Trafford Council

NEW CARRINGTON MASTERPLAN

Delivery Strategy: Options Report

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CONTENTS

TABLES

FIGURES

APPENDICES

1

INTRODUCTION

1 INTRODUCTION

1.1 NEW CARRINGTON MASTERPLAN CONTEXT

This Options Report compiled by WSP in conjunction with Deloitte is the second step in informing a Masterplan Delivery Strategy for the New Carrington Allocation on behalf of Trafford Council. It follows the production of the Baseline Report dated October 2024.

The Delivery Strategy is the first part of a detailed Masterplan for the New Carrington Allocation as required by Policy JPA 30 of the Places for Everyone (PfE) plan. The eventual masterplan will provide a clear planning framework to enable the sustainable, phased delivery of the allocation and its associated infrastructure. The aim is to enable high quality place making through provision of clear and unambiguous planning and delivery guidance.

The Delivery Strategy considers the aims and requirements of the whole allocation to facilitate the coordinated delivery of development alongside all types of infrastructure. This will enable place making across the site to come forward in a coherent manner and maximise integration with existing communities and environments, both internal and adjacent to the allocation.

It is important to develop an Infrastructure Framework alongside the overall Delivery Strategy including safeguarding areas of land to ensure infrastructure delivery can take place at the right locations, phase and scale. Clearly balance and equity is important in the planning and delivery of infrastructure, enabling certainty and clarity for residents, developers, statutory consultees, Trafford Council and other stakeholders.

1.2 PURPOSE OF THE OPTIONS REPORT

This Options Report is intended to present the options for infrastructure delivery which are required to enable the New Carrington Allocation development proposals to come forward in a sustainable, coherent and integrated manner.

Options have been examined across the following technical disciplines:

- Transport
- Social Infrastructure, including locations for local and neighbourhood centres
- Energy
- Flood Risk and Drainage

Each technical chapter goes into further detail on the basis of each option, however the options have chiefly been informed by the evidence base available to date (see WSP Baseline Report, October 2024) as well as feedback received during the two rounds of stakeholder consultation held in March 2024 and July 2024.

It should be noted that where specific infrastructure solutions are identified, such as transport link routing, these may be subject to change for example as planning applications for specific development plots come forward. It is possible therefore that over the course of time other suitable alternatives could be put forward which achieve the same objectives.

1.3 OVERALL ASSESSMENT CRITERIA

Following identification of options, each technical chapter goes on to assess the options and present a preferred infrastructure solution.

Whilst each technical chapter of this report has its own specific criteria for assessment, the criteria broadly align with the following principles which were set out within the stakeholder consultation pack issued in July 2024:

Figure 1-1 - Assessment Criteria for Option Review

1.4 ASSUMPTIONS RELATING TO EMPLOYMENT AND HOUSING DELIVERY

To inform the options assessment, assumptions have been made in relation to how development may come forward in future years.

An indicative delivery schedule has been prepared, including parcels of development that have already been delivered, for both residential and employment uses. It is noted that elements of the delivery schedule may need to be refined as part of the future masterplanning, which will be in part informed by the ongoing landowner discussions taking place within this commission.

2

TRANSPORT

2 TRANSPORT

2.1 INTRODUCTION

2.1.1 SCOPE

This section of the report sets out the key principles adopted for Transport within the New Carrington allocation.

Where options for additional or alternative measures to those identified within Appendix D of PfE have been identified through the baseline review stage and/or through stakeholder consultation to date, they have been assessed in line with a set of criteria detailed in Table 2-1.

2.1.2 SOURCES OF INFORMATION AND ASSUMPTIONS

This chapter has been informed by the following:

- Greater Manchester Transport Strategy 2040
- Places For Everyone Joint Development Plan (March 2024)
- New Carrington Outline Transport Strategy (Sept 2023)
- New Carrington Locality Assessment (Nov 2020) – Undertaken for GMSF and latterly PfE
- New Carrington GMSF Masterplan (Sept 2020)
- Feedback from Stakeholder workshops held in March 2024 and July 2024

2.1.3 ASSESSMENT CRITERIA

Where reasonable/ realistic options have been identified, they have been assessed against the criteria set out in Table 2-1 below:

Table 2-1 - Assessment Criteria

Overarching Assessment Criteria	Commentary on Assessment Criteria in Relation to Transport Infrastructure
Sufficient infrastructure capacity to meet the needs of a growing population	Provision ensures that safe and suitable access to the site can be achieved for all users, with particular focus on access to local facilities.
Feedback from events with community group and stakeholders	Has feedback – whether positive of negative – been received on the option being assessed.
Promoting sustainable development	Appropriate opportunities to promote sustainable transport modes have been taken up, given the type of development and its location.
Deliverability and operational efficiency	Are there any risks or barriers to delivery of the option.
Alignment with local and national strategic ambitions and policy	Does the option align with local (e.g. Trafford & TfGM) as well as national policy ambitions and policy.
Phase-ability and trigger points	When is the option likely to be required.

2.1.4 CHAPTER STRUCTURE

The rest of this chapter considers three categories of Transport. It sets out the principles to be adopted and, where identified, assesses options for:

- Active Travel Routes;
- Public Transport;
- Links within New Carrington;
- Bridges; and
- Off-site highway improvements.

2.2 ACTIVE TRAVEL ROUTES

2.2.1 REQUIREMENT

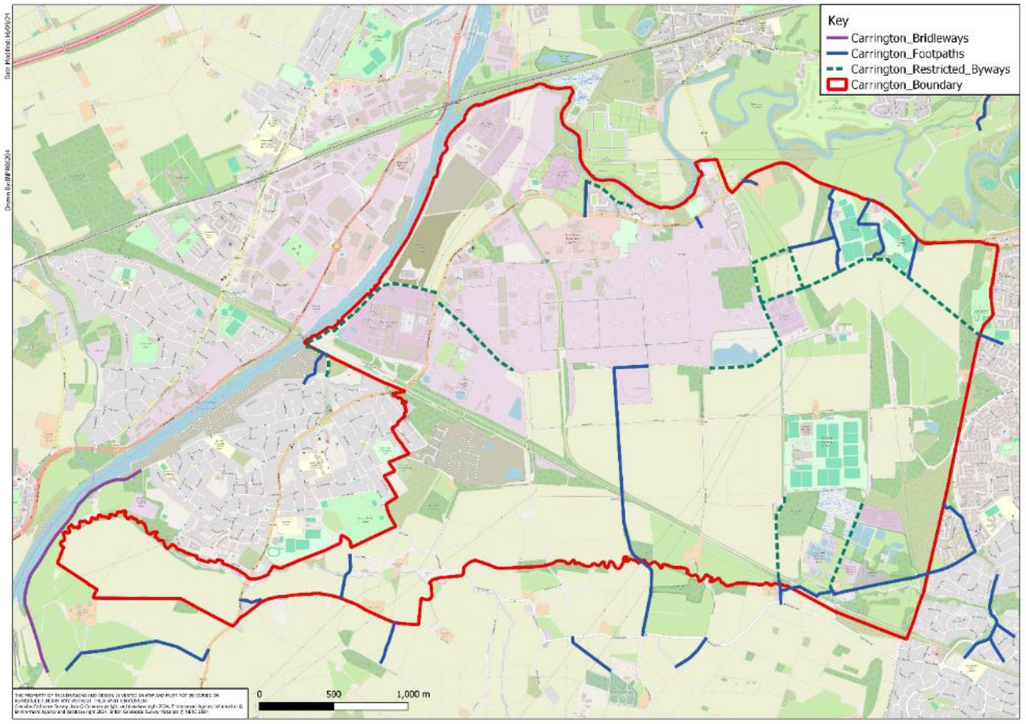
Active travel routes are fundamental for the delivery of the development, both at a local level (e.g. connectivity to/from and between individual housing and employment plots) and at a more long-distance level (e.g. walking and cycling to local and neighbourhood centres). Consideration needs to be given to all users: pedestrians, cyclists, equestrian users, the mobility impaired, and those with mental health conditions, dementia, and age-related and non-visible impairments.

2.2.2 SUMMARY OF PROVISION

2.2.2.1 Existing Provision

There is an existing network of Public Rights of Way across the Carrington area, however the official status of the routes is somewhat disjointed. This is best demonstrated by Trafford's PROW map for the area, shown in Figure 2-1 overleaf.

Figure 2-1 - Existing Formal Public Rights of Way



The above official public rights of way are linked by a series of informal but well-used walking routes, as well as the Carrington Rides. The Rides are routeways dating from the end of the 19th Century when, to facilitate the disposal of waste across the Carrington Moss Estate, around 6 miles of light railway for a 2ft 6inch narrow gauge track was constructed in a grid like pattern, with a line running northwards towards Carrington Wharf and the Mersey. In 1937, refuse dumping in the area ceased altogether and the main feature still surviving at Carrington Moss are the routeways which carried the narrow gauge railway.

2.2.2.2 Proposed Provision

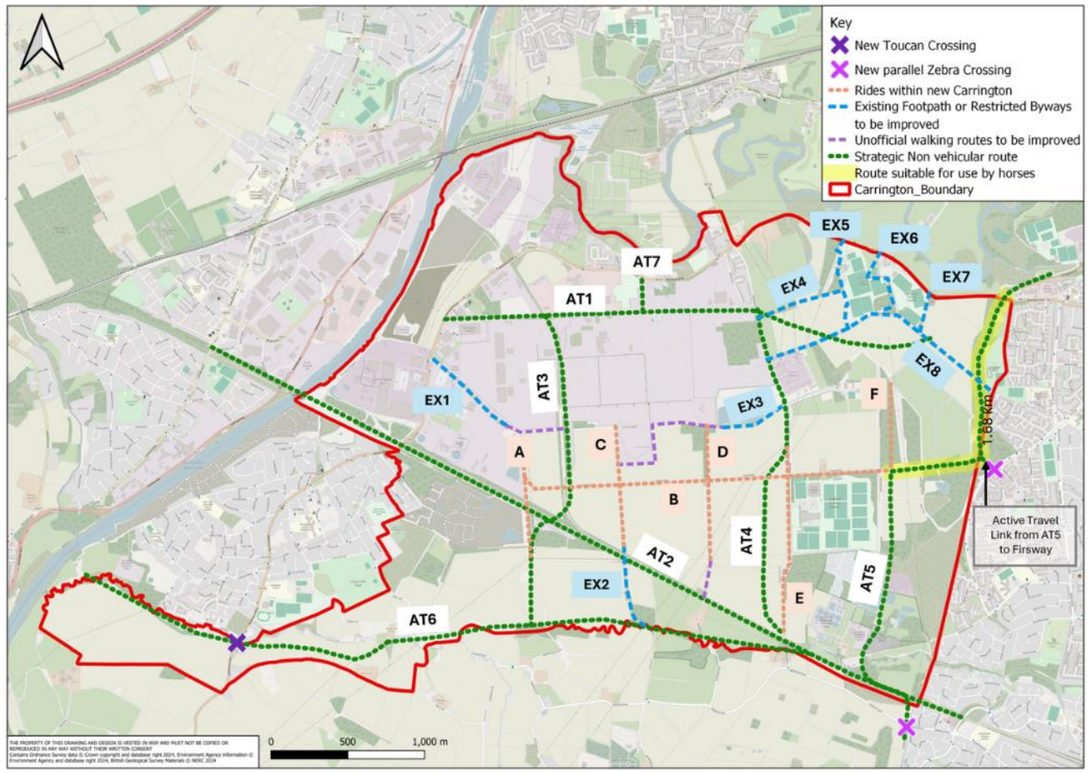
The Strategic Active Travel Links identified in the 2020 New Carrington Masterplan and Outline Transport Strategy have been reviewed and updated based on the latest proposals for the Carrington Relief Road. Changes from the 2020 Masterplan are as follows:

- AT1: Western end follows alignment of Carrington Relief Road. Full route of AT1 is provided as part of CRR;
- AT3: Northern extent ends at CRR. Linkage to A6144 to north is provided by AT7, which would be implemented on an existing link between the A1 road and the A6144.

