in Relation to the Wider Area
- **Plan 3**: Allocation's Location in Relation to the Local Highway Network
- **Plan 4**: Walk Catchments from the Allocation
- **Plan 5**: Cycle Catchment from the Allocation
- **Plan 6**: An Extract from Rochdale Council's Cycle Map
- **Plan 7:** Extract from 'Made to Move': Rochdale's Permeability Pre-implementation of the 'Made to Move' Proposals
- **Plan 8**: Extract from 'Made to Move': Rochdale's Permeability Post-implementation of the 'Made to Move' Proposals

All boundaries shown were correct at time of writing – for definitive boundary information refer to the GMSF allocation maps.



Plan 2: Site Location

Crimble Lane, Heywood

Scale @ A4 1 : 100	Project No: A115508

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Plan 3: Local Highway Network

Crimble Lane, Heywood

Scale @ A4 1:7,500

Project No: A115508

Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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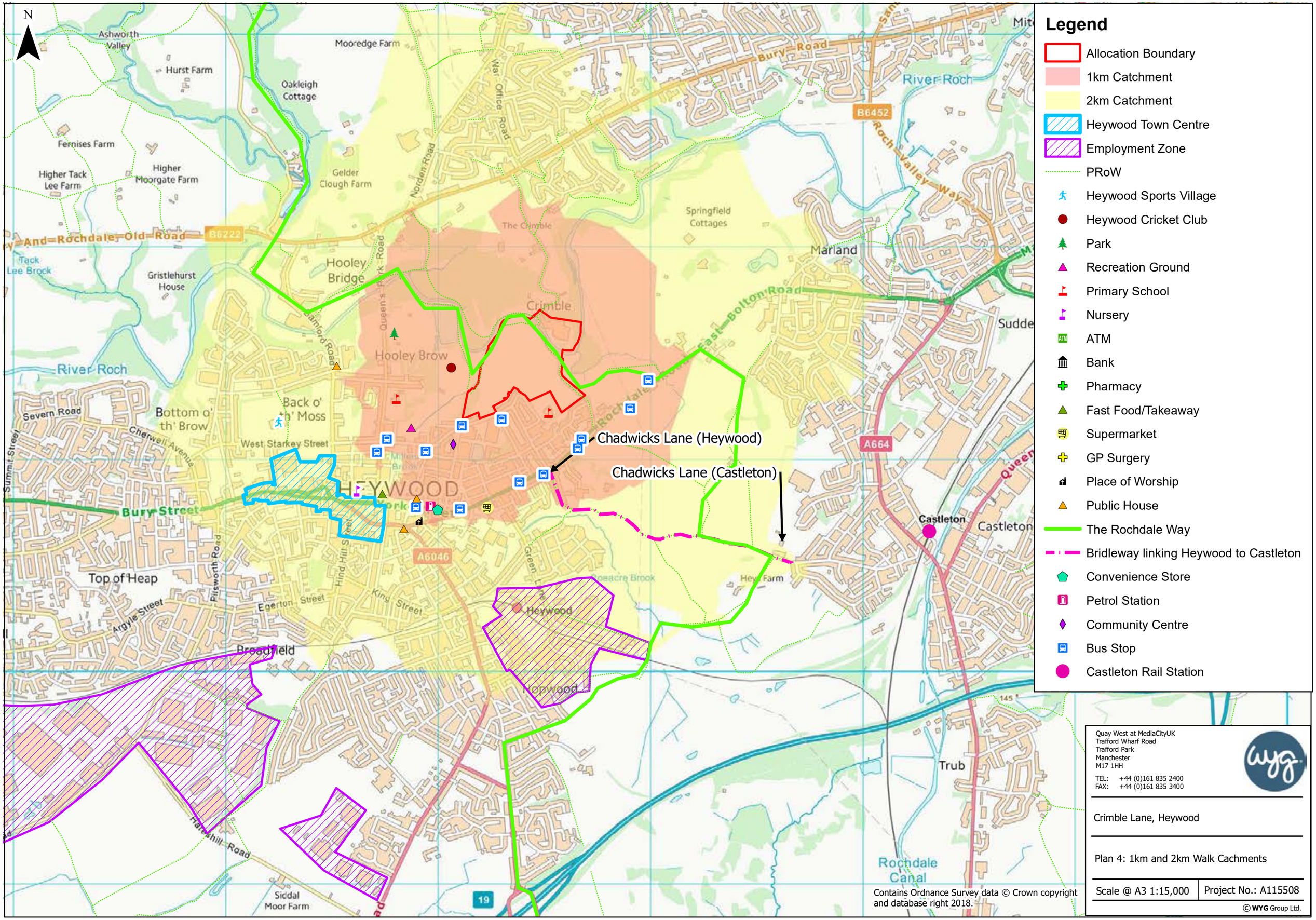

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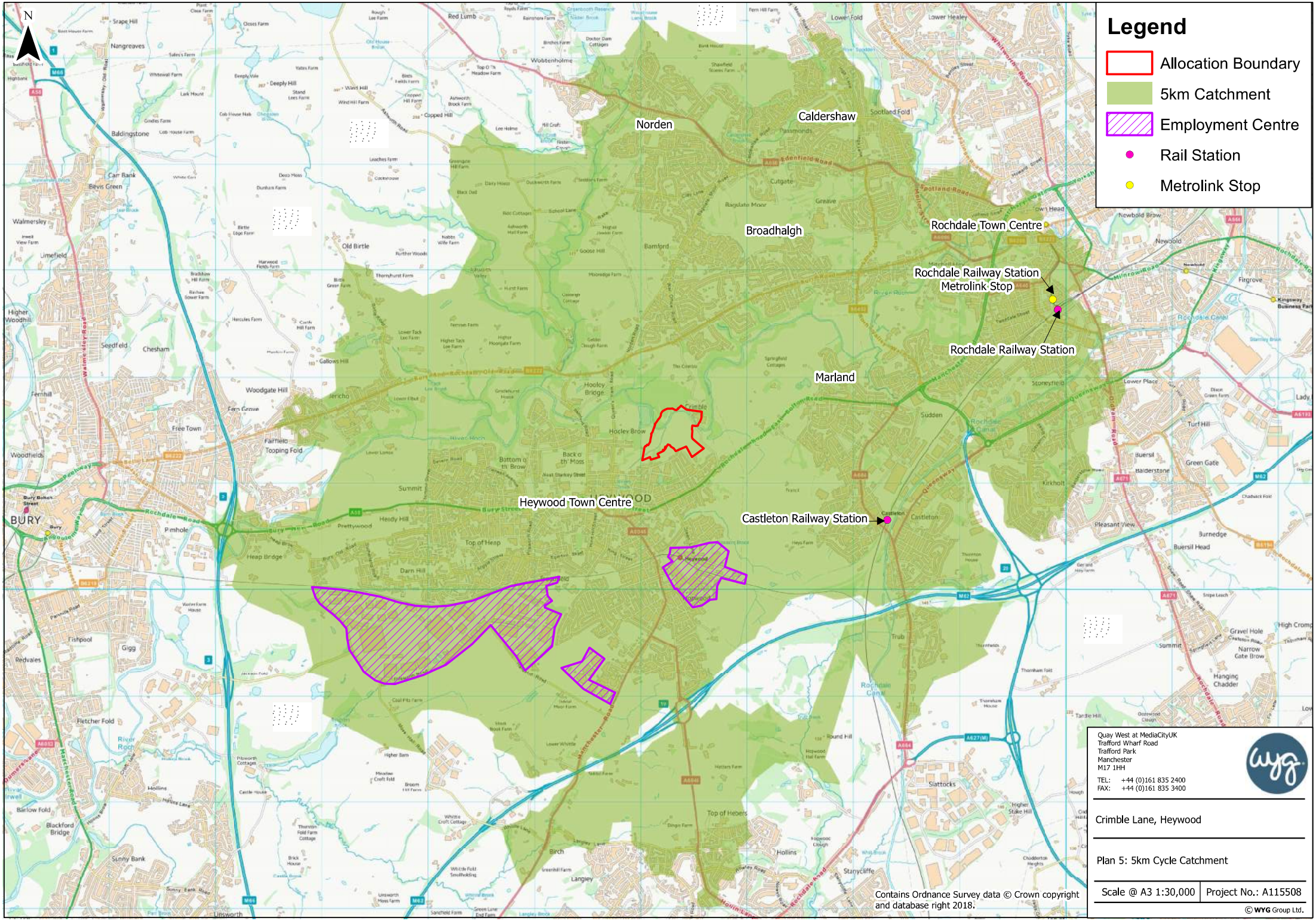
Crimble Lane, Heywood

Plan 4: 1km and 2km Walk Cachments

Scale @ A3 1:15,000 | Project No.: A115508



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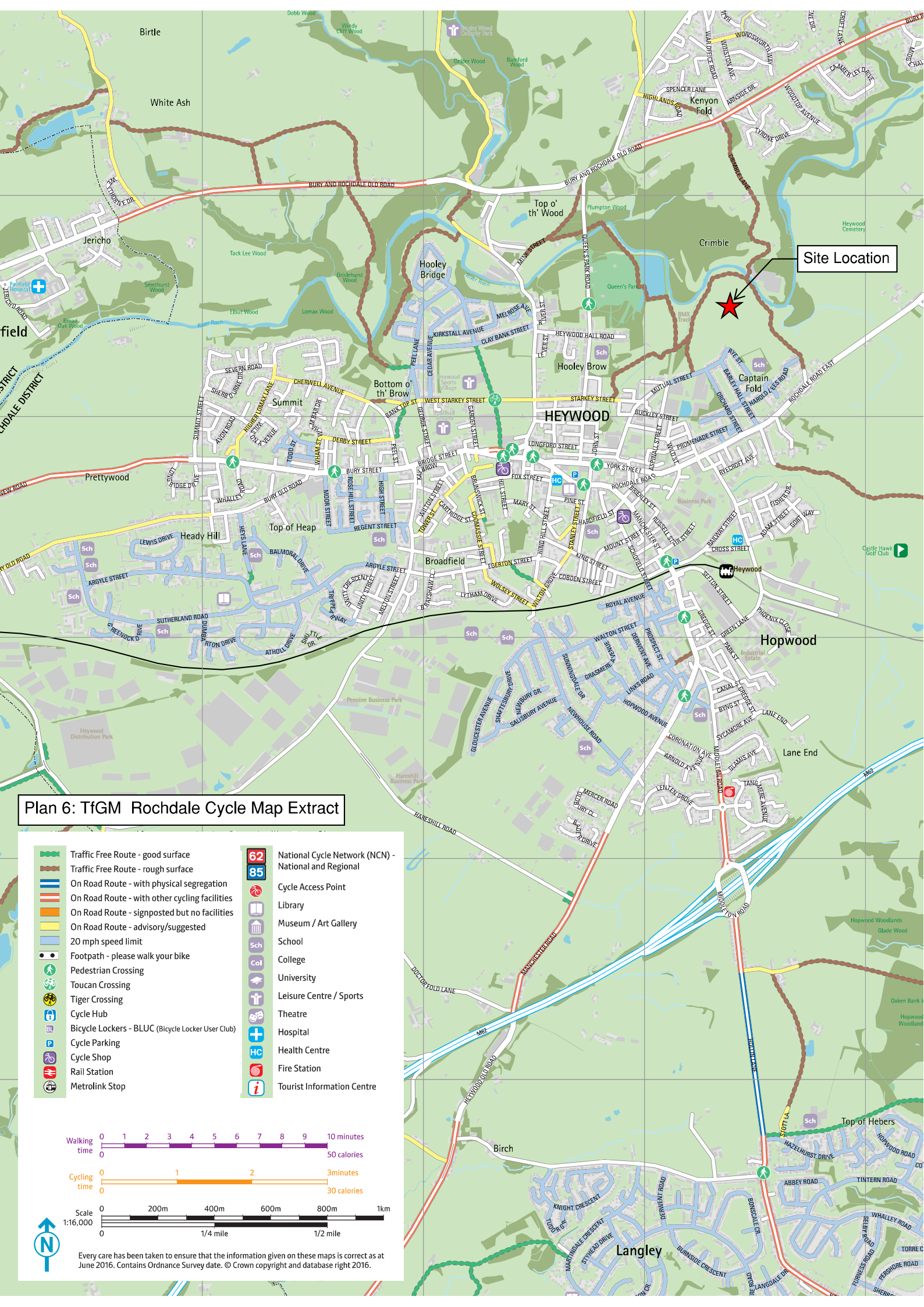
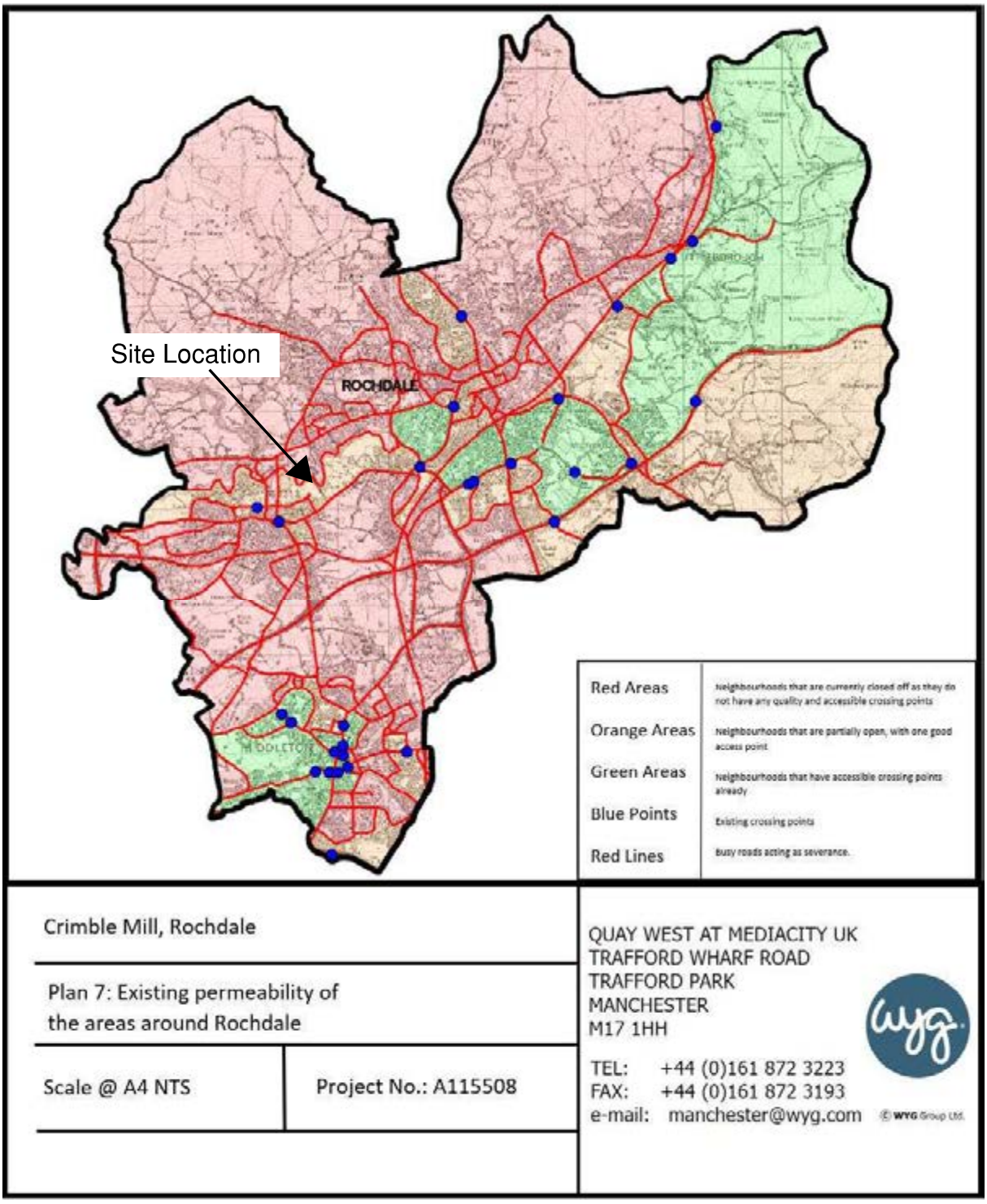
Crimble Lane, Heywood

Plan 5: 5km Cycle Catchment

Scale @ A3 1:30,000 | Project No.: A115508


Site Location
Plan 6: TfGM Rochdale Cycle Map Extract
Traffic Free Route - good surface
Traffic Free Route - rough surface
On Road Route - with physical segregation
On Road Route - with other cycling facilities
On Road Route - signposted but no facilities
On Road Route - advisory/suggested
20 mph speed limit
Footpath - please walk your bike
Pedestrian Crossing
Toucan Crossing
Tiger Crossing
Cycle Hub
Bicycle Lockers - BLUC (Bicycle Locker User Club)
Cycle Parking
Cycle Shop
Rail Station
Metrolink Stop
National Cycle Network (NCN) - National and Regional
Cycle Access Point
Library
Museum / Art Gallery
School
College
University
Leisure Centre / Sports
Theatre
Hospital
Health Centre
Fire Station
Tourist Information Centre
Walking time
0 1 2 3 4 5 6 7 8 9 10 minutes
0 50 calories
Cycling time
0 1 2 3minutes
0 30 calories
Scale 1:16,000
0 200m 400m 600m 800m 1km
0 1/4 mile 1/2 mile
N
Every care has been taken to ensure that the information given on these maps is correct as at June 2016. Contains Ordnance Survey date. © Crown copyright and database right 2016.
Birtle
White Ash
Jericho
Prettywood
Heady Hill
Top of Heap
Summit
Bottom o' th' Brow
Hooley Bridge
Top o' th' Wood
Crimble
Kenyon Fold
Hooley Brow
HEYWOOD
Captain Fold
Broadfield
Hopwood
Lane End
Top of Hebers
Birch
Langley
BURY AND ROCHDALE OLD ROAD
MANCHESTER ROAD
HAREHILL ROAD
HEYWOOD OLD ROAD
ROCHDALE ROAD
ROCHDALE ROAD EAST
MIDDLETON ROAD
M62



Crimble Mill, Rochdale

Plan 7: Existing permeability of the areas around Rochdale

Scale @ A4 NTS

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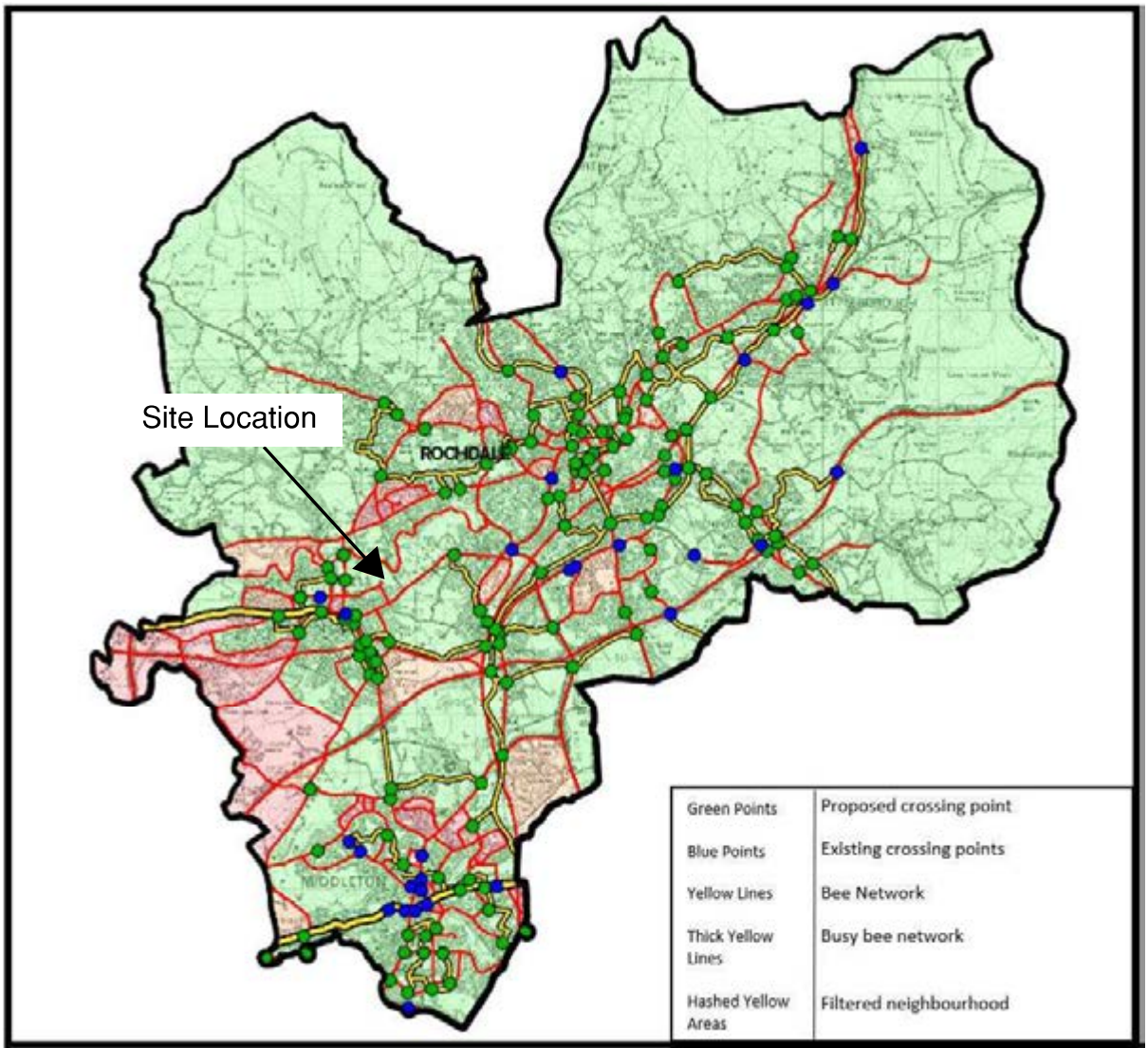

Green Points	Proposed crossing point
Blue Points	Existing crossing points
Yellow Lines	Bee Network
Thick Yellow Lines	Busy bee network
Hashed Yellow Areas	Filtered neighbourhood

Crimble Mill, Rochdale

Plan 8: future permeability of the areas around Rochdale

Scale @ A4 NTS

Project No.: A115508

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Greater Manchester Spatial Framework

Locality Assessment:

Land North of Smithy Bridge (GMA23)

Publication Version 2: November 2020

Identification Table	
Client	Rochdale Borough Council/TfGM
Allocation	Land North of Smithy Bridge
File name	GMA23 Rochdale – Land North of Smithy Bridge LA 021020
Reference number	GMA23 (2020) previously GMA26 (2019)

Approval					
Version	**Role**	**Name**	**Position**	**Date**	**Modifications**
0	Author	Jessica Harrowsmith	Assistant Consultant	14/08/20	Base report
	Checked by	Emma Anforth	Associate	10/09/20	
	Approved by	Stephen Heritage	Associate Director	11/09/20	
1	Author	D Nixon	TfGM	28/09/02	Consistency edits
	Checked by	R Chapman	RBC	28/09/20	
	Approved by	P Moore	RBC	29/09/20	

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Allocation Data	
Allocation Reference No.	GMA23 (2020) GMA26 (2019)
Allocation Name	Land North of Smithy Bridge
Authority	Rochdale Borough Council
Ward	Littleborough
Allocation Proposal	300 houses
Allocation Timescale	0-5 years ☐ 6-15 years ✓ 16 + years ☐

Glossary

"2025 GMSF Constrained" - is the 2025 forecast case in which the model adjusts the input demand based on how the cost of travel changes from the base year to the future. For example, for a shopping trip undertaken by car which becomes more congested in future, changes might be travel via a different route, mode, location or time of day.

"2040 GMSF Constrained" - as above, but for a 2040 forecast year

"2025 GMSF High-Side"- is the 2025 forecast case in which the model does not adjust the input demand based on how the cost of travel changes. In this scenario congestion does not lead to a reassignment of traffic, and therefore road traffic flow will generally be higher.

"2040 GMSF High-Side" - as above, but for a 2040 forecast year

"2025 Reference Case" - is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2025

"2040 Reference Case"- is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2040

AADT - Annual average daily traffic, is a measure used in transportation planning to quantify how busy the road is

Bee Network - is a proposal for Greater Manchester to become the very first city-region in the UK to have a fully joined-up cycling and walking network: the most comprehensive in Britain covering 1,800 miles.

Bus Rapid Transit - is a bus-based public transport system designed to improve capacity and reliability relative to a conventional bus system. Typically, a BRT system includes roadways that are dedicated to buses, and gives priority to buses at junctions where buses may interact with other traffic

Existing Land Supply - these are sites across the county that have been identified by each local planning authority across Greater Manchester and are available for development

Greater Manchester Variable Demand Model (GMVDM) - the multi-modal transport model for Greater Manchester. This transport model provides estimates of future year transport demand as well as the estimates of travel behaviour changes and new patterns that the Plan is likely to produce. These include changes in choices of routes, travel mode, time of travel and changes in journey destinations for some activities such as work and shopping.

“LRN” (Local Road Network) All other roads comprise the Local Road Network. The LRN is managed by the local highways authorities

National Trip End Model (NTEM) - is a Department for Transport forecast that ensures that measures of population, jobs and trips made by various mode are consistent across the whole of Great Britain.

Rapid transit services - refers to high frequency, high capacity metro style transport services including Metrolink and Bus Rapid Transit.

“SRN” (Strategic Road Network) The Strategic Road Network comprises motorways and trunk roads, the most significant ‘A’ roads. The SRN is managed by Highways England.

“TfGM” - Transport for Greater Manchester, the Passenger Transport Executive for Greater Manchester

Urban Traffic Control (UTC) - is a specialist form of traffic management that, by coordinating traffic signals in a centralised location, minimises the impact of stop times on the road user.

1. Allocation Location & Overview

1.1. Introduction

1.1.1 The Land North of Smithy Bridge allocation is in the Borough of Rochdale and is situated between Smithy Bridge and Littleborough. The current land use classification, some 21.3Ha, is assumed to be U011 Agriculture (likely grassland or fallow). This is with the exception of the southern corner of the allocation which currently accommodates a car park serving visitors to Hollingworth Lake.

1.1.2 The allocation is bound by the B6225 Hollingworth Road to the east, the B6225 Lake Bank and Hollingworth Lake to the south, Smithy Bridge to the west and the Rochdale Canal to the north. Beyond the limits of the allocation, the A58 Halifax Road runs to the north and the M62 to the south, connecting the allocation to Rochdale and West Yorkshire. **Figure 1** shows the allocation location in the wider context, illustrating, in addition, the relationship between this allocation to other proposed Greater Manchester Spatial Framework allocations. As can be seen, the allocation is in close proximity to the GMSF allocation at Roch Valley; consequently, impacts of both allocations will be considered cumulatively.

1.1.3 Taking advantage of its attractive setting next to Hollingworth Lake and the Rochdale Canal, the proposed allocation is to provide 300 new homes to attract and retain higher income households within Greater Manchester. At this stage, there is no indication of the exact type of housing that will be provided, albeit the western boundary of the allocation does border the residential area of Smithy Bridge and, consequently, here it will be important to incorporate a design and layout which complements the existing housing stock.

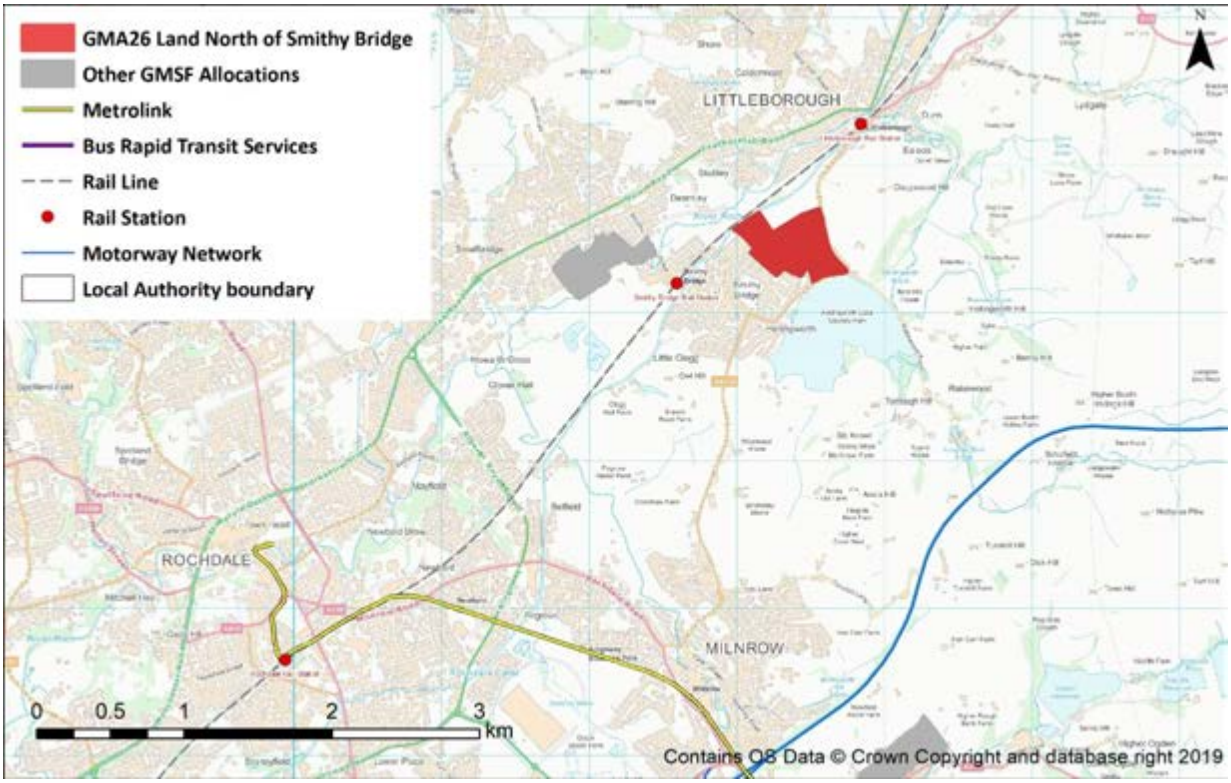
1.1.4 The allocation also includes a new primary school with associated outdoor playing space; and the allocation will contribute towards additional secondary school places to meet the rising demand generated from new development.

1.1.5 Based upon existing road links that surround the allocation, there is potential for the principal access to be achieved from the B6225 Hollingworth Road. Other residential roads within Smithy Bridge, such as Higher Bank Road and Bridge Bank Road, also border the allocation and have the potential to provide secondary or emergency access.

1.1.6 It is envisaged that the allocation for residential development will necessitate the replacement of the existing car park with an equivalent facility so as to meet the parking needs of the visitors to the lake and to avoid displacing car parking onto the adjacent roads.

1.1.7 Please note all boundaries shown in the images in this report were correct at time of writing, but for definitive boundary information please refer to the GMSF allocation maps. The reference number of Land North of Smithy Bridge has been updated from GMA26 to GMA23 since production of these images.

Figure 1. Site Location: Land North of Smithy Bridge



2. Justification for Allocation Selection

2.1.1 The allocation is located to the north of Smithy Bridge within walking distance of both Littleborough and Smithy Bridge railway stations and close to Hollingworth Lake Country Park. The allocation is also relatively close to Littleborough town centre which contains a range of local services and facilities. Access between these destinations can be significantly improved through the creation of new routes within this allocation and the adjoining housing site to the north.

2.1.1 Given the availability of these public transport connections the allocation was selected for inclusion within the GMSF on the basis of Criteria 1 (Land which has been previously developed and/or land which is well served by public transport) of the GMSF site selection criteria detailed further in the Topic paper.

3. Key Issues from Consultation

3.1.1 The Greater Manchester Plan for Homes, Jobs and Environment (Spatial Framework) consultation ran from 14th January to 18th March 2019. There were 599 comments in relation to the allocation; the following summary of responses relate to transport (including highways, public transport, walking and cycling) and, consequently, have informed the consideration of transport related mitigation:

- The local roads already suffer from heavy congestion, especially during peak hours. The A58 and roads around the lake are often gridlocked. These roads cannot cope with any increase in traffic resulting from the proposed homes;
- There is no evidence of any traffic survey being carried out to assess the impact of the new housing on the roads and no solution to the increased traffic resulting from the proposed housing;
- The level crossing already causes heavy congestion and tailbacks. This will be made much worse with increased traffic;
- The local train service is inadequate and overcrowded. It will not cope with increased demand from new houses;
- There are no suitable public transport links to the nearest Metrolink stop;
- The proposed Rochdale bus priority corridor in the 2040 strategy could extend to Littleborough;
- The loss of the car park will exacerbate existing on street parking problems;
- The response times for emergency vehicles to Littleborough is already above the national average. This will only get worse with increased traffic; and
- The proposed development cuts off cycle routes and reduces parking.

3.1.2 A full summary of all consultation responses is available on the GMCA GMSF website.

4. Existing Network and Site Access

4.1 Existing Road Network

4.1.1 As discussed, access to the allocation is currently gained via the B6225 Hollingworth Road and the B6225 Lake Bank. Both roads are approximately 7.5 metres in width, are street lit, and have a speed limit of 30 mph.

4.1.2 The B6225 Hollingworth Road connects the north of the allocation to the A58 Halifax Road, providing connections to Rochdale, to the south-west, and West Yorkshire to the north-east. The allocation is typically a fifteen minute drive to Junction 21 of the M62 (J21 M62).

4.1.3 Currently, direct access to the allocation can also be achieved from the south via Heald Lane, which form as junction with the B6225 Lake Bank. The lane is a single-track which currently provides access to a cluster of farm buildings.

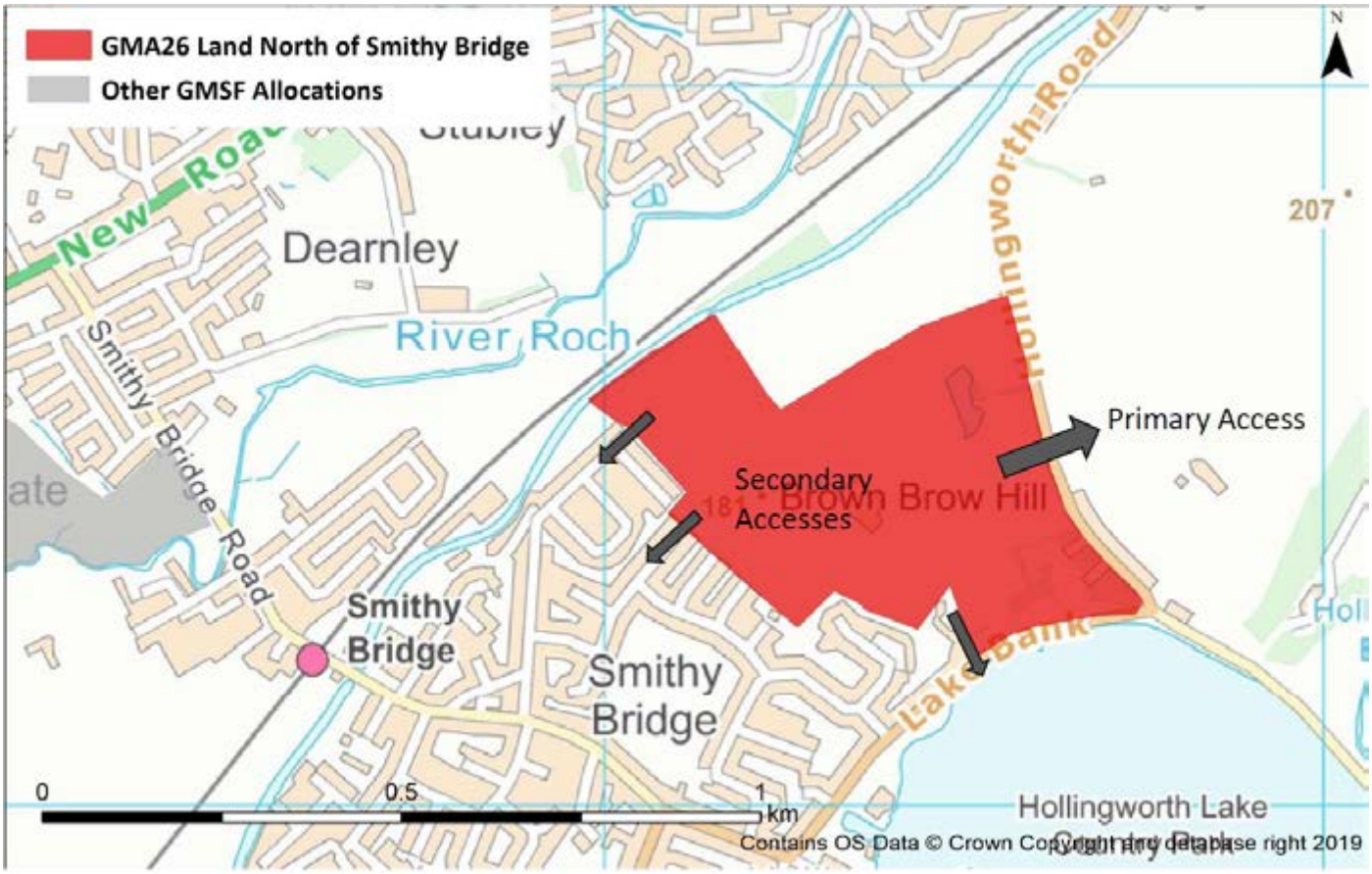
4.2 Proposed Allocation Access

4.2.1 The allocation would likely take access from the B6225 Hollingworth Road, with a secondary emergency access taken via Lake Bank or, potentially, from adjacent residential routes; all access routes would be designed to accommodate active modes (walking and cycling) with the Lake Bank access (via Heald Lane) intended primarily for pedestrian and cycle access.

4.2.2 A new junction with the B6225 Hollingworth Road may take the form of a priority 'T' with a right turn ghost island arrangement on the primary route; this would be subject to capacity requirements and detailed design. Equally, with the benefit of additional capacity and inherent traffic calming influence, the provision of a three arm roundabout access also has potential and, given the extensive site frontage on Hollingworth Road, the implementation of either form of access is considered to be readily achievable.

4.2.3 The allocation will also provide a new visitor car park to replace the existing spaces on the southern boundary potentially lost to the proposed development.

Figure 2. Site Location with Access Arrangements: Land North of Smithy Bridge



4.2.4 Note that the allocation boundaries shown in **Figure 2** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. The reference number of Land North of Smithy Bridge has been updated from GMA26 to GMA23 since production of these images.

5. Multi-modal accessibility

5.1 Current Assessment of Accessibility

5.1.1 Land North of Smithy Bridge and the local area is accessible via public transport with good access to local rail and bus services. Within the Regional Centre there are extensive interchange facilities including connections to destinations on the West Coast Mainline, Trans-Pennine routes and Manchester Airport.

5.1.2 With regards to the allocation, an 'index score' has been derived from the Greater Manchester's Accessibility Level model (GMAL). The index score is categorized into eight levels, 1 to 8, where Level 8 represents a high level of accessibility and Level 1 a low level of accessibility. GMAL

suggests that the majority of the site allocation sits at Level 5 whilst the south-east corner of the allocation has a GMAL Level of 3.

5.1.3 Note that the GMAL rating is based on pre-COVID-19 pandemic figures and therefore may not be representative of the latest transport accessibility rating.

5.2 Public Transport

5.2.1 The allocation is located equidistant from the Littleborough and Smithy Bridge Railway Stations, with Smithy Bridge being located approximately some 600m to the west of the allocation and Littleborough being 600m to the east. These stations are on the Calder Valley Line providing two trains per hour westbound to Rochdale and Manchester and eastbound towards Leeds.

5.2.2 Smithy Bridge Station is unstaffed, however, there are accessible ticket machines available. Access between the platforms is via the adjacent level crossing or a narrow subway under the level crossing which facilitates pedestrian access whilst the level crossing barriers are down. However, only the northern end of the subway provides step free access. The station is not covered by CCTV and waiting facilities comprise of basic shelters on each platform. There is a station car park on private land with 20 spaces, none of which are accessible spaces, and there are no cycle parking spaces provided.