The updated Active Travel Strategy is shown on Figure 2-2 and provides well for active travel across the wider allocation. It allows for a very high level of accessibility around local and neighbourhood centres. Alternative east-west connections are possible via the Carrington Rides, which would also be upgraded as development comes forward.

Furthermore the existing Public Rights of Way in the area would be improved, as would the informal routes linking them. Where possible, these informal routes would be adopted as formal Public Rights of Way.

Figure 2-2 - Strategic Active Travel Links



2.2.3 CARRINGTON RELIEF ROAD - COMPLEMENTARY LINKS

The Carrington Relief Road will have fully segregated cycling and walking links alongside the highway link, but there is also a need to ensure the active travel links extend beyond the CRR and link into the wider network.

In addition there is an opportunity to improve active travel provision on the existing A6144 through Carrington Village when the CRR scheme is in place, providing further opportunities for sustainable transport.

The following schemes have therefore been identified:

1. Broadway to Common Lane
    a. Cycle crossing at Broadway

b. Segregated cycleway on the south side of the road continuing to bridge.

c. Beneath the existing bridge a signalised cycle gate is proposed with pedestrians using the existing tunnel.

d. Cyclists and pedestrians then merge to a shared footway over the bridge.

e. After bridge active travel once again becomes segregated up to Common Lane.

f. A new zebra crossing near Saica Paper to facilitate active travel use.

2. A6144 through Carrington Village to Flixton junction

   a. Segregated cycleway to southern side of A6144 with various smaller interventions such as bus layby improvements, speed cushions and/ or uncontrolled crossing points

   b. Shared footway proposed where land and other external constraints mean there isn't enough room for a segregated cycleway

   c. Potential speed reduction to 20/30mph through Carrington Village

3. Flixton junction to Banky Lane junction via A6144

   a. Shared cycleway footway to south side of A6144

   b. New uncontrolled crossing facilities

   c. Bus stop improvements

2.2.4 INDICATIVE ARRANGEMENT

An indicative cross-section for the strategic active travel links, based on baseline review and stakeholder feedback is included in Appendix A. Also provided in Appendix A is a plan setting out the lengths of each Active Travel Link and each of the New Carrington "Rides" which would be upgraded.

Each Strategic Active Travel Link would be a minimum of 3m wide, lit, and would have asphalt surfacing with the exception of the length of AT5 shown in the figure as being suitable for use by horses. The highlighted stretch of AT5 above connects the Carrington Rides through to the Pegasus crossing at the Banky Lane junction and would be surfaced to Bridleway standard with an aggregate and topsoil mix.

Other existing footpaths and restricted byways within the New Carrington Allocation would be improved, with surfacing brough up to Bridleway standard to ensure a good permeation of active travel provision through the area. These routes would continue to provide a facility mainly for leisure users, and so would not have lighting introduced.

Given the very good level of provision across the allocation, no additional or alternative allocation-wide options have been identified, however in order to ensure that a similar level of provision is made within individual development plots as they come forward, a set of principles have been identified.

2.2.5 PROPOSED DEVELOPMENT PLOT ACTIVE TRAVEL PRINCIPLES FOR NEW CARRINGTON

- Focus on highest levels of accessibility around local centres and walking routes to school;
- Consider allocating space on active travel corridors for underground plant;
- High frequency of access points to Strategic Active Travel Links;
- Active Travel Links to present safe environment for all users (well-lit, natural surveillance, clear lines of sight along each stretch of route);
- Safe and suitable access to and within the site can be achieved for all users;
- Transport elements of development plots should be designed in line with relevant guidance including:
  - Trafford Design Code (2024)
  - TfGM Greater Manchester Streets for All Design Guide (2023)
  - Active Travel England - Route Check User Manual (2024)
  - DfT Inclusive Mobility guidance (2021)
  - LTN 1/20 Cycle Infrastructure Design (2020)
  - Manual for Streets (2007)

2.3 PUBLIC TRANSPORT

2.3.1 REQUIREMENT

Convenient and safe public transport options are key to encouraging non car usage for all distances of journey to, from and within the New Carrington area. Existing public transport provision is not sufficient for the future requirements of the area, and as such extensive work has been undertaken previously by Trafford Council and TfGM to examine the options for bus based public transport to/from and within the allocation and existing local communities.

The options are set out in full in the 2023 New Carrington Outline Transport Strategy; a brief overview of which is reproduced below for ease.

To assess the uncertain impact of the development in terms of transport, a range of three future scenarios have been developed, which represent different trajectories and outcomes in terms of policy, travel behaviour and sustainability. These three scenarios are:

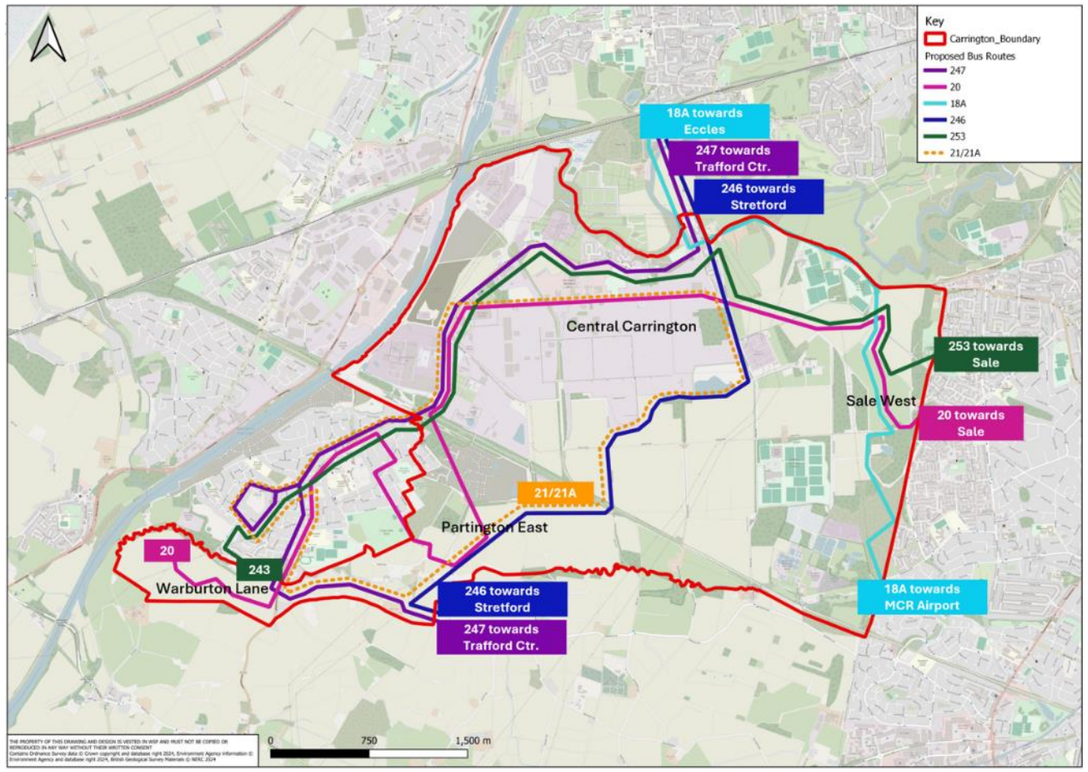
- Scenario 1, bottom (unsustainable, high cost, highway focussed):
  - Scenario 1 has a non-car mode share of 21%.
- Scenario 2, (Midpoint):
  - Indicative Scenario 2 has a non-car mode share of 26%
- Scenario 3, top (sustainable mode share, very high cost):
  - Scenario 3 has a non-car mode share of 46% (aligning with the TfGM Right Mix target for wider Trafford)

The midpoint Scenario 2 is considered to be both realistic and achievable.
Securing a suitable balance in Scenario 2, between transport sustainability, satisfactory performance and affordability, is essential. The indicative Scenario 2 will undergo further iterative work to resolve intervention options, travel patterns, (especially trip distribution), impacts, costs, funding, land use arrangements, and approvals.

Patronage levels for bus services have been calculated from the Scenario 1, 2 and 3 trip rates and mode shares. An approximate level of viable bus provision has been determined, for each scenario, using the annual cost of operating a bus in Greater Manchester (£225k), the average net passenger revenue per trip (£1), and the cost recovery percentage (50%).

There is a requirement for further, more comprehensive modelling of the proposed network and the patronage/revenue it is likely to generate. However, the TfGM bus operations team has identified some feasible options for improving bus service provision with the New Carrington development, under a worst case Scenario 1 outcome, which could support 7 – 8 new buses, and under a more realistic Scenario 2 outcome, which could support 15 – 16 new buses. The options for Scenario 2 are shown in Figure 2-3.

Figure 2-3 - Scenario 2 bus route options



The Scenario 2 improvements fall short of the currently unachievable addition of around 25 – 30 new buses which would be required for a fully sustainable Scenario 3, and which would enable a reasonably comprehensive network, along with 15 minute headway service to both Stretford and Sale Metrolink stations. It is assumed that Scenario 3 would need substantial pump-prime developer contributions and potentially long-term revenue support funding.