5.2.3 Littleborough Station is staffed, has a ticket office, and additional ticket machines are located on the platforms. Step free access (via a subway) is provided between the platforms. A waiting room is available on platform 2 (towards Leeds) with additional shelters provided on each platform. The station is not covered by CCTV. There is a free station car park with 36 spaces, none of which are accessible spaces, and bicycle stands provide uncovered parking for 4 cycles. There is a bus stop located outside of the station which is serviced by the buses which pass along Hollingworth Road to the east of the allocation.

5.2.4 It is reasonable to conclude, given the above, that the allocation facilitates good access to rail, although consultation has identified that these services are overcrowded in peak hours.

5.2.5 The nearest bus stops are located on the B6225 Hollingworth Road to the east of the allocation; these provide access to an hourly service (service 458) to Rochdale and Littleborough. More frequent bus services are accessible from bus stops adjacent to Stubley Lane on the A58 (services 456, 457, 587, 588, 589, 590, X58), some 1km to the north of the allocation. These provide access

to five or six buses per hour to Rochdale and seven buses per hour to Littleborough, with one bus per hour serving Burnley and Halifax.

5.2.6 **Table 1** identifies the current accessibility of public transport for the future residents of Land North of Smithy Bridge allocation, illustrating the proximity and the frequency of travel during peak hours.

Table 1. Proximity to Public Transport: Land North of Smithy Bridge

Mode	Nearest Stop/ Station	Distance (km)*	Peak Hour Frequency (Mins)
Bus	B6225 Hollingworth Road	0.4	60
Bus	A58 Halifax Road	1.0	10
Rail	Smithy Bridge	0.6	30
Metrolink	Milnrow	4.1	12

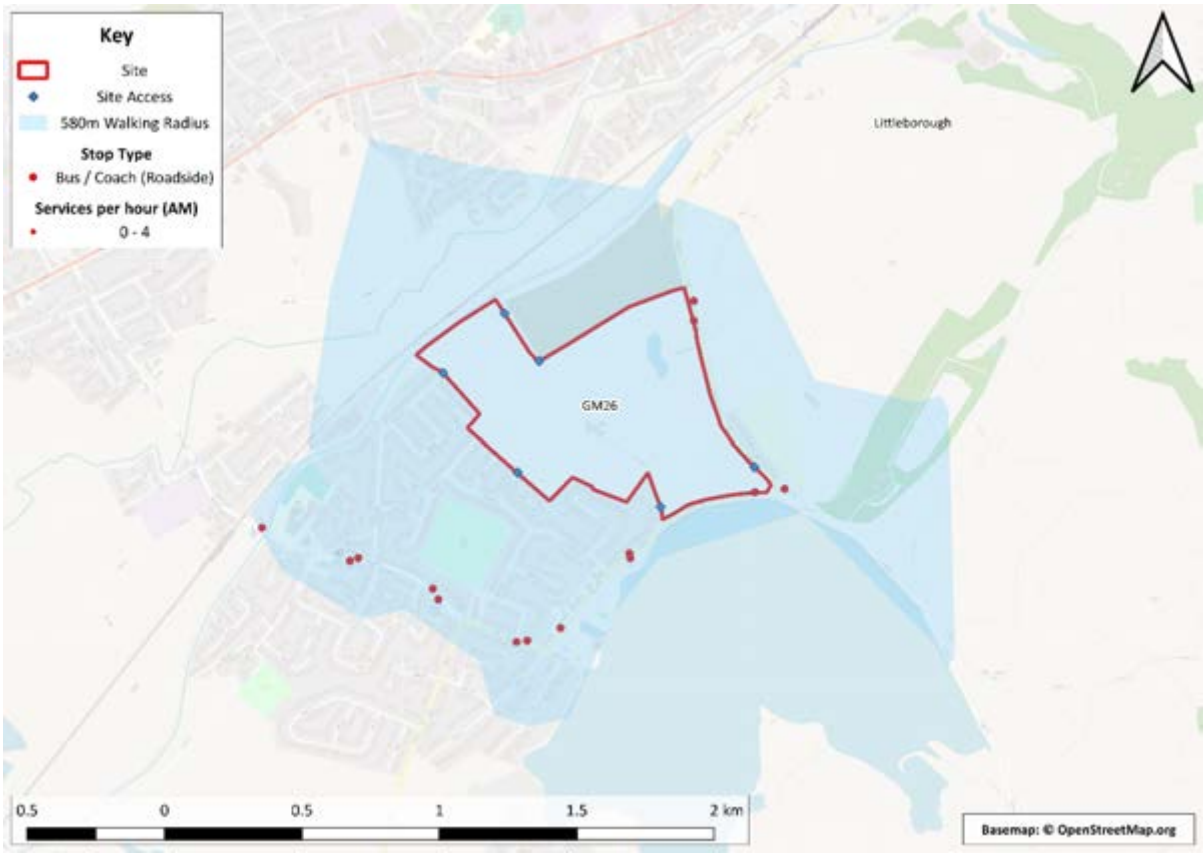
5.3 Walking and Cycling

5.3.1 National Cycle Network Route 66 which links Littleborough with the Regional Centre, Rochdale and West Yorkshire follows the Rochdale Canal towpath, just to the north of the allocation.. The principal cycling desire lines are along the towpath and along the A58 between Littleborough and Rochdale, 0.5 kilometres to the north of the allocation

5.3.2 **Figure 3** shows the potential access points for pedestrians with a 580 metre walking boundary surrounding these access points. Any bus stops within this boundary are highlighted. This shows the accessibility and proximity of public transport to pedestrians at the allocation.

5.3.3 Note that the allocation boundaries shown in **Figure 3** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. The reference number of Land North of Smithy Bridge has been updated from GMA26 to GMA23 since production of these images.

Figure 3. Accessibility and Proximity of Bus Stops: Land North of Smithy Bridge



5.4 Road Safety

5.4.1 Collision data within a 1km radius of Land North of Smithy Bridge, collated for the most recent five year period, is provided in **Appendix 1**. Significantly, there were no road traffic incidents identified which have resulted in fatalities, and there are 16 RTI in total over the five year period. Nonetheless, one serious collision was recorded at the B6225 Hollingworth Road/Rakewood Road junction and two other serious collisions were recorded on the B6225 Hollingworth Road and Smithy Bridge Road.

5.4.2 In the five years including 2018, there have been four serious accidents, involving pedestrians and cyclists, along the A58 between Littleborough and Smithy Bridge Road. In addition, there were a number of slight accidents along both the A58 and Smithy Bridge Road. Nonetheless, the data suggests that there are no particular clusters of pedestrian or cyclist casualties.

5.5 Proposed

5.5.1 It is anticipated that investment in public and active transport modes will be required in order for this allocation to meet TfGM's 2040 Transport Strategy targets (i.e. 50% of all journeys in Greater Manchester to be made by walking, cycling and public transport by 2040). The investment may including increased bus frequencies and public transport penetration into the allocation.

5.5.2 Specifically, in terms of public transport, the following improvements are desirable:

- An improvement to the capacity of peak hour rail services on the Calder Valley Line (i.e. extra carriages) to provide more comfortable and attractive journeys for rail users;
- An improvement to the frequency of bus services along Lake Bank and Hollingworth Road to provide better travel times and increased capacity for bus users; and
- Improvements to bus stops to provide high quality shelters and information on Lake Bank and Hollingworth Road.

5.5.3 In terms of an improvement to the capacity of the Calder Valley Line, TfGM is about to commence the Greater Manchester North East Rail Capacity Study (which includes this line), and this study will determine the service improvements required to meet future demand.

5.5.4 In terms of an improvement to the frequency of the 458 service along Lake Bank and Hollingworth Road, due to low passenger numbers, the service would not be sustainable due to the scale of subsidy required from the developer and the level of support needed from TfGM once developer contributions expire. Therefore it is recommended that improvements to the bus stops on Lake Bank and Hollingworth Road are provided to support the existing service.

5.5.5 Walking and cycle opportunities are also important considerations with schools located in close proximity to the allocation. The allocation should:

- Be designed to encourage the use of accessible public transport services, including high quality pedestrian routes and off allocation pedestrian crossings which connect all parts of the allocation to bus stops; and
- Incorporate attractive public rights of way through the allocation.

5.5.6 The allocation will also need to create safe and convenient walking and cycling links to key local destinations including Littleborough, Hollingworth Lake, the Rochdale Canal and the two railway stations. As the allocation also includes a primary school it will require safe walking and cycling routes and connections to the surrounding residential areas.

5.5.7 The Rochdale Canal towpath (NCN 66) is included in the Greater Manchester Bee Network. Any improvements to the towpath would provide a safer walking and cycling connection with Littleborough and its railway station in the eastbound direction and to Rochdale town centre in the westbound direction. Further, public consultation has identified the need to manage the number of parked cars on Hollingworth Road, vehicle speeds, and HGV access in order to promote a safe cycle route between Littleborough and Hollingworth Lake.

5.5.8 The Bee Network proposes a safe crossing at Bridge 52 on the canal, which already exists as a pedestrian bridge, and a second crossing on Hollingworth Road. All crossings would need to meet 'Made to Move' standards or the 'Streets for All Design Guide', and benefit pedestrians and cyclists. The main recommendations to improve cycling and walking access, and its integration with public transport include:

- Safe walking and cycling routes passing through the allocation, serving the proposed primary school, the Rochdale Canal and Hollingworth Lake;
- A traffic free connection to Hollingworth Road near the proposed Bee Network crossing;
- A traffic free connection to Lake Bank along Heald Lane, including lighting and surface treatment;
- Traffic free route to Bridge 52 on the Rochdale Canal (summer route to Smithy Bridge Rail Station);
- Traffic free connections to Wood Bank Road and Brown Lodge Drive via the existing rights of way (winter route to Smithy Bridge Rail Station);
- Improvements to the existing right of way to Stubley Lane including lighting and surface treatment, connecting with frequent bus services along the A58;
- Traffic calming and parking management measures along Hollingworth Road towards Littleborough; and
- Provision of new and improved cycle parking at Littleborough Rail Station.

5.5.9 The first five of the above measures are considered to be essential to the allocation. The sixth measure is considered to be a necessary local measure to support net zero ambitions given the

proximity of the allocation to the existing route, and the benefits that it achieves in providing a connection to frequent bus services and employment opportunities in Littleborough, though it is understood that this improvement is being progressed through the Station Alliance. The final two measures are considered to be supporting measures to encourage further sustainable transport use.

6. Parking

6.1.1 The following parking standards for residential development are set out in Appendix 5 of the Rochdale Adopted Core Strategy (2016) and are based on draft Greater Manchester-wide standards developed in association with the other Greater Manchester authorities.

6.2 Car Parking

6.2.1 The car parking standards comply with maximum levels set out in PPG13 'Transport', although for some types of Use Class, the standards are slightly more restrictive to reflect local circumstances. They are also in accordance with the maximum levels set out in draft Regional Planning Guidance (May 2002). The draft RPG also sets out 'urban conurbation' ceilings, and these are generally consistent with the Rochdale standards, with a few exceptions again designed to reflect local circumstances.

6.2.2 In addition to the required residential car parking requirements, the allocation will also provide visitor parking to replace the existing spaces lost to development to the south of the allocation. The size of this car parking area is still to be determined.

6.3 Disabled Car Parking

6.3.1 This is based on recommendations in the Department of Transport Traffic Advisory Note on Parking for Disabled People.

6.4 Cycle Parking

6.4.1 The cycle standards are generally slightly higher than the level of parking provision suggested in the National Cycle Strategy to reflect the increasing importance of cycle provision.

6.5 Motorcycle Parking

6.5.1 The motorcycle standards generally allow for 2.5% of maximum car parking provision.

Table 2. Rochdale Borough Council Parking Standards

Type of Development	Maximum Standard for Car Parking Excluding Disabled	Minimum Standards for Car Parking for those who are Disabled	Minimum Standards for Cycle Parking
C3. Dwelling Houses 2+ bedrooms outside town centres	2 per dwelling (not including a garage)		No standard
Single bed dwellings and dwellings in town centres	1.25 per dwelling		No standard
Flats/apartments 2+ bedrooms outside town centres	2 per dwelling		Flats and apartments – 1 secure locker per 5 dwellings – minimum of 2 spaces
Single bed dwellings and flats/apartments in town centres	1.25 per dwelling		Flats and apartments – 1 secure locker per 5 dwellings – minimum of 2 spaces
Sheltered housing	1 per 3 dwellings + 1 per 2 full time staff		No standard
B2. General Industry	1 per 60m^2	Below 12 spaces – 10% of total capacity; 12 – 200 – 3 bays or 6% of total capacity (whichever is greater); Over 200 – 4 bays plus 4% of total capacity	1 per 700m^2 – minimum of 2 spaces;
B8. Storage & Distribution	1 per 100m^2	As above	1 per 850m^2 – minimum of 2 spaces

7. Allocation Trip Generation and Distribution

7.1.1 For the purposes of the testing the impact of the allocation through the strategic model, a total of 300 dwellings have been assumed to be built out by 2040. The GM transport modelling suite has a

2040 forecast year, as such it uses 2040 trajectory data as proxy for 2037 full build-out, this is not considered to materially impact on the analysis or conclusions of this report.

7.1.2 Future trip generation to/from the site (i.e. how many people and vehicles will enter or leave the site) was estimated by applying a set of GM-wide trip rates to the agreed development quantum for each site. The distribution of trips (i.e. where they are going to or coming from) was derived by selecting nearby zones with similar land use characteristics as a proxy and using the existing distribution in the model.

7.1.3 **Table 3** indicates the quantum of development for Land North of Smithy Bridge. Only 18 are expected to be delivered by 2025, the remainder will be delivered by 2040.

Table 3. Cumulative Development Quantum

Use	Use Sub Category	Development Quantum 2025	Development Quantum 2040
Residential	Houses	18	300
Residential	Apartments	0	0
Total		**18**	**300**

Table 4. Allocation Traffic Generation

Year	AM Peak Hour Departures	AM Peak Hour Arrivals	PM Peak Hour Departures	PM Peak Hour Arrivals
2025 GMSF Constrained	6	2	3	6
2025 GMSF High-Side	6	2	4	6
2040 GMSF Constrained	87	26	43	94
2040 GMSF High-Side	103	41	63	94

Units are in PCU (passenger car units/hr)

Table 5. Traffic Distribution at 2040 (Origins and Destinations Combined)

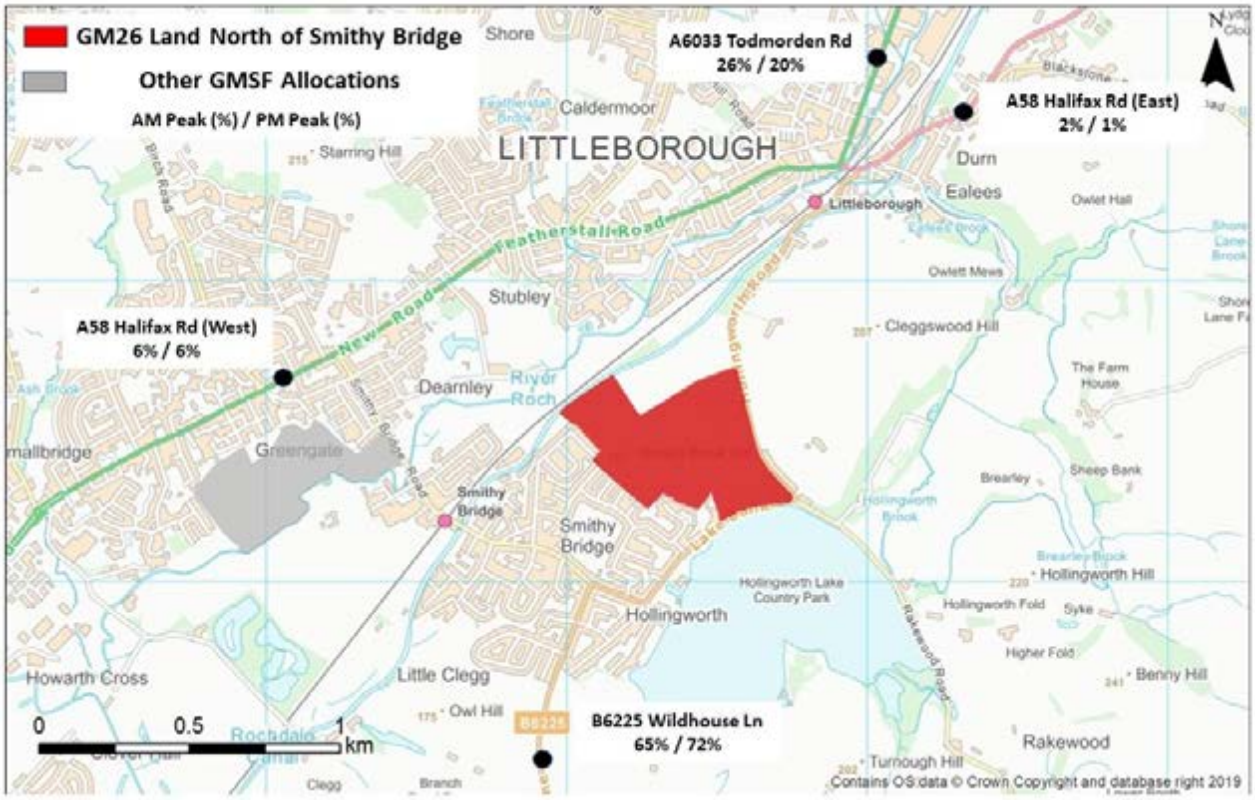
Route	AM Peak Hour	PM Peak Hour
A58 Halifax Road (West Of A6033 Junction)	6%	6%
A6033 Todmorden Road	26%	20%
B6225 Wildhouse Lane	65%	72%
A58 Halifax Road (east of A6033 junction)	2%	1%

Table 6. Cross Boundary Trip Distribution at 2040

Route	Share AM Peak Hour	Share PM Peak Hour	2 Way Flow AM Peak Hour	2 Way Flow PM Peak Hour
A6033 Todmorden Road	26%	20%	38	32
A58 Halifax Road (east of A6033 junction)	2%	1%	3	2

7.1.4 **Table 6** shows a summary of trips expected to move beyond the GM boundary. Of these, the majority head towards Todmorden on the A6033 Todmorden Road.

Figure 4. Allocation Traffic Distribution, 2040 GMSF High-Side (Origin/Destination Combined)



7.1.5 Note that the allocation boundaries shown in **Figure 4** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. The reference number of Land North of Smithy Bridge has been updated from GMA26 to GMA23 since production of these images.

8. Current Highway Network Review

8.1.1 The B6225 Hollingworth Road and the B6225 Lake Bank are single carriageway routes which currently experience on-street parking from visitors to Hollingworth Lake. Both routes are free from congestion in both the morning and evening peaks. Smithy Bridge Road, to the west of the allocation, is a single carriageway route with residential frontage through Smithy Bridge. The A58 Halifax Road, to the north of the allocation, is a main distributor road of strategic importance; it is part of the national Primary Route Network and the GM Key Route Network and, therefore, performs a key role for cross boundary trips. Nonetheless, the A58 accommodates multiple priority junctions to access residential roads and frequent bus stops; consequently, both the A58 and the B6225 experience congestion during the morning and evening peaks.

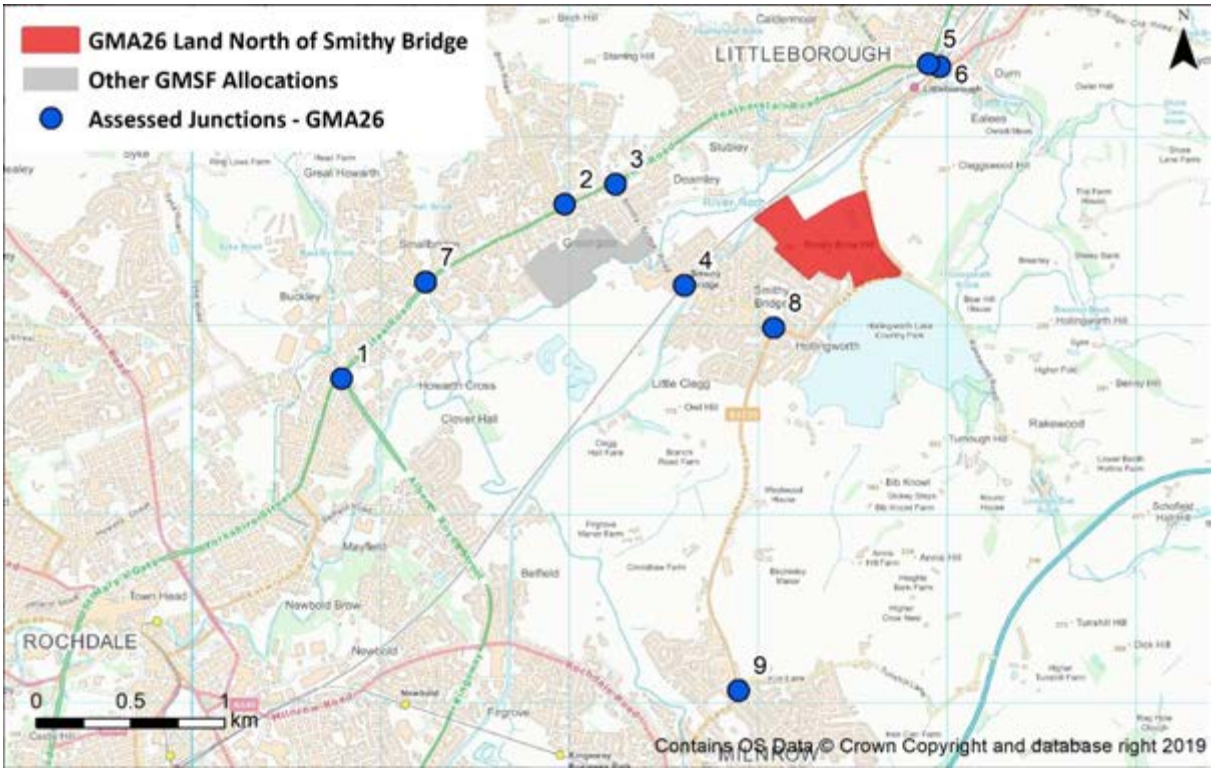
8.1.2 SYSTRA identified a number of junctions in proximity to the allocation where, based on existing conditions, additional traffic could have an impact on their operation. The following junctions were

deemed to be the most important in the local area and are, therefore, referred to as 'in scope' junctions.

- 1. A58 Halifax Road / Albert Royds Street;
- 2. A58 Halifax Road / Birch Road;
- 3. A58 Halifax Road / Smithy Bridge Road;
- 4. Smithy Bridge Road / level crossing;
- 5. A58 Halifax Road / A6033 Todmorden Road;
- 6. A58 Halifax Road / B6225 Hollingworth Road;
- 7. A58 / Wardle Road;
- 8. Wildhouse Lane / Smithy Bridge Road; and
- 9. Wildhouse Lane / Kiln Lane.

8.1.3 Note that the allocation boundaries shown in **Figure 5** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. The reference number of Land North of Smithy Bridge has been updated from GMA26 to GMA23 since production of these images.

Figure 5. Assessed Junctions: Land North of Smithy Bridge



9. Treatment of Cumulative Impacts

9.1.1 The constrained and High Side model runs take account of all traffic associated with GMSF allocations; nonetheless, more local to Land North of Smithy Bridge, within a 2km buffer, is the Roch Valley allocation. At the local level, therefore, the transport impact of the allocation needs to be considered cumulatively with the GMSF allocation GM28 Roch Valley because relative impacts are a potentially important consideration for apportioning the cost of any mitigation.

9.1.2 The Land North of Smithy Bridge allocation is forecast to generate approximately 144 to 157 two-way vehicle trips during the morning and evening peak hours. The Roch Valley allocation is forecast to generate approximately 101 to 112 two-way vehicle trips during the morning and evening peak hours. In any one location, the combined impact of these trips could have a more significant impact on the network than that of the allocation by itself; hence the combination of impacts has been assessed.

10. Allocation Access Assessment

10.1.1 The form of access will be determined through discussions with the local highway authority at the planning stage, however, it is considered that the Hollingworth Road boundary to the allocation has sufficient frontage to accommodate a simple priority T junction, with ghost island. With reference to Design Manual for Roads and Bridges (DMRB), CD123 Geometric design of at-grade priority and signal-controlled junctions states that, where the minor road flow has Annual Average Daily Traffic in excess of 300, a ghost island right turn filter lane should be provided.

10.1.2 For the purposes of the Locality Assessment, and in order to demonstrate further enhanced capacity, the access to the allocation is assumed to be a three arm roundabout. This site access arrangement has been developed to illustrate that there is a practical option for site access in this location and to develop indicative cost estimations. An outline design is provided in **Appendix 2**.It is assumed that a detailed design consistent with Greater Manchester's best practice Streets for All highway design principles will be required at the more detailed planning application stage.

11. Impact of Allocation Before Mitigation on the Local Road Network

11.1.1 This section looks at the impact on the network at the junctions highlighted in **Section 8**. In order to understand a worst case impact of the GMSF, the 'High Side' runs from the GMVDM were used to derive with GMSF development flows for 2025 and 2040. These flows were then entered into junction based models for the junctions identified in **Section 8**. Flows from the 2025 and 2040 Reference Case scenarios (including approved Local Plan development from the respective districts) were also extracted to provide a comparison between the operation of those junctions in the 2025 and 2040 Reference Case and the 2025 and 2040 with GMSF development scenarios.

11.1.2 The 'with GMSF' scenario was assessed against a Reference Case which assumes background growth and includes the housing and employment commitments from the districts. These assessments were then used to identify the junctions where there is considered to be a substantial impact, relative to the operation of the junction in the 2025 and 2040 Reference Case scenarios, and hence where mitigation was considered to be required in order to bring GMSF sites forward. Through discussions with TfGM and the Combined Authority, it was agreed that where mitigation is required, it should mitigate the impacts back to the Reference Case scenario.

11.1.3 Signalised junctions were assessed in detail using industry-standard modelling software LINSIG version 3. Where possible, traffic signal information was requested from TfGM in order to ensure

that the local junction models reflected (as far as possible), the operation of the junctions on street. Junctions 9 software was used to assess priority and roundabout junctions.

11.1.4 **Table 7** below provides a comparison between the operation of the 'in scope' junctions in the 2040 Reference Case and the 2040 'High Side' scenarios, as well as the site development flows through each respective junction. The table shows a comparison between the ratio of flow to capacity on the worst case arm at each junction as well as the total development flows (in PCUs) through the junction.

11.1.5 For reference, a figure of between 85% and 99% illustrates that the junction is nearing its operational capacity (and is highlighted in amber), and a figure of 100% or over illustrates that flows exceed the operational capacity at the junction (and is highlighted in red).

11.1.6 It should be noted that by 2025, there were considered to be no substantial impacts requiring mitigation between the reference case and 'with GMSF' outputs. A summary table of the results of local junction capacity analysis before mitigation for 2025 is provided in Appendix 3.

Table 7. Results of Local Junction Capacity Analysis Before Mitigation 2040

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
A58 / Albert Royds Street	142%	109%	146%	116%	8	9
A58 / Birch Road	98%	75%	93%	78%	10	10
A58 / Smithy Bridge Road	76%	94%	78%	98%	10	10
Smithy Bridge Road / level crossing	28%	28%	25%	26%	10	10
A58 / A6033 Todmorden Road	105%	115%	109%	120%	35	30
A58 / B6225 Hollingworth Road	116%	98%	143%	134%	40	35
A58 / Wardle Road	178%	143%	207%	154%	8	10
Wildhouse Lane / Kiln Lane	195%	168%	199%	170%	94	110
Wildhouse Lane / Smithy Bridge Road	92%	117%	97%	126%	104	120

A58 / Albert Royds Road

11.1.7 A comparison between the 2040 Reference Case and the 2040 High Side scenarios for the A58 / Albert Royds Road junction shows that, despite the fact that the junction is over capacity in both scenarios, the overall operation of the junction is similar in both scenarios (an increase in the ratio of flow to capacity on the worst case arm of 4% in the morning peak and 7% in the evening peak). It was concluded, therefore, that the allocation does not cause a severe impact at the junction and no further mitigation was investigated.

A58 / Birch Road

11.1.8 The A58 / Birch Road is approaching capacity in the morning peak and within capacity in the evening peak in both the 2040 Reference Case and the 2040 High Side scenarios (98%/75% & 93%/78% respectively), therefore, no further mitigation was investigated.

A58 / Smithy Bridge Road

11.1.9 The A58 / Smithy Bridge Road is within capacity in the morning peak and approaching capacity in the evening peak in both the 2040 Reference Case and the 2040 High Side scenarios (76%/94% & 78%/98% respectively), therefore, no further mitigation was investigated.

Smithy Bridge Road / Level Crossing

11.1.10 At the maximum rail line speed, the crossing warning time given to drivers at level crossings might typically be around 27sec from the amber light first showing to the train arriving at the crossing; this is followed by the time taken for the train to clear the crossing and for the gates to reopen. Particularly in peak periods, this cycle of warning, road closure and road reopening might occur a number of times. Unfortunately, the variable and generally short term, temporal nature of the queues and delays to traffic caused by level crossings cannot be represented well in junction-based traffic modelling. Consequently, mitigation was not tested but was considered here at the request of Network Rail, and in the light of consultation responses. Furthermore it is understood that an upgrade to the crossing to provide safety benefits is now being progressed through the Station Alliance.

A58 / A6033 Todmorden Road

11.1.11 The A58 / A6033 Todmorden Road junction is over capacity in both the 2040 Reference Case and the 2040 High Side scenarios. The forecast increase in the ratio of flow to capacity on the worst arm of the junction however is only 4% (from 105% to 109%) in the morning peak and is only 5% (from 115% to 120%) in the evening peak. It was therefore concluded that the allocation does not cause a severe impact at the junction and no further mitigation was investigated.

A58 / B6225 Hollingworth Road

11.1.12 A comparison between the 2040 Reference Case and the 2040 High Side scenarios shows that the ratio of flow to capacity on the worst case arm at the A58 / B6225 Hollingworth Road junction increases from 116% to 143% in the morning peak and from 98% to 134% in the evening peak. This is considered a material change, alongside the development flows of 35 to 40 in peak periods and, therefore, mitigation was investigated at the junction. Due to the proximity between this junction and the A58 / A6033 Todmorden Road junction, the mitigation proposed covers both junctions.

A58 / Wardle Road

11.1.13 A comparison between the 2040 Reference Case and the 2040 High Side scenarios shows that the ratio of flow to capacity on the worst case arm at the A58 / Wardle Road junction increases from 178% to 207% in the morning peak and from 143% to 154% in the evening peak. This is considered a material change (particularly in the evening peak) and, therefore, mitigation was investigated at the junction.

Wildhouse Lane / Kiln Lane

11.1.14 The Wildhouse Lane / Kiln Lane junction is over capacity in both the 2040 Reference Case and the 2040 High Side scenarios. However, the increase in the ratio of flow to capacity on the worst arm of the junction is only 4% (from 195% to 199%) in the morning peak and is only 2% (from 168% to 170%) in the evening peak. It was, therefore, concluded that the allocation does not cause a severe impact at the junction and no further mitigation was investigated.

11.1.15 Rochdale Borough Council is investigating an improvement scheme at the junction, but as this scheme is to mitigate Reference Case impacts rather than GMSF impacts, this scheme was not included as mitigation for the GMSF.

Wildhouse Lane / Smithy Bridge Road

11.1.16 The Wildhouse Lane / Smithy Bridge Road junction is within capacity in the morning peak and overcapacity in the evening peak in both the 2040 Reference Case and the 2040 High Side scenarios. The increase in the ratio of flow to capacity on the worst-case arm is 5% (from 92% to 97%) in the morning peak hour and 9% (from 117% to 126%) in the evening peak hour. The evening peak hour increase, in particular, was considered a concern, particularly given the high level of development flows through the junction (104 to 120 in peak periods). Therefore, mitigation was investigated at the junction.

12. Transport Interventions Tested on the Local Road Network

12.1.1 As a result of the junction assessments outlined in the previous section, the approach to the testing of mitigation is summarised in **Table 8**. It is worth noting that the interventions are not expected to be the definitive solutions and are discussed here in order to demonstrate that the allocation has the potential to be implemented and have informed the costing of GMSF mitigations.

Table 8. Approach to Mitigation

Junction	Approach To Mitigation
A58 / Albert Royds Street	Results comparable – no mitigation proposed
A58 Halifax Road / Birch Road;	Results comparable – no mitigation proposed
A58 / Smithy Bridge Road	Results comparable – no mitigation proposed
Smithy Bridge Road / level crossing	Temporal nature of issue not well represented in existing models – no mitigation proposed, Station Alliance to provide safety upgrade
A58 / A6033 Todmorden Road	Due to the proximity with A58 / B6225 junction, mitigation proposed covering both A58 / A6033 and A58 / B6225 junctions (signalisation).
A58 / B6225 Hollingworth Road	Due to proximity with A58 / A6033 junction, mitigation proposed covering both A58 / A6033 and A58 / B6225 junctions (signalisation), due to deterioration from Reference Case to GMSF.
A58 / Wardle Road	Mitigation proposed due to deterioration from Reference Case to GMSF.
Wildhouse Lane / Kiln Lane	Results comparable – no mitigation proposed
Wildhouse Lane / Smithy Bridge Road	Results comparable – no mitigation proposed

12.1.2 In summary, mitigation tested in the GMVDM to support the allocation was as follows:

- A58 / A6033 Todmorden Road and A58 / B6225 Hollingworth Road junctions signalisation. It should be noted that it may be difficult to locate the signal heads for this improvement due to the railway bridge and, therefore, further scheme development will be required.
- A58 / Wardle Road junction signalisation with free flow east-west movement.

12.1.3 It is worth noting that Rochdale Borough Council has an aspiration to deliver the A58 Residential Relief Road (also known as Smithy Bridge Local Access Route) running to the south of the Roch Valley site, between Smithy Bridge Road and Riverside Drive. This route may remove development traffic from the A58 and, potentially, negate the need for an improvement to the A58/Wardle Road junction as well as providing potential benefits to the operation of the wider road network, including routes to and from Milnrow and the M62. However, due to uncertainty regarding the delivery of the relief road, the scheme was not included in the strategic modelling exercise so that the schemes required to mitigate GMSF impacts could be clearly identified. However, RBC considers the scheme to be a supporting measure.

13. Impact of interventions on the Local Road Network (where appropriate)

13.1.1 In order to understand whether the mitigation developed for the allocation (and all other allocations within the GMSF) is sufficient to mitigate the worst case impacts of the GMSF identified in **Section 11**, a second run of the GMVDM was undertaken with all identified mitigation included. Where a significant flow change was observed, the junction models were rerun, where required, to check that the mitigation identified in **Section 12** is still sufficient to mitigate allocation impacts, and that all other 'in scope' junctions continue to operate satisfactorily following any reassignment of traffic due to the mitigation schemes.

13.1.2 **Table 9** provides a comparison between the forecast operation of the 'in scope' junctions in the 2040 Reference Case and the 2040 'High Side' with mitigation scenarios, or an explanation as to why a rerun of the junction model was not required, as well as the allocation development flows through each respective junction. As with **Table 7**, the table shows a comparison between the ratio of flow to capacity on the worst-case arm at each junction.

Table 9. Results of Local Junction Capacity Analysis After Mitigation 2040

Junction	Reference Case AM	Reference Case PM	GMSF High With Mit AM	GMSF High With Mit PM	Allocation Flows AM	Allocation Flows PM
A58 / Albert Royds Street	142%	109%	151%	115%	7	9
A58 / Birch Road	98%	75%	87%	72%	7	10
A58 / Smithy Bridge Road	76%	94%	79%	99%	9	10
Smithy Bridge Road / level crossing	28%	28%	25%	32%	9	10
A58 / A6033 Todmorden Road	105%	115%	87%	77%	38	32
A58 / B6225 Hollingworth Road	116%	98%	87%	77%	42	34
A58 / Wardle Road	178%	143%	96%	96%	7	10
Wildhouse Lane / Kiln Lane	195%	168%	193%	174%	94	113
Wildhouse Lane / Smithy Bridge Road	92%	117%	87%	114%	102	123

13.1.3 As shown in **Table 9**, the introduction of the A58 / A6033 Todmorden Road and A58 / B6225 Hollingworth Road junctions signalisation results in a significant improvement to junction operation. Due to the difficulty in locating the signal heads for the signalisation, more detailed work is required in developing the design for the potential scheme.

13.1.4 Similarly, the introduction of the A58 / Wardle Road junction signalisation with free flow east-west movement, results in a significant improvement to the operation of this junction, returning the junction to being within its operational capacity.

13.1.5 In addition, the operation of all other 'in scope' junctions remains comparable with the 2040 Reference Case meaning that the schemes tested are considered to mitigate the impacts of the GMSF as whole and specifically Land North of Smithy Bridge.

14. Impact and mitigation on Strategic Road Network (where applicable)

14.1 Overview

14.1.1 This section considers the likely impacts of traffic generated by the GMSF allocations on the operation of the Strategic Road Network (SRN).

14.1.2 On behalf of TfGM and the Combined Authority, SYSTRA is consulting with Highways England in relation to the wider impacts of the GMSF allocations on the Strategic Road Network (SRN). This consultation is ongoing and is expected to provide Highways England with a strategic understanding of the likely demands on the SRN as a consequence of GMSF. In turn, this understanding will inform further discussions between the parties, regarding the appropriateness of GMSF allocations, such that an agreement can be reached - or common ground established - in advance of Examination in Public (EiP).

14.2 Allocation Impacts

14.2.1 The strategic modelling results suggest that:

- By 2040, 74 two-way trips (51% of total trip generation) will use the SRN in the morning peak;
- 90 two-way trips (57% of total trip generation) will use the SRN in the evening peak; and
- Trips are accessing the network at M62 Junction 21 and heading westbound towards the regional centre.

14.2.2 Based upon the scale of these trips (and the cumulative impacts of other GMSF sites) at M62 Junction , further work will be required to understand whether mitigation is required at the junction and the Locality Assessment will be updated appropriately when this work is complete.

15. Final list of interventions

15.1.1 In accordance with the proposed sustainable transport measures presented in Section 5.5, the approach to access set out in Section 10 and the highway mitigation tested in Section 13, the table below summarises the proposed mitigation for Land North of Smithy Bridge. Further detail on the necessary and supporting mitigation is provided below the table.

Table 10. Interventions List

Mitigation	Description
Site Access	
Hollingworth Road access junction	3-arm roundabout
Necessary Strategic Interventions	
None	-
Supporting Strategic Interventions	
A58 Residential Relief Road	Also known as Smithy Bridge Local Access Route running to the south of the Roch Valley site, between Smithy Bridge Road and Riverside Drive.
Supporting Local Interventions	
A58 local improvements	Local improvements to be developed to improve efficiency of corridor including A58/Smithy Bridge Road, A58/Birch Road, and A58/Albert Royds St.
Necessary Local Mitigations	
A58 / B6225 / A6033 signals	A58 Halifax Road / B6225 Hollingworth Road co-ordinated signals with A58 Halifax Road / A6033 Todmorden Road

A58 Wardle Road junction	Signalisation of junction and inbound free-flow
Hollingworth Lake car park	300 space visitor car park to replace existing car park lost to development
Traffic calming and car park management measures	To support introduction of site access on Hollingworth Road
Secure cycle parking at Littleborough Rail Station	10 secure lockers assumed
Bus stop upgrades	3 stops – 2 on Hollingworth Road and 1 on Lake Bank assumed

15.2 Necessary Local Mitigations

15.2.1 Current modelling shows that co-ordinated signalisation of the A58 / B6225 Hollingworth Road junction with the A58 / A6033 Todmorden Road and a signalisation of Wardle Road with a free-flow east-west movement are needed in order to mitigate the impacts of the allocation. Two factors however should be considered:

- It may be difficult to locate the signal heads for the signalisation of the A58 / B6225 Hollingworth Road junction due to the railway bridge; and
- The reassignment of traffic due to the A58 Residential Relief Road (also known as Smithy Bridge Local Access Route), may reduce the need for both schemes relative to the 2040 Reference Case results, should Rochdale Borough Council be able to deliver the scheme within the plan period.

15.2.2 In the light of this, further development of both schemes will be required. However, it is considered that a scheme to reduce any impacts relative to the 2040 Reference Case could be achieved to allow the allocation to form part of the GMSF.

15.2.3 A new Hollingworth Lake car park to replace the that being lost to the development and to also provide extra spaces, better traffic management and a safer cycle route along Hollingworth Road is required. The current car park provides 250 spaces and therefore a 300 space car park has been assumed as being the requirement, since a full assessment of parking needs has not yet been undertaken.