More analysis of this will be required:

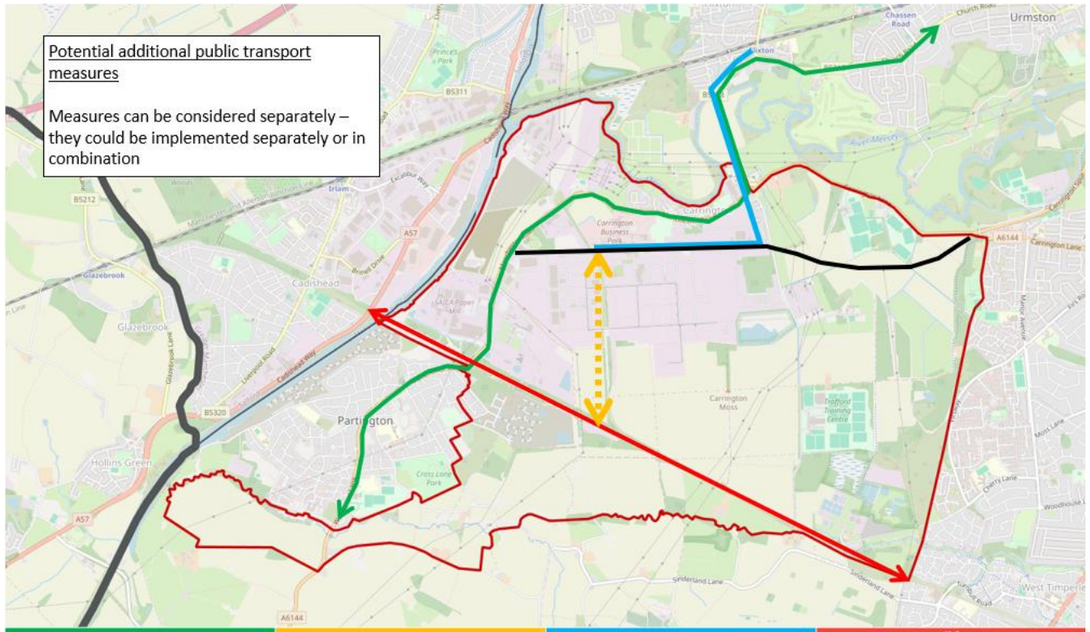
- Using the farebox yield associated with the land use development under alternate TOD assumptions to scale the public transport interventions using affordability/VfM considerations.
- Iterate through the land use/transport interaction process to confirm an optimised (but affordable/credible) package of scenario 2 transport interventions.

Further development of the public transport strategy will require collaboration with the TfGM Bus Network team to develop a comprehensive bus services model, linked to the developing masterplanning.

2.4 ADDITIONAL PUBLIC TRANSPORT OPTIONS TO BE ASSESSED

Some options for additional provision, complementing those shown above have been identified and are set out in Figure 2-4 overleaf:

Figure 2-4 - Potential Public Transport Options for assessment



2.4.1 OPTION ASSESSMENTS

Public Transport Option 1: 255 Bus Service to Manchester City Centre – Enhance/ Increase Frequency

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide additional capacity in response to demand and utilise existing/ planned infrastructure, e.g. existing A6144 and CRR.
Feedback from events with community group and stakeholders		There was some positive feedback for this option, however it was also noted that this option could be treated as Business As Usual and that frequency should increase anyway if the demand is there. The overall was that journeys to the Metrolink in Sale & Altrincham are likely to be the most attractive to residents accessing the city centre as they would provide the best journey times and have greater journey time reliability..
Promoting sustainable development		Would increase provision for a sustainable transport mode and encourage mode shift away from the private car. Specifically it would encourage commuting and trips for leisure purposes to Manchester city centre by a sustainable mode, with a travel time not dissimilar to travel time by the private car once bus priority measures are taken into account.
Deliverability and operational efficiency		Stakeholders observed that service frequency should increase anyway if the demand is there. In the short-term, there is the potential for funding from other sources outside of the 'farebox' income, but the medium to long term model should be for the service to become self-sufficient and self financing once the demand (in terms of local residents desiring to travel on the route) and frequency (an attractive regular service) is available.
Alignment with local and national strategic ambitions and policy		Works toward NPPF aim that *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location".* Conforms with PfE policy JP-C8 in relation to Transport Requirements of New Development, specifically in relation to Public Transport focus. Conforms with PfE policy JPA 30 bullet point 5 (see baseline review) which requires the allocation to *"Contribute to new / enhanced bus services and deliver bus priority infrastructure within the site and, where appropriate, on bus routes linking to the site."*
Phase-ability and trigger points		Can be introduced when required due to demand levels. Potential to be introduced as an early solution with developer funding, and at later stages of build-out could be self-funding once critical mass of patronage is reached. Also is a variable solution i.e. frequency could be varied to suit potential demand and also developer funding which is available.

Public Transport Option 2: Public Transport Link to Carrington Relief Road

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide additional capacity for both local trips within the New Carrington area and also connect into longer distance bus routes running along the CRR and / or along other strategic links within the New Carrington area.
Feedback from events with community group and stakeholders		Generally ambivalent feedback. Stakeholders raised that it was not clear how it would fit in with wider proposition and would remove some routes from eastern link. Deliverability of the route was also raised as a concern due to constraints in the area such as existing above-ground pipelines and employment uses.
Promoting sustainable development		Would increase provision for a sustainable transport mode but would require construction of new carriageway. Potentially relatively limited benefit in terms of encouraging modal shift when compared to other options, given that the eastern link could fill the role of this option.
Deliverability and operational efficiency		Requires new carriageway construction and connection to Carrington Relief Road. Would require re-routing of some services away from Eastern Link. Therefore may be some

Criteria	Rating	Comment
		operational challenges relating to bus operators running services as they may prefer to concentrate on strategic routes such as Eastern Link Road.
Alignment with local and national strategic ambitions and policy		Works toward NPPF aim that *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location".* Conforms with PfE policy JP-C8 in relation to Transport Requirements of New Development, specifically in relation to Public Transport focus. Conforms with PfE policy JPA 30 bullet point 6 (see baseline review) which requires the allocation to *"Facilitate delivery of the Carrington Relief Road to provide an alternative route to the A6144, incorporating provision for pedestrians, cyclists and bus priority measures."*
Phase-ability and trigger points		Not clear whether there would be a clear trigger point for provision. Likely to be dependent on specific development plots being delivered including infrastructure for bus services within the plots.

Public Transport Option 3: Bus Priority Measures to Flixton Station

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Improves bus connectivity to neighbouring areas of Flixton and Urmston, and Flixton Station, for existing residents in the area as well as new residents of New Carrington.
Feedback from events with community group and stakeholders		A mixture of ambivalent and positive feedback from stakeholders. Some stakeholders considered that bus priority measures should be implemented as part of a proposed road scheme as a matter of course if feasible (business as usual) as opposed to it being an option.
Promoting sustainable development		Would increase provision for a sustainable transport mode, but could require more construction of new carriageway. Specifically would encourage commuting and trips for leisure purposes to Manchester city centre and also to Warrington / Liverpool by a sustainable mode (bus then train).
Deliverability and operational efficiency		Likely to require more carriageway construction and road space at junctions but could be incorporated with CRR works. Potential operational issues with connectivity times between bus and rail, but work with TfGM and rail operators could be undertaken to address this.
Alignment with local and national strategic ambitions and policy		Works toward NPPF aim that *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location".*
		Conforms with PfE policy JP-C8 in relation to Transport Requirements of New Development, specifically in relation to Public Transport focus. Conforms with PfE policy JP-C3 Bullet points 5 and 6 (see baseline review) which require *"Better integration of services and between public transport modes".*
Phase-ability and trigger points		Could be delivered alongside main Carrington Relief Road project and therefore be an efficient delivery mechanism.

Public Transport Option 4: Guided busway on Greenway

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide significant additional capacity on a currently convoluted bus route towards Timperley / Altrincham area, also with the potential to make Metrolink connections. This option is intended to improve journey times to Altrincham and Metrolink, however there is also the potential to link across the Manchester Ship Canal to Cadishead dependant on structural integrity of the Cadishead Viaduct.
Feedback from events with community group and stakeholders		Generally ambivalent feedback. It was recognised as something that would be a long term aspiration, better to ensure the masterplan doesn't preclude it coming forward in future.
Promoting sustainable development		Would present a step-change in provision for a sustainable transport mode, with the consequent significant potential to deliver mode shift, i.e. more so than a traditional bus service improvement. Noted that it would require some construction.
Deliverability and operational efficiency		Level differences between the former rail line and road network around the A56 will make new connections difficult and require significant construction work to achieve.
Alignment with local and national strategic ambitions and policy		Works toward NPPF aim that *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location".* Noted in TfGM Delivery Strategy. Conforms with PfE policy JP-C8 in relation to Transport Requirements of New Development, specifically in relation to Public Transport focus. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Provide an east / west strategic sustainable transport corridor across the site from the Manchester Ship Canal to Sale to link with the wider Carrington Greenway scheme;"*
Phase-ability and trigger points		Unlikely to be delivered as part of allocation, but the masterplan could reserve land to facilitate it coming forward in future in

Criteria	Rating	Comment
		addition to the Strategic Active Travel route proposed for the Greenway, which may be achievable in the Masterplan period.

2.4.2 SUMMARY OF ASSESSMENT AND RECOMMENDATIONS

Public Transport Option 1: 255 Bus Service to Manchester City Centre – Enhance/ Increase Frequency returns green ratings for most criteria, however it does represent a step away from TfGM's overarching strategy to improve access to the Metrolink in Sale and Altrincham. Stakeholder feedback highlights that the option could come forward anyway if the demand was present, however it is considered that bus linkage to the Altrincham Metrolink line would present a more attractive option for residents wanting to travel to the city centre.

It is therefore recommended that this option is not taken forward as something that would be delivered as part of the New Carrington allocation.

Public Transport Option 2: Public Transport Link to Carrington Relief Road returns amber ratings for most criteria. There are deliverability challenges with this route due to existing structures, and in any case it would ultimately remove services from the eastern link, which makes it difficult to demonstrate a need for the provision of this option.

It is therefore recommended that this option is not taken forward as something that would be delivered as part of the New Carrington allocation.

Public Transport Option: 3 Bus Priority Measures to Flixton Station returns green ratings for most criteria, although stakeholder feedback advises that bus priority measures would typically be incorporated in highway improvement proposals as a matter of course if feasible. To that end, they would therefore mainly consist of at-junction measures as opposed to full sections of bus lane. It is recognised that physical installation of bus-only sections at junctions can be land hungry and can present further crossing requirements for pedestrians and cyclists.

It is therefore recommended that Active Priority measures be considered, whereby bus detector systems are installed at the Flixton Lights junction and the Carrington Relief Road/Isherwood Lane junction. This would prioritise buses by extending the current green or changing to the relevant stage to give the bus progression through the junction, without disadvantaging active travel users.

Public Transport Option 4: Guided busway on Greenway returns red ratings for two criteria due to the challenges around delivery in the short to medium term, which were noted in the stakeholder presentations.

It is therefore recommended that this option is not taken forward as something that would be delivered as part of the New Carrington allocation, but that consideration be given to reserving/ safeguarding land for delivery in the future. It is important to note that this option is additional to the provision of the Active Travel Route on the Greenway, which remains an integral clement of the New Carrington allocation.

The recommended additional public transport interventions to be allowed for within the allocation are therefore as follows:

- Active Bus Priority Measures to be included within traffic signal controlled junctions implemented on Carrington Relief Road; and
- Consider reserving or safeguarding land for the future delivery of a public transport corridor along the Greenway, in addition to the proposed Active Travel Route;
- Investigate suitability of Cadishead viaduct for future accommodation of public transport corridor.

2.5 LINKS WITHIN THE ALLOCATION

PfE Appendix D lists the provision of the following links as being Necessary Transport interventions for the JPA 30 allocation, linking to development parcels:

- Southern Link as per Masterplan 2020
- Eastern Link as per Masterplan 2020
- Isherwood Road Upgrade (part of Eastern Link as per Masterplan 2020)
- Sale West Link as per Masterplan 2020

Indicative routes for the above links are shown in PfE Picture 11.46 with each link serving the following purpose:

- Southern Link – connecting the A6144 Warburton Lane and the A6144 Manchester Road (via either Moss Lane or Broadway), crossing the Red Brook and providing a local route around the Partington urban area;
- Eastern Link – connecting development parcels in the East Partington area to Isherwood Road, crossing the rail line and linking through the employment parcels; and
- Sale West Link – from the Carrington Relief Road and extending south through the Sale West development parcel and linking to Firs Way.

Measures to discourage 'rat-running', specifically in the rural lanes to the south of the New Carrington Allocation area will need to be incorporated at highway design development concept stage. Horizontal deviation and width restriction measures plus introduction of additional landscape features should all be considered.

Further consideration of each link is set out below:

2.6 SOUTHERN LINK: OPTIONS

2.6.1 REQUIREMENT

Key movement corridors for traffic are necessary both to allow access to new development and address the constraints of the existing road network in the area. The Southern Link will fill this dual purpose, by both providing access to the adjacent development plots and removing traffic demand from the A6144 through Partington.

2.6.2 SUMMARY OF PROVISION

The Southern Link will provide a connection between Warburton Lane and the crossing point of Dunham Road over the Carrington Greenway. The link will facilitate access into and through development parcels and provide a through route for active travel and public transport.

2.6.3 DESIGN GUIDANCE

The final alignment of the Southern Link will be fixed by the development through which it passes, however in order to ensure appropriate levels of provision for active travel and public transport, the Link should be designed in accordance with guidance set out in:

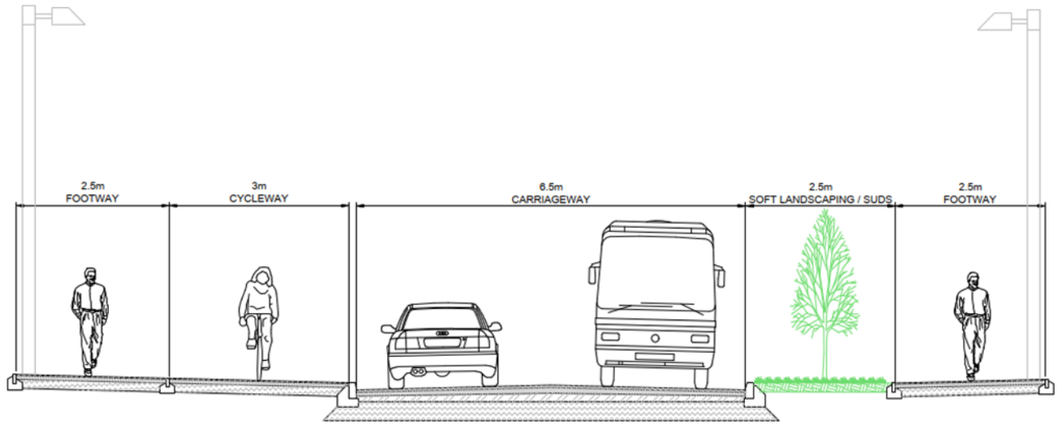
- CIHT Buses in Urban Developments (2018)
- Trafford Design Code (2024)
- TfGM Greater Manchester Streets for All Design Guide (2023)
- Active Travel England - Route Check User Manual (2024)
- LTN 1/20 Cycle Infrastructure Design (2020)
- Manual for Streets (2007)

Start and end points for the Link are shown in Appendix B of this report. Tortuous routes should be avoided for all links in order to avoid inconveniencing active travel and bus users.

2.6.4 TYPICAL ARRANGEMENT

A typical cross-section for the Southern Link, based on baseline review and stakeholder feedback is shown below, and in more detail in Appendix B.

Figure 2-5 - Typical Cross Section: Southern Link

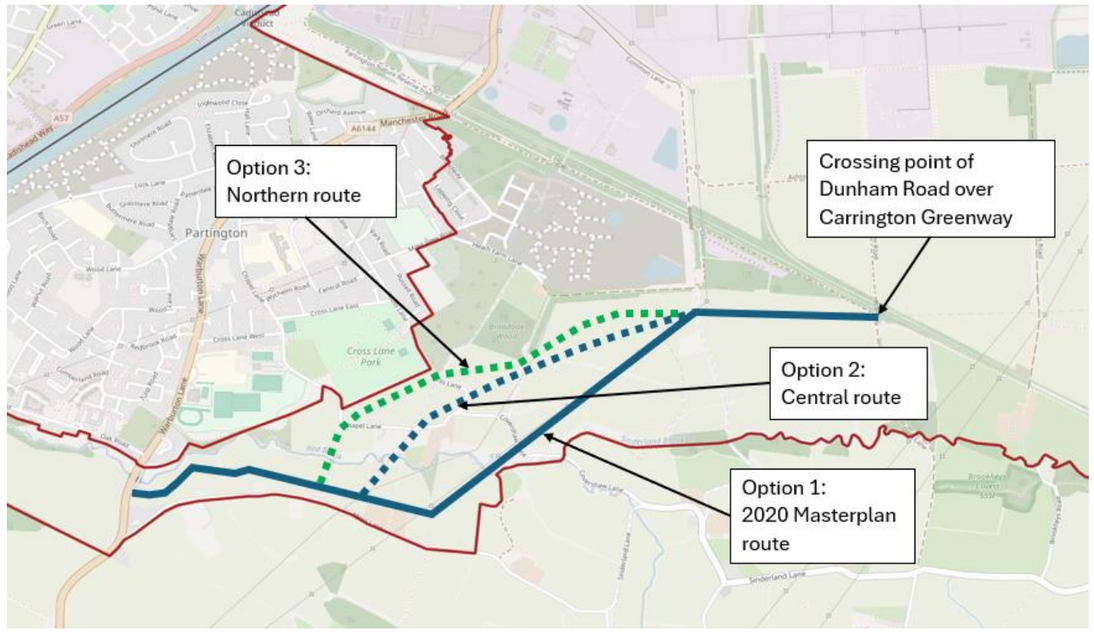


This cross section aligns with the principles for Connector Street as set out in TFGM's Greater Manchester's Streets for All Design Guide. As shown above, a soft landscaping/SUDS strip would be installed to facilitate sustainable drainage. This is shown only on one side of the carriageway in order to minimise separation between plots on either side of the link given the proposed residential use.

2.6.5 ROUTE OPTIONS TO BE ASSESSED

The Southern Link alignment shown in the 2020 Masterplan follows the southern boundary of the allocation before routing to connect to the Eastern Link at the crossing point of Dunham Road over the Carrington Greenway. Given that the Southern Link is intended to provide for a bus corridor, routing along the southern boundary would ultimately reduce the catchment area for future bus services. Similarly, as the link includes active travel provision, the catchment for these users is likely to be less efficient than it could be. Consequently, options for alternative provision of the Southern Link route are illustrated in Figure 2-6.

Figure 2-6 - Southern Link route options for assessment



2.6.6 OPTION ASSESSMENTS

Southern Link Option 1 (2020 masterplan route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient vehicular capacity for the allocation, however an alignment toward the periphery of the development, rather than centrally through it, would result in an inefficient catchment for public transport and active travel users.
Feedback from events with community group and stakeholders		Feedback received from Stakeholders concerned about noise impact on properties on Moss Lane.
Promoting sustainable development		Inefficient catchment for public transport and active travel users, when considered in context of the development proposals within the local area.
Deliverability and operational efficiency		New construction through generally open land. Crossing of Red Brook required but relatively simple structure likely to be needed.

Criteria	Rating	Comment
Alignment with local and national strategic ambitions and policy		Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed cross section. Due to non-central route and distance from existing Partington area, only partially conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected neighbourhoods which successfully link with existing communities"*
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, rather than being delivered as one strategic link in the same manner as the CRR.

Southern Link Option 2 (central route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient vehicular capacity for the allocation, with catchment on both sides of route for public transport and active travel users.
Feedback from events with community group and stakeholders		Increased distance from properties on Moss Lane in comparison to Option 1, which should alleviate noise impact.
Promoting sustainable development		Good catchment for public transport and active travel users, taking central route through the development plot and hence minimising walk distances to public transport services and strategic active travel routes.
Deliverability and operational efficiency		New construction through generally open land. Crossing of Red Brook required but relatively simple structure likely to be needed.
Alignment with local and national strategic ambitions and policy		Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed cross section. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected neighbourhoods which successfully link with existing communities".*
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, rather than being delivered as one strategic link in the same manner as the CRR.

Southern Link Option 3 (northern route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient vehicular capacity for the allocation, however an alignment toward the periphery of the development, rather than centrally through it, would result in an inefficient catchment for public transport and active travel users. Whilst the route is closer to Partington, there is very little built up land in the area it is adjacent to, and therefore very little potential public transport and active travel users.
Feedback from events with community group and stakeholders		Feedback received from Stakeholders expressed a desire for the link to also serve Partington (but see above note).
Promoting sustainable development		Inefficient catchment for public transport and active travel users, when considered in context of the development proposals within the local area.
Deliverability and operational efficiency		New construction through generally open land. Crossing of Red Brook required but relatively simple structure likely to be needed.
Alignment with local and national strategic ambitions and policy		Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed cross section. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected neighbourhoods which successfully link with existing communities".*
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, rather than being delivered as one strategic link in the same manner as the CRR.

2.6.7 SUMMARY OF ASSESSMENT AND RECOMMENDATIONS

Southern Link Option 2 returns green ratings for all criteria. It is therefore proposed that this option be taken forward as the masterplan is developed further. The indicative cross section and alignment, including start and end points, are included in Appendix B.

2.7 EASTERN LINK: OPTIONS

2.7.1 REQUIREMENT

Key movement corridors for traffic are necessary both to allow access to new development and address the constraints of the existing road network in the area. The Eastern Link will primarily provide access to the employment land, as well as providing opportunities to relieve existing traffic conditions on the A6144 through Carrington and Partington, in combination with the committed infrastructure of the Carrington Relief Road project and provide a public transport corridor..

2.7.2 SUMMARY OF PROVISION

The Eastern Link will provide a connection between Isherwood Road and the crossing point of Dunham Road over the Carrington Greenway. The link will facilitate access into and through development parcels and provide a through route for active travel and public transport.