15.2.4 Traffic calming and parking management measures along Hollingworth Road towards Littleborough are intended to support the implementation of the new car park included as a strategic measure, aimed at addressing comments from the local community regarding parking issues.

15.2.5 Provision of new and improved cycle parking at Littleborough Rail Station will support other local mitigations to promote integration and sustainable mode use.

15.2.6 Provision of bus stops where they are not present on Hollingworth Road and Lake Bank are aimed at encouraging bus use through better information and an improved waiting environment.

16. Strategic Context – GM Transport Strategy Interventions

16.1 Rochdale

16.1.1 In addition to the allocation-specific interventions set out in this Locality Assessment, there are a number of other measures already planned by RMBC and TfGM to support sustainable travel, and to contribute to the achievement of Greater Manchester's 'Right Mix' ambition. These are set out in the GM Transport Strategy 2040 and Our 5-Year Transport Delivery Plan.

16.1.2 In relation to schemes near to Land North of Smithy Bridge, there are planned improvements to the Calder Valley Line and TfGM is about to commence the Greater Manchester North East Rail Capacity Study, (which includes the Calder Valley Line), and will determine the service improvements required to meet future demand.

16.1.3 In the short to medium term, Quality Bus Transit is planned on the key bus corridor between Bury and Rochdale and in the longer term a Metro/tram-train corridor is planned.

16.1.4 TfGM's 'Bee Network' project aims to increase walking and cycling across Greater Manchester. In Rochdale, 136 new or upgraded crossings are proposed for pedestrians and cyclists. Six miles of Beeline routes are proposed on busier roads in Rochdale, including a corridor scheme to connect Rochdale and Castleton.

17. Phasing Plan

17.1.1 The initial locality assessments were based on information on new allocations consolidated by TfGM based on inputs from each of the Districts. This initial exercise focused on the development quanta to be delivered at the end of the plan period, ie. by 2040. All phasing plans information

contained in this Locality Assessment is indicative only and has only been used to understand the likely intervention delivery timetable. Final trajectory information and the final allocation proposal is contained in the GMSF Allocation Topic Paper.

17.1.2 During the locality assessment work in late 2019 / early 2020, the Districts provided input on their expected phasing of the allocations focusing on the milestone years of 2025 and 2040. The expected 2025 development quanta were tested along with those for 2040 to assess their deliverability in terms of transport network capacity. In some cases the development phasing was amended by the Districts as a result of the technical analysis undertaken.

17.1.3 At 2025, only 18 homes have been considered within the modelling work undertaken for this allocation. As indicated in Tables 3 and 4, fewer than 10 two-way trips will be generated in either peak and in the constrained and high scenarios which is considered to have a negligible impact on the network.

17.1.4 However, the measures to support sustainable travel, i.e. improvements to bus stops and secure cycle parking at Littleborough Rail Station, will be required from the occupation of the first dwelling in order to promote sustainable mode use from the outset. The new car park will be required as soon as the existing car park is removed and the allocation access is provided on Hollingworth Road (since this will remove existing on-street car parking).

17.1.5 As set out in **Table 11**, since the majority of the site is to be delivered by 2030 and the whole of Roch Valley is to be delivered by 2025, it is anticipated that all other mitigation will be required by 2030, namely:

- A58 / B6225 / A6033 signals
- Wardle Road junction
- Traffic calming and parking management measures along Hollingworth Road

Table 11. Allocation Phasing

Allocation Phasing	2020 25	2025 30	2030 2037	2037+	Total
Dwellings	18	210	72	0	**300**

Table 12. Indicative Intervention Delivery Timetable

Mitigation	2020 2025	2025 2030	2030 2037
Site Access			
Hollingworth Road access junction	✓		
Necessary Local Mitigations			
A58 / B6225 / A6033 signals		✓	
A58 Wardle Road junction		✓	
Hollingworth Lake car park	✓		
Traffic calming and car park management measures		✓	
Secure cycle parking at Littleborough Rail Station	✓		
Bus stop upgrades	✓		

17.1.6 The costs of the necessary infrastructure assessed within this report are subject to further consideration through the GMSF process and are being considered with regards to the overall viability of the necessary supporting requirements.

18. Summary & Conclusion

18.1.1 The Land North of Smithy Bridge allocation is located in Rochdale Borough and is situated between Smithy Bridge and Littleborough. The allocation is bound by the B6225 Hollingworth Road to the east, the B6225 Lake Bank and Hollingworth Lake to the south, Smithy Bridge to the west and the Rochdale Canal to the north.

18.1.2 The land use of the area is mainly natural and greenfield, with the exception of the southern corner of the allocation which is currently occupied by a car park which accommodates visitors to Hollingworth Lake.

18.1.3 Vehicular access will be provided from a junction from the B6225 Hollingworth Road. For the purpose of the Locality Assessment, access is assumed to be a three arm roundabout which will provide traffic calming benefits on Hollingworth Road. Traffic free connections will be provided to Wood Bank Road, Brown Lodge Drive and Lake Bank.

18.1.4 Modelling work has been undertaken using the Greater Manchester Variable Demand Model (GMVDM) with a constrained and High Side scenario. The constrained and High Side model runs take account of traffic associated with all GMSF allocations.

18.1.5 A 'with GMSF' scenario has been assessed against a Reference Case which assumes background growth and includes the housing and employment commitments from the districts. Specific junctions have been assessed to understand the impact of the development, and junctions along the A58 Halifax Road are forecast to be experiencing issues in the 2040 Reference Case as well as the with GMSF scenarios.

18.1.6 In order to address concerns about congestion, car parking and road safety in the local area, the following schemes are considered necessary to bring the allocation forward as part of the GMSF:

- Co-ordination of the A58 / A6033 Todmorden Road junction and A58 / B6225 Hollingworth Road junction signals
- Signalisation of the A58 / Wardle Road junction
- New car park to serve Hollingworth Lake

18.1.7 To address consultation comments about sustainable mode use and integration, the following schemes are considered to support the allocation:

- Traffic calming and parking management measures along Hollingworth Road
- Secure cycle parking at Littleborough Rail Station
- Improved bus stops on Lake Bank and Hollingworth Road

18.1.8 The phasing of the necessary and supporting mitigations are summarised in Table 12.

18.1.9 It should also be noted that schemes to improve access to the Public Right of Way to the north of the allocation and the level crossing on Smithy Bridge Road are being progressed by the Station Alliance. Furthermore, TfGM is undertaking the Greater Manchester North East Rail Capacity Study, which includes the Calder Valley Line, and will determine the service improvements required to meet future demand.

Conclusion

18.1.10 Based on the information contained within this report, it is concluded that the traffic impacts of the allocation are likely to be less than severe. Whilst the modelling work does indicate that junctions may experience capacity issues, they are not significantly worse than those experienced in the 2040 Reference Case. At this stage, the modelling work is considered a 'worst case' scenario as it does not take full account of the extensive opportunities for active travel and public transport improvements in the local area. On this basis, it is considered that the allocation is deliverable from a transport perspective.

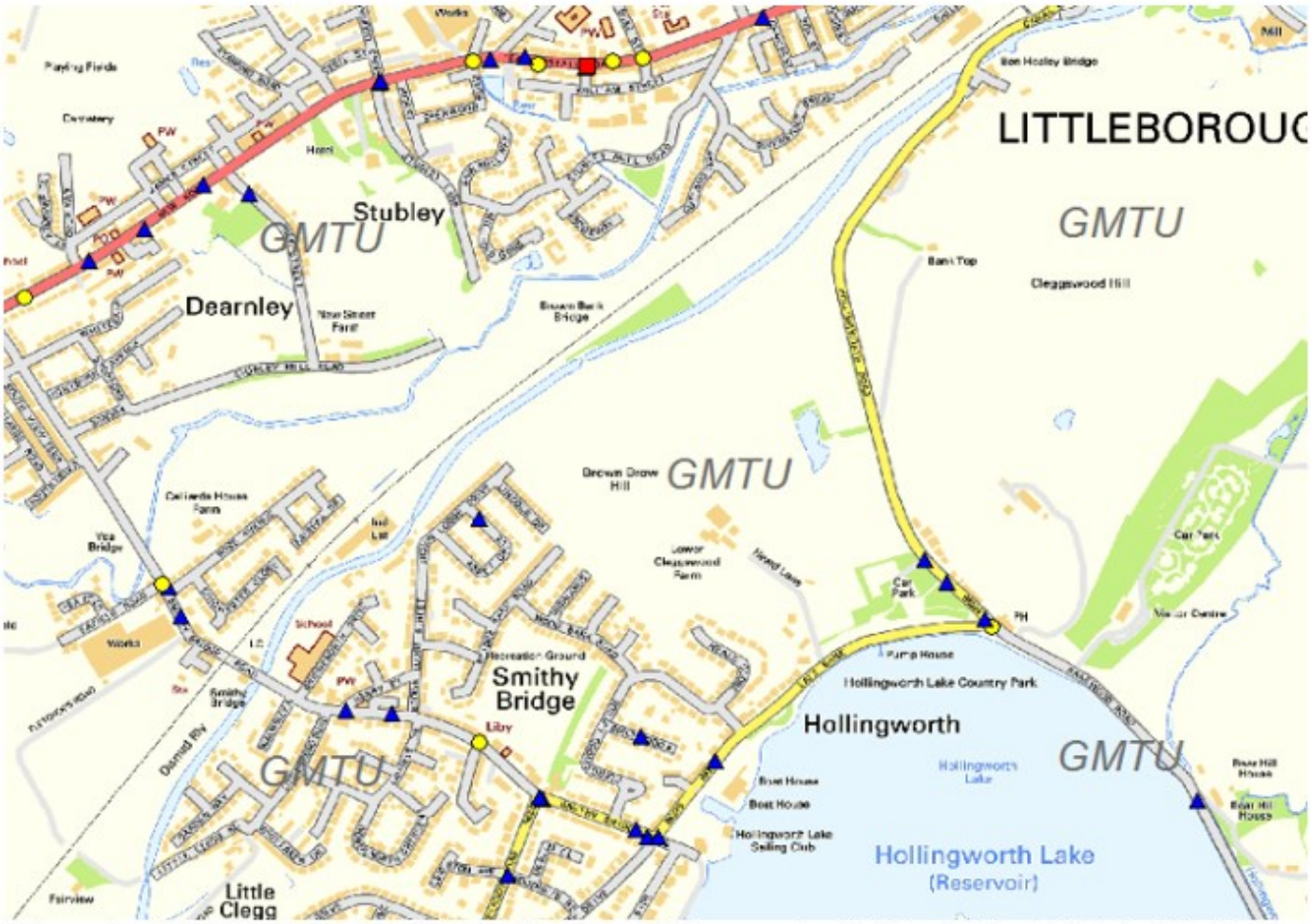
18.1.11 It should be noted that the forecasts underpinning this assessment assume a continuation of investment in our wider transport network over the Plan Period.

18.1.12 Junctions which are considered to operate over capacity in the 2040 model years, both with and without mitigation, are attributed not entirely to the introduction of development trips, but to the cumulative impact of wider growth. The objective of mitigation scenarios is to suitably accommodate the proposed development trips for this allocation, rather than fully addressing wider traffic concerns.

18.1.13 However, the mitigation schemes proposed should be considered in conjunction with continued investment into sustainable transport alternatives, including pedestrian, cycling and public transport, in order to reduce the overall number of additional vehicles being introduced onto the local road network. This, combined with the mitigation schemes, could potentially resolve a number of issues raised regarding congestion, car parking and sustainable mode availability in relation to the Land North of Smithy Bridge allocation.

18.1.14 This is an initial indication that the allocation is deliverable and to inform viability, and that further detailed work will be necessary to identify the specific interventions required to ensure the network works effectively based on transport network conditions at the time of the planning application.

Appendix 1 – Collision data within a 1km radius of Land North of Smithy Bridge



Appendix 2 – Illustrative site access arrangement on Hollingworth Road

[Illustrative/Typical Layout]

Appendix 3 – Results of Local Junction Capacity Analysis Before Mitigation 2025

Land North of Smithy Bridge

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
A58 / Albert Royds Street	136%	102%	138%	102%	0	0
A58 / Birch Road	100%	71%	100%	72%	0	0
A58 / Smithy Bridge Road	74%	77%	74%	77%	0	0
Smithy Bridge Road / level crossing	25%	28%	26%	29%	0	0
A58 / A6033 Todmorden Road	85%	79%	87%	76%	1	1
A58 / B6225 Hollingworth Road	103%	84%	103%	83%	1	1
A58 / Wardle Road	127%	128%	133%	129%	0	0
Wildhouse Lane / Kiln Lane	182%	157%	190%	163%	7	8
Wildhouse Lane / Smithy Bridge Road	79%	104%	81%	111%	7	9

Greater Manchester Spatial Framework

Locality Assessment:

Newhey Quarry (GMA24)

Publication Version 2: November 2020

Identification Table	
Client	Rochdale/TfGM
Allocation	Newhey Quarry
File name	GMA24 Rochdale - Newhey Quarry LA 021020
Reference number	GMA24 (2020) previously GMA27 (2019)

Approval					
Version	**Role**	**Name**	**Position**	**Date**	**Modifications**
0	Author	Nick Calder	Senior Engineer	31/07/2020	Base report
	Checked	Martin Crabtree	Principal Engineer	31/07/2020	
	Approved	Geoff Bowman	Associate	31/07/2020	
1	Author	D Nixon	TfGM	16/09/20	Consistency edits
	Checked	R Chapman	RBC	28/09/20	
	Approved	P Moore	RBC	29/09/20	

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Allocation Data	
Allocation Reference No.	GMA24 (2020) previously GMA27 (2020)
Allocation Name	Newhey Quarry
Authority	Rochdale
Ward	Milnrow
Allocation Proposal	250 Dwellings
Allocation Timescale	0-5 years ✓ 6-15 years ☐ 16 + years ☐

Glossary

"2025 GMSF Constrained" - is the 2025 forecast case in which the model adjusts the input demand based on how the cost of travel changes from the base year to the future. For example, for a shopping trip undertaken by car which becomes more congested in future, changes might be travel via a different route, mode, location or time of day.

"2040 GMSF Constrained" - as above, but for a 2040 forecast year

"2025 GMSF High-Side"- is the 2025 forecast case in which the model does not adjust the input demand based on how the cost of travel changes. In this scenario congestion does not lead to a reassignment of traffic, and therefore road traffic flow will generally be higher.

"2040 GMSF High-Side" - as above, but for a 2040 forecast year

"2025 Reference Case" - is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2025

"2040 Reference Case"- is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2040

AADT - Annual average daily traffic, is a measure used in transportation planning to quantify how busy the road is

Bee Network - is a proposal for Greater Manchester to become the very first city-region in the UK to have a fully joined-up cycling and walking network: the most comprehensive in Britain covering 1,800 miles.

Bus Rapid Transit - is a bus-based public transport system designed to improve capacity and reliability relative to a conventional bus system. Typically, a BRT system includes roadways that are dedicated to buses, and gives priority to buses at junctions where buses may interact with other traffic

Existing Land Supply - these are sites across the county that have been identified by each local planning authority across Greater Manchester and are available for development

Greater Manchester Variable Demand Model (GMVDM) - the multi-modal transport model for Greater Manchester. This transport model provides estimates of future year transport demand as well as the estimates of travel behaviour changes and new patterns that the Plan is likely to produce. These include changes in choices of routes, travel mode, time of travel and changes in journey destinations for some activities such as work and shopping.

“LRN” (Local Road Network) All other roads comprise the Local Road Network. The LRN is managed by the local highways authorities

National Trip End Model (NTEM) - is a Department for Transport forecast that ensures that measures of population, jobs and trips made by various mode are consistent across the whole of Great Britain.

Rapid transit services - refers to high frequency, high capacity metro style transport services including Metrolink and Bus Rapid Transit.

“SRN” (Strategic Road Network) The Strategic Road Network comprises motorways and trunk roads, the most significant ‘A’ roads. The SRN is managed by Highways England.

“TfGM” - Transport for Greater Manchester, the Passenger Transport Executive for Greater Manchester

Urban Traffic Control (UTC) - is a specialist form of traffic management that, by coordinating traffic signals in a centralised location, minimises the impact of stop times on the road user.

1. Allocation Location & Overview

1.1.1 The allocation is located to the north-east of Newhey and is bounded by the A640 Huddersfield Road to the south, St. Thomas Church to the west and fields to the north and east. The site is located some 1.1 kilometres to the south-east of Junction 21 of the M62 as the crow flies.

1.1.2 It is envisaged that the allocation will comprise around 250 dwellings delivering a mix of housing density, with the potential for higher density development in the south west part of the allocation closest to the village centre and Newhey Metrolink stop.

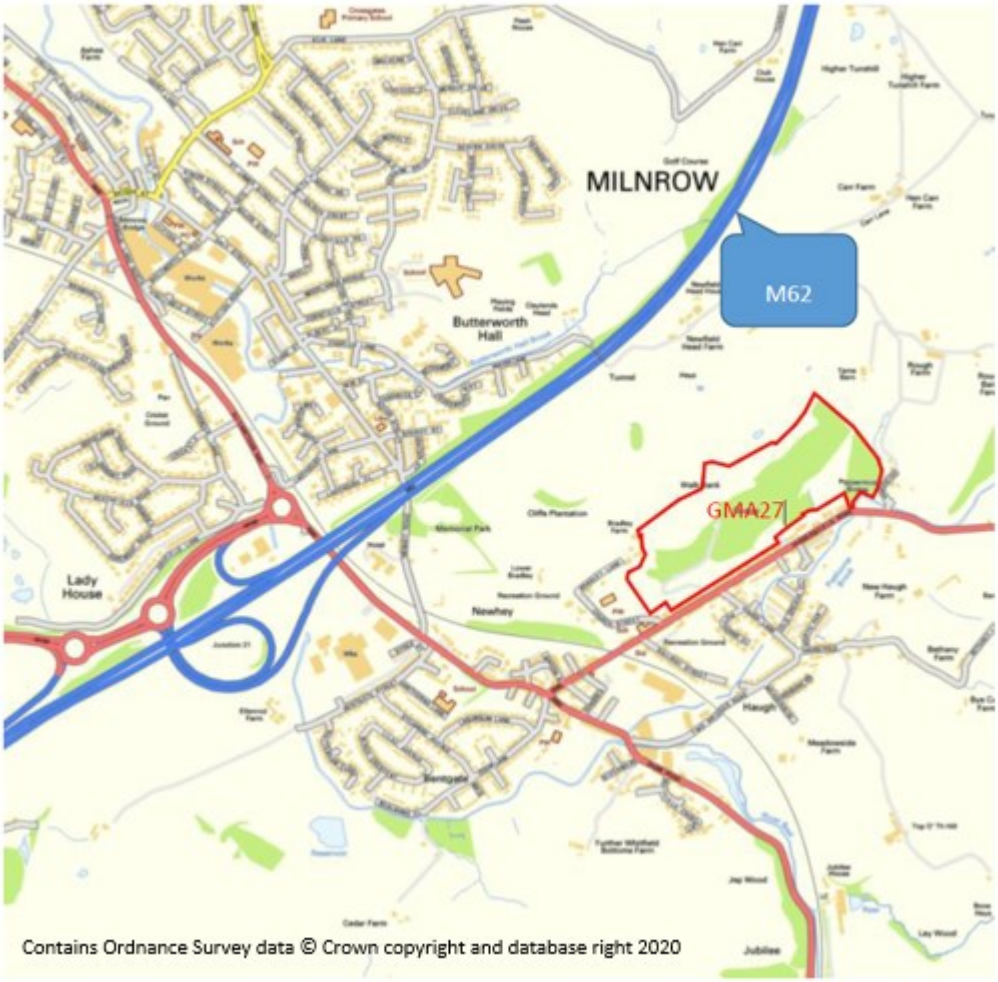
1.1.3 The northern and eastern parts of the allocation could include larger, higher value housing to diversify housing choice in the local area.

1.1.4 The proposed development platform is lower than the immediately adjoining land on its north, west and east boundaries some of which are approximately 30m lower than adjoining land.

1.1.5 It is also proposed that the allocation would provide publicly available car parking to serve the Metrolink stop in Newhey, as well another car park for the residents on the A640 Huddersfield Road to alleviate on street parking.

1.1.6 Note that the allocation boundaries shown in **Figure 1** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. The reference number of Newhey Quarry has been updated from GMA27 to GMA24 since production of these images.

Figure 1. Allocation Location: Newhey Quarry



2. Justification for Allocation Selection

2.1.1 The site is in a sustainable location with easy access to the centre of Newhey and the Metrolink stop. Presently Newhey Metrolink stop is well used but has no dedicated parking. The development of this site will be required to deliver publicly available car parking.

2.1.2 Given the accessibility of Newhey Quarry to the Metrolink network the allocation was selected for inclusion within the GMSF on the basis of criteria 1 (Land which has been previously developed and/or land which is well served by public transport) of the GMSF site selection criteria detailed further in the Topic paper.

3. Key Issues from Consultation

3.1.1 The Greater Manchester Plan for Homes, Jobs and Environment (Spatial Framework) consultation ran from 14th January to 18th March 2019.

3.1.2 The following are the main points raised within the GMSF consultation summary report:

- Existing heavy congestion issues in the area, especially on A640 Huddersfield Road, A663 Shaw Road, Elizabethan Way and at M62 Junction 21.
- Traffic and congestion are a major problem especially if is there is an issue on the motorway.
- The existing infrastructure will not be able accommodate increased traffic created from this new housing.
- A bypass is needed rather than a relief road.
- The current public transport links are inadequate and overstretched.
- Space for a cycling route is limited.

3.1.3 The responses have informed consideration of potential mitigation, this is discussed later on in this LA. A full summary of all consultation responses is available on the GMCA GMSF website.

4. Existing Network Conditions and Allocation Access

4.1 Existing Network Conditions

4.1.1 The allocation is located to the rear of houses fronting A640 Huddersfield Road. The allocation shares a boundary with 56 houses and with two public houses, The Bird in Hand Lower and The Bird in Hand Upper. Houses fronting Church Street, St Thomas Church & Graveyard and St Thomas' C of E Primary School form another boundary along Church Street. The allocation, a former quarry, is cut into the lower slope of Moy Hill beyond which is the elevated topography of agricultural land extending up to the M62 motorway.

4.1.2 Access to the allocation is via Bradley Street, a dedicated access road. It is in the ownership of Brock Ltd the allocation owners and was upgraded in the 1990s by Brock Ltd to achieve modern day standards pursuant to planning permission ref: D23249 for use by Quarry tipper vehicles and other quarry traffic, equipment and machinery.

4.1.3 Bradley Street is some 11m wide at its junction with A640 Huddersfield Road. The A640 Huddersfield Road is some 7.3m wide, with 2m wide footways on either side. Huddersfield Road is subject to a 30-mph speed limit and slopes gently down to Newhey Road.

4.1.4 Public Rights of Way (footpaths 127, 129 and 132) provide access to Moy Hill, Green Belt Parcel RDBA3 with its elevated topography extending up to the M62 Motorway. The allocation has pedestrian access to a Restricted Byway using three footpath links across Moy Hill (127, 129 and A132). The Restricted Byway has an underpass beneath the M62 motorway linking with Milnrow.

4.1.5 There are waiting restrictions along the majority of A640 Huddersfield Road which prohibit waiting Monday – Friday 08:00 – 18:30 and Saturday 08:00 – 13:00.

4.1.6 From the Bradley Street quarry access, the A640 Huddersfield Road provides access to the Newhey Metrolink stop which lies approximately 250m to the south west. Near the Newhey Metrolink Stop there are double yellow lines on street.

4.1.7 On the A640 Huddersfield Road there are 'dragon's teeth' carriageway markings and school 'keep clear' road markings in the vicinity of the St Thomas' C of E Primary School.

4.1.8 A640 Huddersfield Road with a range of community facilities then runs further to the south west to meet the A663 Shaw Road, A640 Newhey Road and Cedar Lane at a four-armed traffic signalled junction. These traffic signals have the benefit of tactile paving, pedestrian crossing facilities and advanced stop lines for cyclists on A640 Huddersfield Road and in both directions on A640 Newhey Road.

4.1.9 From this junction, A640 Newhey Road then runs to the south east toward the local centre of Shaw and further south towards Oldham. Towards the north west, A640 Newhey Road leads to Junction 21 of the M62 and accesses Kingsway Business Park. The M62 provides a good connection towards Leeds to the east and Manchester to the west.

4.1.10 On site observations in November 2018 and June 2019 of the surrounding highway network show that A640 Huddersfield Road is reasonably lightly trafficked and generally operates satisfactorily. There was some on street parking taking place with cars parked half on the carriageway and half on the footway. However, due to the generous 2m footway widths, this is not a problem. It is noted that some consultation comments suggest that the occasional queuing is observed on the highway network, this will be investigated further as part of any future planning application for the site.

4.1.11 It was also observed that the route to Junction 21 of the M62, access to Kingsway Business Park and to the outskirts of Rochdale was generally not subject to queuing or delays, however, there is some that occur during the network peak periods.

4.2 Proposed Site Access

4.2.1 The width of the existing Bradley Street quarry access road is some 11m and Huddersfield Road (A640) is some 7.3m in width, with 2m footways on both sides.

4.2.2 The Bradley Street access road was improved by the quarry owner to achieve modern day standards in the 1990's pursuant to planning permission ref: D/23249 to facilitate mineral extraction and access for tipper vehicle movements and other quarry traffic including equipment and machinery.

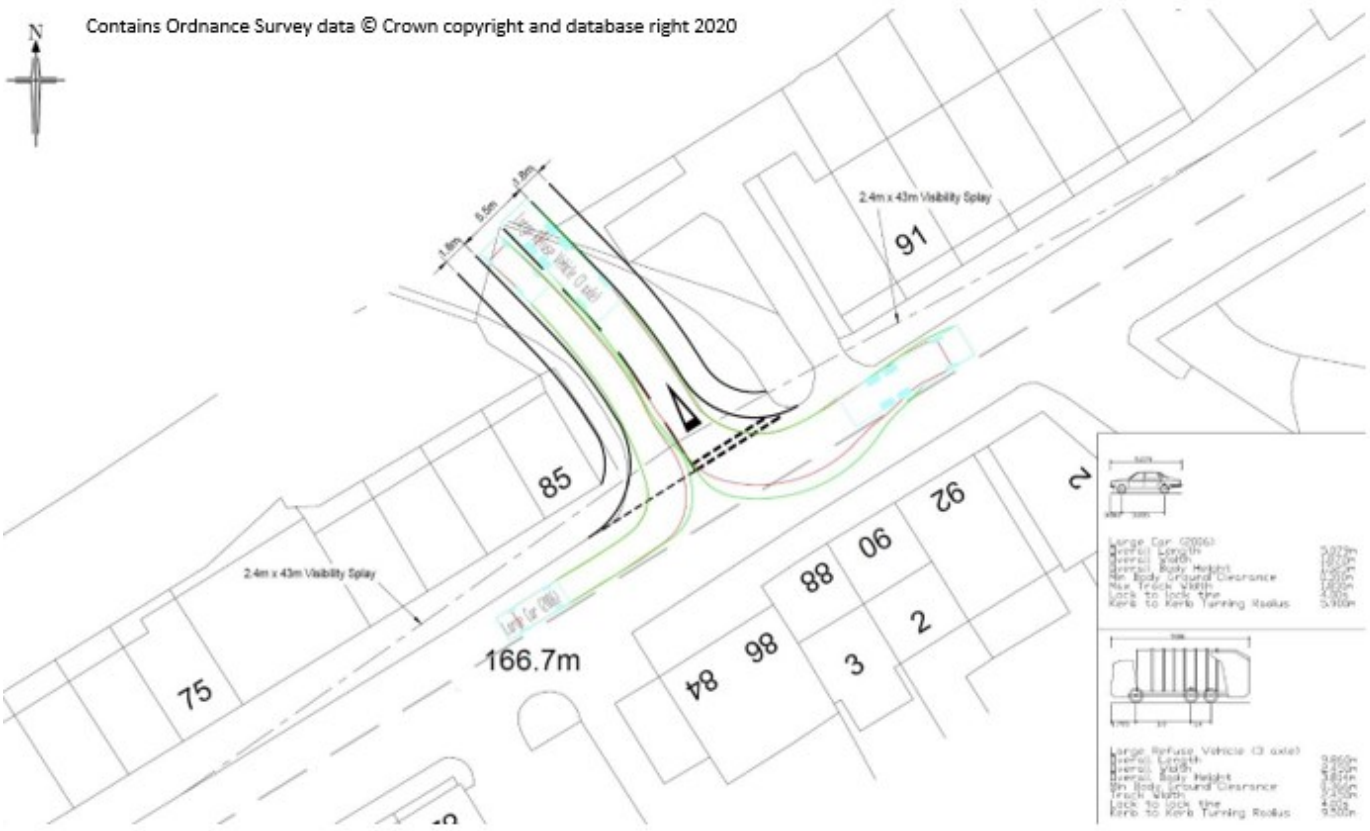
4.2.3 Manual for Streets requires a 5.5m carriageway with 1.8m wide footways to both sides of the carriageway; such dimensions are achievable at this allocation. This is shown on Figure 2 below together with a service vehicle swept path analysis in contraflow with a large passenger car.

4.2.4 Given the existing widths of the Bradley Street quarry access and A640 Huddersfield Road, the existing simple priority access already complies with the required standards because it has been delivered at this location pursuant to the 1990 planning permission ref D23249.

4.2.5 A640 Huddersfield Road is subject to a 30-mph speed limit and Manual for Streets requires visibility splays 2.4m x 43m. The required 2.4m x 43m visibility splays can be achieved in both directions and are shown on **Figure 2** below.

4.2.6 The final form of a new junction with A640 Huddersfield Road will be considered and agreed as part of any future planning application.

Figure 2. Access Proposals (Illustrative/Typical design)



5. Multi-modal accessibility

5.1 Walking & Cycling

5.1.1 Most public transport journeys take place with a 'pedestrian leg' and the pedestrian environment is fundamental in encouraging public transport use as well as walking more generally. Existing footway provision in the vicinity of the allocation is good, with 2m wide footway provision on both sides of A640 Huddersfield Road

5.1.2 There is extremely good access to a range of local facilities on both sides of A640 Huddersfield Road with footway widths of 2m within the desirable maximum walking distance of 400m and well within the acceptable maximum walking distance of 800m. There is the opportunity to provide a controlled pedestrian crossing facility across A640 Huddersfield Road in the vicinity of the allocation to aid pedestrian movements, this will be investigated further as part of any future planning application.

5.1.3 There is an existing footpath access to the allocation, off Church Street, behind St Thomas C of E Primary School. St Thomas School is separated from the Quarry by the width of Church Street. This

provides a shorter walking route from the allocation to the local community facilities in Newhey on both sides of A640 Huddersfield Road.

5.1.4 There is a walking link along Bradley Lane linking with Church Street. Bradley Lane also links with public footpaths 127, 129/132 and onto the Restricted Byway.

5.1.5 Importantly, the scheme will provide walking and cycling access via appropriate existing routes using Bradley Lane and Church Street through the traffic free, Green Flag Awarded, Milnrow Memorial Park using the Bridleway and park to Milnrow and to local schools and access to Kingsway Business Park for employment.

5.1.6 The Chartered Institution of Highways and Transportation publication 'Guidelines for Providing for Journeys on Foot' (2000) notes that walking accounts for over a quarter of all journeys and four-fifths of journeys less than one mile (1.6 km).

Figure 3. Walking and Cycle Routes together with other sustainable facilities

5.1.7 Having regard to walking distances to local area, it is clear there are a range of community facilities that are significantly within the desirable and acceptable walking distance from this allocation using the existing footway network. Walking and cycling will link the allocation to three local schools, as well as to Kingsway Business Park for employment and to various leisure and recreational destinations including The Green Flag Awarded Milnrow Memorial Park.

5.1.8 The Newhey Metrolink stop is located within 150m of the allocation boundary when measured from the Church Street pedestrian access to the Tram Stop overbridge. It is 440m from the centre of the allocation. All of this allocation is within the TfGM 800m Walking Catchment area of a Metrolink Stop.

5.1.9 Local bus services are a short walk from the allocation with two bus termini within 500m with nearby bus stops on the way along A640 Huddersfield Road. The bus stops are 60m from the allocation boundary. These bus stops are 380m maximum distance to the centre of the allocation via the Church Street pedestrian access and are within the GMPTE 400-600m Walking Catchment for bus stops.

5.1.10 The Chartered Institution of Highways and Transportation's publication "Planning for Cycling", November 2014, states that cycling is regarded as having the potential to substitute short car trips, in particular those under 8km and to form part of longer journeys by public transport.

5.1.11 From Bradley Lane and Church Street there is a traffic free Bridleway which can be used by cyclists. The Bridleway provides access to Milnrow through the Green Flag Awarded Milnrow Memorial Park with connections to Kingsway Business Park, one of the North West's premier Business Parks and connecting Hollingworth Academy.

5.1.12 There is potential therefore for residents of the development to access local community facilities and employment opportunities and education opportunities by bike as well as by walking.

5.1.13 The number of local facilities within walking distance that can account for four fifths of journeys is extensive as previously discussed (Local Community and Public Transport Facilities) with cycling as an alternative choice.

5.1.14 The allocation will be consistent with the 'Beelines' vision of TfGM which has outlined plans for over 75 miles of segregated cycling and walking routes within Greater Manchester. In Rochdale, 136 new or upgraded crossings are proposed and six miles of Beelines are proposed on busy roads. This includes improvements to A640 Huddersfield Road at its junction with A663 Shaw Road which will complement the allocation.

5.2 Public Transport

5.2.1 Conventionally TfGM considers access to bus services where 400m-600m would be a representative walking catchment for bus stops. All of the allocation is within 400-600m of bus stops on A640 Huddersfield Road.

5.2.2 There are convenient bus stops located to the north east of the allocation access on A640 Huddersfield Road within 60m of the allocation boundary which could readily provide opportunities for residents of the proposed development to travel by bus. These bus stops are served by the 451 service which provides a circular service to and from Rochdale, via Newhey, with the buses on the way to the Newhey Peppermint Bridge Terminus approximately 500m north east of the allocation. The 451 provides a service every two hours between the hours of 09:17 and 17:27 Monday to Friday and a service every two hours on a Saturday between 09:17 and 17:17.

5.2.3 There are other convenient bus stops to the south east of the junction of A640 Huddersfield Road/Cedar Lane/A640 Newhey Road on A663 Shaw Road on the way to the Newhey Terminus, approximately 500m to the south of the allocation. This terminus is served by four services. It includes the number 58 which provides a 30-minute service frequency between Middleton – Oldham – Rochdale. The other services provide a 60-minute frequency service to and from Kingsway Business Park and also include the R4 and R5 services which provide a combined 60-minute frequency service to Rochdale.

5.2.4 Newhey also lies within the catchment area for Transport for Greater Manchester's Local Link service. This offers a direct and flexible transport service for local journeys and it uses shared minibuses to transport passengers operating from early morning to late at night. It would be particularly appropriate for journeys between the allocation and Kingsway Business Park, especially if residents from the proposed development are employed at Kingsway Business Park working early or late shifts.

5.2.5 Together these bus services and the Local Link service provide frequent services for the allocation to a variety of destinations, including Kingsway Business Park, Rochdale, Milnrow, Oldham and Manchester City Centre, terminating within 500m of the allocation at two Bus Termini and with bus stops on the way, 60m from the allocation boundary.

5.2.6 It is noted that the recommendations of TfGM for this allocation are to enhance existing R5 bus service by improving to hourly and withdrawing R4 and to replace R4 with Local Link. These recommendations for the allocation will be investigated as part of any future planning application.

5.2.7 The Rochdale-Oldham Heavy Rail Loop line, which closed in October 2009, re-opened to the public in February 2013 as a Metrolink route between Manchester and Rochdale Town Centre via Oldham including Metrolink Stops at Newhey, Milnrow and Kingsway Business Park, to access employment opportunities.

5.2.8 TfGM considers 800m to be a representative walking catchment for its Metrolink Stops. All of the allocation is within the 800m catchment area. The Newhey Metrolink Stop is within 150m from Church Street. It has stair and ramp access to both platforms enabling access for able bodied people and for those that are less mobile.

5.2.9 The Metrolink stops at Rochdale train station, Manchester Victoria train station and near to Manchester Piccadilly train station with a terminus at Manchester airport. These Metrolink stops allow residents of Newhey and other local areas to connect with the national rail network at Rochdale Railway Station thereby extending public transport journeys.

5.2.10 Newhey Metrolink Stop is situated on The East Didsbury to Rochdale line of the Metrolink system. Trams from Newhey Metrolink Stop provide a 12-minute service frequency between 06:00-23:30 Monday to Thursday, 06:00-00:30 Friday-Saturday and 07:00-22:30 Sunday. The service provides access to Exchange Square, Manchester Victoria and St Peter's Square within the Manchester City Zone. The approximate journey time from the Newhey Metrolink Stop to Kingsway Business Park Metrolink Stop is 4 minutes, Rochdale is 8 minutes, to Oldham is 10 minutes and to the Manchester City Zone is 40 minutes.

5.2.11 The entirety of this allocation is within the TfGM 800m walking catchment area. The walking distance from the Newhey Metrolink stop to the Church Street pedestrian access is 150m, to the Bradley Street Quarry access is 250m and to the centre of the allocation via Church Street is 470m.

5.2.12 For a reduction in journey times it should be noted that Kingsway Business Park, which is a major employment area has its own dedicated Metrolink stop, it is a short 4-minute journey from the Newhey Metrolink stop to facilitate walking to work.

5.2.13 The Metrolink stop is an excellent facility for Newhey, it is readily accessible from the allocation and provides exceptional opportunities for sustainable travel. There is excellent connectivity to the national rail network and Manchester Airport.

5.2.14 Encouraging walking to work using the Newhey and Kingsway Metrolink stops to access the Business Park is a feasible choice. It is expected that, if the scheme proceeds, residents would use the Metrolink system to travel for leisure, shopping and work.

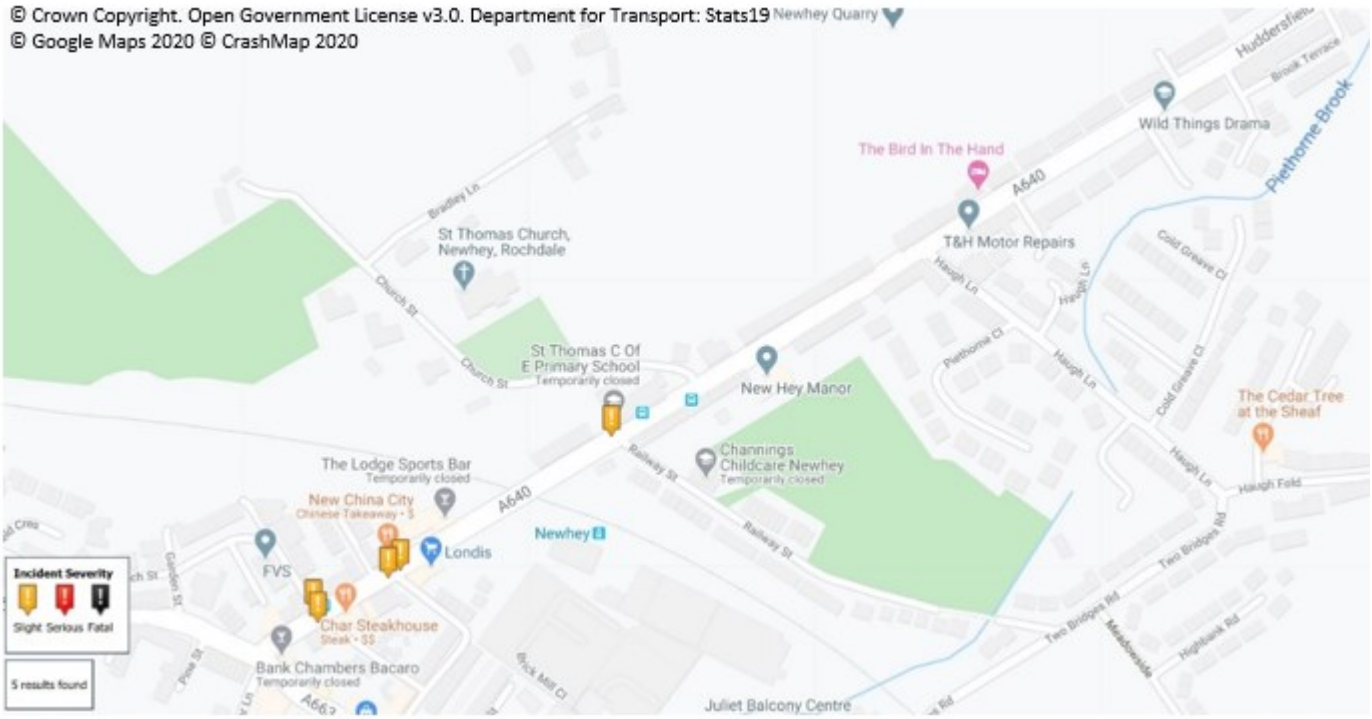
5.2.15 A 24-space car park will be provided at the south-west corner of the allocation in a convenient location near to Church Street. It will be used as a Park & Ride for Newhey Metrolink stop. Such a facility will meet the aspirations of the Council as set out in the Rochdale Council Car Park Strategy (2017).