2.7.3 DESIGN GUIDANCE

The final alignment of Eastern Link will be fixed by the development through which it passes, however in order to ensure appropriate levels of provision for active travel and public transport, the link should be designed in accordance with guidance set out in:

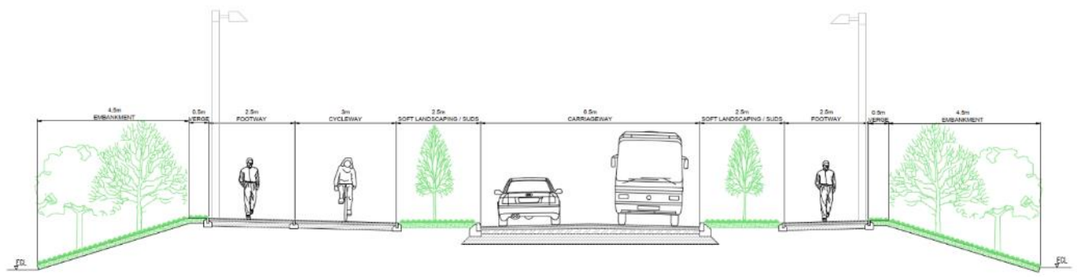
- CIHT Buses in Urban Developments (2018)
- Trafford Design Code (2024)
- TfGM Greater Manchester Streets for All Design Guide (2023)
- Active Travel England - Route Check User Manual (2024)
- LTN 1/20 Cycle Infrastructure Design (2020)
- Manual for Streets (2007)

Start and end points for the Link are shown in Appendix B of this report. Tortuous routes should be avoided for all links in order to avoid inconveniencing active travel and bus users.

2.7.4 TYPICAL ARRANGEMENT

A typical cross-section for the Eastern Link, based on baseline review and stakeholder feedback is shown in Figure 2-7 below, and in more detail in Appendix B.

Figure 2-7 - Typical Cross Section: Eastern Link



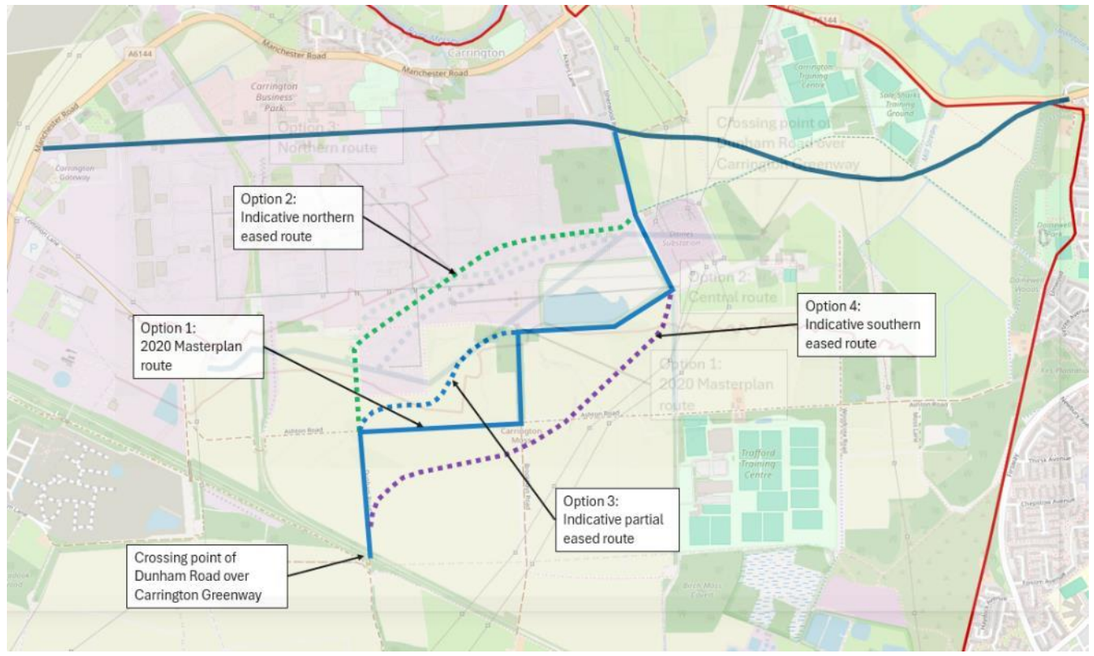
This cross section aligns with the principles for Connector Street as set out in TFGM's Greater Manchester's Streets for All Design Guide. As shown above, soft landscaping/SUDS strips would be installed on both sides to facilitate sustainable drainage. It is expected that the link would need to be built on embankment to avoid disturbing peat or PFAS contamination. These constraints and the unknowns in relation to the employment uses within the New Carrington allocation mean that there is more uncertainty on the route of the Eastern Link Road, in comparison to the other link roads.

Detailed ground investigation needs to be undertaken in advance of any planning application for the link and adjacent plots. In the absence of that information at this stage it has been assumed that any embankment would be around 1.5m high on average.

2.7.5 ROUTE OPTIONS TO BE ASSESSED

The Eastern Link alignment shown in the 2020 Masterplan follows the routes of the Carrington "Rides", resulting in a series of 90 degree bends, which has the potential to disadvantage public transport and active travel users. Consequently, options for alternative provision of the Eastern Link route are illustrated in Figure 2-8.

Figure 2-8 - Eastern Link options for assessment



2.7.6 OPTION ASSESSMENTS

Eastern Link Option 1 (2020 masterplan route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient capacity for the allocation given the proposed cross section and the associated junction infrastructure.
Feedback from events with community group and stakeholders		Indirect routes for public transport and active travel noted as a disbenefit, particularly so for active travel where desire lines are crucial.
Promoting sustainable development		Routing disbenefits public transport and active travel users. Route along edge of Green Belt means the link serves plots on only one side of it.
Deliverability and operational efficiency		Follows existing routes of Carrington "Rides", but may require full depth reconstruction as the link would present a significant upgrade to existing construction.
Alignment with local and national strategic ambitions and policy		Does not meet NPPF aims as well as alternative routes do. Namely *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location".*

Criteria	Rating	Comment
		Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed cross section. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected neighbourhoods which successfully link with existing communities".*
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, with delivery following the pattern of housing build-out in the area.

Eastern Link Option 2 (northern eased route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient capacity for the allocation given the proposed cross section and the associated junction infrastructure.
Feedback from events with community group and stakeholders		Eased route seen as a positive, provided it avoids the two sites of biological interest to west of Isherwood Road.
Promoting sustainable development		Improved for public transport and active travel users. Route away from edge of Green Belt means the link can serve plots both sides of it.
Deliverability and operational efficiency		Minimises impacts on existing routes during construction, but cuts between two sites of biological interest, separating the two.
Alignment with local and national strategic ambitions and policy		Good alignment with NPPF aim that *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location".* Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed cross section. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected neighbourhoods which successfully link with existing communities".*
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, with delivery following the pattern of housing build-out in the area.

Eastern Link Option 3 (partial eased route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient capacity for the allocation given the proposed cross section and the associated junction infrastructure.
Feedback from events with community group and stakeholders		Eased route seen as a positive, provided it avoids the two sites of biological interest to west of Isherwood Road.
Promoting sustainable development		Improved provision for public transport and active travel users. Route does run partly along edge of Green Belt, but only to route around the sites of biological interest.
Deliverability and operational efficiency		Smallest change to existing route but delivers same benefit of removing three 90 degree turns. Depending on the type of development which comes forward the route is likely to impact the development potential of this parcel.
Alignment with local and national strategic ambitions and policy		Good alignment with NPPF aim that *"appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location"* Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed road cross section. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected neighbourhoods which successfully link with existing communities"*
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, with delivery following the pattern of housing build-out in the area.

Eastern Link Option 4 (southern eased route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient capacity for the allocation given the proposed cross section and the associated junction infrastructure.
Feedback from events with community group and stakeholders		Eased route seen as a positive, but this option impacts the Green Belt.
Promoting sustainable development		Improved provision for public transport and active travel users but runs through Green Belt and would not serve any adjacent plots for much of its length.
Deliverability and operational efficiency		Minimises impacts on existing routes during construction, but at cost of impact on Green Belt.
Alignment with local and national strategic ambitions and policy		Presents less sustainable proposal than other options, and impacts Green Belt. Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed cross section. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected*

Criteria	Rating	Comment
		neighbourhoods which successfully link with existing communities".
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, with delivery following the pattern of housing build-out in the area.

2.7.7 SUMMARY OF ASSESSMENT AND RECOMMENDATIONS

Eastern Link Option 3 returns mostly green ratings. It is therefore proposed that this option be taken forward as the masterplan is developed further. The indicative route and approximate length is included in Appendix B.

Given the nature of the employment land, as well as the existing constraints in the area and associated construction challenges there is greater uncertainty about the route of the Eastern Link and it will therefore be kept under review.

2.8 SALE WEST LINK: OPTIONS

2.8.1 REQUIREMENT

The Sale West Link is required to facilitate access to and through the Sale West residential area of the New Carrington Allocation. Access is needed to both north and south (i.e. Carrington Relief Road and Firs Way respectively) so that traffic to and from Sale West does not have to make longer journeys on the wider road network. However, the arrangement needs to avoid inducing additional traffic through the site and minimise the removal of trees and woodland within the indicative strategic green spaces identified in JPA 30.

2.8.2 SUMMARY OF PROVISION

The Sale West Link will provide a connection between the Carrington Relief Road and Firs Way. The location of the connection to Firs Way will be subject to a detailed assessment of constraints, including trees, ecology and underground plant, but is intended to be at a point between Thirsk Avenue and Newbury Avenue (shown in Figure 2-10). The link will facilitate access into and through development parcels and provide a through route for active travel and public transport.

2.8.3 DESIGN GUIDANCE

The final alignment of the Sale West Link will be fixed by the development through which it passes, however in order to ensure appropriate levels of provision for active travel and public transport, the link should be designed in accordance with guidance set out in:

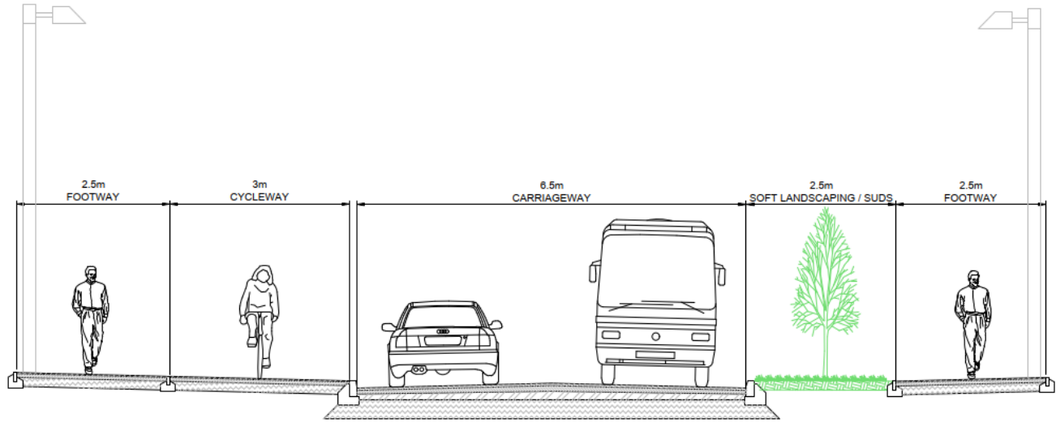
- CIHT Buses in Urban Developments (2018)
- Trafford Design Code (2024)
- TfGM Greater Manchester Streets for All Design Guide (2023)
- Active Travel England - Route Check User Manual (2024)
- LTN 1/20 Cycle Infrastructure Design (2020)
- Manual for Streets (2007)

Start and end points for the Link are shown in Appendix B of this report. Tortuous routes should be avoided for all links roads in order to avoid inconveniencing active travel and bus users.