5.3 Road Safety

5.3.1 Based on the CrashMap website, for the 5-year period from 2015 to 2020, there have been no accidents on A640 Huddersfield Road in the vicinity of the allocation access.

5.3.2 There have been 5 accidents on A640 Huddersfield Road all of which have been slight, one at the junction with Railway Street and four on the approach to the traffic signal junction with A663. It is generally the case that traffic signals do result in some accidents. The existing frequency of less than 1 accident per year shows there is no significant issue regarding highway safety in the vicinity of the allocation.

Figure 4. Accident Data Summary: Newhey Quarry



6. Parking

6.1.1 Rochdale's Parking Standards are based on draft Greater Manchester-wide standards developed in association with the other Greater Manchester local authorities and are detailed in Appendix 5 of the Rochdale Borough Core Strategy (2016).

6.1.2 The car parking standards comply with maximum levels set out in PPG13 'Transport', although for some types of Use Class, the standards are slightly more restrictive to reflect local circumstances. They are also in accordance with the maximum levels set out in draft Regional Planning Guidance (May 2002). The draft RPG also sets out 'urban conurbation' ceilings, and these are generally consistent with the Rochdale standards, with a few exceptions again designed to reflect local circumstances.

6.1.3 The cycle standards are generally slightly higher than the level of parking provision suggested in the National Cycle Strategy to reflect the increasing importance of cycle provision.

Table 1. Rochdale Borough Council Parking Standards

Type of Development	Maximum Standard for Car Parking Excluding Disabled	Minimum Standards for Car Parking For Those Who Are Disabled	Minimum Standards for Cycle Parking
C3. Dwelling Houses 2+ bedrooms outside town centres	2 per dwelling (not including a garage)		No standard
Single bed dwellings and dwellings in town centres.	1.25 per dwelling		No standard
Flats/apartments 2+ bedrooms outside town centres	2 per dwelling		1 secure locker per 5 dwellings – minimum of 2 spaces.
Single bed dwellings and flats/apartments in town centres	1.25 per dwelling		1 secure locker per 5 dwellings – minimum of 2 spaces.

6.1.4 A maximum of 2 spaces per dwelling (not including garages) will be provide on the allocation or the required provision from the Local Planning Authority at the time of planning application. For any flats/apartments 1 secure cycle parking space per 5 dwellings or again the required provision from the Local Planning Authority at the time of planning application.

6.1.5 At present, A640 Huddersfield Road residents either side of the Bradley Street quarry access road park in the junction, but this is only the case because the access to the quarry is currently unused by the allocation owner. Accessed from Bradley Street there is an existing (unused) 15 space car park permitted and implemented pursuant to planning permission granted in the 1990s ref:

D/23249 which is located to the rear of housing fronting A640 Huddersfield Road within the confines of the quarry.

6.1.6 It is proposed to increase this existing 15 space car park to 30 spaces for use by A640 Huddersfield Road residents only, which could be controlled by a Council issued permit to local residents.

6.1.7 Car parking would be controlled by the Local Highway Authority and would not take place in the junction in the event that the Bradley Street Quarry access road is used for access to the Quarry pursuant to planning permission ref: D23249 or alternatively for access to the proposed residential development.

6.1.8 The existing car park for teachers at St Thomas' C of E School is owned by Brock Ltd and is subject to an annual license agreement for school use, will continue to operate in the same manner.

6.1.9 The Rochdale Council Car Park Strategy (2017) confirms that there is a requirement for a Metrolink Park & Ride facility in Newhey.

6.1.10 The proposals have taken account of this requirement to provide a 24-space facility. The facility is close to the allocation boundary on Church Street and is within 150m of the Newhey Metrolink Stop.

7. Allocation Trip Generation and Distribution

7.1.1 For the purposes of the testing the impact of the allocation through the strategic model, a total of 250 dwellings have been assumed to be built out by 2040. The GM transport modelling suite has a 2040 forecast year, as such it uses 2040 trajectory data as proxy for 2037 full build-out, this is not considered to materially impact on the analysis or conclusions of this report.

7.1.2 Future trip generation to/from the allocation (i.e. how many people and vehicles will enter or leave the allocation) was estimated by applying a set of GM-wide trip rates to the agreed development quantum for each allocation. The distribution of trips (i.e. where they are going to or coming from) was derived by selecting nearby zones with similar land use characteristics as a proxy and using the existing distribution in the model.

7.1.3 **Table 2** below summarises the development quantum for the allocation and anticipated timescales assuming for modelling purposes.

Table 2. Development Quantum

Residential	Houses	32	200
Residential	Apartments	8	50
Total		**40**	**250**
NB - (exact mix to be confirmed)			

7.1.4 The figures above are as assumed for modelling purposes. The actual phasing and development mix may differ slightly from these; for example, more units may be completed by 2025. It is not anticipated that such changes would impact on the form and scope of mitigation, but there may a need to advance the delivery of some of the mitigation measures.

7.1.5 **Table 3** below summarises the number of vehicle trips which the allocation is likely to generate during the AM and PM peak hours, for various future year scenarios. It shows that the allocation is predicted to generate a maximum of 125 vehicle trips in the AM peak hour and 126 vehicle trips in the PM peak hour. These figures will be reviewed and confirmed as part of any future planning application.

Table 3. Allocation Traffic Generation

Year	AM Peak Hour Departures	AM Peak Hour Arrivals	PM Peak Hour Departures	PM Peak Hour Arrivals
2025 GMSF Constrained	80	31	49	74
2025 GMSF High-Side	94	31	38	88
2040 GMSF Constrained	80	31	49	72
2040 GMSF High-Side	94	31	38	88

Units are in PCU (passenger car units/hr)

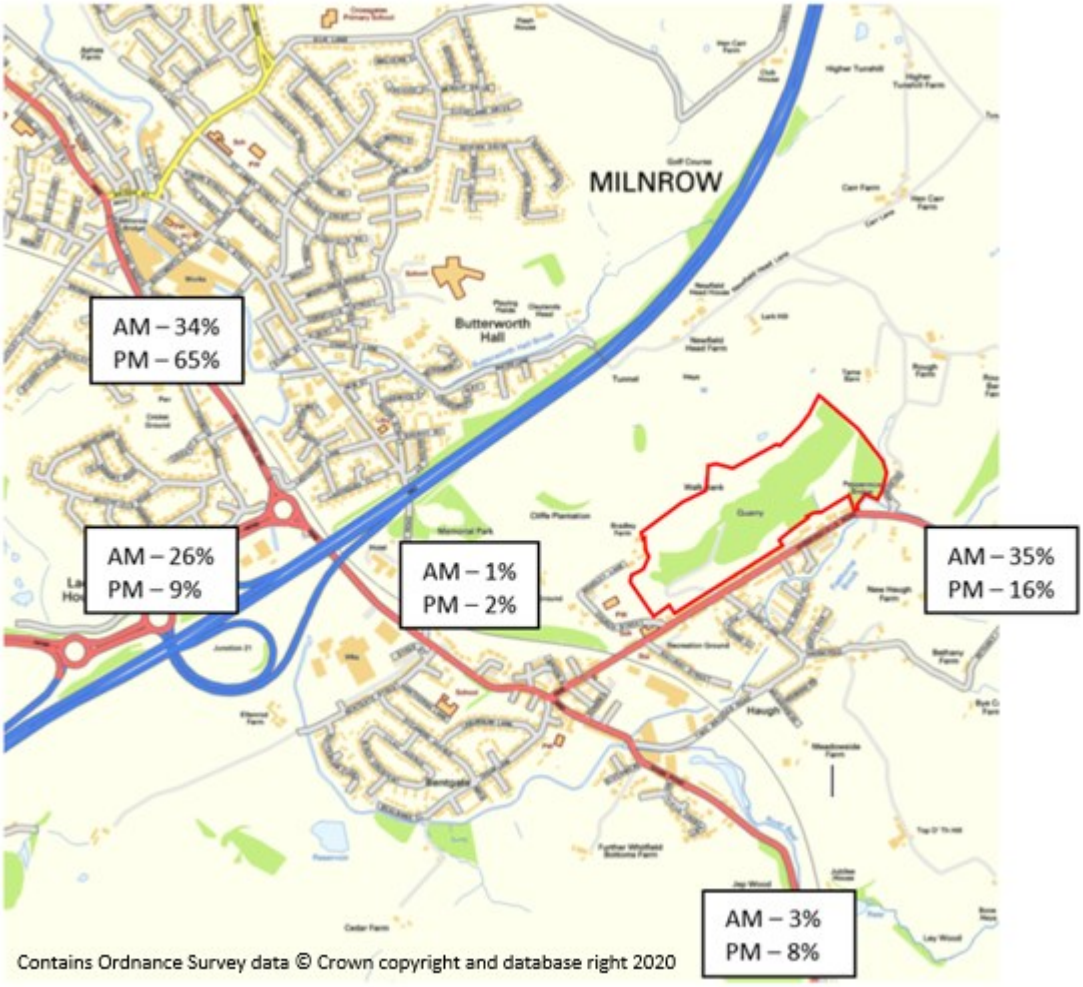
7.1.6 **Table 4** below summarises the routes which the above generated vehicle trips are likely to take to and from the allocation during the AM and PM peak hours respectively. Similarly, this likely

routing will be reviewed and confirmed as part of any future planning application. Table 4 shows that in the AM peak hour, the majority of vehicle trips are likely to travel in the direction of / from Elizabethan Way and A640 Huddersfield Road. In the PM peak hour, most vehicle trips are likely to travel in the direction of / from Elizabethan Way.

Table 4. Allocation Traffic Distribution, 2040 GMSF High-Side

Route	AM Peak Hour	PM Peak Hour
Elizabethan Way	34%	65%
Newhey Road	1%	2%
A663 Shaw Road	3%	8%
M62 (North)	26%	9%
A640 Huddersfield Road	35%	16%

Figure 5. Allocation Traffic Distribution



7.1.7 Note that the allocation boundaries shown in **Figure 5** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps.

7.1.8 **Table 5** combines **Tables 3 and 4** and summarises the number of vehicle trips which are likely to use these routes during the AM and PM peak hours.

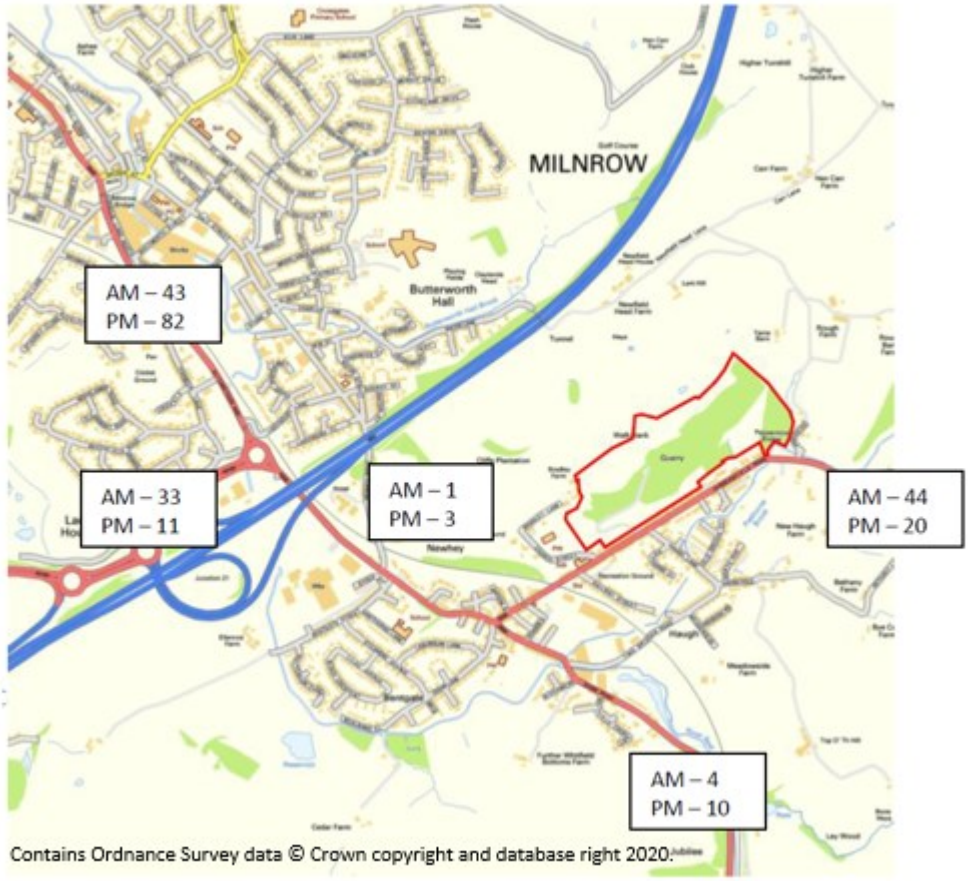
7.1.9 **Table 5** also shows that the allocation is likely to generate some 4 and 10 vehicle trips along A663 Shaw Road in the AM and PM peak periods respectively which leads into the highway network maintained by Oldham Metropolitan Borough Council. Similarly, the allocation is likely to generate some 44 and 20 vehicle trips respectively towards A640 Huddersfield Road to the east which also leads to the highway network maintained by Oldham Metropolitan Borough Council. These vehicle trips will dissipate onto the wider highway network and have no material impact beyond.

Table 5. Trip distribution at 2040

Route	2 Way Flow AM Peak Hour	2 Way Flow PM Peak Hour
Elizabethan Way	43	82
Newhey Road	1	3
A663 Shaw Road	4	10
M62 (North)	33	11
A640 Huddersfield Road	44	20

Units are in PCU (passenger car units/hr)

Figure 6. Allocation Trip Distribution



7.1.10 Note that the allocation boundaries shown in **Figure 6** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps

8. Current Highway Capacity Review

8.1.1 The A640 Huddersfield Road to the south of the allocation is a single carriageway route with residential frontage and on street parking. The A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane is signal controlled, with single lane approaches on all arms.

8.1.2 To the north of the A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane Newhey Road junction the A640 Newhey Road forms a priority T-junction with a minor road, also called Newhey Road. The minor road Newhey Road is subject to 30mph with Traffic Regulation Orders for no parking to either side of the carriageway. The minor road Newhey Road is accessed by a ghost island from A640 Newhey Road. To egress onto A640 Newhey Road, there are two lanes to allow for vehicles to egress to the south and north.

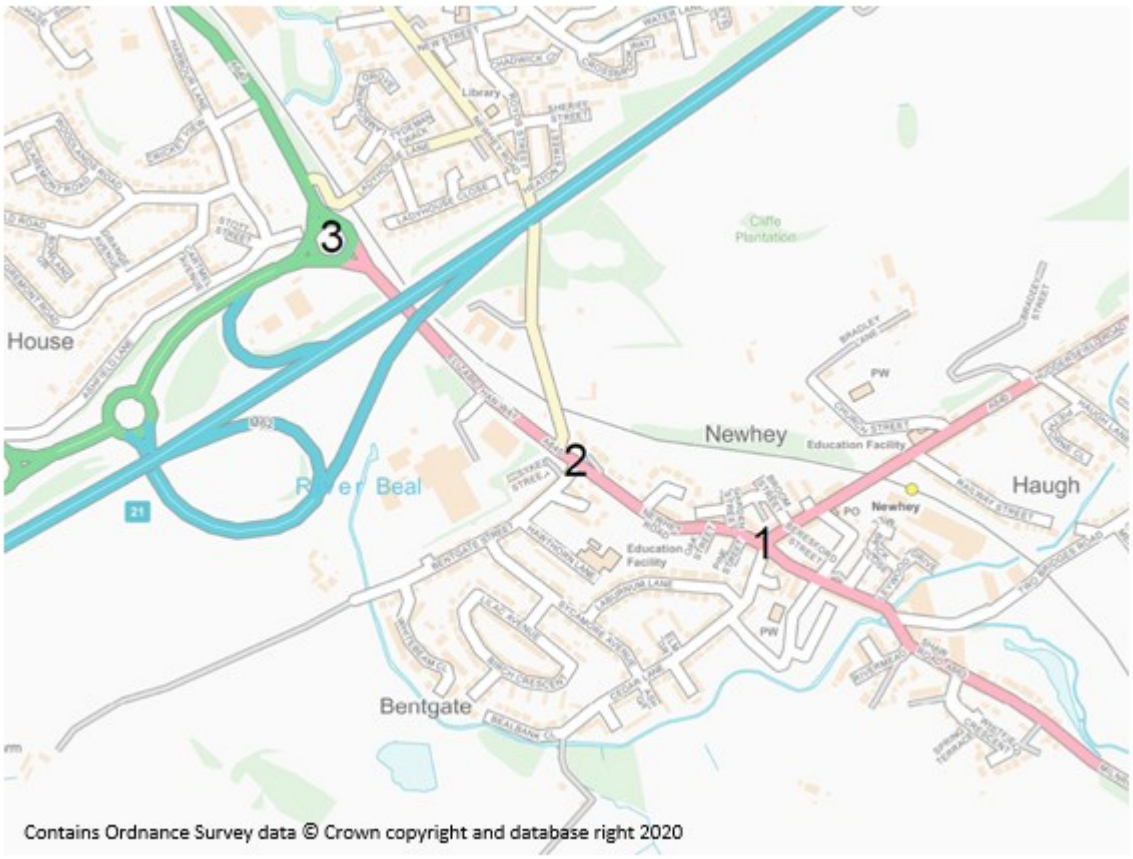
8.1.3 To the north of the allocation, A640 Newhey Road forms the southern arm of a three-arm roundabout, with A6193 Sir Isaac Newton Way to the west and Elizabethan Way to the north. A6193 Sir Isaac Newton Way to the west forms the eastern arm of a roundabout for J21 of the M62. Elizabethan Way continues north into the town of Milnrow.

8.1.4 The operation of the following junctions has been included in the assessment:

- Junction 1 - A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane
- Junction 2 - Newhey Road / A640 Newhey Road
- Junction 3 - Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way

8.1.5 **Figure 7** below shows the location of these junctions in the context of the local area.

Figure 7. Assessed Junctions



9. Treatment of Cumulative Impacts

9.1.1 It is considered that the impact of the proposed allocation is likely to be relatively minimal when compared with the other allocations, however, it is understood that there is a need to consider the cumulative impacts as these can be used to apportion the cost of the mitigation of required. The high side model runs take account of traffic associated with all GMSF allocations in order to look at cumulative impacts.

9.1.2 There is only one proposed allocation in close proximity to the development this being GMA3 – Kingsway South (700 dwellings and 310,00sqm employment), which Is located to the west of A640 Newhey Road.

9.1.3 The following analysis includes the trip generation of all the other allocations throughout the GMSF area including the GMA3 – Kingsway South and not just Newhey Quarry.

10. Allocation Access Assessment

10.1.1 The allocation access arrangement shown in Figure 2 has been developed to illustrate that there is a practical option to access the allocation in this location and to develop indicative cost estimations.

10.1.2 It is assumed that a detailed design consistent with Greater Manchester's best practice Streets for All highway design principles will be required at the more detailed planning application stage.

11. Impact of Allocation Before Mitigation on the Local Road Network

11.1.1 In order to understand a worst-case impact of the GMSF, the 'high side' runs from the GMVDM were used to derive with GMSF development flows for 2040. These flows were then entered into junction-based models for the junctions identified in section 8. Flows from a 2040 reference case scenario (including approved Local Plan development from the respective districts) were also extracted to provide a comparison between the operation of those junctions in the 2040 reference case and the 2040 with GMSF development scenarios.

11.1.2 The 'with GMSF' scenario has been assessed against a Reference Case which assumes background growth and includes the housing and employment commitments from the districts.

11.1.3 These assessments were then used to identify the junctions where there was considered to be a substantial impact, relative to the operation of the junction in the 2040 reference case, and hence where mitigation was considered to be required in order to bring GMSF sites forward. Through discussions with TfGM and the Combined Authority, it was been agreed that where mitigation is required, it should mitigate the impacts back to the reference case scenario. It should be noted that mitigating back to this level of impact may not mean that the junction operates within capacity by 2040.

11.1.4 This section looks at the impact on the network at the junctions highlighted in section 8. Signalised junctions were assessed in detail using industry-standard modelling software LINSIG version 3. Where possible, traffic signal information was requested from TfGM in order to ensure that the local junction models reflected (as far as possible), the operation of the junction s on the ground. Junctions software was used to assess priority and roundabout junctions. Table 6 below provides a comparison between the operation of the in-scope junctions in the 2040 reference case and the 2040 'high side' scenarios, as well as the site development flows through each respective junction. The table shows a comparison between the ratio of flow to capacity on the worst-case arm at each

junction as well as the total development flows through the junction. A detailed summary of the local junction modelling and outputs can be provided on request.

Table 6. Results of 2040 Local Junction Capacity Analysis Before Mitigation

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
1. A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane	98%	102%	121%	116%	81	106
2. Newhey Road / A640 Newhey Road	61%	73%	38%	99%	77	96
3. Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way	106%	120%	117%	114%	76	93

11.2 A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road / Cedar Lane junction

11.2.1 Using the flows provided by SYSTRA it is concluded that the GMSF development related flows do have an impact on the A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road junction, however, the junction is predicted to operate at capacity in the reference case scenarios with Degrees of Saturation of **98%** and **102%** in the AM and PM peak hours respectively. Naturally any additional trips associated with the GMSF development related flows would result in the junction operating over capacity. The impact associated with Newhey Quarry is considered to be minimal and not material. The increase in trips at the A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane junction associated with the development is less than 20% of the overall increase as part of the GMSF in the future year of 2040. This junction (and all other junctions within this LA) will be assessed and reviewed appropriately as part of any future planning application.

11.3 A640 Newhey Road/Newhey Road junction

11.3.1 The GMSF development related flows do have an impact on the A640 Newhey Road/Newhey Road junction, however, the junction is predicted to operate within capacity in both the reference case scenarios and the GMSF high side scenarios with Ratio of Flow to Capacity of less than 100% and operating at below 50% in the AM peak. The increase in trips at the Newhey Road /A640 Newhey Road junction associated with the development is in the order of 15% of the overall increase in both AM and PM peak periods as part of the GMSF in the future year of 2040.

11.3.2 The key movement in the GMSF high side PM peak is the right turning movement into Newhey Road from A640 Newhey Road. The modelling predicts that the queues in the future year would increase by only 3 PCUs in the PM peak on the right turning movement into Newhey Road. This is an increase from a reference case of 3 PCUs. On that movement the flows associated with Newhey Quarry are negligible i.e. less than 3 trips as that is the total two way movement to and from Newhey Road and given it is a proposed residential development likely that all of these trips would be returning to the site in the PM peak. In the AM peak there is no change in queuing at the junction.

11.3.3 Given this and whilst the results are above 85% in the PM peak, they are below 100% and there is no impact associated with Newhey Quarry it is not considered appropriate to provide physical mitigation at the junction.

11.4 Elizabethan Way / A640 Newhey Road/ A6193 Sir Isaac Newton Way

11.4.1 The GMSF development related flows do have an impact on the Elizabethan Way / A640 Newhey Road/ A6193 Sir Isaac Newton Way junction, however, the junction is predicted to operate at capacity in the reference case scenarios with Degrees of Saturation of **106%** and **120%** in the AM an PM peak hours respectively. Naturally any additional trips associated with the GMSF development related flows would result in the junction operating over capacity. The impact associated with Newhey Quarry is considered to be minimal and not material. The increase in trips at the Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way junction associated with the development is in the order of 10% of the overall increase as part of the GMSF in the future year of 2040.

12. Transport Interventions Tested on the Local Road Network

12.1.1 Given the results of the assessments it is considered that mitigation as part of the GMSF may only be required at the following junctions:

- A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane
- Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way

12.1.2 It should be noted that these interventions may not be the definitive solution to addressing the impact of the allocation but have been developed to demonstrate that a solution is possible at the location. The exact form of the required mitigation will be confirmed, and its detailed design developed as part of the statutory planning process, should the allocation within GMSF be approved. The site promoter will need to develop detailed design solutions – consistent with Greater Manchester's best practice Streets for All highway design principles – at the planning application stage.

12.1.3 The potential mitigation layout for the Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way junction is attached at Appendix 2, however, no scheme layout is required for the potential mitigation at the A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane junction as this is associated with changes to signal timings and controller specifications.

Table 7. Approach to Mitigation

Junction	Mitigation Approach
1. A640 Huddersfield Road / A640 Newhey Road / A663 Shaw Road / Cedar Lane	There is little opportunity to provide physical capacity enhancing mitigation at the A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane junction, given the adjacent properties, therefore, enhancements and efficiencies to the operation of the signal controlled junction is considered the most appropriate by way of updating the signal controller to MOVA control. It is understood TfGM already have plans to introduce MOVA at this junction. The effectiveness of this scheme, if implemented, will be reviewed as part of any future planning application.
3. Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way	The enhancements required at the junction are associated with the A640 Newhey Road give-way approach and the node of the Elizabethan Way/circulatory carriageway. Given this, a possible solution is to provide changes to the layout to permit two lanes turning left at the A640 Newhey Road give-way approach and two right turn lanes from the circulatory carriageway at the Elizabethan Way node to the A640 Newhey Road. Another option would be to signalise this node, however all options will be reviewed and considered in more detail as part of any future planning application.

12.1.4 Notwithstanding the sustainable nature of the allocation, which is readily accessible by walking, cycling, bus and Metrolink with connectivity to the national rail network and Manchester Airport (thereby according with national planning policy), the trip generation rates provided are considered an extremely worst-case scenario.

12.1.5 Due to the quantum of the development, it would be expected that a Travel Plan along with a package of measures to encourage sustainable travel to and from the development would be required to support a planning application. This would further help to minimise car borne trips.

12.1.6 It also includes the enlargement of the existing 15 space car park increasing it to 30 spaces accessed from Bradley Street for use by residents of A640 Huddersfield Road (subject to a Council controlled parking permit).

12.1.7 It also includes a 24 space Park & Ride facility for users of the nearby Newhey Metrolink Stop.

13. Impact of interventions on the Local Road Network

13.1.1 The following table provides a comparison between the predicted junction operation of the A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane junction and Elizabethan Way / A640 Newhey Road/ A6193 Sir Isaac Newton Way in the reference scenario and the GMSF high side scenario but with the mitigation in place.

13.1.2 It is evident that the potential mitigation at the two junctions results in the junction operating at levels no worse than in the reference case scenario and certainly not severe.

Table 8. Results of Local Junction Capacity Analysis After Mitigation 2040

Junction	Reference Case AM Without Mit	Reference Case PM Without Mit	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
1. A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane	98%	102%	99%	95%	81	106
3. Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way	106%	120%	99%	91%	76	93

14. Impact and mitigation on Strategic Road Network

14.1 Overview

14.1.1 This chapter covers those impacts where traffic generated by the GMSF allocations meets the Strategic Road Network (SRN). Junctions at the interface between the Local Road Network (LRN) and the Strategic Road Network (SRN) have been assessed using a similar approach to that described in the preceding chapters. Wider issues relating to the SRN mainline are being assessed separately as described below.

14.1.2 SYSTRA is currently consulting with Highways England on behalf of TfGM and the Combined Authority in relation to the wider impacts of the GMSF allocations on the Strategic Road Network (SRN). This consultation is ongoing and will allow Highways England to gain a strategic understanding of where there is an interaction between network stress points and GMSF allocation demand. This will facilitate further discussion between TfGM and Highways England to reach agreement and/or common ground on the GMSF allocations in advance of Examination in Public (EiP).

14.2 Impact of the Allocation before Mitigation on the Strategic Road Network

14.2.1 Initial forecasting work suggests that trips in the order of 30 PCUs in the AM peak hour and 10 PCUs in the PM peak hour are forecast to use the M62 Junction 21.

14.2.2 This equates to a trip every other minute and a trip every six minutes respectively.

14.2.3 It should also be considered that the 30 trips in the AM peak will be split amongst the various links, on-slips and off-slips as they are arrivals and departures from the site so that the effective impact is further lessened.

14.2.4 It is not considered that the impact would be classed as severe and they can be accommodated within the existing capacity of the section of the SRN and would not be noticeable given the daily fluctuations in traffic flows.

14.3 Transport Interventions tested on the Strategic Road Network

14.3.1 In the light of the conclusion above, no mitigation is required on the SRN.

15. Final list of interventions

15.1.1 The following table overleaf provides a summary of the interventions that may be required to facilitate the GMSF allocations, not just the Newhey Quarry allocation. These interventions are as a result of the analysis set out within this LA and as a result of the consultation responses discussed in **Chapter 3.**

Table 9. List of Interventions: Newhey Quarry

Mitigation	Description
Allocation Access	
Proposed Allocation Access	The proposed access is from the existing Bradley Street Quarry access road onto the A640 Huddersfield Road. The existing widths of the Bradley Street Quarry access and A640 Huddersfield Road, together with visibility splays of the existing simple priority access already complies with standards.
Travel Plan Measures	Allocation Design – Street hierarchy and high-quality pedestrian and cycle facilities, including review of local bus stop facilities; On Allocation Promotional Events - Dr Bike, Cycle groups and walking groups; On Allocation Steering Group; Sustainable Travel Guide; Website, Newsletter and Personal Travel Planning; and Taster Tickets - for public transport or cycling equipment.
Necessary Strategic interventions	
Not required	
Supporting Strategic Interventions	
Not Required	
Necessary Local Interventions	

A640 Huddersfield Road / A640 Newhey Road / A663 Shaw Road / Cedar Lane	There is little opportunity to provide physical capacity enhancing mitigation at the A640 Huddersfield Road/A640 Newhey Road/A663 Newhey Road/Cedar Lane junction, given the adjacent properties, therefore, enhancements and efficiencies to the operation of the signal-controlled junction is considered appropriate by way of updating the signal controller to MOVA control.
Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way	The enhancements required at the junction are associated with the A640 Newhey Road give-way approach and the node of the Elizabethan Way/circulatory carriageway. Given this a possible solution is to provide changes to the layout to permit two lanes turning left at the A640 Newhey Road give-way approach and two right turn lanes from the circulatory carriageway at the Elizabethan Way node to the A640. Newhey Road
Pedestrian Crossing on Huddersfield Road	A signalised pedestrian crossing will be provided across Huddersfield Road in the vicinity of the site. The exact location will be determined through the planning application for the site.
Existing Residents Car Park	The existing 15 car parking spaces to 30 car parking spaces within the allocation accessed from Bradley Street, for use by existing A640 Huddersfield Road residents will remove cars which are currently parked half on the carriage way and half on the footway in the vicinity of the Bradley Street access.
Metrolink Park & Ride Car Park	The proposed 24 space car park will be provided at the south-west corner of the allocation in a convenient location near to Church Street. It will be used as a Park & Ride for Newhey Metrolink Stop. Such a facility will meet the aspirations of the Council as set out in the Rochdale Council Car Park Strategy (2017).
Supporting Local Interventions	
Changes to Existing bus services	A review will take place into the potential enhancement to the existing R5 bus service by improving to hourly and withdrawing R4 and to replace R4 with Local Link.
SRN Interventions	
Not required	

15.1.2 It is considered that the existing allocation access will be required to facilitate the development access arrangements. The suggested improvement scheme at the A640 Huddersfield Road/A640

Newhey Road/A663 Shaw Road/Cedar Lane and Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way are not considered necessary to facilitate the development, but mitigation may be required at these two locations for the GMSF as a whole.

15.1.3 As part of the development local measures such as Travel Plan initiatives would be in place to minimise where possible trips by the private car.

15.1.4 The proposals to provide existing residents with a larger car park to alleviate an existing on-street parking issue and the Metrolink Park & Ride would provide additional benefits to the local community as well as assisting with minimising the development impact.

15.1.5 A signalised pedestrian crossing will be provided across Huddersfield Road in the vicinity of the site. The exact location will be determined through the planning application for the site.

15.1.6 A review will take place into the potential enhancement to the existing R5 bus service by improving to hourly and withdrawing R4 and to replace R4 with Local Link.

16. Strategic Context – GM Transport Strategy Interventions

Rochdale

16.1.1 The Greater Manchester Transport Strategy 2040 and Our 5-Year Transport Delivery Plan recognise that a long-term investment plan is required to support growth across the city region – and in addition to the allocation-specific interventions set out in this Locality Assessment, there are a number of other measures already planned to support sustainable travel, and to contribute to the achievement of Greater Manchester's 'Right Mix' ambition.

16.1.2 In relation to schemes near to this allocation, there are planned improvements such as capacity improvements to the Metrolink (Shaw and Crompton – East Didsbury) line that serves the Newhey stop. In the short to medium term, Highways England will be delivering a Smart Motorway scheme on the M62 between Junctions 20 and 25 and Quality Bus Transit is planned on the key bus corridor between Bury and Rochdale. In the longer term a Metro/tram-train corridor is planned, with one of the initial "pathfinder" lines being Oldham-Newhey-Rochdale-Heywood.

16.1.3 TfGM's 'Bee Network' project aims to increase walking and cycling across Greater Manchester. In Rochdale, 136 new or upgraded crossings are proposed for pedestrians and cyclists. Six miles of

Beeline routes are proposed on busier roads in Rochdale, including a corridor scheme to connect Rochdale and Castleton.

17. Phasing Plan and Summary of Mitigations

17.1.1 All phasing plan information contained in this Locality Assessment is indicative only and has only been used to understand the likely intervention delivery timetable. Final trajectory information and the final allocation proposal is contained in the GMSF Allocation Topic Paper.

17.1.2 The following tables provide an indication of the modelled phasing of the allocation.

Table 10. Allocation Phasing included in Modelling

Allocation Phasing	2020 2025	2025 2030	2030 2037	2037+	Total
Allocation	40	210	-	-	**250**
Total	40	210	-	-	**250**

Table 11. Indicative intervention delivery timetable: Newhey Quarry

Mitigation	2020 2025	2025 2030	2030 2037	2037+
Allocation Access				
Allocation Access	✓			
Travel Planning Measures	✓			
Necessary Strategic interventions				
None	-	-	-	
Supporting Strategic Interventions				
None	-	-	-	
Necessary Local Interventions				
A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane		✓		
Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way		✓		
Pedestrian Crossing on Huddersfield Road	✓			
Existing Residents Car Park	✓			
Metrolink Park & Ride	✓			
Supporting Local Interventions				
Changes to Existing bus services	✓			
SRN Interventions				
N/A	-	-	-	

18. Summary & Conclusion

18.1.1 Newhey Quarry is planned to comprise around 250 dwellings delivering a mix of housing density, with the potential for higher density development in the south west part of the allocation closest to the village centre and the Metrolink stop.

18.1.2 The allocation is located in a highly sustainable location, with excellent public transport services and connectivity. It is within 150m of the Newhey Metrolink stop with excellent connectivity to the national rail network and Manchester Airport.

18.1.3 Using the flows provided by SYSTRA, it is concluded that whilst the GMSF development related flows do have an impact on the junctions, however, the impact associated with Newhey Quarry is considered to be minimal and not material. Junction improvements suggested at the A640 Huddersfield Road/A640 Newhey Road/A663 Shaw Road/Cedar Lane and Elizabethan Way / A640 Newhey Road / A6193 Sir Isaac Newton Way junctions are not definitive solutions and are merely examined to demonstrate that the allocation has the potential to be implemented. Furthermore, given the relatively minimal impact that the allocation has in relation to the other allocations these mitigation measures would not be required for this allocation in isolation.

18.1.4 Notwithstanding the exceptionally sustainable nature of the allocation, which is readily accessible by walking, cycling, bus and Metrolink with connectivity to the national rail network and Manchester Airport (thereby in accordance with national planning policy), the trip generation rates provided are considered an extremely worst-case scenario.

18.1.5 Due to the quantum of the development, it would be expected that a Travel Plan along with a package of measures to encourage sustainable travel to and from the development would be required to support a planning application. This would further help to minimise car borne trips. To support this, a signalised pedestrian crossing will be provided across Huddersfield Road in the vicinity of the site. The exact location will be determined through the planning application for the site. A review will take place into the potential enhancement to the existing R5 bus service by improving to hourly and withdrawing R4 and to replace R4 with Local Link.

18.1.6 It also includes both the enlargement of the existing 15 space car park, increasing it to 30 spaces accessed from Bradley Street for use by residents of A640 Huddersfield Road (subject to a Council controlled parking permit), and a 24 space Park & Ride facility for users of the nearby Newhey Metrolink stop.

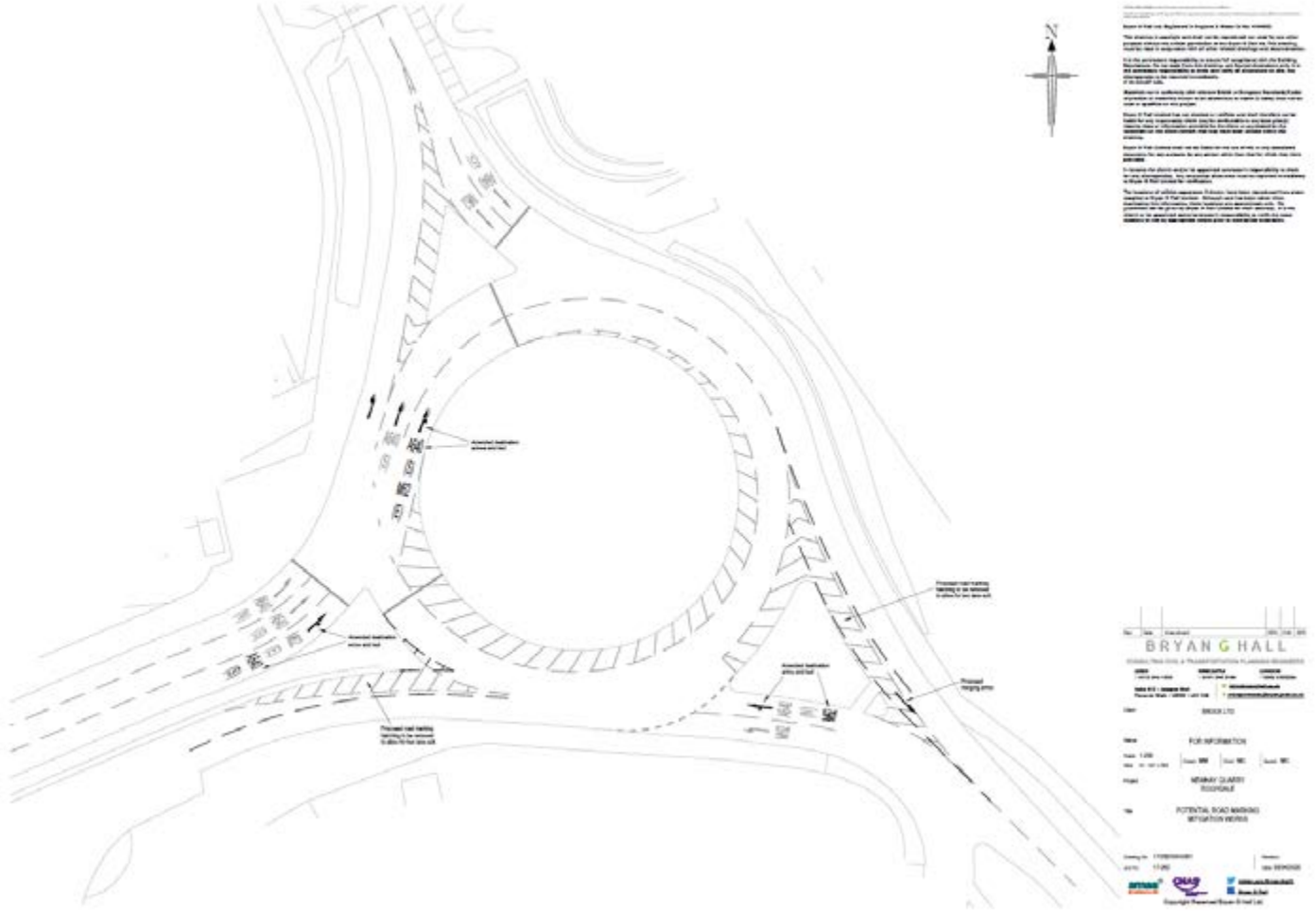
18.1.7 Mitigation schemes were developed and tested to address the network congestion impacts at both the strategic and local road networks and identify appropriate sustainable solutions. These schemes have only been developed in outline detail to inform viability and allocations policy.

18.1.8 Further detailed work will be necessary to identify the specific interventions required to ensure the network works effectively based on transport network conditions at the time of the planning application. All final design solutions should be consistent with Greater Manchester's best practice Streets for All highway design principles.

18.1.9 In summary, this assessment gives an initial indication that the allocation is deliverable, however, significant further work will be needed to verify and refine these findings, particularly in relation to connections to the SRN, as the allocation moves through the planning process. The allocation will also need to be supported by continuing wider transport investment across GM.

Appendix 1 – Potential Mitigation

[Illustrative/Typical Layout]



Greater Manchester Spatial Framework

Locality Assessment:

Roch Valley (GMA25)

Publication Version 2: November 2020

Identification Table	
Client	Rochdale Borough Council/TfGM
Allocation	Roch Valley
File name	GMA25 Rochdale - Roch Valley LA 021020
Reference number	GMA25 (2020 GMSF) previously GMA28 (2019 GMSF)

Approval					
Version	**Role**	**Name**	**Position**	**Date**	**Modifications**
0	Author	Jessica Harrowsmith	Assistant Consultant	20/08/20	Base report
	Checked by	Terry Dale	Associate Director	14/09/20	
	Approved by	Stephen Heritage	Associate Director	14/09/2020	
1	Author	D Nixon	TfGM	27/09/20	Consistency edits
	Checked by	R Chapman	RBC	30/09/20	
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Allocation Data	
Allocation Reference No.	GMA25 (2020 GMSF) previously GMA28 (2019 GMSF)
Allocation Name	Roch Valley
Authority	Rochdale
Ward	Wardle
Allocation Proposal	210 houses
Allocation Timescale	0-5 years ✓ 6-15 years ☐ 16 + years ☐

Glossary

"2025 GMSF Constrained" - is the 2025 forecast case in which the model adjusts the input demand based on how the cost of travel changes from the base year to the future. For example, for a shopping trip undertaken by car which becomes more congested in future, changes might be travel via a different route, mode, location or time of day.

"2040 GMSF Constrained" - as above, but for a 2040 forecast year

"2025 GMSF High-Side"- is the 2025 forecast case in which the model does not adjust the input demand based on how the cost of travel changes. In this scenario congestion does not lead to a reassignment of traffic, and therefore road traffic flow will generally be higher.

"2040 GMSF High-Side" - as above, but for a 2040 forecast year

"2025 Reference Case" - is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2025

"2040 Reference Case"- is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2040

AADT - Annual average daily traffic, is a measure used in transportation planning to quantify how busy the road is

Bee Network - is a proposal for Greater Manchester to become the very first city-region in the UK to have a fully joined-up cycling and walking network: the most comprehensive in Britain covering 1,800 miles.

Bus Rapid Transit - is a bus-based public transport system designed to improve capacity and reliability relative to a conventional bus system. Typically, a BRT system includes roadways that are dedicated to buses, and gives priority to buses at junctions where buses may interact with other traffic

Existing Land Supply - these are sites across the county that have been identified by each local planning authority across Greater Manchester and are available for development

Greater Manchester Variable Demand Model (GMVDM) - the multi-modal transport model for Greater Manchester. This transport model provides estimates of future year transport demand as well as the estimates of travel behaviour changes and new patterns that the Plan is likely to produce. These include

changes in choices of routes, travel mode, time of travel and changes in journey destinations for some activities such as work and shopping.

“LRN” (Local Road Network) All other roads comprise the Local Road Network. The LRN is managed by the local highways authorities

National Trip End Model (NTEM) - is a Department for Transport forecast that ensures that measures of population, jobs and trips made by various mode are consistent across the whole of Great Britain.

Rapid transit services - refers to high frequency, high capacity metro style transport services including Metrolink and Bus Rapid Transit.

“SRN” (Strategic Road Network) The Strategic Road Network comprises motorways and trunk roads, the most significant ‘A’ roads. The SRN is managed by Highways England.

“TfGM” - Transport for Greater Manchester, the Passenger Transport Executive for Greater Manchester

Urban Traffic Control (UTC) - is a specialist form of traffic management that, by coordinating traffic signals in a centralised location, minimises the impact of stop times on the road user.

1. Allocation Location & Overview

1.1.1 The Roch Valley allocation is located within the Rochdale Borough and is situated to the north-west of Smithy Bridge, south of Hurstead, and east of Smallbridge. The allocation is bounded by Smithy Bridge Road to the east, fields to the south, and residential areas - served from the A58 Halifax Road - to the north and west.

1.1.2 The current land use classification is assumed to be U011 Agriculture (likely grassland or fallow), sitting adjacent to a significant area of green belt. The allocation is seeking 210 houses to be delivered by 2025. A full planning application for this quantum was submitted in August 2019 and is awaiting a decision. There is no indication of the type of housing that is to be provided although the planning application seek approval for three, four and five bedroom homes. The allocation also outlines plans to ensure that there are sufficient school places to accommodate the new households, either through an expansion of existing schools or the provision of new school facilities; this includes financial contributions towards additional primary and secondary school places within the area.

1.1.3 With regards to access, multiple residential streets border the allocation, including Lambs Fold and Wuerdle Close, which have the potential to facilitate active modes of travel.

1.1.4 The allocation is in close proximity to the Greater Manchester Spatial Framework (GMSF) allocation Land North of Smithy Bridge, therefore, the impacts of both sites will be considered cumulatively. **Figure 1** shows the Roch Valley allocation in its wider context, illustrating other nearby sites in the GMSF. **Figure 2** shows the allocation in its more local context.

1.1.5 Note that the allocation boundaries shown in **Figure 1 and 2** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. Since the modelling analysis has been undertaken for this report, the site at Kingsway South has been removed from the GMSF. The reference number of Roch Valley has been updated from GMA28 to GMA25 since production of these images.

Figure 1. Allocation Location: Roch Valley – Wider Context

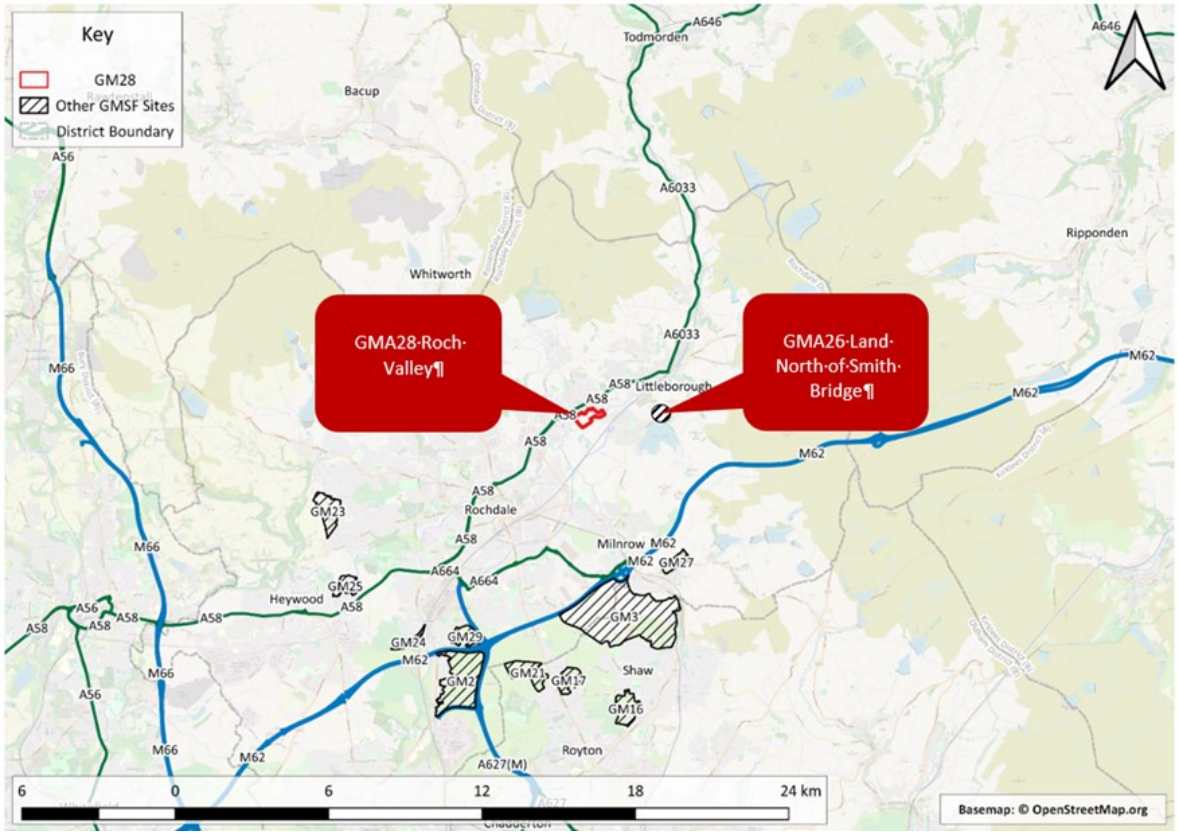
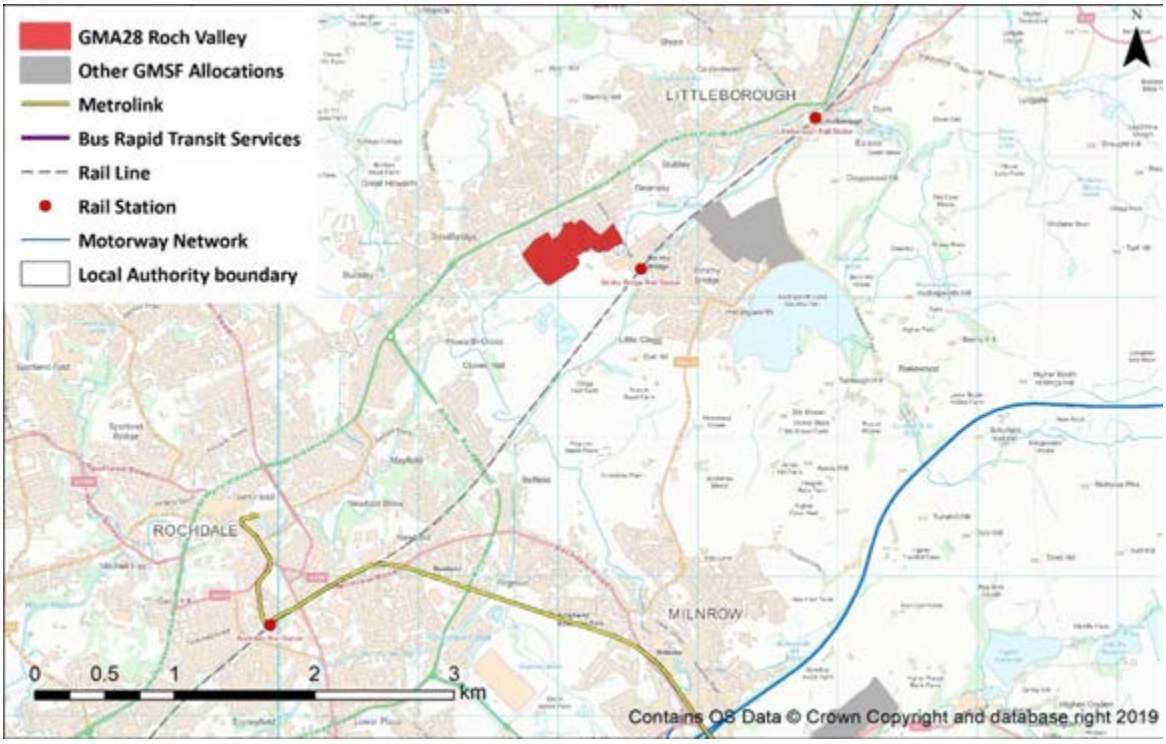


Figure 2. Allocation Location: Roch Valley – Local Context



2. Justification for Allocation Selection

2.1.1 The allocation is located within the wider Roch Valley between Rochdale and Littleborough. The area has good access to the A58 bus corridor and there are local services and facilities along this route. The allocation is also in close proximity to the Calder Valley Railway line station at Smithy Bridge which offers good access to the regional centre and other areas of GM. The allocation offers opportunities for good quality walking and cycling routes along the river valley.

2.1.2 Given that this allocation is Protected Open Land and not Green Belt it was not included in the site selection process given that it is sequentially preferable. Further information is set out in the Topic Paper.

3. Key Issues from Consultation

3.1.1 The Greater Manchester Plan for Homes, Jobs and Environment (Spatial Framework) consultation ran from 14th January to 18th March 2019. There were 453 comments in relation to the GMA28 allocation; the following summary of responses relate to transport (including highways, public transport, walking and cycling) and, consequently, have informed the consideration of transport related mitigation:

- The local road infrastructure will not be able to support the additional traffic resulting from this development;
- Smithy Bridge Road, the A58 and many local roads are already heavily congested, especially during peak hours. Any additional traffic will make this much worse and unbearable;
- The level crossing is frequently down which disrupts traffic. Any additional train services will cause even more delays;
- The local road infrastructure already needs improvement, without the added pressure of further housing; and
- The train service is overcrowded and inadequate. The Metrolink service is also overcrowded for those who can access it.

3.1.2 A full summary of all consultation responses is available on the GMCA GMSF website.

4. Existing Network Conditions and Site Access

4.1 Existing Road Network

4.1.1 Vehicular access to the allocation is currently provided via Smithy Bridge Road which runs to the east of the allocation. The road has a 30mph speed limit, has footways to either side and is street lit. It is some 9.5m in width (kerb to kerb), however, the two-way traffic lanes are some 8m in total width with the remaining 1.5m being a mandatory - on carriageway - cycle lane. From Halifax Road (northwest) to Fletcher's Road (southeast), Smithy Bridge Road has little horizontal curvature, the road bends to the left, at Fletcher's Road, on its approach the railway line and level crossing; the route is also on a downhill gradient until the it runs parallel to the allocation frontage.

4.1.2 Along the eastern frontage, between Eafield Road and S View Road – some 230m – there are four bus stops which could readily service the allocation.

4.1.3 Pedestrian access is available via footpaths that run through the residential areas around the edge of the allocation, such as those accessed from Old Road.

4.2 Road Safety

4.2.1 The allocation is located to the north of the Smithy Bridge railway level crossing; a risk assessment, undertaken by Network Rail, identified eight reported incidents at the crossing within the last five year period.

4.2.2 Further, collision data for the area within a 1km radius of the allocation, highlights that there were 24 road traffic incidents in the currently reported 5 year period; none were identified as resulting in fatalities. However, there have been three serious accidents involving pedestrians and cyclists along the A58, between Smithy Bridge Road, and the A664 Albert Royds Street with a series of slight accidents along the A58, Albert Royds Street and Smithy Bridge Road. The data is provided in **Appendix 1**.

4.3 Proposed Allocation Access

4.3.1 The allocation would likely take access from Smithy Bridge Road, with a secondary emergency access, potentially, from adjacent residential routes. All access routes would be designed to accommodate active modes (walking and cycling)

4.3.2 A new junction with Smithy Bridge Road may take the form of a priority 'T' junction as illustrated in **Appendix 2**; this would be subject to capacity requirements and detailed design. As can be seen however, the junction would need to incorporate existing mandatory cycle lanes, bus cages and there is the potential to accommodate a TOUCAN crossing facility with direct pedestrian and cycle access to the allocation from the Smithy Bridge Road frontage.

5. Multi-modal accessibility

5.1 Current Assessment of Accessibility

5.1.1 Roch Valley and the local area is accessible via public transport with good access to local rail, Metrolink and bus services. Within the Regional Centre, there are extensive interchange facilities including connections to destinations on the West Coast Mainline, Trans-Pennine routes and Manchester Airport.

5.1.2 With regards to the allocation, an 'index score' has been derived from the Greater Manchester's Accessibility Level model (GMAL). The index score is categorized into eight levels, 1 to 8, where Level 8 represents a high level of accessibility and Level 1 a low level of accessibility. GMAL suggests that the allocation sits at Level 6.

5.2 Public Transport

5.2.1 The nearest railway station is at Smithy Bridge, located 0.7 kilometres from the allocation. Access between the platforms is via the adjacent level crossing or a narrow subway, under the level crossing, which facilitates pedestrian access whilst the level crossing barriers are down. However, only the northern end of the subway provides step free access.

5.2.2 Smithy Bridge station is unstaffed, however, there are accessible ticket machines available. Waiting facilities comprise of single, basic shelters on each platform. There are no customer help points and the station is not covered by CCTV. There is a privately owned station car park with 20 spaces, none of which are accessible spaces, and no cycle parking is provided. The station is on the Calder Valley Railway Line providing two trains per hour to Rochdale and Manchester and eastwards towards Leeds; however, notwithstanding the good rail access, public consultation has identified that train services are overcrowded in peak periods.

5.2.3 With regards to bus access, there are bus stops located on the A58, adjacent to Braddocks Close, approximately 300m north of the allocation. These stops accommodate five or six buses per hour to Rochdale and seven buses per hour to Littleborough, along the A58, with a bus per hour going to/from Burnley and Halifax. In addition, as discussed earlier, there is an hourly service to Rochdale and Littleborough accessed from bus tops on Smithy Bridge Road to the east of the allocation.

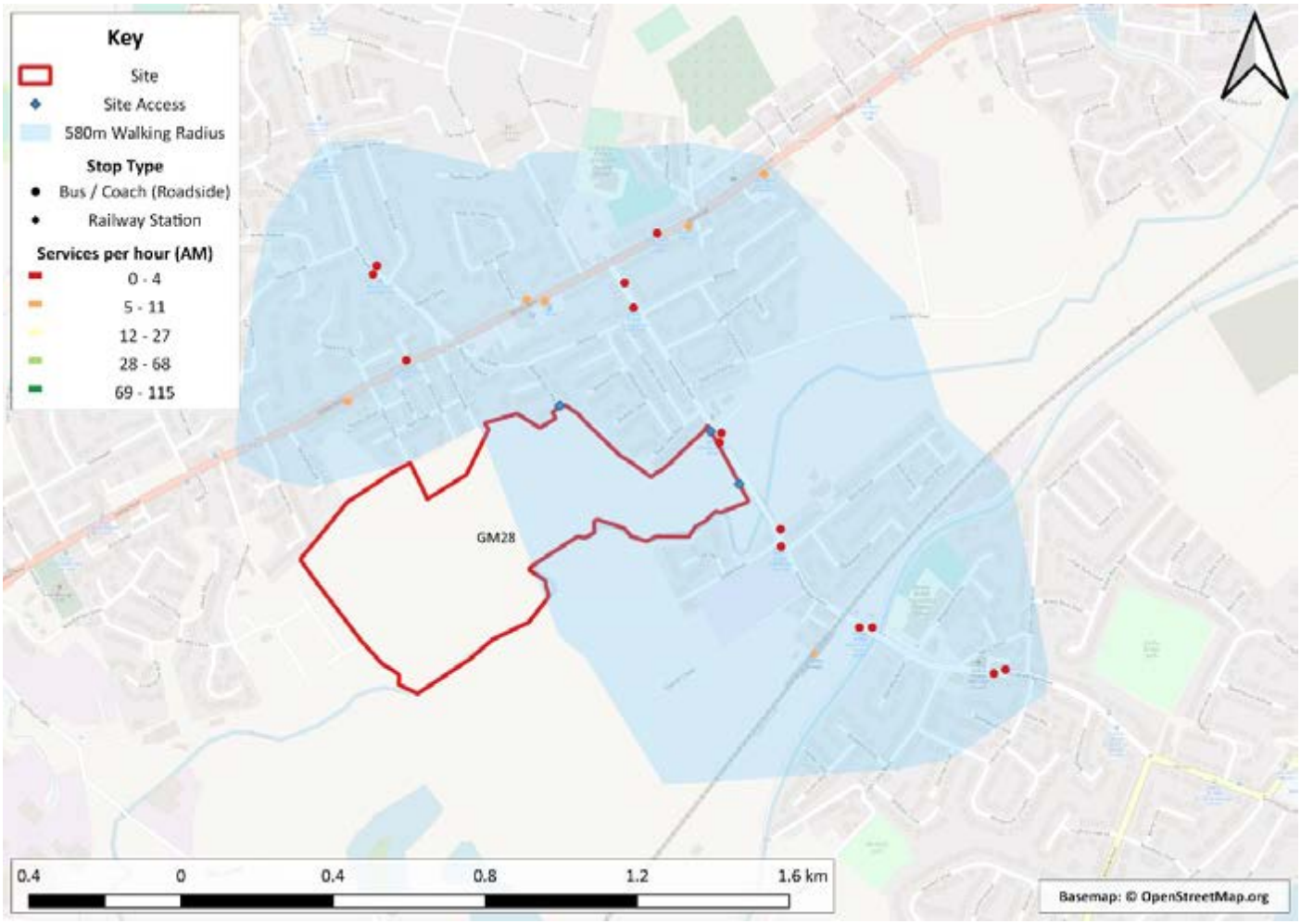
5.2.4 Bus service frequency and access is summarised in **Table 1.**

Table 1. Accessibility of and proximity to public transport Roch Valley

Mode	Nearest Stop/ Station	Distance (km)*	Peak Hour Frequency (Mins)
Bus	A58/Braddocks Close	0.3	10
Bus	Smithy Bridge Road	0.5	60
Rail	Smithy Bridge	0.7	30
Metrolink	Newbold	2.5	12

5.2.5 **Figure 3** identifies the current accessibility of public transport for the future residents of Roch Valley, exploring the proximity, and the frequency of travel during peak hours.

Figure 3. Accessibility and Proximity of Bus Stops: Roch Valley



5.2.6 Note that the allocation boundaries shown in **Figure 3** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. The reference number of Roch Valley has been updated from GMA28 to GMA25 since production of these images.

5.3 Walking and Cycling

5.3.1 The principal cycling desire lines are along the Rochdale Canal towpath and along the A58 between Littleborough and Rochdale.

5.3.2 National Cycle Network Route 66 links Littleborough with the regional centre, Rochdale and West Yorkshire, and follows the Rochdale Canal towpath, 0.8 kilometres to the south of the allocation, across the River Roch. However, the towpath is not currently in a condition to provide safe and comfortable year round cycling access. Regional Route 80 is located to the north of the allocation and routes along Stubley Mill Road and Old Road, and provides a connection between

Littleborough to the east and Halifax Road to the north of the allocation. There are safe crossings of the A58, but no crossings along Smithy Bridge Road.

5.4 Proposed

5.4.1 Investment in public and active transport will be required in order for this allocation to meet the target of TfGM's 2040 Transport Strategy (i.e. 50% of all journeys in Greater Manchester to be made by walking, cycling and public transport by 2040), this will include increased bus frequency and/or bus penetration in to the allocation.

5.4.2 Specifically, in terms of public transport, the following improvements are recommended:

- An improvement to the frequency of bus services along Smithy Bridge Road to provide better travel times and increased capacity for bus users; and
- An improvement to the capacity of peak hour rail services on the Calder Valley Line (i.e. extra carriage) to provide more comfortable and attractive journeys for rail users.

5.4.3 The allocation will need to create safe and convenient walking and cycling links to key local destinations, enhancing sustainable transport opportunities along the Roch Valley, and to principal centres including Smithy Bridge Railway Station and bus services along the A58 and Smithy Bridge Road.

5.4.4 The closest schools are Smithy Bridge Primary, to the south of the level crossing, Alice Ingham RC and Meadows Schools to the west along the A58, and St Andrews CofE and Wardle Academy to the north of the A58.

5.4.5 Local cycling and walking routes are proposed in the Greater Manchester Beeline network along the Roch Valley from Littleborough via Dye House Lane to Albert Royds Street, and along the Rochdale Canal towpath. A safe crossing for the Roch Valley route is proposed at the junction of Stopford Avenue and Smithy Bridge Road. The crossing would need to meet 'Made to Move Standards' and benefit pedestrians and cyclists. It is assumed that improvements to these routes will be made as part of the Beelines delivery programme.

5.4.6 The planning application for the allocation includes a number of measures for pedestrians and cyclists including:

- A new 2m footway and 4m cycleway to be provided to the south of the proposed access road connecting into Smithy Bridge Road to the east;
- Pedestrian accesses provided from the allocation directly onto Smithy Bridge Road, Holland Street and Brooklyn Avenue providing access to nearby bus stops, Smithy Bridge Railway Station and key facilities on the A58 and along Smithy Bridge Road;
- Diversion of the Public Right of Way (PRoW) from the north east corner to the south west corner across the allocation realigning the footpath north-south through the allocation to meet the proposed east-west footway/cycleway to the south of the allocation;
- The PRoW will enable further connections to the surrounding areas with two connections onto Wuerdle Farm Way and a connection to the west to a recently constructed residential development and a connection onto Smithy Bridge Road providing a more direct access to the northbound bus stop and Smithy Bridge Railway Station;
- The allocation will be subject to a 20mph speed limit improving the environment for pedestrians using the allocation; and
- A puffin crossing on Smithy Bridge Road providing a safe and controlled crossing point for pedestrians.

5.4.7 It is worth noting that Rochdale Borough Council is promoting the A58 Residential Relief Road (also known as Smithy Bridge Local Access Route), hence, the proposed footway/cycleway to the south of the allocation may in future follow the alignment of the relief road (subject to detailed design). If the relief road were to come forward, there will be a need to ensure crossings and connections into existing and proposed sustainable links, including the two north-south footways/cycleways running into the allocation and the existing PRoWs running to the east of the allocation boundary and potentially those located south of the River Roch.

5.4.8 Additional measures that would improve multi modal accessibility to the allocation include:

- A toucan crossing of Smithy Bridge Road at the entrance to the allocation. This would connect Regional Route 80 (running along Stubley Mill Road) with the proposed new route to the south of the allocation;
- A new foot/cycle bridge across the River Roch and improvement to the PRoW running from the River Roch southwards towards Fletcher's Road. This would provide a traffic-free connection with Smithy Bridge Railway Station and the Rochdale Canal via the

Fletcher's Road subway under the rail line (avoiding the constrained road width on Smithy Bridge Road around the railway station). Lighting and surface treatment would be required;

- A toucan crossing of Smithy Bridge Road adjacent to the railway station to allow crossing from the ramp from the canal towpath to the platforms; and
- Secure cycle parking at Smithy Bridge Railway Station.

1.1.6 The following are considered to be essential, site-based measures:

- Pedestrian accesses provided from the allocation directly onto Smithy Bridge Road, Holland Street and Brooklyn Avenue providing access to nearby bus stops, Smithy Bridge Railway Station and key facilities on the A58 and along Smithy Bridge Road;
- Diversion of the Public Right of Way (PRoW) from the north east corner to the south west corner across the allocation realigning the footpath north-south through rhe allocation to meet the proposed east-west footway/cycleway to the south of the allocation;
- The PRoW will enable further connections to the surrounding areas with two connections onto Wuerdle Farm Way and a connection to the west to a recently constructed residential development and a connection onto Smithy Bridge Road providing a more direct access to the northbound bus stop and Smithy Bridge Railway Station; and
- The allocation should be subject to a 20mph speed limit improving the environment for pedestrians using the allocation.

6. Parking

6.1.1 The following parking standards for residential development are set out in Appendix 5 of the Rochdale Adopted Core Strategy (2016) and are based on draft Greater Manchester-wide standards developed in association with the other Greater Manchester authorities.

6.2 Car Parking

6.2.1 The car parking standards comply with maximum originally set out in Planning Policy Guidance 13 (PPG13) 'Transport', although for some types of Use Class, the standards are slightly more restrictive to reflect local circumstances. They are also in accordance with the maximum levels set out in draft Regional Planning Guidance (May 2002). The draft RPG also sets out 'urban

conurbation' ceilings, and these are generally consistent with the Rochdale standards, with a few exceptions again designed to reflect local circumstances.

6.2.2 In addition to the required residential car parking requirements, the allocation will also provide visitor parking to replace the existing spaces lost to development to the south of the allocation. The size of this car parking area is still to be determined.

6.3 Disabled Car Parking

6.3.1 This is based on recommendations in the Department of Transport Traffic Advisory Note on Parking for Disabled People.

6.4 Cycle Parking

6.4.1 The cycle standards are generally slightly higher than the level of parking provision suggested in the National Cycle Strategy to reflect the increasing importance of cycle provision.

6.5 Motorcycle Parking

6.5.1 The motorcycle standards generally allow for 2.5% of maximum car parking provision.

Table 2. Rochdale Borough Council Parking Standards

Type of Development	Maximum Standard for Car Parking Excluding Disabled	Minimum Standards for Car Parking for those who are Disabled	Minimum Standards for Cycle Parking
C3. Dwelling Houses 2+ bedrooms outside town centres	2 per dwelling (not including a garage)		No standard
Single bed dwellings and dwellings in town centres	1.25 per dwelling		No standard
Flats/apartments 2+ bedrooms outside town centres	2 per dwelling		Flats and apartments – 1 secure locker per 5 dwellings – minimum of 2 spaces
Single bed dwellings and flats/apartments in town centres	1.25 per dwelling		Flats and apartments – 1 secure locker per 5 dwellings – minimum of 2 spaces
Sheltered housing	1 per 3 dwellings + 1 per 2 full time staff		No standard
B2. General Industry	1 per 60m^2	Below 12 spaces – 10% of total capacity; 12 – 200 – 3 bays or 6% of total capacity (whichever is greater); Over 200 – 4 bays plus 4% of total capacity	1 per 700m^2 – minimum of 2 spaces;

Type of Development	Maximum Standard for Car Parking Excluding Disabled	Minimum Standards for Car Parking for those who are Disabled	Minimum Standards for Cycle Parking
B8. Storage & Distribution	1 per 100m^2	As above	1 per 850m^2 – minimum of 2 spaces

7. Allocation Trip Generation and Distribution

7.1.1 For the purposes of the testing the impact of the allocation through the strategic model, a total of 210 dwellings have been assumed to be built out by 2040. The GM transport modelling suite has a 2040 forecast year, as such it uses 2040 trajectory data as proxy for 2037 full build-out, this is not considered to materially impact on the analysis or conclusions of this report.

7.1.2 Future trip generation to and from the allocation (i.e. how many people and vehicles will enter or leave the allocation) was estimated by applying a set of GM-wide trip rates to the agreed development quantum. The distribution of trips (i.e. where they are going to or coming from) was derived by selecting nearby zones with similar land use characteristics as a proxy and using the existing distribution in the model.

7.1.3 **Table 3** indicates the quantum of development for Roch Valley. Of the homes that are allocated for the allocation, all 210 are expected to be delivered by 2025.

Table 3. Development Quantum: Land North of Smithy Bridge Roch Valley

Use	Use Sub Category	Development Quantum 2025	Development Quantum 2040
Residential	Houses	210	210
Residential	Apartments	0	0

Table 4. Allocation Traffic Generation: Roch Valley

Year	AM Peak Hour Departures	AM Peak Hour Arrivals	PM Peak Hour Departures	PM Peak Hour Arrivals
2025 GMSF Constrained	70	21	36	77
2025 GMSF High-Side	72	29	44	77
2040 GMSF Constrained	63	19	31	67
2040 GMSF High-Side	72	29	44	67

Units are in PCU (passenger car units/hr)

Table 5. Traffic Distribution at 2040 (Origins and Destinations Combined): Roch Valley

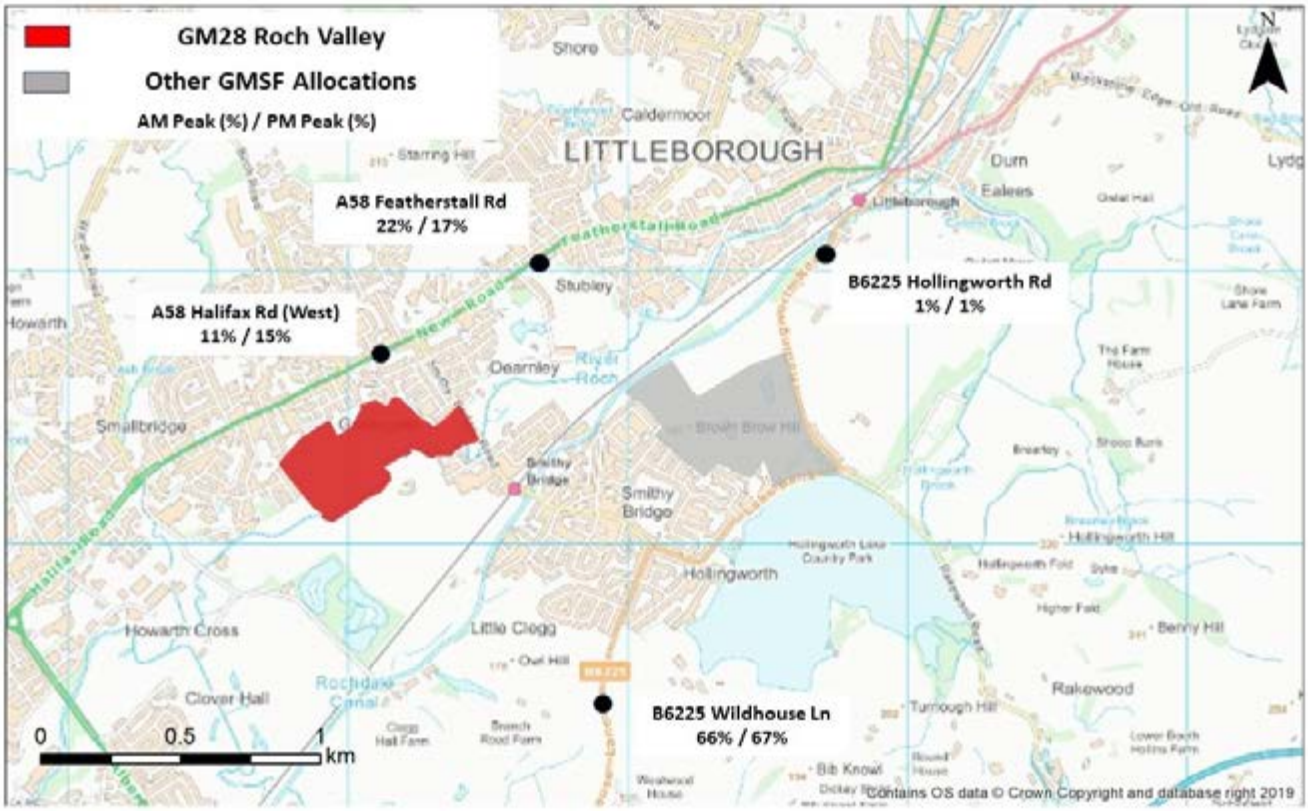
Route	AM Peak Hour	PM Peak Hour
Wildhouse Ln	66%	67%
A58 Featherstall Rd	22%	17%
B6225 Hollingworth Road	1%	1%
A58 Halifax Rd (West)	11%	15%

Table 6. Cross Boundary Trip Distribution at 2040: Roch Valley

Route	Share AM Peak	Share PM Peak	2 Way Flow AM Peak	2 Way Flow PM Peak
A6033 Rochdale Road	21%	16%	21	18
A58 Halifax Road	1%	2%	1	2

7.1.4 **Table 6** shows a summary of trips expected to move beyond the GM boundary. Of these, the majority head towards Todmorden on the A6033 Todmorden Road.

Figure 4. Allocation Traffic Distribution, 2040 GMSF High-Side (Origin/Destination Combined)



7.1.5 Note that the allocation boundaries shown in **Figure 6** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. The reference number of Roch Valley has been updated from GMA28 to GMA25 since production of these images.

8. Current Highway Network Review

8.1.1 The A58 Halifax Road, to the north of the allocation, is a main distributor road of strategic importance; it is part of the national Primary Route Network and the GM Key Route Network and, therefore, performs a key role for cross boundary trips. Nonetheless, the A58 accommodates multiple priority junctions to access residential roads and frequent bus stops; consequently, the A58 experiences congestion during the morning and evening peak periods.

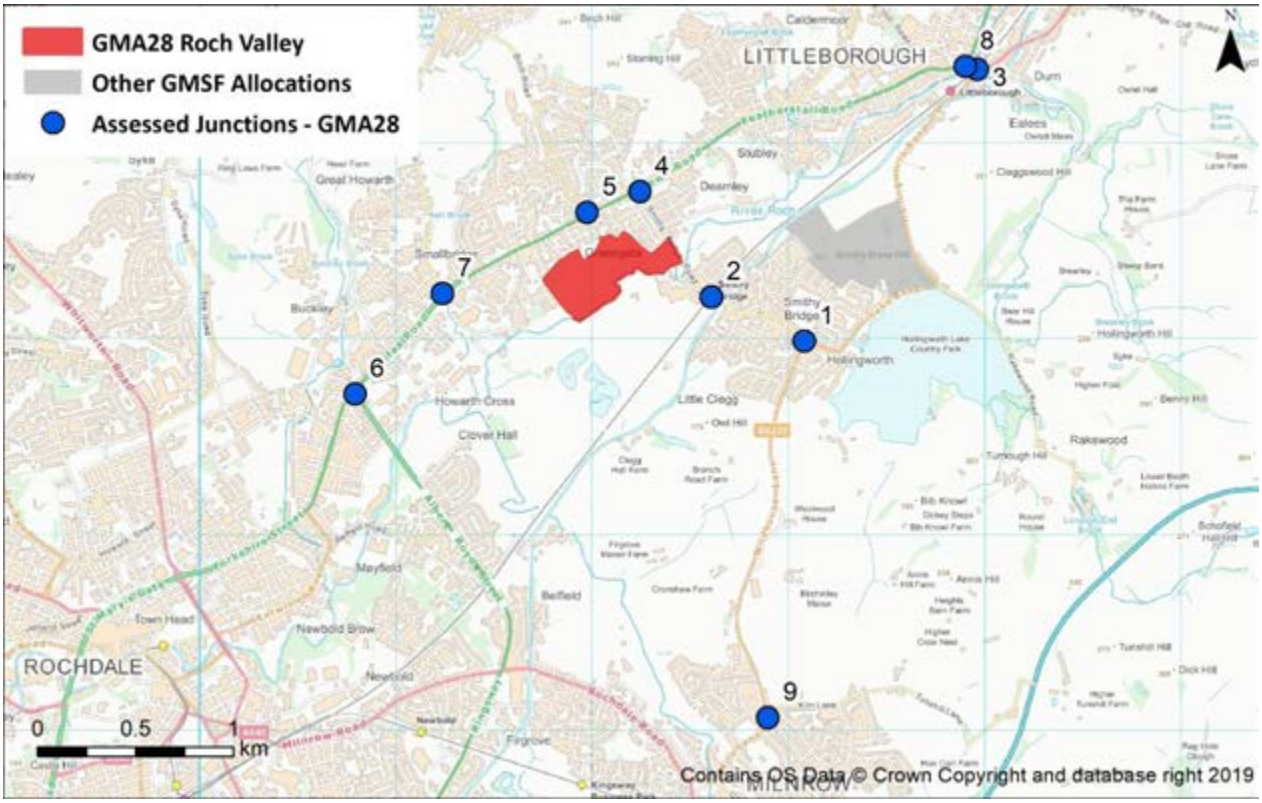
8.1.2 The junction between A58 Halifax Road and Smithy Bridge Road is signal controlled. Both of these roads suffer from minor levels of congestion during the morning and evening peaks, with some sections of heavy congestion during the evening peak. The previously discussed planning

application for development of the allocation showed that the A58 Halifax Road / Smithy Bridge Road / Union Road signalised junction is operating close to capacity in the morning peak with some substantial queues forming on the A58 westbound in the morning peak, eastbound in the evening peak and Smithy Bridge Road in both the morning and evening peak periods in the 2016 baseline assessment. However, the junction does currently operate under MOVA control, therefore, the levels of queuing and delay at the junction forecast by the model are likely to be overestimated.