2.8.4 TYPICAL ARRANGEMENT

A typical cross-section for the Sale West Link, based on baseline review and stakeholder feedback is shown in Figure 2-9, and in more detail in Appendix B.

Figure 2-9 - Typical Cross Section: Sale West Link

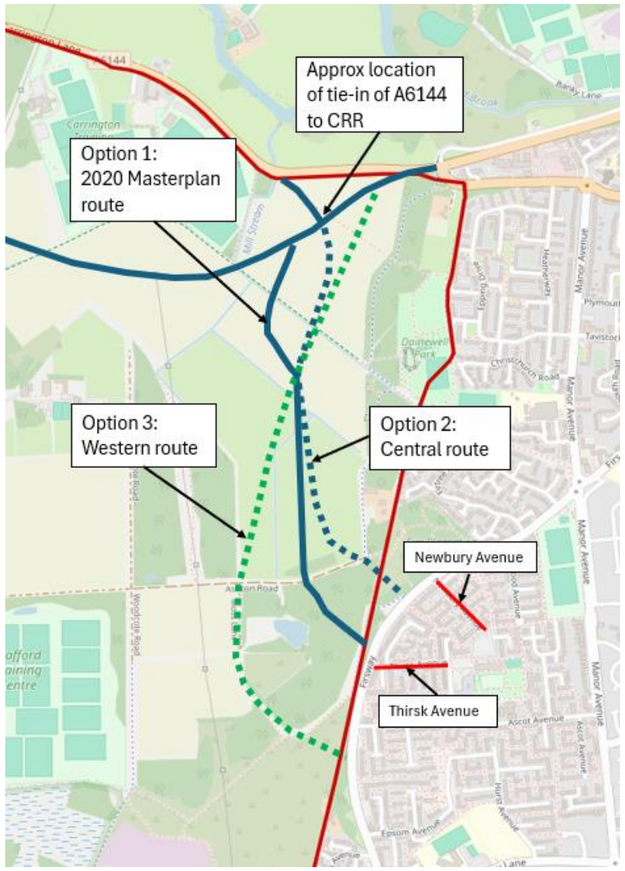


This cross section aligns with the principles for Connector Street as set out in TFGM's Greater Manchester's Streets for All Design Guide. As shown above, a soft landscaping/SUDS strip would be installed to facilitate sustainable drainage. This is shown only on one side of the carriageway in order to minimise separate between plots on either side of the link given the proposed residential use.

2.8.5 ROUTE OPTIONS TO BE ASSESSED

Options for alternative provision of the Sale West Link route are illustrated in Figure 2-10.

Figure 2-10 - Sale West Link options for assessment



2.8.6 OPTION ASSESSMENTS

Sale West Link Option 1 (2020 masterplan route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient vehicular capacity for the allocation, with catchment generally on both sides of route for public transport and active travel users
Feedback from events with community group and stakeholders		No strong views expressed regarding Sale West Link route options during stakeholder events to date, other than general need to minimise ecological impact.
Promoting sustainable development		Good catchment for public transport but impacts on woodland adjacent to Firs Way.
Deliverability and operational efficiency		New construction through generally open land but impacts on woodland adjacent to Firs Way.
Alignment with local and national strategic ambitions and policy		Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed cross section. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected neighbourhoods which successfully link with existing communities".*
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, being brought forward in line with development plots.

Sale West Link Option 2 (central route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient vehicular capacity for the allocation, with catchment generally on both sides of route for public transport and active travel users
Feedback from events with community group and stakeholders		No strong views expressed regarding Sale West Link route options during stakeholder events to date, other than general need to minimise ecological impact.
Promoting sustainable development		Good catchment for public transport and active travel users, minimises impact on woodland adjacent to Firs Way, although still some impact.
Deliverability and operational efficiency		Connection to CRR can be made by way of a fourth arm to the current planned junction with the realigned section of the A6144. New construction through generally open land and minimises impact on woodland adjacent to Firs Way.
Alignment with local and national strategic ambitions and policy		Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed cross section. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected neighbourhoods which successfully link with existing communities".*
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, being brought forward in line with development plots.

Sale West Link Option 3 (western route)

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Would provide sufficient vehicular capacity for the allocation, but catchment for public transport and active travel users is impacted by need to route to west to link to other development parcels.
Feedback from events with community group and stakeholders		No strong views expressed regarding Sale West Link route options during stakeholder events to date, other than general need to minimise ecological impact.
Promoting sustainable development		Inefficient catchment for public transport and active travel users, impacts on woodland adjacent to Firs Way.
Deliverability and operational efficiency		Northern end would be in close proximity to Banky Lane junction on CRR. Would provide access to more development plots, but would require a longer length to construct, connecting further south to Firs Way, all of which would have to be constructed before a through route is provided.
Alignment with local and national strategic ambitions and policy		Conforms with PfE policy JP-C5 in relation to Streets for All, specifically in relation to the proposed cross section. Conforms with PfE policy JPA 30 bullet point 4 (see baseline review) which requires the allocation to *"Deliver connected neighbourhoods which successfully link with existing communities".*
Phase-ability and trigger points		Can be introduced when required due to allocation build-out, being brought forward in line with development plots.

2.8.7 SUMMARY OF ASSESSMENT AND RECOMMENDATIONS

Sale West Link Option 2 returns green ratings for all but one criteria. It is therefore proposed that this option be taken forward as the masterplan is developed further. The indicative route and approximate length is included in Appendix B.

It is noted however that Option 2 does not provide access to the land west of Moss Lane. The requirement for that access is considered in more detail below.

2.8.8 ACCESS TO LAND WEST OF MOSS LANE

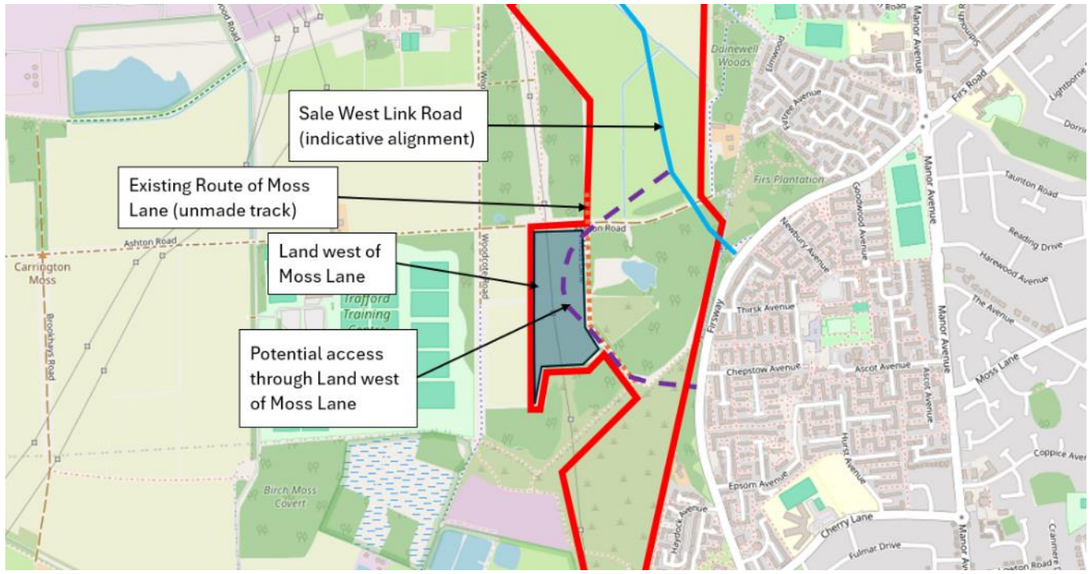
Moss Lane is an unmade track within the Sale West area as shown in Figure 2-11.

Figure 2-11 - Moss Lane within Sale West area

Part of the Sale West area, west of Moss Lane is part separated from the rest of the residential area by the Strategic Green Space adjacent to Firs Way. Access to this area will need to be provided in a way that minimises impact on the existing green space.

This will be possible by using the space presented by Moss Lane, which runs directly alongside the Strategic Green Space, as shown in Figure 2-12.

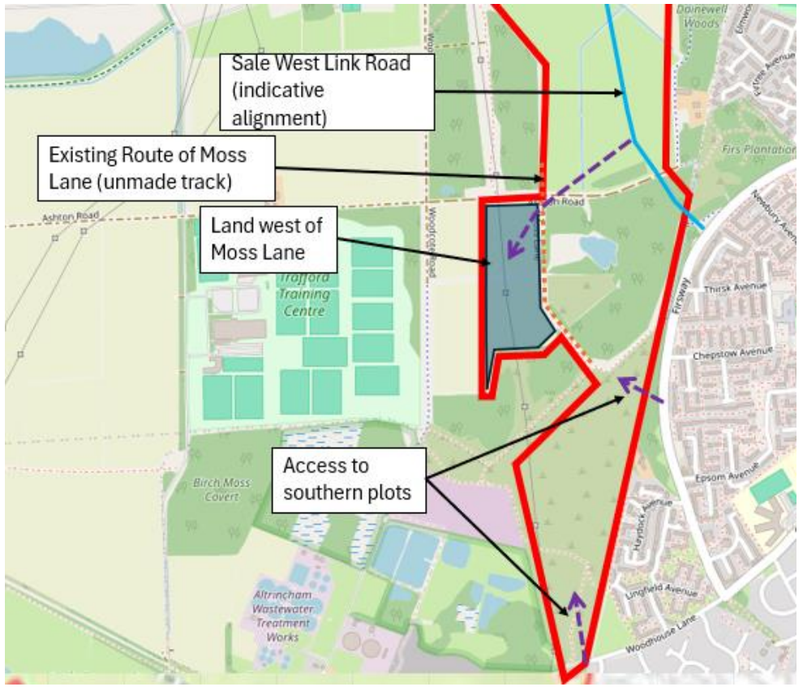
Figure 2-12 - Potential access through land west of Moss Lane



If necessary, the carriageway width could be reduced at pinch points to avoid impact on the green space, alternatively the access link could be made one-way to reduce overall width requirements. Similarly, depending on forecast levels of traffic on the road, shared space provision could be adopted to reduce the spatial requirements for active travel users.