8.1.3 SYSTRA identified a number of junctions in proximity to the allocation where, based on existing conditions, additional traffic could have an impact on their operation. The following junctions were deemed to be the most important in the local area and are, therefore, referred to as 'in scope' junctions.

- 1. A58 Halifax Road / Albert Royds Street;
- 2. A58 Halifax Road / Birch Road;
- 3. A58 Halifax Road / Smithy Bridge Road;
- 4. Smithy Bridge Road / level crossing;
- 5. A58 Halifax Road / A6033 Todmorden Road;
- 6. A58 Halifax Road / B6225 Hollingworth Road;
- 7. A58 / Wardle Road;
- 8. Wildhouse Lane / Smithy Bridge Road; and
- 9. Wildhouse Lane / Kiln Lane.

Figure 5. Assessed Junctions: Roch Valley



9. Treatment of Cumulative Impacts

9.1.1 The constrained and High Side model runs take account of all traffic associated with GMSF allocations; nonetheless, more local to Roch Valley, within a 2km buffer, is the Land North of Smithy Bridge allocation. At the local level, therefore, the transport impact of the allocation needs to be considered cumulatively with the GMSF allocation Land North of Smithy Bridge because relative impacts are a potentially important consideration for apportioning the cost of any mitigation.

9.1.2 The Land North of Smithy Bridge allocation is forecast to generate approximately 144 to 157 two-way vehicle trips during the morning and evening peak hours. The Roch Valley allocation is forecast to generate approximately 101 to 112 two-way vehicle trips during the morning and evening peak hours. In any one location, the combined impact of these trips could have a more significant impact on the network than that of the allocation by itself; hence the combination of impacts has been assessed.

10. Allocation Access Assessment

10.1.1 The form of access will be determined through discussions with the local highway authority at the planning stage, however, it is considered that the Smithy Bridge Road boundary has sufficient frontage to accommodate a simple priority T junction. An indicative site access arrangement has been developed to illustrate that there is a practical option for site access in this location and to develop indicative cost estimates. A potential outline design is provided in **Appendix 2**. It is assumed that a detailed design consistent with Greater Manchester's best practice Streets for All highway design principles will be required at the more detailed planning application stage.

11. Impact of Allocation Before Mitigation on the Local Road Network

11.1.1 This section looks at the impact on the network at the junctions highlighted in **Section 8**. In order to understand a worst case impact of the GMSF, the 'High Side' runs from the GMVDM were used to derive with GMSF development flows for 2025 and 2040. These flows were then entered into junction based models for the junctions identified in **Section 8**. Flows from the 2025 and 2040 Reference Case scenarios (including approved Local Plan development from the respective districts) were also extracted to provide a comparison between the operation of those junctions in the 2025 and 2040 Reference Case and the 2025 and 2040 with GMSF development scenarios.

11.1.2 The 'with GMSF' scenario was assessed against a Reference Case which assumes background growth and includes the housing and employment commitments from the districts. These assessments were then used to identify the junctions where there is considered to be a substantial impact, relative to the operation of the junction in the 2025 and 2040 Reference Case scenarios, and hence where mitigation was considered to be required in order to bring GMSF sites forward. Through discussions with TfGM and the Combined Authority, it was agreed that where mitigation is required, it should mitigate the impacts back to the Reference Case scenario.

11.1.3 Signalised junctions were assessed in detail using industry-standard modelling software LINSIG version 3. Where possible, traffic signal information was requested from TfGM in order to ensure that the local junction models reflected (as far as possible), the operation of the junctions on street. Junctions 9 software was used to assess priority and roundabout junctions.

11.1.4 **Table 7** below provides a comparison between the operation of the 'in scope' junctions in the 2040 Reference Case and the 2040 'High Side' scenarios, as well as the allocation development flows through each respective junction. The table shows a comparison between the ratio of flow to capacity on the worst case arm at each junction as well as the total development flows (in PCUs) through the junction.

11.1.5 For reference, a figure of between 85% and 99% illustrates that the junction is nearing its operational capacity (and is highlighted in amber), and a figure of 100% or over illustrates that flows exceed the operational capacity at the junction (and is highlighted in red).

11.1.6 It should be noted that by 2025, there were considered to be no substantial impacts requiring mitigation between the reference case and 'with GMSF' outputs. A summary table of the results of local junction capacity analysis before mitigation for 2025 is provided in **Appendix 3**.

Table 7. Results of Local Junction Capacity Analysis Before Mitigation 2040: Roch Valley

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
A58 / Albert Royds Street	142%	109%	146%	116%	11	14
A58 / Birch Road	98%	75%	93%	78%	11	14
A58 / Smithy Bridge Road	76%	94%	78%	98%	30	28
Smithy Bridge Road / level crossing	28%	28%	25%	26%	71	80
A58 / A6033 Todmorden Road	105%	115%	109%	120%	4	8
A58 / B6225 Hollingworth Road	116%	98%	143%	134%	1	1

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
A58 / Wardle Road	178%	143%	207%	154%	11	14
Wildhouse Lane / Kiln Lane	195%	168%	199%	170%	69	78
Wildhouse Lane / Smithy Bridge Road	92%	117%	97%	126%	71	80

A58 / Albert Royds Road

11.1.7 A comparison between the 2040 Reference Case and the 2040 High Side scenarios for the A58 / Albert Royds Road junction shows that, despite the fact that the junction is over capacity in both scenarios, the overall operation of the junction is similar in both scenarios (an increase in the ratio of flow to capacity on the worst case arm of 4% in the morning peak and 7% in the evening peak). It was concluded, therefore, that the allocation does not cause a severe impact at the junction and no further mitigation was investigated.

A58 / Birch Road

11.1.8 The A58 / Birch Road is approaching capacity in the morning peak and within capacity in the evening peak in both the 2040 Reference Case and the 2040 High Side scenarios (98%/75% & 93%/78% respectively), therefore, no further mitigation was investigated.

A58 / Smithy Bridge Road

11.1.9 The A58 / Smithy Bridge Road is within capacity in the morning peak and approaching capacity in the evening peak in both the 2040 Reference Case and the 2040 High Side scenarios (76%/94% & 78%/98% respectively), therefore, no further mitigation was investigated.

Smithy Bridge Road / Level Crossing

11.1.10 At the maximum rail line speed, the crossing warning time given to drivers at level crossings might typically be around 27sec from the amber light first showing to the train arriving at the crossing; this is followed by the time taken for the train to clear the crossing and for the gates to reopen. Particularly in peak periods, this cycle of warning, road closure and road reopening might occur a number of times. Unfortunately, the variable and generally short term, temporal nature of the queues and delays to traffic caused by level crossings cannot be represented well in junction-based traffic modelling. Consequently, mitigation was not tested but was considered here at the request of Network Rail, and in the light of consultation responses. Furthermore it is understood that an upgrade to the crossing to provide safety benefits is now being progressed through the Station Alliance.

A58 / A6033 Todmorden Road

11.1.11 The A58 / A6033 Todmorden Road junction is over capacity in both the 2040 Reference Case and the 2040 High Side scenarios. The forecast increase in the ratio of flow to capacity on the worst arm of the junction however is only 4% (from 105% to 109%) in the morning peak and is only 5% (from 115% to 120%) in the evening peak. It was therefore concluded that the allocation does not cause a severe impact at the junction and no further mitigation was investigated.

A58 / B6225 Hollingworth Road

11.1.12 A comparison between the 2040 Reference Case and the 2040 High Side scenarios shows that the ratio of flow to capacity on the worst case arm at the A58 / B6225 Hollingworth Road junction increases from 116% to 143% in the morning peak and from 98% to 134% in the evening peak. This is considered a material change, alongside the development flows of 35 to 40 in peak periods and, therefore, mitigation was investigated at the junction. Due to the proximity between this junction and the A58 / A6033 Todmorden Road junction, the mitigation proposed covers both junctions.

A58 / Wardle Road

11.1.13 A comparison between the 2040 Reference Case and the 2040 High Side scenarios shows that the ratio of flow to capacity on the worst case arm at the A58 / Wardle Road junction increases from 178% to 207% in the morning peak and from 143% to 154% in the evening peak. This is considered a material change (particularly in the evening peak) and, therefore, mitigation was investigated at the junction.

Wildhouse Lane / Kiln Lane

11.1.14 The Wildhouse Lane / Kiln Lane junction is over capacity in both the 2040 Reference Case and the 2040 High Side scenarios. However, the increase in the ratio of flow to capacity on the worst arm of the junction is only 4% (from 195% to 199%) in the morning peak and is only 2% (from 168% to 170%) in the evening peak. It was, therefore, concluded that the allocation does not cause a severe impact at the junction and no further mitigation was investigated.

11.1.15 Rochdale Borough Council is investigating an improvement scheme at the junction, but as this scheme is to mitigate Reference Case impacts rather than GMSF impacts, this scheme was not included as mitigation for the GMSF.

Wildhouse Lane / Smithy Bridge Road

11.1.16 The Wildhouse Lane / Smithy Bridge Road junction is within capacity in the morning peak and overcapacity in the evening peak in both the 2040 Reference Case and the 2040 High Side scenarios. The increase in the ratio of flow to capacity on the worst-case arm is 5% (from 92% to 97%) in the morning peak hour and 9% (from 117% to 126%) in the evening peak hour. The evening peak hour increase, in particular, was considered a concern, particularly given the high level of development flows through the junction (104 to 120 in peak periods). Therefore, mitigation was investigated at the junction.

12. Transport Interventions Tested on the Local Road Network

12.1.1 As a result of the junction assessments outlined in the previous section, the approach to the testing of mitigation is summarised in **Table 8**. It is worth noting that the interventions are not expected to be the definitive solutions and are discussed here in order to demonstrate that the allocation has the potential to be implemented and have informed the costing of GMSF mitigations.

Table 8. Approach to Mitigation: Roch Valley

Junction	Approach To Mitigation
A58 / Albert Royds Street	Results comparable – no direct mitigation
A58 Halifax Road / Birch Road;	Results comparable – no direct mitigation
A58 / Smithy Bridge Road	Results comparable – no direct mitigation
Smithy Bridge Road / level crossing	Temporal nature of issue not well represented in existing models – no mitigation proposed, Station Alliance to provide safety upgrade
A58 / A6033 Todmorden Road	Due to the proximity with A58 / B6225 junction, mitigation proposed covering both A58 / A6033 and A58 / B6225 junctions (signalisation).
A58 / B6225 Hollingworth Road	Due to proximity with A58 / A6033 junction, mitigation proposed covering both A58 / A6033 and A58 / B6225 junctions (signalisation), due to deterioration from Reference Case to GMSF.
A58 / Wardle Road	Mitigation proposed due to deterioration from Reference Case to GMSF.
Wildhouse Lane / Kiln Lane	Results comparable – no mitigation proposed
Wildhouse Lane / Smithy Bridge Road	Results comparable – no mitigation proposed

12.1.2 In summary, mitigation tested in the GMVDM to support the Roch Valley allocation was as follows:

- A58 / A6033 Todmorden Road and A58 / B6225 Hollingworth Road junctions signalisation. It should be noted that it may be difficult to locate the signal heads for this improvement due to the railway bridge and, therefore, further scheme development will be required; and
- A58 / Wardle Road junction signalisation with free flow east-west movement.

12.1.3 As discussed, it is worth noting that Rochdale Borough Council has an aspiration to deliver the A58 Residential Relief Road (also known as Smithy Bridge Local Access Route) running to the south of the Roch Valley allocation, between Smithy Bridge Road and Riverside Drive. This route may remove development traffic from the A58 and, potentially, negate the need for an improvement to the A58/Wardle Road junction as well as providing potential benefits to the operation of the wider road network, including routes to and from Milnrow and the M62. However, due to uncertainty regarding the delivery of the relief road, the scheme was not included in the strategic modelling exercise such that the schemes required to mitigate GMSF impacts could be clearly identified. Nonetheless, Rochdale Borough Council considers the scheme to be a supporting measure, and in the interim will be examining options for a package of supporting measures on the A58 corridor.

13. Impact of interventions on the Local Road Network (where appropriate)

13.1.1 In order to understand whether the mitigation developed for the allocation (and all other allocations within the GMSF) is sufficient to mitigate the worst case impacts of the GMSF identified in **Section 11**, a second run of the GMVDM was undertaken with all identified mitigation included. Where a significant flow change was observed, the junction models were rerun, where required, to check that the mitigation identified in **Section 12** is still sufficient to mitigate allocation impacts, and that all other 'in scope' junctions continue to operate satisfactorily following any reassignment of traffic due to the mitigation schemes.

13.1.2 **Table 9** provides a comparison between the forecast operation of the 'in scope' junctions in the 2040 Reference Case and the 2040 'High Side' with mitigation scenarios, or an explanation as to why a rerun of the junction model was not required, as well as the allocation development flows through each respective junction. As with **Table 7**, the table shows a comparison between the ratio of flow to capacity on the worst-case arm at each junction.

Table 9. Results of Local Junction Capacity Analysis After Mitigation 2040: Roch Valley

Junction	Reference Case AM	Reference Case PM	GMSF High With Mit AM	GMSF High With Mit PM	Allocation Flows AM	Allocation Flows PM
A58 / Albert Royds Street	142%	109%	151%	115%	16	20
A58 / Birch Road	98%	75%	87%	72%	0	0
A58 / Smithy Bridge Road	76%	94%	79%	99%	16	13
Smithy Bridge Road / level crossing	28%	28%	25%	32%	46	68
A58 / A6033 Todmorden Road	105%	115%	87%	77%	2	6
A58 / B6225 Hollingworth Road	116%	98%	87%	77%	1	1
A58 / Wardle Road	178%	143%	96%	96%	0	0
Wildhouse Lane / Kiln Lane	195%	168%	193%	174%	43	67
Wildhouse Lane / Smithy Bridge Road	92%	117%	87%	114%	45	68

13.1.3 As shown in **Table 9**, the introduction of the A58 / A6033 Todmorden Road and A58 / B6225 Hollingworth Road junctions signalisation results in a significant improvement to junction operation. However, due to the difficulty in locating the signal heads for the signalisation, more detailed work is required to develop the design for the final scheme.

13.1.4 Similarly, the introduction of the A58 / Wardle Road junction signalisation with free flow east-west movement, results in a significant improvement to the operation of this junction, returning the junction to being within its operational capacity.

13.1.5 In addition, the operation of all other 'in scope' junctions remains comparable with the 2040 Reference Case meaning that the schemes tested are considered to mitigate the impacts of the GMSF as whole and specifically Roch Valley.

14. Impact and mitigation on Strategic Road Network (where applicable)

14.1 Overview

14.1.1 On behalf of TfGM and the Combined Authority, SYSTRA is consulting with Highways England in relation to the wider impacts of the GMSF allocations on the Strategic Road Network (SRN). This consultation is ongoing and is expected to provide Highways England with a strategic understanding of the likely demands on the SRN as a consequence of GMSF. In turn, this understanding will inform further discussions between the parties, regarding the appropriateness of GMSF allocations, such that an agreement can be reached - or common ground established - in advance of Examination in Public (EiP).

14.2 Allocation Impacts

14.2.1 With regard to Roch Valley, the strategic modelling results suggest that:

- By 2040, 56 two-way trips generated by the allocation (55% of total trip generation) will use the SRN in the morning peak period;
- Similarly, 63 two-way trips (57% of total trip generation) will use the SRN in the evening peak; and
- Allocation generated trips access the Strategic Road Network at Junction 21 M62 (J21M62) and route westbound towards the regional centre.

14.2.2 Based upon the volume of trips forecast in the AM and PM peak periods at J21M62 (along with the cumulative impacts of other GMSF sites), it can be concluded that further work is required to understand whether mitigation is necessary at the junction and the Locality Assessment should be updated appropriately when this work is completed.

15. Final list of interventions

15.1.1 In accordance with the proposed sustainable transport measures presented in **Section 5.5**, the approach to access set out in **Section 10** and the highway mitigation tested in **Section 13**, the table below summarises the proposed mitigation for Roch Valley. The table sets out the necessary mitigations, i.e. that required to facilitate GMSF, and supporting mitigations, i.e. improvements that would benefit the operation of the transport network.

Table 10. Interventions List: Roch Valley

Mitigation	Description
Site Access	
Smithy Bridge Road access junction	Priority T Junction
Necessary Strategic Interventions	
None	-
Supporting Strategic Interventions	
A58 Residential Relief Road	Also known as Smithy Bridge Local Access Route running to the south of the Roch Valley site, between Smithy Bridge Road and Riverside Drive.
Cycle improvements towards Smithy Bridge Railway Station	Cycle improvements including a new foot/cycle bridge over the River Roch and improvement to the PRoW running from the River Roch southwards towards Fletcher's Road
Upgrade of level crossing on Smithy Bridge Road	Upgraded level crossing being progressed through the Station Alliance.

Supporting Local Interventions	
A58 local improvements	Local improvements to be developed to improve efficiency of corridor including A58/Smithy Bridge Road, A58/Birch Road, and A58/Albert Royds St.
Footway/cycleway to the south of the proposed access road	A 2m footway and 4m cycleway to be provided to the south of the allocation, connecting into Smithy Bridge Road to the east
Necessary Local Mitigations	
A58 / B6225 / A6033 signals	A58 Halifax Road / B6225 Hollingworth Road co-ordinated signals with A58 Halifax Road / A6033 Todmorden Road
A58 Wardle Road junction	Signalisation of junction and inbound free flow
Secure cycle parking at Smithy Bridge Rail Station	Provision of secure cycle parking at the rail station
TOUCAN crossing at Smithy Bridge Station	TOUCAN crossing of Smithy Bridge Road to allow crossing to the station.
TOUCAN crossing at allocation entrance on Smithy Bridge Road	A toucan crossing of Smithy Bridge Road at the entrance to the allocation. This would connect Regional Route 80 (running along Stubley Mill Road) with the proposed new route to the south of the allocation
Bus stop upgrades	Bus stop upgrades: 2 stops on Smithy Bridge Road, 1 stop on Halifax Road

15.1.2 As discussed, Rochdale Borough Council has an aspiration to deliver the A58 Residential Relief Road (also known as Smithy Bridge Local Access Route) running to the south of the Roch Valley allocation, between Smithy Bridge Road and Riverside Drive; the route will incorporate 2m footways and a 4m cycleway. This route has the potential to remove trips from the A58 and, potentially, negate the need for an improvement to the A58/Wardle Road junction, as well as

providing operational benefits to the wider road network - including routes to and from Milnrow and the M62.

15.1.3 However, due to uncertainties regarding the delivery of the relief road, the road scheme was not included in the strategic modelling exercise such that the schemes required to mitigate GMSF impacts could be clearly identified. Notwithstanding this, given the potential for improved network performance, Rochdale Borough Council considers the road scheme to be a GMSF supporting measure.

16. Strategic Context – GM Transport Strategy Interventions

16.1 Rochdale

16.1.1 In addition to the allocation-specific interventions set out in this Locality Assessment, there are a number of other measures already planned by RMBC and TfGM to support sustainable travel, and to contribute to the achievement of Greater Manchester's 'Right Mix' ambition. These are set out in the GM Transport Strategy 2040 and Our 5-Year Transport Delivery Plan.

16.1.2 In relation to schemes near to Roch Valley, there are planned improvements to the Calder Valley Line and TfGM is about to commence the Greater Manchester North East Rail Capacity Study, (which includes the Calder Valley Line), and will determine the service improvements required to meet future demand.

16.1.3 In the short to medium term, Quality Bus Transit is planned on the key bus corridor between Bury and Rochdale and in the longer term a Metro/tram-train corridor is planned.

16.1.4 GM's 'Bee Network' project aims to increase walking and cycling across Greater Manchester. In Rochdale, 136 new or upgraded crossings are proposed for pedestrians and cyclists. Six miles of Beeline routes are proposed on busier roads in Rochdale, including a corridor scheme to connect Rochdale and Castleton.

17. Phasing Plan

17.1.1 All phasing plans information contained in this Locality Assessment is indicative only and has only been used to understand the likely intervention delivery timetable. Final trajectory information and the final allocation proposal is contained in the GMSF Allocation Topic Paper.

17.1.2 The phasing of GMSF has focused on the development quanta to be delivered by the end of the plan period (2040); however, all of the 210 new homes at Roch Valley allocation are expected to be complete by 2025. Consequently, when considered cumulatively with the Land North of Smithy Bridge allocation, since the majority of that allocation is to be delivered by 2030 and the whole of Roch Valley is to be delivered by 2025, it is anticipated that the following necessary local mitigation will be required by 2030:

- A58 / B6225 / A6033 signals; and
- Wardle Road junction.

17.1.3 Other necessary mitigation will be required from the occupation of the first dwelling in order to promote sustainable mode use from the outset.

Table 11. Allocation Phasing: Roch Valley

Allocation Phasing	2020 25	2025 30	2030 2038	2038+	Total
Dwellings	210				**210**

Table 12. Indicative Intervention Delivery Timetable: Roch Valley

Mitigation	2020 2025	2025 2030	2030 2038
Site Access			
Smithy Bridge Road access junction	✓		
Necessary Local Mitigations			
A58 / B6225 / A6033 signals		✓	
A58 Wardle Road junction		✓	
Secure cycle parking at Smithy Bridge Rail Station			
TOUCAN crossing at Smithy Bridge Station	✓		
TOUCAN crossing at allocation entrance on Smithy Bridge Road	✓		
Bus stop upgrades	✓		
Supporting Local Interventions			
A58 local improvements	✓		
Footway/cycleway to the south of the proposed access road	✓		

18. Infrastructure Costings

18.1.1 The costs of the necessary infrastructure assessed within this report are subject to further consideration through the GMSF process and are being considered with regards to the overall viability of the necessary supporting requirements.

19. Summary & Conclusion

19.1 Summary

19.1.1 The proposed Roch Valley allocation comprises 210 dwellings. It is located in Rochdale Borough Council and is situated to the north-west of Smithy Bridge, south of Hurstead and east of Smallbridge. The allocation is bounded by Smithy Bridge Road to the east, fields to the south and residential areas served from the A58 Halifax Road to the north and west. The land use of the area is principally agricultural and greenfield; albeit located adjacent to a significant area of green belt. Multiple residential streets also border the allocation which could potentially provide access to the allocation for active modes of travel.

19.1.2 It is anticipated that the allocation will be accessed from a priority junction from Smithy Bridge Road initially, with the A58 Residential Relief Road leading from this in due course.

19.1.3 As discussed in Section 3, there were some 453 comments in relation to the allocation and these were principally related to the operation of the existing road network and local congestion. A review of the operation of the local road network, for the purposes of this Locality Assessment, has indeed identified issues of congestion at certain locations. Where these locations are materially exacerbated by the allocation suitable mitigation has been given consideration and road improvements have been identified. Furthermore, measure to encourage a mode shift away from the private car, including pedestrian and cycle provisions, have also been recommended. In this way, therefore, the concerns expressed at public consultation have been considered and addressed.

19.1.4 The principal recommendations to improve cycling and walking access, and its integration with public transport in relation to links within the allocation can be summarised as follows:

- Pedestrian accesses provided from the allocation directly onto Smithy Bridge Road, facilitating access to nearby bus stops, Smithy Bridge Railway Station, and key facilities on the A58 and along Smithy Bridge Road;
- Diversion of the Public Right of Way (PRoW);
- Provision of a TOUCAN crossing of Smithy Bridge Road in the vicinity of the allocation access;
- Provision of a TOUCAN crossing of Smithy Bridge Road adjacent to the railway station;
- Secure cycle parking at Smithy Bridge Railway Station; and
- A new foot/cycle bridge across the River Roch.

19.1.5 Traffic modelling has been undertaken using the Greater Manchester Variable Demand Model (GMVDM) with a constrained and high side scenario. The constrained and high side model runs take account of traffic associated with all GMSF sites.

19.1.6 A 'with GMSF' scenario has been assessed against a Reference Case which assumes background growth and includes the housing and employment commitments from the districts. Specific junctions have been assessed to understand the impact of the development and junctions along the A58 Halifax Road and Wildhouse Lane are experiencing significant issues in the 2040 reference case as well as the with GMSF scenarios.

19.1.7 The following schemes are considered necessary to bring the allocation forward as part of the GMSF:

- A58 / B6225 / A6033 signals
- Wardle Road junction
- Secure cycle parking at Smithy Bridge Rail Station
- TOUCAN crossing at Smithy Bridge Station
- TOUCAN crossing at allocation entrance on Smithy Bridge Road

19.2 Conclusion

19.2.1 Based on the information contained within this report, it is reasonable to conclude that the traffic impacts of the allocation can be mitigated where appropriate and are likely to be less than severe where mitigation is not justified i.e. whilst the modelling work does indicate that some junctions

will experience capacity issues, these are not forecast to be significantly worse than would otherwise be experienced in the 2040 reference case.

19.2.2 Furthermore, at this stage in the process the modelling work is considered to be a 'worst case' scenario as it does not take full account of the extensive opportunities for active travel and public transport improvements in the local area. On this basis, it is considered that the allocation is deliverable from a transport perspective.

19.2.3 It should, however, be noted that the forecasts underpinning this assessment assume a continuation of investment in the wider transport network, over the Plan Period. Furthermore, this assessment has been undertaken to provide an indication of the allocation's deliverability and to inform viability; more detailed work will be required to ensure that the road network operates effectively based on the network conditions at the time of any future planning application.

Appendix 1 – Collision data within a 1km radius of Roch Valley

Appendix 2 – Illustrative site access arrangement on Hollingworth Road

[Illustrative/Typical Layout]

Appendix 3 – Results of Local Junction Capacity Analysis Before Mitigation 2025

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
A58 / Albert Royds Street	136%	102%	138%	102%	11	14
A58 / Birch Road	100%	71%	100%	72%	11	14
A58 / Smithy Bridge Road	74%	77%	74%	77%	30	28
Smithy Bridge Road / level crossing	25%	28%	26%	29%	71	80
A58 / A6033 Todmorden Road	85%	79%	87%	76%	4	8
A58 / B6225 Hollingworth Road	103%	84%	103%	83%	1	1
A58 / Wardle Road	127%	128%	133%	129%	11	14
Wildhouse Lane / Kiln Lane	182%	157%	190%	163%	69	78
Wildhouse Lane / Smithy Bridge Road	79%	104%	81%	111%	71	80

Greater Manchester Spatial Framework

Locality Assessment:

Trows Farm (GMA26)

Publication Version 2: November 2020

Identification Table	
Client	Rochdale/TfGM
Allocation	Trows Farm
File name	GMA26 Rochdale - Trows Farm 021020
Reference number	GMA26 (2020) previously GMA29 (2019)

Approval					
Version	**Role**	**Name**	**Position**	**Date**	**Modifications**
0	Author	Craig Thomson	SCP	22/09/2020	Base report
	Checked by	Peter Todd	SCP	22/09/2020	
	Approved by	Peter Todd	SCP	22/09/2020	
1	Author	D Nixon	TfGM	27/09/20	Consistency edits
	Checked by	R Chapman	RBC	30/09/20	
	Approved by	P Moore	RBC	30/09/20	

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Allocation Data	
Allocation Reference No.	GMA26 (2020) previously GMA29 (2019)
Allocation Name	Trows Farm
Authority	Rochdale
Ward	Castleton
Allocation Proposal	600 houses
Allocation Timescale	0-5 years ✓ 6-15 years ✓ 16 + years ☐

Glossary

"2025 GMSF Constrained" - is the 2025 forecast case in which the model adjusts the input demand based on how the cost of travel changes from the base year to the future. For example, for a shopping trip undertaken by car which becomes more congested in future, changes might be travel via a different route, mode, location or time of day.

"2040 GMSF Constrained" - as above, but for a 2040 forecast year

"2025 GMSF High-Side"- is the 2025 forecast case in which the model does not adjust the input demand based on how the cost of travel changes. In this scenario congestion does not lead to a reassignment of traffic, and therefore road traffic flow will generally be higher.

"2040 GMSF High-Side" - as above, but for a 2040 forecast year

"2025 Reference Case" - is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2025

"2040 Reference Case"- is the Do Minimum scenario which includes delivery of all transport schemes already committed and assumed to be completed by 2040

AADT - Annual average daily traffic, is a measure used in transportation planning to quantify how busy the road is

Bee Network - is a proposal for Greater Manchester to become the very first city-region in the UK to have a fully joined-up cycling and walking network: the most comprehensive in Britain covering 1,800 miles.

Bus Rapid Transit - is a bus-based public transport system designed to improve capacity and reliability relative to a conventional bus system. Typically, a BRT system includes roadways that are dedicated to buses, and gives priority to buses at junctions where buses may interact with other traffic

Existing Land Supply - these are sites across the county that have been identified by each local planning authority across Greater Manchester and are available for development

Greater Manchester Variable Demand Model (GMVDM) - the multi-modal transport model for Greater Manchester. This transport model provides estimates of future year transport demand as well as the estimates of travel behaviour changes and new patterns that the Plan is likely to produce. These include

changes in choices of routes, travel mode, time of travel and changes in journey destinations for some activities such as work and shopping.

“LRN” (Local Road Network) All other roads comprise the Local Road Network. The LRN is managed by the local highways authorities

National Trip End Model (NTEM) - is a Department for Transport forecast that ensures that measures of population, jobs and trips made by various mode are consistent across the whole of Great Britain.

Rapid transit services - refers to high frequency, high capacity metro style transport services including Metrolink and Bus Rapid Transit.

“SRN” (Strategic Road Network) The Strategic Road Network comprises motorways and trunk roads, the most significant ‘A’ roads. The SRN is managed by Highways England.

“TfGM” - Transport for Greater Manchester, the Passenger Transport Executive for Greater Manchester

Urban Traffic Control (UTC) - is a specialist form of traffic management that, by coordinating traffic signals in a centralised location, minimises the impact of stop times on the road user.

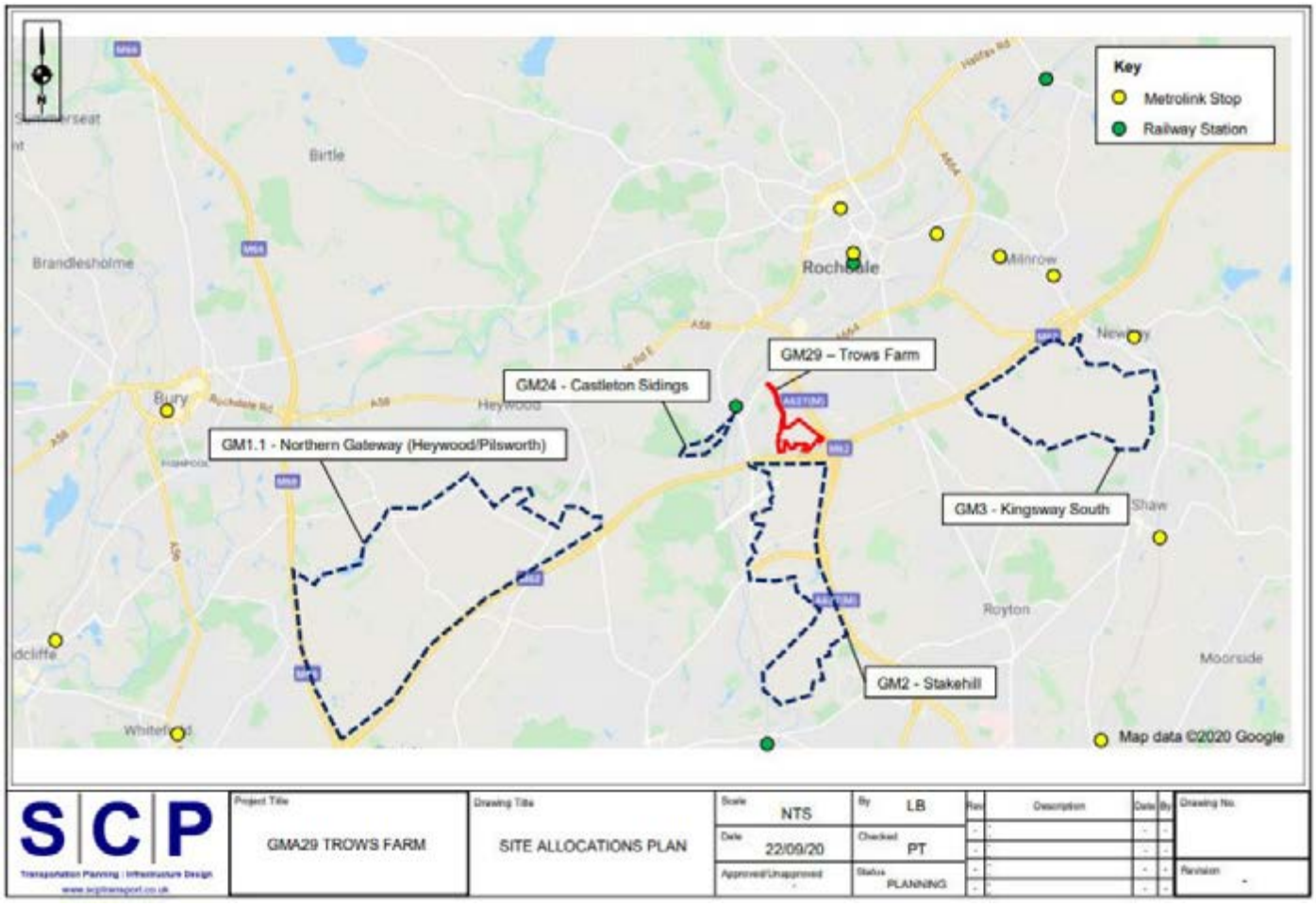
1. Allocation Location & Overview

1.1.1 The allocation is located to the south-east of Castleton and is bounded by industrial units to the north, the A627(M) to the east, the M62 to the south and residential dwellings to the west. It is envisaged that the allocation will comprise circa 600 dwellings, with a good mix of housing types.

1.1.2 The location of the allocation along with other nearby allocations, the Northern Gateway, Stakehill, and Castleton Sidings are shown on Figure 1 below.

1.1.3 Note that the allocation boundaries shown in Figure 1 were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps. Since the modelling analysis has been undertaken for this report, the site at Kingsway South has been removed from the GMSF. The reference number of Trows Farm has been updated from GMA29 to GMA26 since production of these images.

Figure 1. Allocation Location Plan



2. Justification for Allocation Selection

2.1.1 This allocation is in a sustainable location close to the centre of Castleton which offers a number of local services and has excellent transport links. Rail journeys into the regional centre from Castleton station take only fifteen minutes and this is complemented by a quality bus corridor along A663 Manchester Road with a high frequency Monday to Saturday daytime bus service.. High-quality walking and cycling connections to Castleton station and Manchester Road would therefore be provided as part of the development. The allocation also has good access to the motorway network.

2.1.2 Given that this site is Protected Open Land and not Green Belt it was not included in the site selection process given that it is sequentially preferable. Further information is set out in the Topic Paper.

3. Key Issues from Consultation

3.1.1 The Greater Manchester Spatial Framework Consultation Summary Report (October 2019) provides a summary of the responses.

3.1.2 A total of 283 comments were provided on the Trows Farm allocation with the key concerns being how the new additional homes proposed would place a considerable amount of pressure on existing infrastructure, which could exacerbate issues around drainage, sewers and flooding measures There is support for providing adequate infrastructure such as schools, hospitals and doctors, in order to ensure that community facilities can accommodate and manage the additional capacity/subscription.

3.1.3 In relation to transport and highways, concerns were raised that additional development within the area will exacerbate existing congestion, with the main issues summarised below:-

- The existing road infrastructure in this area is not designed for the additional capacity new homes and employment space will bring;
- Concerns raised over the negative impact on roads and motorways in terms of congestion, noise and air pollution; and
- None of the future mitigating transport interventions set out within the Strategy and Delivery Plan have been properly scoped, subject to feasibility, or are funded (e.g. tram-train usage from

Rochdale railway station to Bury via Castleton and Heywood and the provision of a new railway station at Slattocks).

4. Existing Network Conditions and Site Access

4.1 Existing Site Access and Facilities

4.1.1 Vehicular access to the allocation is currently provided via Cowm Top Lane which serves a number of existing industrial units on the Crown Business Park. Cowm Top Lane meets the A664 Queensway at a priority controlled junction, which benefits from a ghost island right turn lane.

4.1.2 The northern section of Cowm Top Lane, which serve the existing industrial units, has a carriageway width of approximately 7m and benefits from street lighting and footways along its length. A number of lay-by parking bays are located on the eastern side of Cowm Top Lane in the vicinity of its junction with A664 Queensway. To the south of the industrial units, Cowm Top Lane reduces down to single track lane with no footways or street lighting provided.

4.1.3 There are good, well surfaced and street-lit footways on both sides of the roads in the built-up areas to the west and north of the site as well as natural surveillance by virtue of the residential properties in the area. The services and facilities in Castleton are within easy reach of the site by walking and cycling and there are also a range of public transport options including Castleton Railway and the bus corridor along Manchester Road.

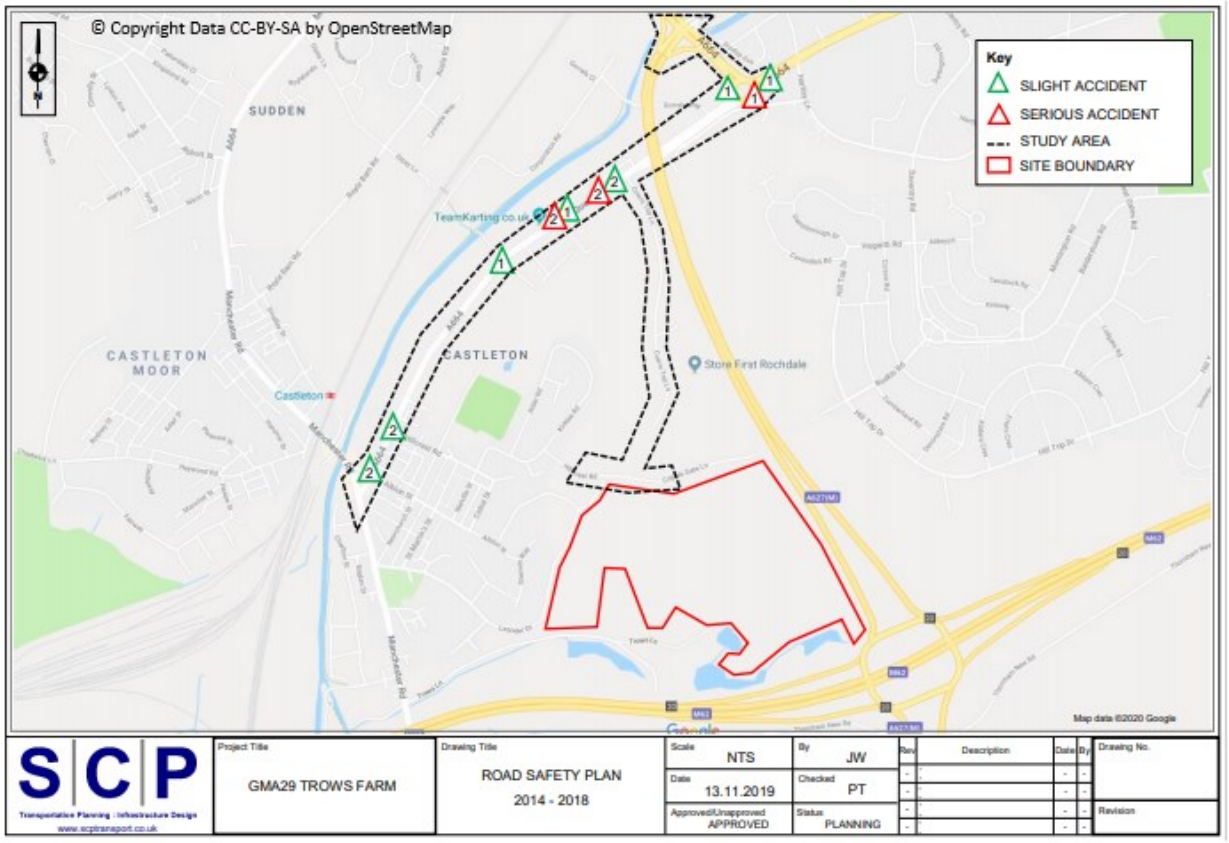
4.2 5-Year Road Safety Record

4.2.1 The Personal Injury Accident data for the local highway network has been obtained from the CrashMap website for the most recently available circa five-year period ending 4th October 2019. The injuries caused by the accidents are classified as ‘slight’, ‘serious’ or ‘fatal’.

4.2.2 The location and severity of the accidents shown on **Figure 2** below.

4.2.3 Note that the allocation boundaries shown in **Figure 2** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps.

Figure 2. 5-Year Road Safety Record



4.2.4 The key points from this accident analysis are:

- Two slight accidents have occurred in the vicinity of the junction between Cowm Top Lane and the A664 Queensway.
- No accidents have occurred at the A664 Queensway / A664 Manchester Road junction, although two slight accidents have occurred at A664 Queensway / Albion Street junction.
- Three accidents have occurred at the A664 Queensway / A664 Edinburgh Way junction, including one of serious severity.
- No accidents were recorded at the A627(M)/A664/Sandbrook Way junction.
- Sporadic accidents have occurred along the A664 Queensway, but no specific accident cluster spot has been identified.

4.2.5 The above results therefore suggest that there is no inherent road safety issue present on the local adopted highway network adjacent to the proposed allocation site which the development would exacerbate.

4.3 Proposed Site Access

4.3.1 Vehicular access will be provided from an extension to Cowm Top Lane. The access will provide a 6.7m wide carriageway and 2m wide footways on both sides of the road. The access will cross the existing Public Right of Way (PRoW) running along Cripple Gate Lane (RocFRupp24), where dropped kerbs and tactile paving will be provided to assist pedestrians crossing. The proposed access arrangements are shown in **Figure 3** below:-

Figure 3. Proposed Access Arrangement Plan [Illustrative Layout]

4.3.2 In addition, traffic calming and drainage improvements will be provided to the existing section of Cowm Top Lane to address Rochdale Metropolitan Borough Council's (RMBC) concerns over the existing gradient and drainage. The works involve the introduction of a number of raised junction tables at the existing accesses to the industrial units, along with areas of anti-skid surface treatment to help reduce traffic speeds. It is also proposed that linear drainage channels (ACO drains) are introduced across the full width of the road at the top of each of the raised tables, which will connect into the existing surface water carrier drains. The introduction of the raised tables will also help to slow the flow of water down Cowm Top Lane and address existing issues.

4.3.3 The proposed access and future adoption of the proposed access arrangements has been discussed and agreed with RMBC, as the highway authority.

4.3.4 An emergency access will also be provided from Trows Lane to the south of the site, although the specific location of the emergency access is still to be determined. The emergency access will take the form of a shared footway/cycleway with a minimum width of 3.7m in order to accommodate a fire appliance and the access will be controlled with retractable bollards. It should be noted that the site benefits from a large section of frontage onto Trows Lane therefore there are no constraints on delivering the emergency access.

5. Multi-modal accessibility

5.1 Current

5.1.1 Access between the site and local areas by non-motorised modes has been assessed by comparison with the following typical threshold distances:

Table 1. Typical Threshold Distances (Not Upper Limits)

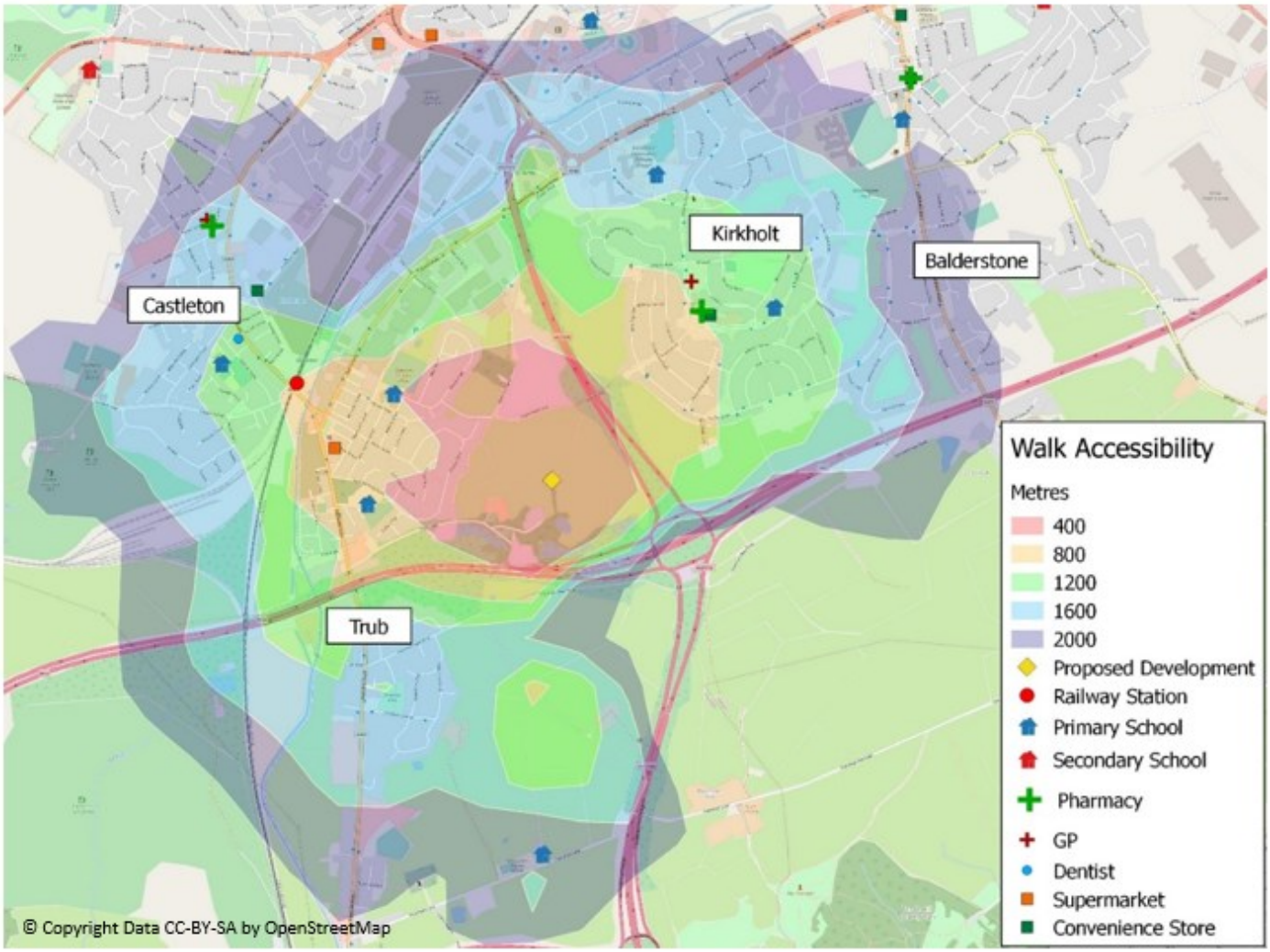
Threshold Distance	Significance
800m	Motorised modes are rarely used for trips of around 800m or less
2km	Walking offers the greatest potential to replace short car trips particularly those under 2km.

Threshold Distance	Significance
5km	Cycling also has potential to substitute for short car trips, particularly those under 5km and form part of a longer journey by public transport.

Pedestrian Accessibility

5.1.2 TRACC software has been used to assess the accessibility of the development on foot for a 2km walk distance from the site, as shown in **Figure 4**. The plan shows the areas reachable on foot from the centre of the site for a journey up to a maximum of 2km. The routes are divided into 400m coloured bands to demonstrate the relative attractiveness of areas by direction out of the site.

Figure 4. Walk Accessibility



5.1.3 In terms of the areas within the 2km walk distance threshold, the site is located within walking distance of numerous neighbourhoods such as Castleton, Kirkholt, Balderstone and Trub.

5.1.4 A number of local amenities are also within a 2km walk of the site (up to 10 minutes' walk) which will promote trips to be made on foot. A small selection of local amenities within an acceptable walk distance of the site is summarised in Table 2.

Table 2. Accessibility to Local Amenities from the Development Site

Service	Detail	Distance (Straight Line)
Primary School	St Gabriels RC Primary School	550m
Primary School	Castleton Primary School	590m
Convenience Store	The Co-Op Food	710m
Pharmacy	Strand Pharmacy	800m
Pharmacy	Well Castleton	860m
GP	Kirkholt Medical Practice	1030m
Dentist	Dental Air Service UK Ltd	1080m
Dentist	Better Dental Rochdale	1170m
Convenience Store	NISA Local	1400m
GP	Castleton Health Centre	1450m

5.1.5 There are good, well surfaced and street-lit footways on both sides of the roads in the built-up areas to the west and north of the site as well as natural surveillance by virtue of the residential and council properties in the area.

5.1.6 Pedestrian and cycle access to the site will be provided at the same location as the main vehicular access from Cowm Top Lane as well as the PRoWs located around the site.

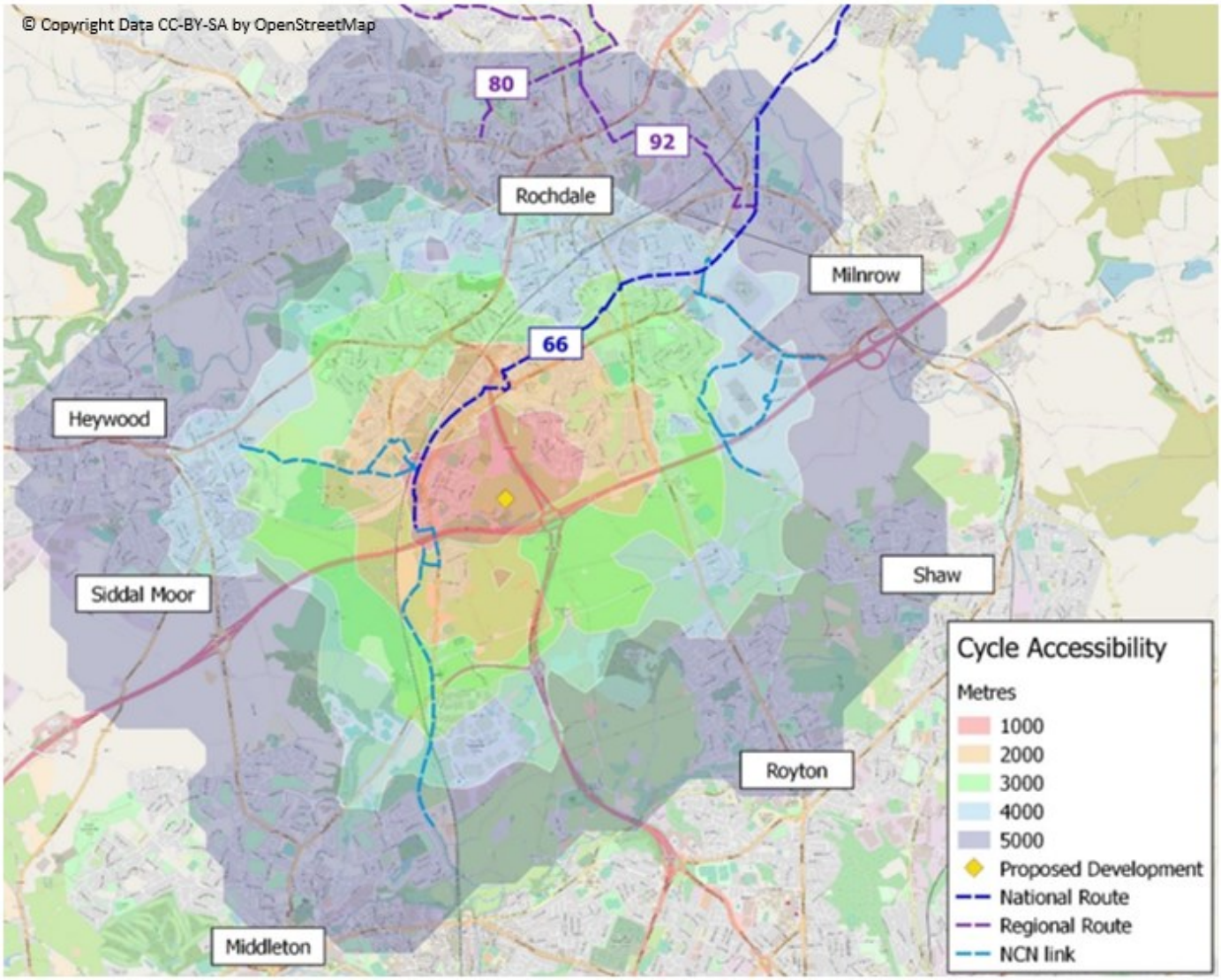
Cycling Accessibility

5.1.7 Transport Policy identifies that cycling represents a realistic and healthy option to use of the private car for making journeys up to 5km as a whole journey or as part of a longer journey by public transport.

5.1.8 TRACC software has been used to assess the accessibility of the development by bike for a 5km distance from the site, as shown in Figure 5. The plan shows the areas that may be reached within 1000m coloured bands from the site up to the maximum 5km journey distance.

5.1.9 Rochdale, Heywood, Siddal Moor, Middleton, Royton, Shaw and Milnrow are within a 5km cycle distance from the site.

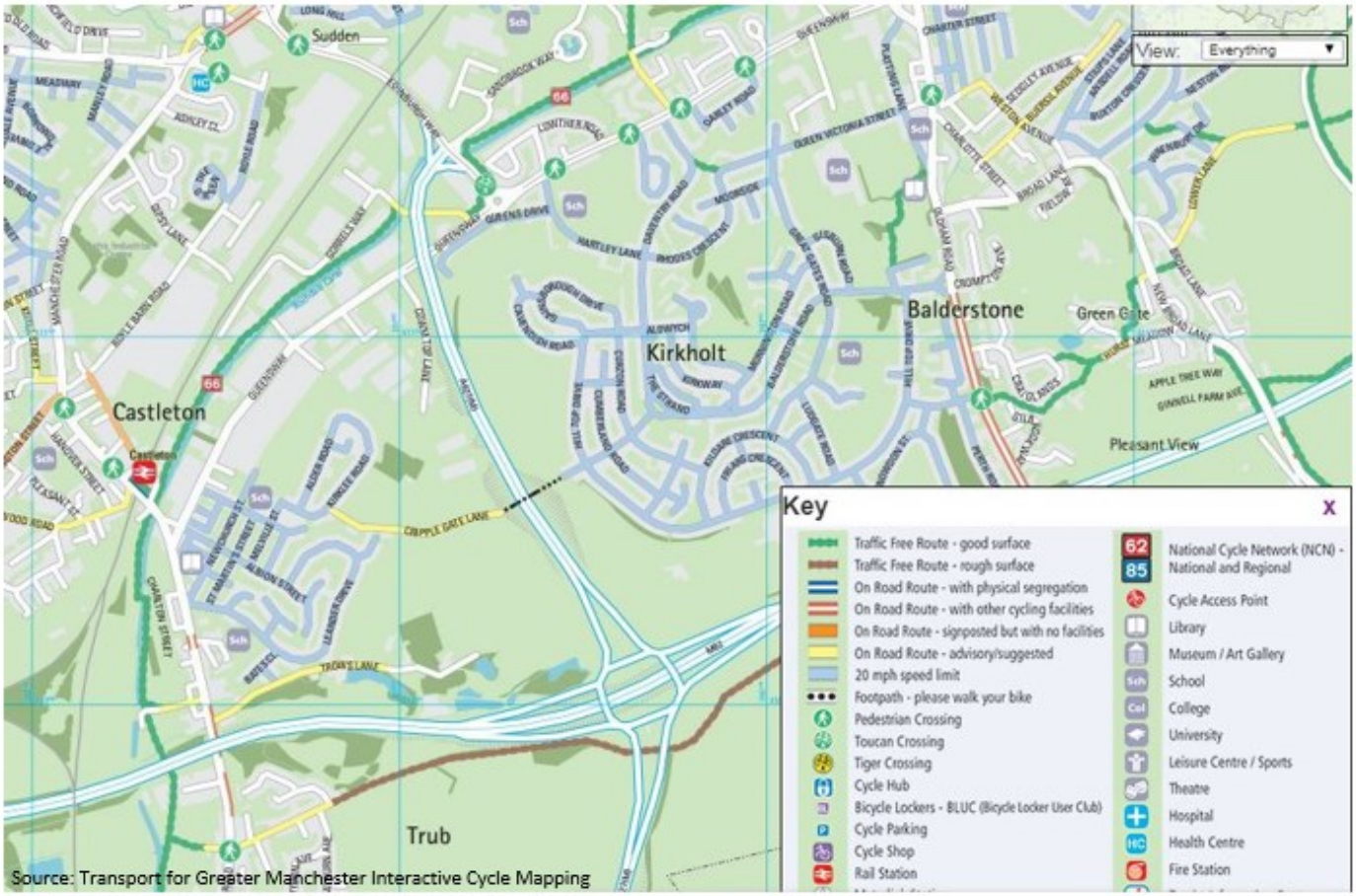
Figure 5. Cycle Accessibility



5.1.10 National Cycle Route (NCR) 66 is located approximately 970m north of the site and runs from central Manchester to Spurn Head via Bradford, Leeds, York, Beverley, and Kingston upon Hull. Regional Routes 80 and 692 are also located near the site, respectively 3960m and 3670m north-east of the site. The Regional Routes provide connections with local destinations such as Rochdale town centre, Whitworth and Shawforth.

5.1.11 As shown in Figure 6, local cycle routes are also available near the site, including dedicated cycle lanes and unpaved trails.

Figure 6. TfGM Cycle Route Network



5.1.12 In addition to the above, a number of cycle infrastructure improvements have specifically been announced around Castleton, including Castleton Local Centre Corridor (CLCC) and TfGM's Bee Network. Improvements proposed along the canal and Cripple Gate Lane / Hillcrest Road as well as the junctions being improved. The development will ensure that the pedestrian and cycling facilities are linked with the improved infrastructure and provide a contribution to improving the surface of Cripple Gate Lane / Hillcrest Road which will assist in the delivery of and link into this section of the Bee Network.

Public Transport Accessibility

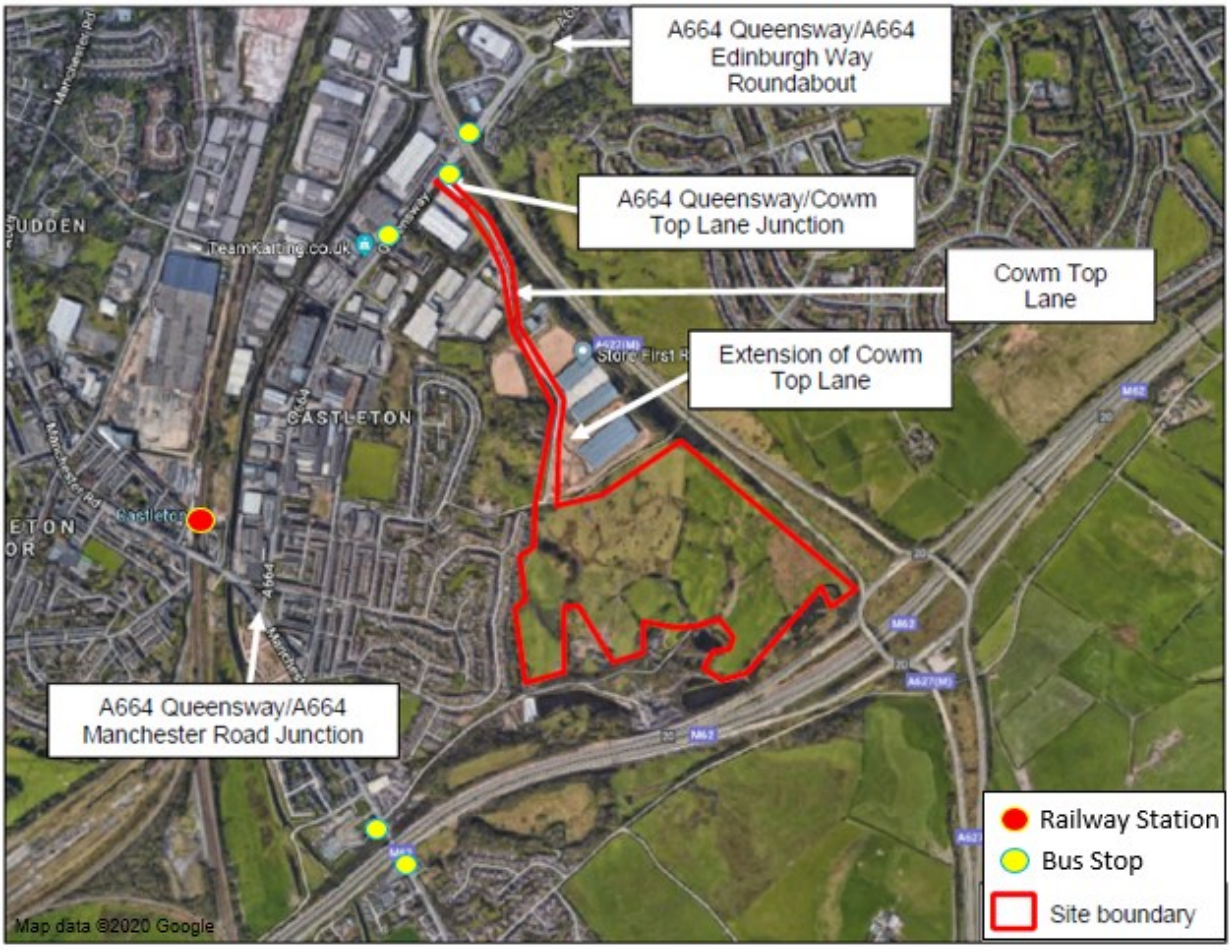
5.1.13 The nearest bus stops to the site are located on A664 Queensway, immediately to the east of its junction with Cowm Top Lane, and on A664 Manchester Road, less than 900m from the centre of the site.

5.1.14 The nearest bus stops in the vicinity of the site are shown on Figure 7 below and the services available in the vicinity of the site are listed in Table 3 below. Note the services stated below were current at the time of preparing this Locality Assessment.

Table 3. Local Bus Services

Number	Route Description	Mon Fri Avg. Frequency	Saturday Avg. Frequency	Sunday Avg. Frequency
R7 – Queensway	Castleton to Rochdale	1 hour	1 hour	1 hour
17 / 17A – A664 Manchester Road	Manchester – Rochdale Via Middleton (17A – Via Stakehill Industrial Estate)	5-10 min	15 min	15 min

Figure 7. Local Public Transport Provision



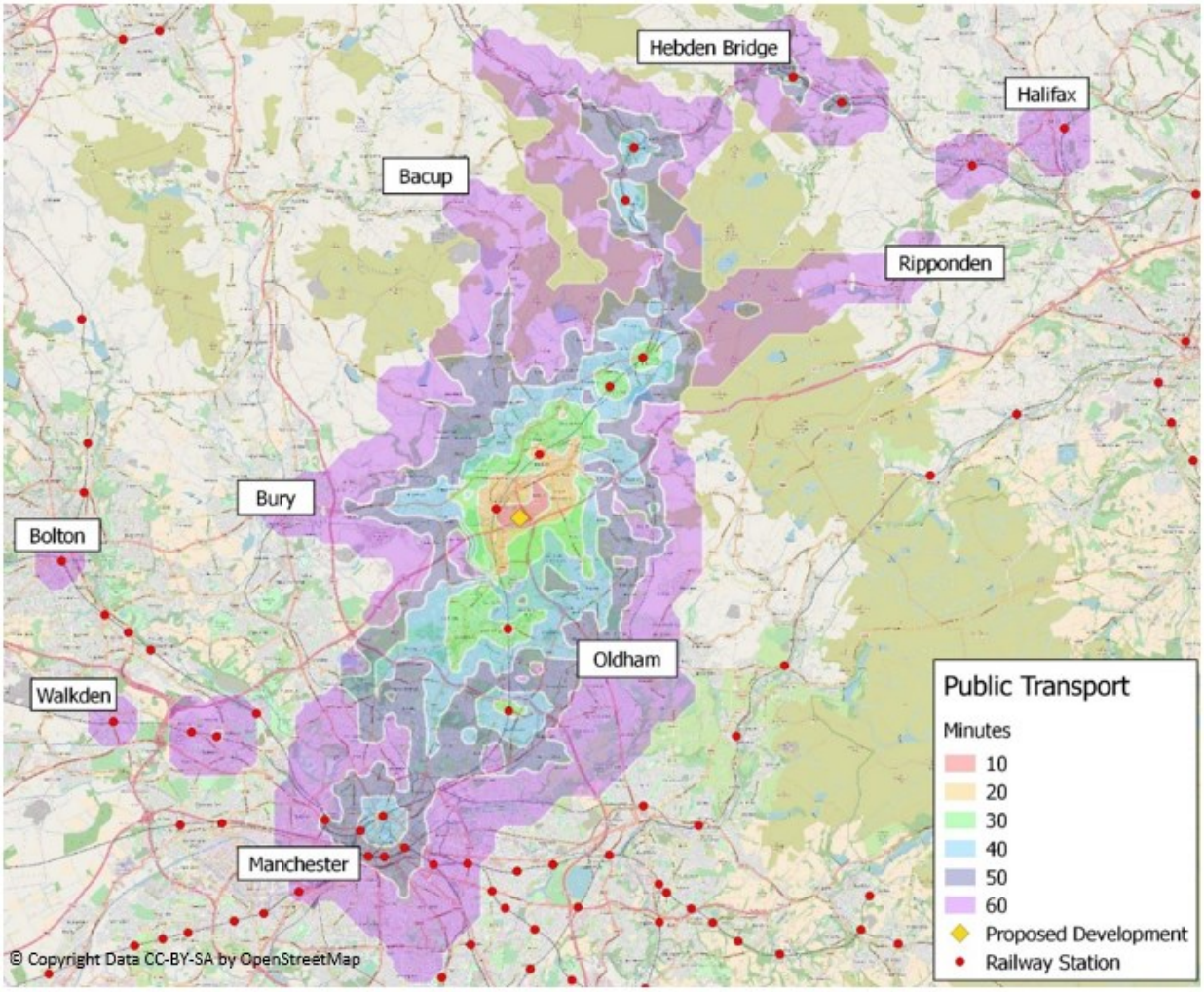
5.1.15 Note that the allocation boundaries shown in **Figure 7** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps.

5.1.16 Castleton Railway Station is located approximately 900m west of the proposed site, as shown on Figure 8, and is therefore well within walking distance, providing direct connections to Rochdale, Clitheroe, Blackburn and Manchester.

5.1.17 TRACC software has been used to assess the accessibility of the development within a 60- minute public transport (bus and rail) commute, as shown in **Figure 8**.

5.1.18 The map shows the areas that may be reached within 10-minute coloured bands from the site for the maximum hour-long journey, including the walk to the bus stops / railway station. Figure 9 demonstrates that key areas of Manchester, Bury, Bolton, Walkden, Halifax, Ripponden and Hebden Bridge, amongst others, are within an acceptable 60-minute public transport commute.

Figure 8. Public Transport Accessibility



5.1.19 The current accessibility of the Trows Farm allocation using Greater Manchester's Accessibility Level model (GMAL) has been identified as comprising areas of level 5 for accessibility, giving it a an average rating. Note that the GMAL rating is based on pre-COVID-19 pandemic figures and therefore may not be representative of the latest transport accessibility rating.

5.1.20 Greater Manchester Accessibility Levels are a detailed and accurate measure of the accessibility of a point to both the conventional public transport network (i.e. bus, Metrolink and rail) and Greater Manchester's Local Link (flexible transport service), taking into account walk access time and service availability. The method is essentially a way of measuring the density of the public transport provision at any location within the Greater Manchester region. The GMAL methodology is derived from the Public Transport Accessibility Level (PTAL) approach developed by the London Borough of Hammersmith and Fulham, but modified to consider flexible transport service provision (Local Link) and to reflect local service provision levels (different accessibility levels) within Greater Manchester.

5.2 Proposed

5.2.1 As can be seen from the above analysis, the site already possesses good levels of accessibility by the main non-car modes of transport. In order to maximise the opportunities available, the development will link into the existing and new pedestrian and cycling infrastructure. This will ensure that future residents can walk and cycle to local facilities, bus stops and train stations in preference, particularly for short journeys, rather than make use of the private car.

5.2.2 The proposed development will be fully permeable by foot, providing footways connection onto Cowm Top Lane and Trows Lane to the south. As discussed later, there is potential to signalise the Cowm Top Lane / Queensway junction and introduce signal controlled crossings on all arms of the junction.

5.2.3 The nearest bus stops to the site are located on A664 Queensway, immediately to the east of its junction with Cowm Top Lane, and on A664 Manchester Road, less than 900m from the centre of the site, and are considered acceptable to encourage prospective residents to travel via bus. Having regard to this and in addition to the close proximity to Castleton Railway Station which allows prospective residents access to destinations further afield via sustainable modes, the site is considered to be adequately served by public transport. Notwithstanding this, the site access and

internal site layout will be of a standard that could accommodate a bus service if considered necessary at a future date.

5.3 Parking

5.3.1 The parking standards for the development are set out in Appendix 5 of Rochdale Borough Council's core strategy and are summarised below:-

- Single Bedroom Houses – 1.25 spaces per bedroom
- 2+ Bedroom Houses - A maximum of 2 spaces per dwelling (not including garages)
- There are no standards for cycle and motorcycle parking

5.3.2 As the application is in outline, the level of parking is still to be determined, however, it is confirmed that the development would provide a level of parking in accordance with RMBC's standards and adequate space for cycle parking will also be provided.

6. Allocation Trip Generation and Distribution

6.1.1 Future trip generation to/from the site (i.e. how many people and vehicles will enter or leave the site) was estimated by applying a set of GM-wide trip rates to the agreed development quantum for each site. The distribution of trips (i.e. where they are going to or coming from) was derived by selecting nearby zones with similar land use characteristics as a proxy and using the existing distribution in the model.

6.1.2 For the purposes of the testing the impact of the allocation through the strategic model, a total of 600 dwellings have been assumed to be built out by 2040. The GM transport modelling suite has a 2040 forecast year, as such it uses 2040 trajectory data as proxy for 2037 full build-out, this is not considered to materially impact on the analysis or conclusions of this report.

6.1.3 The development quantum for Trows Farm is 600 units as shown in Table 4 below.

Table 4. Cumulative Development Quantum

Residential	Houses	67	600
Total		**-**	**600**

6.1.4 Traffic flow data has been provided from the GM Strategic model for a 2025 and 2040 future assessment years. The following scenarios have been provided:-

- Reference case (no GMSF sites) scenario;
- DG with GMSF sites (constrained) scenario; and
- DG with GMSF sites (high side) scenario.

6.1.5 The "constrained" model forecasts adjusts / reduces future highway trips due to congestion on the highway network. This constraining process is undertaken by the Greater Manchester Variable Demand Model (GMVDM) and takes the unconstrained input demand and adjusts it to reflect changes in the costs of travel over time, taking into account increased congestion, changes in travel costs, public transport fares, introduction of new public transport services etc.

6.1.6 The "high side" forecasts do not assume that future highway trips are constrained by congestion or other reasons. Whilst capacity assessments have been undertaken using the "high side" forecasts, these provide a robust assessment and are considered to be a sensitivity test.

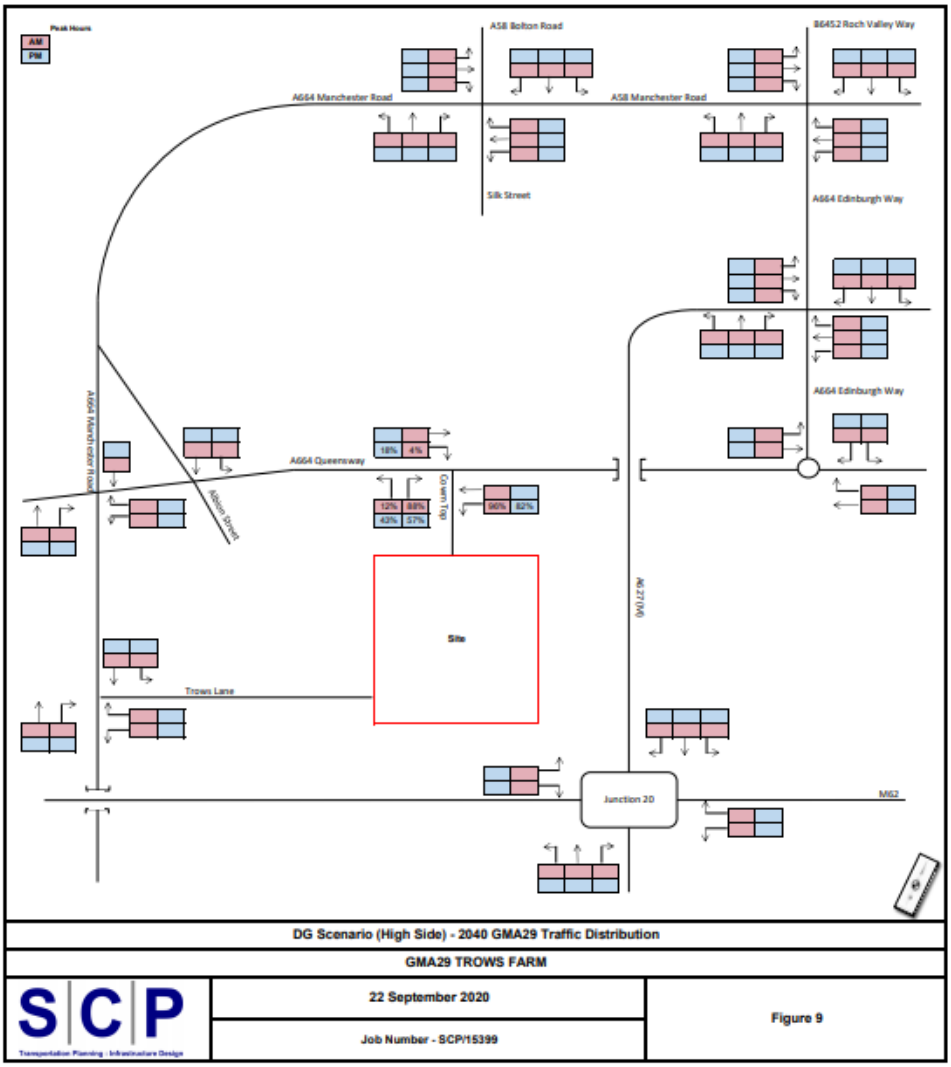
6.1.7 The traffic flow figures with the allocation traffic generation for the 2025/2040 constrained and high-side scenarios are provided in Table 5 and the allocated traffic distribution in the 2040 high-side scenario presented in Table 6, as well as diagrammatically in Figure 9.

Table 5. Allocation Traffic Generation

Year	AM Peak Hour Departures	AM Peak Hour Arrivals	PM Peak Hour Departures	PM Peak Hour Arrivals
2025 GMSF Constrained	22	7	11	25
2025 GMSF High-Side	23	9	14	24
2040 GMSF Constrained	170	51	92	194
2040 GMSF High-Side	207	82	126	195

Units are in PCU (passenger car units/hr)

Figure 9. Allocation Traffic Distribution, 2040 GMSF High-Side (Origin/Destination Combined) arm



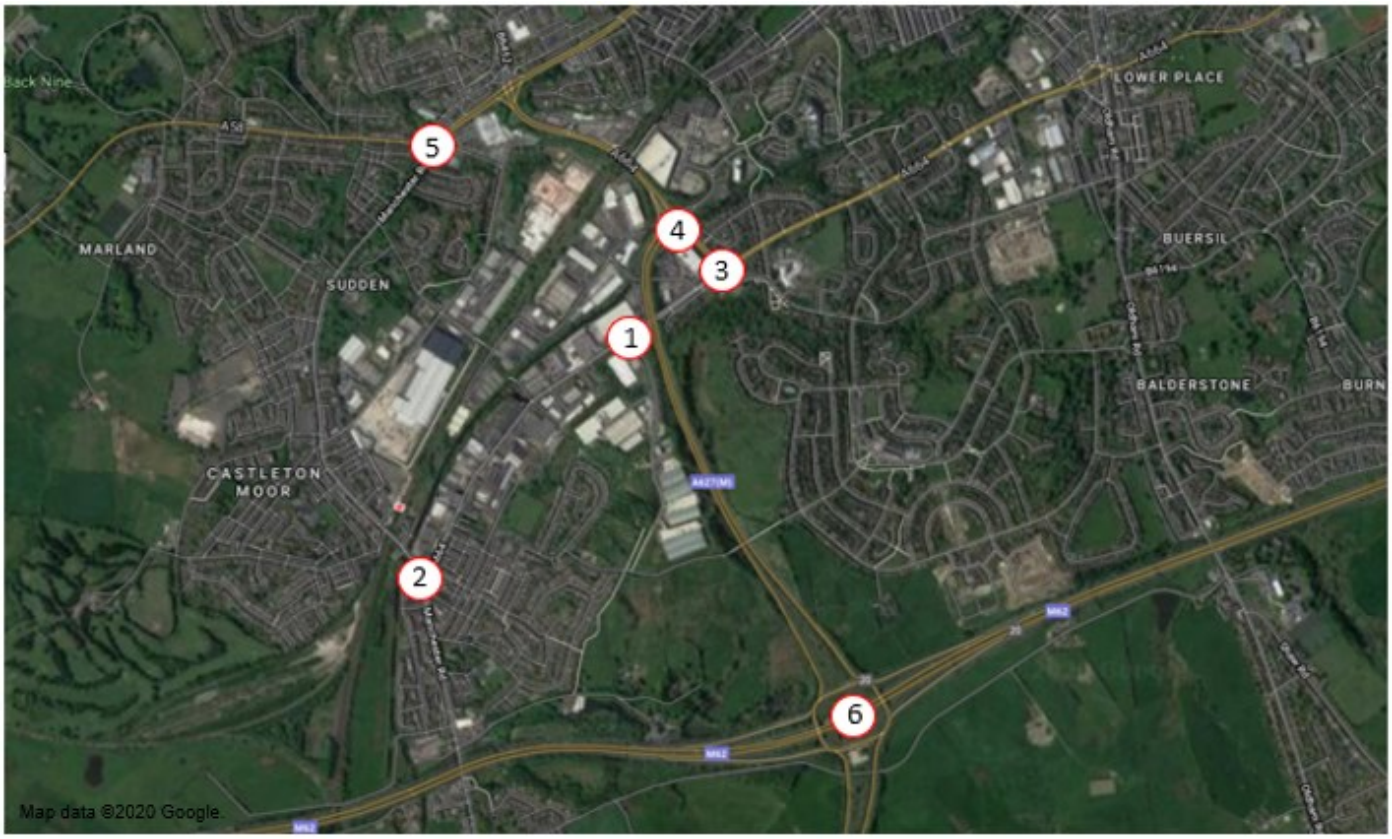
7. Current Highway Capacity Review

7.1.1 The following junctions have been considered most applicable in this Locality Assessment:-

1. A664 Queensway / Cowm Top Lane (priority T-junction)
2. A664 Queensway / A664 Manchester Road (signalised junction)
3. A664 Queensway / A664 Edinburgh Way (3-arm roundabout)
4. A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way (signalised junction)
5. A58 Manchester Road / A58 Bolton Road (signalised junction)
6. A627(M) / M62 Junction 20 (signalised roundabout junction).

7.1.2 The location of these junctions are shown on Figure 10 below.

Figure 10. Assessed Junctions



7.1.3 Junctions 9 'Assessment of Roundabout Capacity and Delay (ARCADY)' software was used to model the A664 Queensway / A664 Edinburgh Way roundabout while the Priority Intersection Capacity and Delay (PICADY) software was used to model the A664 Queensway / Cowm top Lane priority junction.

7.1.4 The Junctions 9 models generate a Ratio of Flow to capacity (RFC) along with an estimate of the likely traffic queues. RFC values between 0.00 and 0.85 are generally accepted as representing stable and acceptable operating conditions. Values between 0.85 and 1 represent variable operation (i.e. possible queues building up at the junction during the period under consideration and increases in vehicular delay moving through the junction). RFC values in excess of 1 represent overloaded conditions (i.e. congestion).