Consideration should also be given to providing a link to this area only from other development parcels in Sale West, removing the need for an additional access point on to Firs Way, as shown in Figure 2-13.

Figure 2-13 - Potential single point of access to land west of Moss Lane



Also shown in the figure above are indicative access locations to two development plots at the southern end of the Sale West area, one from Firs Way and the other from Woodsend Road. It is considered that an access link serving land west of Moss Lane, and those serving the two southern development plots, would serve a similar function to a typical estate road rather than a through route or distributor road and should be delivered by the developer of each plot as part of their scheme. It has therefore not been included in the list of the required allocation-wide infrastructure.

Nevertheless, the principles of access set out above should be adopted for these plot of land. That is, the impact on existing green space should be minimised and the layout for access links must be designed in accordance with the design guidance documents set out above, including Greater Manchester's Streets for All Design Guide.

2.8.9 SUMMARY

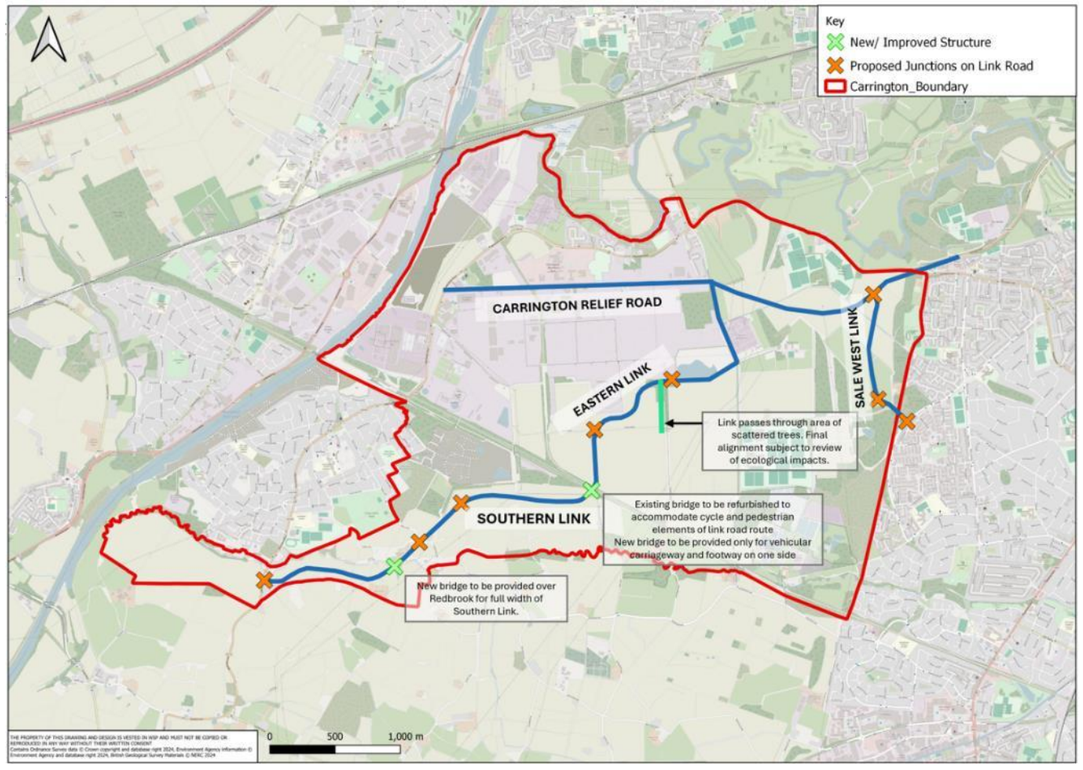
The Sale West Link will provide a connection between the Carrington Relief Road and Firs Way. The connection point onto Firs Way shown currently is indicative only as the final location will be subject to a detailed assessment of constraints, including trees, ecology and underground plant. It is however intended to be at a point between Thirsk Avenue and Newbury Avenue. The link will facilitate access into and through development parcels and provide a through route for active travel and public transport.

An indicative cross section and alignment to allow production of a cost estimate are included in Appendix B.

2.9 BRIDGES AND JUNCTIONS

The plan in Figure 2-14 overleaf, and included in more detail in Appendix B, shows locations where structures will be required as part of the link provision.

Figure 2-14 - Bridge and Junction Locations



Structure locations are shown in green crosses and are:

- Where the Southern Link crosses Red Brook; and
- The bridge over the greenway where the Southern and Eastern Links meet.

For the latter crossing there is an existing bridge in place, however it is insufficiently wide to accommodate the link cross-section, as shown in Figure 2-15.

Figure 2-15 - Existing bridge over Carrington Greenway

It is expected that the width of the existing bridge will be sufficient to accommodate active travel uses, however a new bridge will be required to accommodate vehicular traffic. The structure would need to be of sufficient height to accommodate a public transport route (busway, or potentially rail) beneath the structure, and this has been factored into the costing exercise undertaken for this structure. Potential junctions would be likely to be traffic signal controlled, including bus priority and active travel facilities where applicable. Again this has been factored into the costing exercise undertaken.

2.10 OFF-SITE TRANSPORT INFRASTRUCTURE

2.10.1 REQUIREMENT

In addition to the on-site infrastructure set out in the preceding sections, there is a requirement for off-site transport infrastructure to address the following key objectives:

- Improve safety and connectivity for active travel users to and from the New Carrington allocation area
- Improve public transport opportunities and linkages to and from the New Carrington allocation area.
- Provide additional highway capacity where appropriate to accommodate the additional vehicle demand associated with the development proposals.

2.10.2 SUMMARY OF PROVISION

Off-site highway improvements were identified as part of the Locality Assessment that was undertaken for Places for Everyone and are set out in Appendix D of PfE.

The interventions set out in PfE as being necessary to facilitate New Carrington have been reviewed and sketched out at a high level. This review document is included in Appendix D of this report.

From the review, there are two measures that are not considered necessary to mitigate for the impacts of the New Carrington allocation, these are as follows:

Altrincham - A56 Dunham Road - Park Road - Charcoal Road: Signals intervention

At this junction, the signals were proposed to be upgraded to include controlled crossings. However on closer review of the junction, it is considered that there is no notable level of pedestrian demand at this junction currently, nor arising from the New Carrington Allocation

Further, crossing distances on A56 are too long to be accommodated in a single movement (15m max usually adopted), and there is insufficient room for staggered crossings to be accommodated. Staggered refuge islands are 3m wide, whereas the existing islands for signal equipment are only 1.5m wide.

Finally, the impact of the Allocation Flows on the operation of the junction were shown to be relatively minor within the Locality Assessment. Improvement requirements are therefore not considered to be a result of PfE allocations.

Rixton - Manchester Road - Warburton Bridge Road Junction – carriageway widening.

At this location, the Locality Assessment found that "*In 2025 there is no capacity impact, however in 2040 the junction is approaching its design capacity and therefore intervention has been explored. A flow comparison indicates that [PfE] traffic will have an impact in the AM peak (7% additional traffic) and negligible impact in the PM peak. Mitigation at junction has been identified in form of widening on the Warburton Bridge Road - extend length of two-lane approach; and widening of the eastbound Manchester Road approach to lengthen the right turn lane.*"

It is important to note the reference to the junction approaching capacity in 2024, not exceeding capacity. Also, whilst the allocation may route additional traffic through the junction, the impact on operation is not significant, with an increase in Degree of Saturation below 5%. It is not therefore considered necessary to improve the junction to accommodate traffic generated by PfE allocations.

There are also two measures that will be delivered by the Carrington Relief Road, which is being brought forward as a separate project and do not therefore require costing for the New Carrington Delivery Strategy, these are:

- Flixton Road Signals
- Carrington Link / Carrington Spur / Banky Lane

2.10.3 RECOMMENDATIONS

The off-site measures set out in Appendix D of this report should be taken forward for costing. It should be noted that due to the period over which New Carrington is to be built out, changes in transport and movement demands may alter the performance of the local highway network. The need for some mitigation measures may fall away and other requirements arise in their place over time.

Off-site mitigation requirements will be subject to further assessment work as New Carrington is built out. However, the overall combined cost of the off-site highway improvements set out in Appendix D of this report presents a reasonable estimate of the likely costs for off-site highway improvements over the plan period.

2.11 ITEMS TO BE TAKEN FORWARD FOR COSTING

The following items should be taken forward for cost estimates

- Strategic Active Travel links (details in Appendix A);
- Upgrades to Carrington Rides (details in Appendix A);
- Active Priority/bus detection system at Flixton Lights and Carrington Relief Road/Isherwood Lane junction;
- Bridges over Red Brook and Carrington Greenway;
- Southern Link (details in Appendix B);
- Eastern Link (details in Appendix B);
- Sale West Link (details in Appendix B); and
- Off-site highway improvements (details in Appendix D).

Cost information for bus service provision will be sought from TfGM's bus operations team.

2.12 SUMMARY OF INFRASTRUCTURE REQUIREMENTS

The following section summarises the transport related infrastructure requirements and costs taken from the analysis within this chapter, which are further summarised at Section 6 and Appendix E.

- On Site Highway Improvements
  - Sale West Link Road
  - Southern Link Road (inc structures)
  - Eastern Link Road (inc structures)
- Active Travel Improvements
  - Existing footpath improvements
  - Existing rides improvements
  - New active travel links (inc structures)
- Off Site Highway Improvements
- Public Transport Improvements (bus service operational costs)

3

SOCIAL INFRASTRUCTURE

3 SOCIAL INFRASTRUCTURE

3.1 INTRODUCTION

3.1.1 SCOPE OF THIS OPTIONS REPORT

The scope of this chapter is to consider the delivery of social infrastructure to meet the needs of a larger residential population comprising education and healthcare infrastructure as well as the provision of new local and neighbourhood centres.

The Places for Everyone (PfE) Policy JP Allocation 30: 'New Carrington' provides principles regarding the development of the site relating to social infrastructure.

In summary:

- It is recognised that the development is likely be an attractive location particularly for families and therefore this demographic is expected to generate demand for school places.
- Financial contributions for off-site additional primary and/or secondary school provision to meet needs generated by the development and, where appropriate, make provision for a new primary school on-site;
- Development will be required to provide new and improved health facilities to support the new community;
- A new local centre in the Partington East development and neighbourhood centres in Central Carrington and Sale West areas; and
- New centres will act as hubs to serve the needs of the new communities and support sustainability of wider Partington and Carrington by locating new shops and services, including potential for new primary schools and GP medical centre.

The following excerpts present Policy JP Allocation 30: New Carrington with regards to social infrastructure.