7.1.5 The junctions in the study area which are operating under signal control were modelled using the LinSig software. Signal timing data was obtained from TfGM. LinSig software presents results as a percentage Degree of Saturation (DoS) and corresponding likely traffic queues for each modelled link at the junction. For Traffic Signals it is generally accepted that DoS of 90% or less on individual links represents satisfactory signal operation. DoS of between 90% and 100% represent variable operation which warrants further investigation and values in excess of 100% represent overloaded conditions.

8. Treatment of Cumulative Impacts

8.1.1 As detailed earlier, the traffic flows used in detailed capacity assessments are taken from the GM Strategic model for a 2025 and 2040 future assessment years. The transport impacts of the site therefore include a cumulative assessment of the following GMSF sites which is important in apportioning costs of any potential mitigation:

- Northern Gateway (Heywood/Pilsworth)
- Stakehill
- Kingsway South
- Castleton Sidings

8.1.2 Note that, since the modelling analysis has been undertaken for this report, the site at Kingsway South has been removed from the GMSF.

9. Allocation Access Assessment

9.1.1 As detailed earlier, there are no constraints on vehicular access or the emergency access to this site and the proposed access arrangement and future adoption of the proposed access arrangements has been discussed and agreed with RMBC, as highway authority. Vehicular access will be provided from an extension to Cowm Top Lane and will measure 6.7m wide with 2m footways on both sides of the road. It should also be noted that the A664 Queensway / Cowm Top Lane (site access) junction has previously been demonstrated to operate with an RFC of below 1 as a standalone assessment, with just the Trows Farm development traffic included.

9.1.2 In addition, traffic calming and drainage improvements will be provided to the existing section of Cowm Top Lane to address RMBC's concerns over the existing gradient and drainage. The works involve the introduction of a number of raised junction tables at the existing accesses to the industrial units, along with areas of anti-skid surface treatment to help reduce traffic speeds. It is also proposed that linear drainage channels (ACO drains) are introduced across the full width of the road at the top of each of the raised tables, which will connect into the existing surface water carrier drains. The introduction of the raised tables will also help to slow the flow of water down Cowm Top Lane and address existing issues.

10. Impact of Allocation Before Mitigation on the Local Road Network

10.1.1 In order to understand a worst case impact of the GMSF, the 'high side' runs from the GMVDM were used to derive with GMSF development flows for 2040. These flows were then entered into junction based models for the junctions identified in Section 8. Flows from a 2040 reference case scenario (including approved Local Plan development from the respective districts) were also extracted to provide a comparison between the operation of those junctions in the 2040 reference case and the 2040 with GMSF development scenarios.

10.1.2 The 'with GMSF' scenario has been assessed against a Reference Case which assumes background growth and includes the housing and employment commitments from the districts. Through discussions with TfGM and the Combined Authority, it has been agreed that where mitigation is

required, it should mitigate the impacts back to a reference case scenario. It should be noted that mitigating back to this level of impact may not mean that the junction operates within capacity.

10.1.3 These assessments were then used to identify the junctions where there was considered to be a substantial impact, relative to the operation of the junction in the 2040 reference case, and hence where mitigation was considered to be required in order to bring GMSF sites forward.

10.1.4 This section looks at the impact on the network at the junctions highlighted in section 9. Signalised junctions were assessed in detail using industry-standard modelling software LINSIG version 3. Where possible, traffic signal information was requested from TfGM in order to ensure that the local junction models reflected (as far as possible), the operation of the junctions on the ground. Junctions 9 software was used to assess priority and roundabout junctions. Table 7 below provides a comparison between the operation of the in scope junctions in the 2040 reference case and the 2040 'high side' scenarios, as well as the site development flows through each respective junction. The table shows a comparison between the ratio of flow to capacity on the worst case arm at each junction as well as the total development flows through the junction.

Table 6. Results of Local Junction Capacity Analysis Before Mitigation

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM
1. A664 Queensway / Cowm Top Lane	0.0	0.0	1.46	1.0
2. A664 Queensway / A664 Manchester Road	65.6%	79.8%	83.6%	104.9%
3. A664 Queensway / A664 Edinburgh Way	0.83	0.79	0.99	0.90
4. A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way	83.2%	88.5%	100.8%	84.0%
5. A58 Manchester Road / A58 Bolton Road	NA (See later comments)	NA (See later comments)	NA (See later comments)	NA (See later comments)

Detailed Junction Results Description

Junction 1 - A664 Queensway / Cowm Top Lane

10.1.5 The A664 Queensway / Cowm Top Lane junction is a priority junction, which benefits from a ghost island right turn lane.

10.1.6 As can be seen in Table 7, in the 2040 reference scenario, the A664 Queensway / Cowm Top Lane junction is shown to have an RFC value of 0.0, due to the fact that Cown Top Lane and the associated A664 Queensway / Cown Top Lane junction was not included in the GMVDM in the reference case.. In the 2040 high-side scenario, the junction (specifically the Cowm Top Lane arm) is forecast to operate over capacity with a worst case RFC value of 1.46 in the AM peak hour, when accommodating traffic from all the GMSF sites. A potential improvement scheme has been identified in the form of signalisation to mitigate the impact of all the GMSF sites, as discussed later in this report.

Junction 2 - A664 Queensway / A664 Manchester Road

10.1.7 The A664 Queensway / A664 Manchester Road junction is a signal controlled junction.

10.1.8 As can be seen in Table 7, in the 2040 reference scenario, the A664 Queensway / A664 Manchester Road junction is predicted to operate within capacity in both the AM and PM peak hours, when accommodating the traffic from all GMSF sites. In the 2040 high-side scenario, the junction is still forecast to operate within capacity in the AM peak hour, however, with DoS values in excess of 100% in the PM peak hour. A potential improvement scheme has been identified to mitigate all GMSF sites at this junction which involves amendments to the staging, to provide more green time to the critical traffic movements, as discussed later in this report.

Junction 3 - A664 Queensway / A664 Edinburgh Way

10.1.9 The A664 Queensway / A664 Edinburgh Way junction is a priority controlled roundabout.

10.1.10 As can be seen in Table 7, the junction is forecast to operate with an RFC of below 1 even in the very robust future assessment year of 2040 with all GMSF sites and unconstrained model scenario. On this basis, the cumulative impact of all GMSF sites on this junction cannot be considered severe and there is no requirement for mitigation measures. Notwithstanding this, a potential

improvement scheme has been identified to mitigate the impact all draft GMSF sites, as discussed later in this report.

Junction 4 - A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way

10.1.11 The A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way junction is a signal controlled crossroad junction.

10.1.12 In the AM peak hour the junction is forecast to operate with a DoS of below 100% on all links with the GMSF sites in all scenarios, with the exception of the A664 Edinburgh Way link which is forecast to operate only slightly over the 100% (DoS 100.8%) in the very robust 2040 "high side" scenario. In the PM peak hour the junction is predicted to operate within capacity, even in the very robust 2040 "high side" scenario. On this basis, the cumulative impact of all GMSF sites on this junction cannot be considered severe and there is no requirement for mitigation measures at this location. Notwithstanding this, a potential improvement scheme has been identified to mitigate the impact of all draft GMSF sites, as discussed later in this report.

Junction 5 - A58 Manchester Road / A58 Bolton Road

10.1.13 The A58 Manchester Road / A58 Bolton Road Junction is a signalised cross road junction, located some distance to the north of the site.

10.1.14 The select link analysis has been reviewed which confirmed that in the 2040 with GMSF "high side" scenario the development is anticipated to result in increase of only 18 two way trips in the AM peak hour and 22 in the PM peak hour. On average this equates to one additional trip every 3 minutes in the peak hours which will not have a material impact on this junction. On this basis, detailed capacity assessments of this junction is not required and the impact of this development cannot be considered severe.

11. Transport Interventions Tested on the Local Road Network

11.1.1 As detailed in the previous chapter, potential interventions have been identified at the following junctions:

- A664 Queensway / Cowm Top Lane priority controlled junction
- A664 Queensway / A664 Manchester Road signal junction

- A664 Queensway / A664 Edinburgh Way priority controlled roundabout
- A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way signal junction

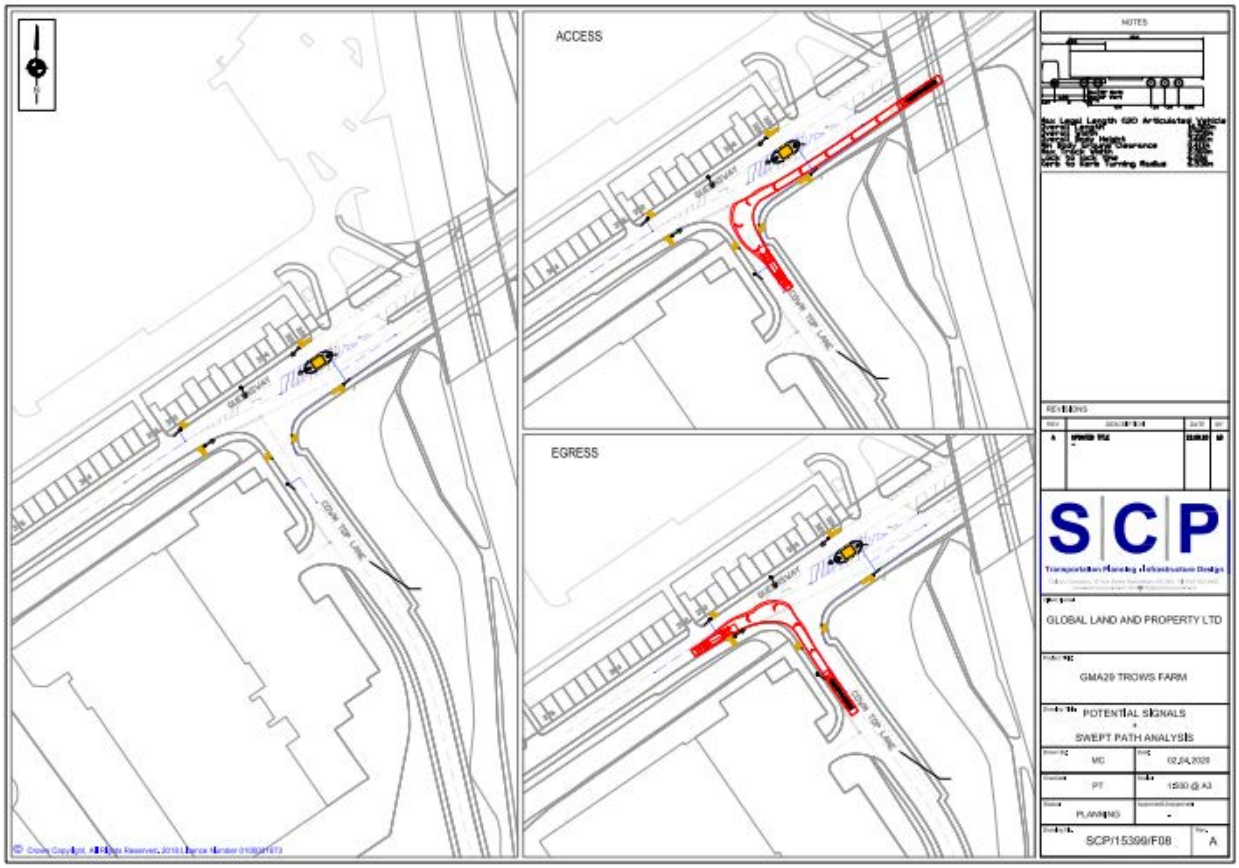
11.1.2 Details of each potential mitigation scheme have been provided below, however, it should be noted that these interventions are also not expected to be the definitive solutions and are merely examined to demonstrate that the allocation has the potential to be implemented and also developed in order to enable costing.

11.1.3 It should also be noted that the potential improvements identified within this section are only required to mitigate the cumulative traffic impacts of all draft GMSF sites, not the Trows Farm development in isolation. The need for and responsibility for providing / contributing to any off-site improvements works are to be determined at planning application stage.

A664 Queensway / Cowm Top Lane Priority Controlled Junction

11.1.4 A potential improvement scheme has been identified which involves signalisation of the junction, which will have the added benefit of allowing signal controlled crossings to be introduced on all arms. The junction has the potential to accommodate the movements of a 16.5m long articulated vehicle. It should also be noted that all footways are a minimum of 2m in width and therefore sufficient to accommodate the signal equipment, an illustrative layout is shown below.

Figure 11. Proposed Signal Layout - A664 Queensway / Cowm Top Lane Junction [Illustrative/Typical Layout]



A664 Queensway / A664 Manchester Road Signal Junction

11.1.5 Transport interventions have been considered at this junction in the form of amendments to the staging of the junction, to provide more green time for the dominant traffic movement turning left out of the A664 Queensway.

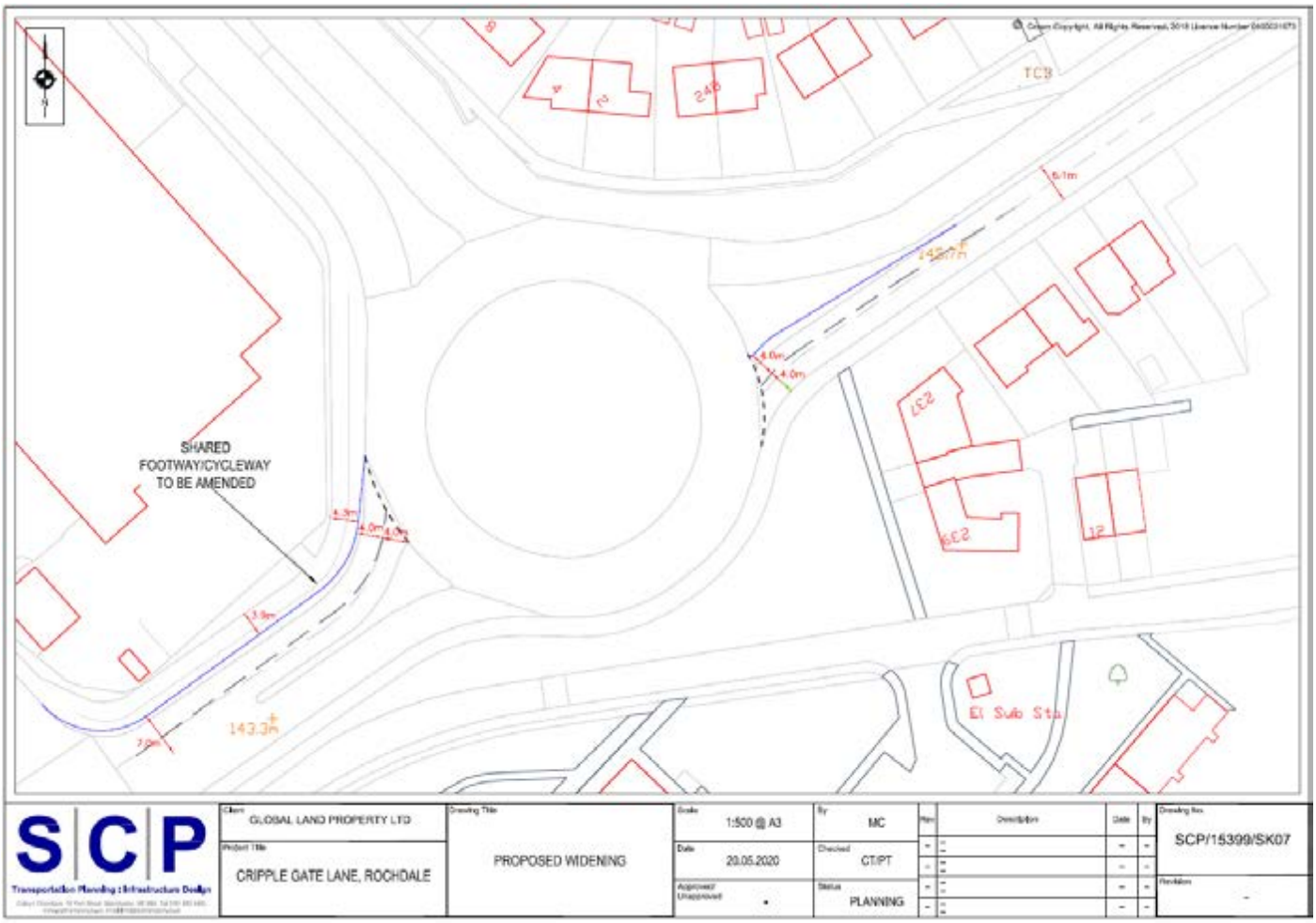
The existing staging for this junction has been examined and the high traffic flows for vehicles turn left out A664 Queensway (south) could be provided with more green time to accommodate this flow more effectively.

A664 Queensway / A664 Edinburgh Way Priority Controlled Roundabout

11.1.6 As detailed earlier, the A664 Queensway / A664 Edinburgh Way junction is forecast to operate with an RFC of below 1 even in the very robust future assessment year of 2040 with all GMSF sites and unconstrainted model scenario. On this basis the cumulative impact of all GMSF sites on this junction cannot be considered severe and there is no requirement for mitigation measures.

11.1.7 Notwithstanding the above, an improvement scheme has been identified which involves widening both the A664 Queensway approaches of the junction. The existing shared footway/cycleway to the north of the A664 Queensway (west) approach is excessively wide and therefore, this has been narrowed to accommodate the widening, although it should be noted that a width in excess of 3m will be maintained with the widening in place, sufficient to accommodate a shared footway / cycleway. The proposed layout is shown on Figure 14 below.

Figure 14. Proposed Widening - A664 Queensway / A664 Edinburgh Way Priority Controlled Roundabout [Illustrative/Typical Layout]



A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way Signal Junction

11.1.8 As detailed earlier, in the AM peak hour the A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way junction is forecast to operate with a DoS of below 100% on all links with the GMSF sites in all scenarios, with the exception of the A664 Edinburgh Way link which is forecast to operate only slightly over the 100% (DoS 100.8%) in the very robust 2040 "high side" scenario. In the PM peak hour the junction is predicted to operate within capacity, even in the very robust 2040 "high side" scenario. On this basis, the cumulative impact of all GMSF sites on this junction cannot be considered severe and there is no requirement for mitigation measures.

11.1.9 Notwithstanding the above, a review of the traffic flows at the junction identifies that a significantly high proportion of flows on the A664 northbound approach undertake a left-turn manoeuvre onto the A627(M). Therefore, an improvement scheme has been identified whereby the signalisation of the A664 (northbound) to A627(M) on-slip has been removed allowing for free-flow movement onto the A627(M) from this approach. The proposed arrangement is shown on Figure 15 below and maintains a 2-lane exit for vehicles exiting the junction from the Sandbrook Way and the A664 (southbound) approaches which then merges into 1 lane prior to the main 2-lane section of the A627(M).

Figure 15. Proposed A664 (northbound) to A627(M) Free-Flow Movement - A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way Signal Junction [Illustrative/Typical Layout]

11.1.10 A summary of all the aforementioned potential mitigation schemes have been provided in Table 7 below, however, it should be noted that these interventions are not expected to be the definitive solutions and are merely examined to demonstrate that the allocation has the potential to be implemented and also developed in order to enable costing.

Table 7. Approach to Mitigation

Junction	Mitigation Approach
A664 Queensway / Cowm Top Lane	Signalisation of the junction with added benefit of allowing signal controlled crossings to be introduced on all arms
A664 Queensway / A664 Manchester Road	Improving the staging of the junction to provide more green time for the dominant traffic movement
A664 Queensway / A664 Edinburgh Way	Widening both the A664 Queensway approaches of the junction
A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way	The signalisation of the A664 (northbound) to A627(M) movement has been removed allowing for free-flow movement onto the A627(M) from this approach

Sustainable Travel Interventions

11.1.11 As detailed earlier, the site already possesses good levels of accessibility by the main non-car modes of transport.

11.1.12 In order to maximise the opportunities available, the allocation will link into the existing and new pedestrian and cycling infrastructure. This will ensure that future residents can walk and cycle to local facilities, bus stops and train stations in preference, particularly for short journeys, rather than make use of the private car.

11.1.13 The development will provide funding improve the surfacing of Hillcrest Road / Cripple Gate Lane which will help to deliver this section of the Bee Network and improve pedestrian and cycle connectivity for both existing and prospective residents of the site.

11.1.14 As discussed, there is also potential to signalise the Cowm Top Lane / Queensway junction and introduce signal controlled crossings on all arms of the junction.

11.1.15 Furthermore the allocation access and internal site layout will be of a standard that could accommodate a bus service, if considered necessary at a future date.

12. Impact of interventions on the Local Road Network (where appropriate)

12.1.1 This section looks at the impact at the junctions where interventions, as highlighted in Chapter 12 have been identified and they have been assessed using a similar approach to that described in Chapter 11.

12.1.2 Capacity assessments of the interventions described in Chapter 12 have been undertaken. Table 9 below provides a comparison between the operation of each junction in the 2025 reference case and the 2025 'high side' scenarios, as well as the site development flows through each respective junction and Table 10 provides a comparison between the operation of each junction in the 2040 reference case and the 2040 'high side' scenarios. The table shows a comparison between the ratio of flow to capacity on the worst case arm at each junction as well as the total development flows through the junction.

Table 8. 2025 Results of Local Junction Capacity Analysis After Mitigation

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM
1. A664 Queensway / Cowm Top Lane	58.0%	75.8%	59.4%	75.7%
2. A664 Queensway / A664 Manchester Road	57.0%	73.6%	58.2%	74.7%
3. A664 Queensway / A664 Edinburgh Way	0.66	0.68	0.72	0.69
4. A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way	63.2%	63.4%	61.7%	63.3%

Table 9. 2040 Results of Local Junction Capacity Analysis After Mitigation

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM
1. A664 Queensway / Cowm Top Lane	69.7%	77.5%	86.4%	87.1%
2. A664 Queensway / A664 Manchester Road	62.8%	77.6%	79.4%	79.6%
3. A664 Queensway / A664 Edinburgh Way	0.74	0.72	0.91	0.80
4. A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way	70.1%	68.0%	85.2%	79.3%

A664 Queensway / Cowm Top Lane Proposed Signal Layout

12.1.3 The capacity assessments confirm that the proposed signal arrangement will operate within capacity in the future assessment year of 2025, with negligible impacts predicted between the 2025 'reference' and 'high side' scenarios. The capacity assessments also confirm that the proposed signal arrangement will operate within capacity in 2040 in the robust 'high side' assessment scenario.

A664 Queensway / A664 Manchester Road Signal Junction Proposed Staging Arrangement

12.1.4 The capacity assessments confirm that the proposed amendments to the staging result in the junction operating within capacity in the future assessment year of 2025, with negligible impacts predicted between the 2025 'reference' and 'high side' scenarios. The capacity assessments also confirm that the proposed amendments to the staging result in the junction operating within capacity in the future assessment year of 2040 in the robust 'high side' assessment scenario.

A664 Queensway / A664 Edinburgh Way Priority Controlled Roundabout

12.1.5 The capacity assessments confirm that the proposed widening to both the A664 Queensway approaches results in the junction operating within capacity in the future assessment year of 2025, with negligible impacts predicted between the 2025 'reference' and 'high side' scenarios. In the very robust future assessment year of 2040 'high side' scenario, the capacity assessments confirm that the proposed widening results in the junction operating with a maximum RFC of below 1 (0.91 – A664 Queensway West) in the AM peak hour and a maximum RFC of 0.80 in the PM peak hour. This represents a significant improvement when compared to the 2040 'high side' without mitigation scenario and only a slight impact when compared to the 2040 'reference' without mitigation scenario.

12.1.6 In terms of queues, when comparing the 2040 'high side' with mitigation scenario with the 2040 'reference' without mitigation scenario, the capacity assessments forecast an increase of just 3 PCU per lane on the worst case arm (A664 Queensway West) in the worst case AM peak hour, which cannot be classed as 'severe'.

A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way Signal Junction

12.1.7 The capacity assessments confirm that the proposed A664 (northbound) to A627(M) free-flow movement results in the junction operating within capacity in the future assessment year of 2025, with negligible impacts predicted between the 2025 'reference' and 'high side' scenarios. The capacity assessments also confirm that the proposed A664 (northbound) to A627(M) free-flow movement results in the junction operating within capacity in the future assessment year of 2040 in the robust 'high side' assessment scenario.

13. Impact and mitigation on Strategic Road Network

Overview

13.1.1 This chapter covers those impacts where traffic generated by the GMSF allocations meets the Strategic Road Network (SRN). Junctions at the interface between the Local Road Network (LRN) and the Strategic Road Network (SRN) have been assessed using a similar approach to that described in the preceding chapters. Wider issues relating to the SRN mainline are being assessed separately as described below.

13.1.2 SYSTRA is currently consulting with Highways England on behalf of the districts, TfGM and the Combined Authority in relation to the wider impacts of the GMSF allocations on the Strategic Road Network (SRN). This consultation is ongoing and it is expected that it will allow Highways England to gain a strategic understanding of where there is an interaction between network stress points and GMSF allocation demand which will facilitate further discussion and transfer of information between the districts, TfGM and Highways England (yet to be defined) in reaching agreement and/or common ground relating to the acceptability of GMSF allocations in advance of Examination in Public (EiP).

Impact of the Allocation before Mitigation on the Strategic Road Network

13.1.3 This section is similar to the previous chapter, however, it looks at the impact at the junctions highlighted in Section 9 that are on the strategic road network. Table 11 below provides a comparison between the operation of the in scope junction in the 2040 reference case and the 2040 'high side' scenarios, as well as the site development flows through each respective junction. The table shows a comparison between the ratio of flow to capacity on the worst case arm at each junction as well as the total development flows through the junction.

Table 10. Results of Local Junction Capacity Analysis Before Mitigation

Junction	Reference Case AM	Reference Case PM	GMSF High AM	GMSF High PM
6. A627(M) / M62 Junction 20	118.9%	121.8%	141.3%	125.1%

13.1.4 The M62 junction 20 takes the form of a four arm signal controlled grade separated junction.

13.1.5 Table 11 demonstrates that M62 junction 20 will experience some operational issues in 2040 in both the reference case and with all GMSF sites in place. It is clear that a transport intervention is required to holistically mitigate the cumulative impact of all of GMSF sites at this junction. It is understood that mitigation measures are being proposed by other GMSF sites which are larger in scale and having a greater impact at M62 junction 20 which involves the provision of an additional left turn only on the A627(M) northbound towards the M62 westbound off slip road and that this mitigates the cumulative impact of the GMSF allocations sites.

14. Final list of interventions

14.1.1 Table 12 provides a full summary of potential interventions, however, it should be noted that these interventions are not expected to be the definitive solutions and are merely examined to demonstrate that the allocation has the potential to be implemented and also developed in order to enable indicative costing. Furthermore, the supporting local mitigation are only required to mitigate the cumulative traffic impacts of all draft GMSF sites, not the Trows Farm development in isolation, as detailed earlier.

Table 11. Potential Interventions

Mitigation	Description
Site Access	
Extension to Cowm Top Lane	6.7m wide carriageway and 2m wide footways on both sides of the road. Dropped kerbs and tactile paving will be provided cross the existing Public Right of Way.
Traffic Calming	Traffic calming improvements will be provided to the existing section of Cowm Top Lane.
Drainage	Drainage improvements will be provided to the existing section of Cowm Top Lane.

Emergency Access	A shared footway/cycleway off with a minimum width of 3.7m in order to accommodate a fire appliance and the access will be controlled with retractable bollards.
Necessary Local Mitigations	
A664 Queensway / Cowm Top Lane signalisation	Signalisation of the A664 Queensway / Cowm Top Lane junction which will have the added benefit of allowing signal controlled crossings to be introduced on all arms.
A664 Queensway / A664 Manchester Road Signal Junction Staging Amendments	Amendments to the staging of the junction, to provide more green time for the dominant traffic movement turning left out of the A664 Queensway
A664 Queensway / A664 Edinburgh Way Roundabout Widening	Widening of verges on east and west approaches
A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way Signal Junction	Signalisation of the A664 (northbound) to A627(M) on-slip has been removed allowing for free-flow movement onto the A627(M) from this approach
Pedestrian and Cycle Improvements	Contribution towards the improvements to the surface of Hillcrest Road / Cripple Gate Lane to promote walking and cycling trips to/from site and help facilitate the delivery of the Bee Network.
SRN Interventions	
M62 Junction 20	Intervention primarily required in relation to the allocation at GM2 Stakehill but will have strategic benefits for Trows Farm.

15. Strategic Context – GM Transport Strategy Interventions

Greater Manchester Transport Strategy 2040

15.1.1 In February 2017, Transport for Greater Manchester (TfGM) published the Greater Manchester Transport Strategy 2040 which sets out the vision for Greater Manchester and provides a plan to "establish a fully integrated, high capacity transport system across Greater Manchester".

15.1.2 Through Greater Manchester's Transport Strategy 2040 and accompanying 5-year Delivery Plan, a 'Right Mix' has been set out for future travel in Greater Manchester, supported by a suite of transport interventions.

15.1.3 The Right Mix is a vision of how travel in Greater Manchester will need to change by 2040 in order to achieve the GM local authorities' policy objectives, with their strong emphasis on creating better places. A pathway to the Right Mix has been set out, comprising a set of evidence-based targets. Those targets will be adjusted over time in the light of the monitoring of progress in meeting those targets and the interventions set out for walking, cycling and public transport for this allocation will contribute to the Right Mix target of reducing growth in motor vehicle traffic in Greater Manchester.

Greater Manchester Transport Strategy 2040 Draft Delivery Plan (2020-2025)

15.1.4 The Transport Strategy Draft Delivery Plan 2020-2025 was published alongside the GMSF and sets out how TfGM are looking to achieve the aims of the Transport Strategy. This includes:

- Making walking and cycling the natural choice for short journeys.
- Ensuring that new developments support sustainable transport, and that our town centres are attractive and well connected.
- Transforming public transport capacity and active travel in the Regional Centre.
- Offer good alternatives to the car for travel across the city-region.
- Enabling good orbital connections between town centres.
- Maximising the efficiency and reliability of our existing transport networks.
- Strengthening our position at the heart of the Northern Powerhouse by fully integrating HS2, Northern Powerhouse Rail, and other national infrastructure with local networks.

- Ensuring Manchester Airport and the Airport Enterprise Zone sustainably meets its potential as an international gateway and employment hub.
- Move and manage freight in the most sustainable and efficient ways.
- Research and harness future technology, innovations and digital connectivity.

15.1.5 The Delivery Plan sets out the practical actions TfGM to look achieve in the next five years and provide a coordinated approach to transport investment. It details:

- Practical transport actions that we are planning to deliver.
- Committed interventions, potential interventions and interventions to be studied over the next five years.
- Further transport reforms that will be needed to deliver our long-term priorities.

15.1.6 In relation to Rochdale, the key transport interventions TfGM are looking to progress include:-

- Quality bus transit on key bus corridors, which may include Bury to Rochdale, Oldham to Rochdale (business case for early delivery) To provide a more attractive alternative to the car for orbital journeys between Bury and Rochdale.
- Strengthening of metrolink system to provide Improved Metrolink capacity between Piccadilly and Victoria stations, to address the GMCA's intention to provide direct services from Rochdale and Oldham into Piccadilly (business case for early delivery)
- Metrolink hubs / park and ride upgrades to Rochdale. To provide better access to public transport through Mobility Hub/Park & Ride facilities
- Tram-train 'Pathfinder' trial project options, Rochdale to Heywood.
- Calder Line Valley Line Improvements: New services enabled by line speed and signalling upgrades (delivered by Network Rail).
- Mills Hills station upgrade: To improve station accessibility (delivered by Network Rail).
- Cycling and Walking Infrastructure: Including improving cycling and walking infrastructure on the Castleton Local Centre Corridor and expansion of the Bee Network of joined up cycling and walking routes.

Greater Manchester's Bee Network

15.1.7 The Bee Network proposal is a vision to make Greater Manchester an easier place for people to get around on foot or by bike.

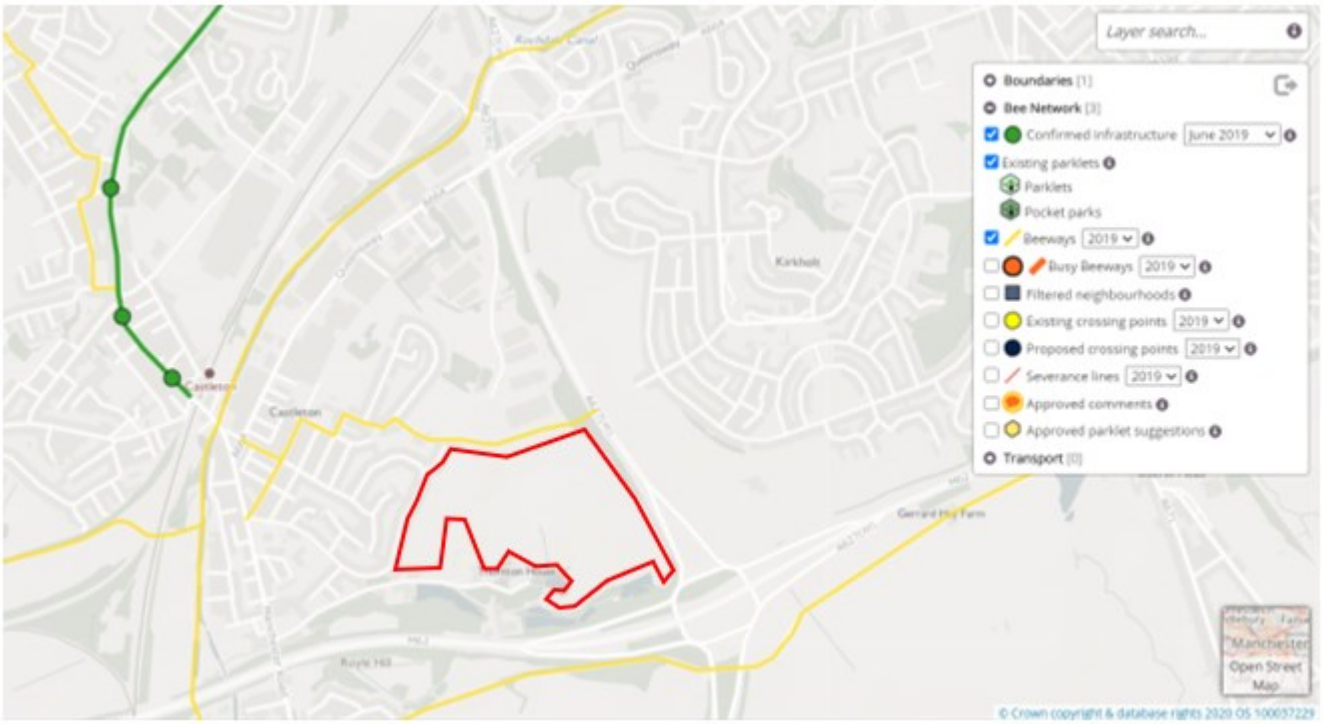
15.1.8 The proposal is a vision for Greater Manchester to become the very first city-region in the UK to have a fully joined-up cycling and walking network: the most comprehensive in Britain covering 1,800 miles.

15.1.9 The latest mapping of the Bee Network from the Cycling and Walking Infrastructure Proposal can be found on MappingGM site https://mappinggm.org.uk/bee-network/.

15.1.10 A number of cycle infrastructure improvements have specifically been announced around Castleton, including Castleton Local Centre Corridor (CLCC) and TfGM's Bee Network. Figure 17 below shows the improvements proposed along the canal and Cripple Gate Lane / Hillcrest Road as well as the junctions being improved. The development will ensure that the pedestrian and cycling facilities are linked with the improved infrastructure and, as detailed earlier, provide a contribution to improving the surface of Cripple Gate Lane / Hillcrest Road which will assist in the delivery of this section of the Bee Network.

15.1.11 Note that the allocation boundaries shown in **Figure 17** were correct at the time of writing, for definitive boundary information refer to the GMSF allocation maps.

Figure 17. Cycling Improvements Planned around Castleton



15.1.12 In general, the relevant transport policies set out above follow similar themes and promote common aims in respect of accessibility by non-car modes. These are to provide sustainable development with good access to encourage non-car modes of transport, to ensure that the highways impact of new developments is acceptable or mitigated against. The transport interventions identified will help to encourage sustainable travel to and from the proposed allocation site and limit traffic growth.

16. Phasing Plan

16.1.1 At this stage the phasing of the development is still to be determined. However, the transport interventions will only be required when a significant level of development from the allocation site and other TfGM sites has come forward. All phasing plans information contained in this Locality Assessment is therefore indicative only and has only been used to understand the likely intervention delivery timetable. Final trajectory information and the final allocation proposal is contained in the GMSF Allocation Topic Paper.

16.1.2 A summary of the indicative allocation phasing and intervention delivery time estimates is provided in Table 12 and Table 13.

Table 12. Indicative Cumulative Allocation Phasing

Allocation Phasing	2020 25	2025 30	2030 2037	2037+	Total
Parcel 1	70-80	530-600	0	0	**600**
Total	70-80	530-600	0	0	**600**

Table 13. Indicative intervention delivery timetable

Mitigation	2020 2025	2025 2030	2030 2037
Site Access			
Extension to Cowm Top Lane	✓		
Traffic Calming	✓		
Drainage	✓		
Emergency Access	✓		
Necessary Local Mitigations			
A664 Queensway / Cowm Top Lane Signalisation	✓	-	-
A664 Queensway / A664 Manchester Road Signal Junction Staging Amendments	✓	-	-
A664 Queensway / A664 Edinburgh Way Roundabout Widening	✓	-	-
A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way Signal Junction	✓	-	-
Pedestrian and Cycle Improvements	✓	-	
SRN Interventions			
M62 Junction 20		✓	-

17. Summary & Conclusion

17.1.1 This assessment has demonstrated the allocation is well located for sustainable travel, close to existing public transport networks and local amenities. In order to maximise the opportunities available, the development has the potential to link into the existing and new pedestrian and cycling infrastructure. This will ensure that future residents can walk and cycle to local facilities, bus stops and train stations in preference, particularly for short journeys, rather than make use of the private car.

17.1.2 The proposed development will be fully permeable by foot, providing footways connection onto Cowm Top Lane and Trows Lane to the south. In addition, the potential signalisation of the Cowm Top Lane / Queensway junction will allow signal controlled crossings to be provided on all arms of the junction.

17.1.3 The nearest bus stop to the allocation is located on A664 Queensway, immediately to the east of its junction with Cowm Top Lane. Other bus stops are located in the vicinity of the allocation, for example on A664 Manchester Road, approximately a 10-minute walk from the site. Having regard to this and in addition to the close proximity to Castleton Railway Station, the allocation is considered to be well served by public transport. The allocation access is of a standard that could accommodate a bus service at a future date.

17.1.4 Traffic arising from the allocation has been tested in detail at the junctions identified as being most impacted, using the traffic flow data provided from the GMVDM for the 2025 and 2040 future assessment years. The assessments demonstrate that junctions on the local road network will operate in an acceptable manner with the proposed allocation and other nearby GMSF allocations in place.

17.1.5 Notwithstanding the above, potential indicative mitigations have been identified at the A664 Queensway / Cowm Top Lane junction, which involves potential signalisation, and at the A664 Queensway / A664 Manchester Road signal junction which involves amendments to the existing staging arrangements. Potential additional improvement schemes have also been identified at the A664 Queensway / A664 Edinburgh Way roundabout, involving the widening of both the A664 Queensway approaches, and at the A664 Queensway / A664 Edinburgh Way / A627 (M) / Sandbrook Way Signal junction which involves the removal of the signals on the A664

(northbound) to A627(M) movement allowing for free-flow movement onto the A627(M) from this approach.

17.1.6 These potential improvement schemes result in these junctions working within capacity, mitigating the impact of both the proposed allocation site (GM29) and other allocations in the area. Having regard to the above, it can be concluded that the traffic impacts of the GM29 allocation site on the local network are less than severe.

17.1.7 The assessments show that M62 junction 20 will experience some operational issues in 2040 in both the reference case and with all GMSF sites in place. It is clear that a transport intervention is required to holistically mitigate the cumulative impact of all of GMSF sites at this junction. It is understood that mitigation measures are being proposed by other GMSF sites which are larger in scale and having a greater impact at M62 junction 20 which involves the provision of an additional left turn only on the A627(M) northbound towards the M62 westbound off slip road and that this mitigates the cumulative impact of the GMSF allocations sites.

17.1.8 The development is compliant with local, regional and national policy and will promote sustainable modes of travel and minimise the need for car travel.

17.1.9 It is therefore concluded that there is no reason on highway or transport grounds why this allocation should not be allocated within the GMSF.