> "Create a local centre comprising a range of small shops and services, within the Partington East development area at a scale to serve the needs of the proposed communities and improve the sustainability of the wider Partington and Carrington area;
>
> Provide a Neighbourhood Centre in the Central Carrington and Sale West character areas to provide local services and community facilities to meet local needs;
>
> Make financial contributions for offsite additional primary and/or secondary school provision to meet needs generated by the development and, where appropriate, make provision for a new primary school on site, in accordance with JP-P5[1]";

> "A new local centre, located in the Partington East character area, will be a hub for community infrastructure and will service the needs of the new community. Smaller neighbourhood centres will also provide local community hubs in the Sale West and Central Carrington character areas. The large number of new residents will also help to support existing shops and services in the surrounding area, such as the Partington Local Centre;
>
> The site will be an attractive location for families and this will generate an additional demand for school places. The development will need to provide new facilities for primary and secondary education. Development will also be required to provide new and improved health facilities to support the new community, as required by Policy JP-P6[2]".

Within PfE, two policies in particular refer to social infrastructure requirements.

Policy JP-P5: Education, Skills and Knowledge makes it clear that new housing development needs to be aligned with sufficient school places, for all ages. In this instance that additional demand cannot be accommodated within existing provision, the impact needs to be mitigated either on-site land, through safeguarded land for new schools, or off-site, by the use of financial contributions to expand capacity at existing schools, where relevant.

> **Policy JP-P5: Education, Skills and Knowledge**
>
> "Significant enhancements in education, skills and knowledge to benefit existing and new residents will be promoted, including by:
>
> 1. Enabling the delivery of new and improved accessible facilities for all ages, such as early years, schools, further and higher education, and adult training to ensure our workforce is ready to benefit from new employment opportunities
> 2. Ensuring the delivery of sufficient school places to respond to the demands from new housing, such as through:
>   a) Working with education providers to forecast likely changes in the demand for school places; and
>   b) Where appropriate, requiring housing developments to make a financial contribution to the provision of additional school places and/or set aside land for a new school, proportionate to the additional demand that they would generate;
> 3. Supporting the continued growth and success of the university sector, such as through:
>   a) Enhancing the existing campuses and developing new ones;
>   b) Strengthening the world-leading research capabilities and promoting opportunities for business spin-offs; and
>   c) Continuing to help develop Greater Manchester as the UK's best destination for students[3]".

[1] Places for Everyone (2024), Policy JP Allocation 30: New Carrington, page 422. Accessed at: https://www.greatermanchester-ca.gov.uk/media/9578/places-for-everyone-joint-development-plan-document.pdf
[2] Ibid, page 450
[3] Ibid, page 199

With regard to healthcare, Policy JP-P6: Health states that housing which generates additional demand would require new or improved health facilities, where relevant. In addition, it is recognised that new development has the opportunity to promote healthy lifestyles through design, such as providing new active travel routes.

Policy JP-P6: Health

"To help tackle health inequality new development will be required, as far as practicable, to:

a) Maximise its positive contribution to health and wellbeing, whilst avoiding any potential negative impacts of new development; B. Support healthy lifestyles, including through the use of active design principles making physical activity an easy, practical and attractive choice; and
b) Be supported by a Health Impact Assessment for all developments which require to be screened for an Environmental Impact Assessment, and other proposals which, due to their location, nature or proximity to sensitive receptors, are likely to have a notable impact on health and wellbeing

Improvements in health facilities will be supported, responding to the changing needs and demands of both existing and new residents, including through:

1. Requiring, where appropriate, the provision of new or improved health facilities as part of new developments proportionate to the additional demand that they would generate;
2. Enabling the continued enhancement and successful operation of our hospitals; and
3. Facilitating greater integration of health and social care, and the provision of integrated wellness hubs, including the co-location of health, community and wellness services[4]".

Education

In terms of education, reflecting the scale of development proposed at New Carrington, demand is anticipated across all types of education provision: early years, primary, secondary and sixth form, as well as Special Educational Needs (SEN).

For the purposes of this Options Report, primary and secondary provision is included, reflecting that the majority of demand for education will be at the primary and secondary levels, and where strategic planning is required by Trafford Council and DfE, in order to accommodate forecast demand.

Other types of education provision will be worked through as New Carrington develops, in summary:

- Early years: it is anticipated that any new primary school would also deliver early years provision on-site, in line with DfE guidance5. Many early years settings also fall within the private, voluntary and independent sector.
- Sixth form: new provision for sixth form may be co-located with existing or new secondary schools, or new standalone sixth-form provision may be determined as the most appropriate solution, as required.
- SEN: this type of provision equates to a smaller proportion of demand, and therefore any demand generated by New Carrington will likely be accommodated through expansion of existing facilities, as required.

Healthcare

In terms of healthcare, the scope includes primary healthcare. For the purposes of this Options Report, the approach has been guided by conversations with the NHS Greater Manchester Integrated Care Board (GM ICB) who have delegated authority from NHS England for the commissioning of primary care services (general medical services) for the entirety of the Trafford Council area. This includes consideration of estate requirements to deliver these services. Other types of healthcare provision will be worked through as the masterplan develops, for example there will likely be additional requirements for health infrastructure to support delivery of community based health and wellbeing services.

3.1.2 SOURCES OF INFORMATION AND ASSUMPTIONS

This Options Report is based on analysis and inputs from several sources, including data analysis as well as the views and advice from stakeholders.

It is important to note that the Options Report has been prepared based on several assumptions which are subject to change. The sources of currently available background information, context and overarching assumptions are set out below:

- **Baseline Report** – as set out in the Introduction chapter, prior to this Options Report, a Baseline Report was first prepared, dated September 2024;
- **Stakeholder feedback** – a series of stakeholder events took place in March and July 2024, the feedback received has been considered as part of this Options Report;
- **Input from Trafford Council Education Team and NHS Greater Manchester Integrated Care Board (ICB**) - Information, data and advice provided by Trafford Council Education Team and NHS GM ICB, between August and November 2024;
- **Demographic trends** – as set out in further detail in the Baseline Report, demographic trends need to be taken into account to understand the potential demand generated by development at New Carrington as well as demographic trends in the surrounding areas, such as the size of the existing residential population, age structure, household occupancy and birth rates;
    - **Population and pupil yield** – one of the main assumptions for understanding the level of demand for social infrastructure generated by development at New Carrington is the quantification of the total population and school age pupil yield resulting from development. These calculations are informed by demographic trends on average household occupancy as well as Trafford Council and Department for Education methodology in calculating pupil yield, respectively. In addition, the indicative quantum of units for each of the four parcels within the New Carrington development (Central Carrington, Sale West, Partington East and Warburton Lane) underpin these calculations;

[4] Ibid, page 202

[5] DfE (2023), Securing Developer Contributions for Education, page 12. Accessed at: Securing developer contributions for education (publishing.service.gov.uk)

- **Phasing** – reflecting the scale and complexity of development at New Carrington, this Options Report is based on assumptions relating to the phasing of new homes, which is subject to change; and
- **Policy** – development at New Carrington is allocated in the Places for Everyone document (JPA Policy 30: New Carrington).

In addition to the above overarching assumptions, the following sections set out specific assumptions relating to education infrastructure and primary healthcare infrastructure, where relevant.

3.2 EDUCATION

3.2.1 ASSESSMENT CRITERIA

As set out in the Introduction, this Options Report is based on six main criteria. The relevance of these six criteria to the consideration of options for education infrastructure is set out in the following table.

Table 3-1 – Commentary on the Overarching Assessment Criteria in relation to Option Review for Education Infrastructure

Assessment Criteria	Commentary on Assessment Criteria in Relation to Education Infrastructure
Sufficient infrastructure capacity to meet the needs of a growing population	Ensure that there is sufficient supply of education infrastructure to meet the demand of the additional population at New Carrington. This needs to consider: ▪ Timing – the phasing of New Carrington, to ensure that there is sufficient supply of school places and different types of education provision in line with growing demand. ▪ Quantum – there is a need for the right amount of additional supply of education provision. Trafford Council has a statutory duty to provide the right amount of school places, and this needs to be carefully balanced taking into account other factors that influence demand such as declining birth rates and the changes in the size of the existing residential population locally. ▪ Location – additional supply of education provision needs to be located in the right places, taking into account the type of education with a need for provision to be located closer to pupils for early years and primary provision in particular.
Feedback from events with community groups and stakeholders	To date, feedback gathered through stakeholder events has been used to inform this Options Report. The stakeholder events which took place in March and July 2024 included several community groups and local Parish Councils. It is noted that later stages of the New Carrington Masterplan and individual planning applications within the development will involve broader public engagement activities and events.
Promoting sustainable development	A key consideration in assessing the options is to support school age pupils to access education facilities and schools through sustainable modes of travel, including active travel.
Deliverability and operational efficiency	It is important that the options for education infrastructure are informed by a consideration of deliverability and operational efficiency. ▪ Trafford Council is aligned with the DfE's guidance on minimum sizes of schools. For example, the DfE's preference for new primary schools is for a minimum of 2FE (420 pupils), and 1FE schools (210 pupils) are not preferred as it is difficult for them to remain financially viable.
Alignment with local and national strategic ambitions and policy	In order to identify and assess the potential options, local and national strategic ambitions and policy will be taken into account, including: ▪ PfE, Policy JP Allocation 30: New Carrington, sets out the principles regarding social infrastructure; ▪ PfE, Policy JP-P5 with regard to education; ▪ Trafford Council education strategy, including Trafford Council's assessment criteria for expansion of existing school[6]: • Location of the school relative to population / catchment area; • Access for pupils by public transport and other sustainable modes of travel; • Current size of the school; • Practicalities of expansion on the existing site; • Costs of expansion; and • Latest OFSTED judgement is good or outstanding. ▪ DfE guidance, such as Securing Contributions for Education (2023) ▪ HM Government Extended Entitlements, for early years provision.
Phase-ability and trigger points	Alignment of the increasing demand for school places in line with the timing of development at New Carrington, including the quantum, tenure and type of new homes as well as their location within the development boundary.

Source: WSP (2024)

3.2.2 ANALYSIS INFORMING THE OPTIONS ASSESSMENT

The following maps set out the location of existing primary and secondary schools in proximity to the New Carrington allocation.

Pupil yield

Trafford Council's Education Team has provided input to this Options report in terms of the expected pupil yield requirements which will be generated by the development. Consideration has also been given to the development phasing across the site to identify 'trigger points' for education provision.

This work has been undertaken alongside a wider review by the Trafford Education Team on the anticipated pupil yield generated by development in Trafford. This takes into account the latest guidance from DfE, as well as data and wider trends in Trafford borough.

Trafford Council is taking into account all types of education, comprising:

[6] Trafford Council https://democratic.trafford.gov.uk/documents/s47106/2024.01.16%20school%20place%20planning%20and%20sufficiency%20v2.pdf

- Early
- years;
- Primary;
- Secondary;
- Sixth form and
- SEN provision.

The information in the Options Report therefore reflects the latest position and this, like other infrastructure requirements, will be kept under review throughout the build out of the Carrington allocation.

Existing schools nearby to New Carrington

The following table indicates existing primary and secondary schools that are located closest to each of the four Character Areas in New Carrington. The following two maps overleaf demonstrate the locations of these schools in relation to the New Carrington allocation boundary.

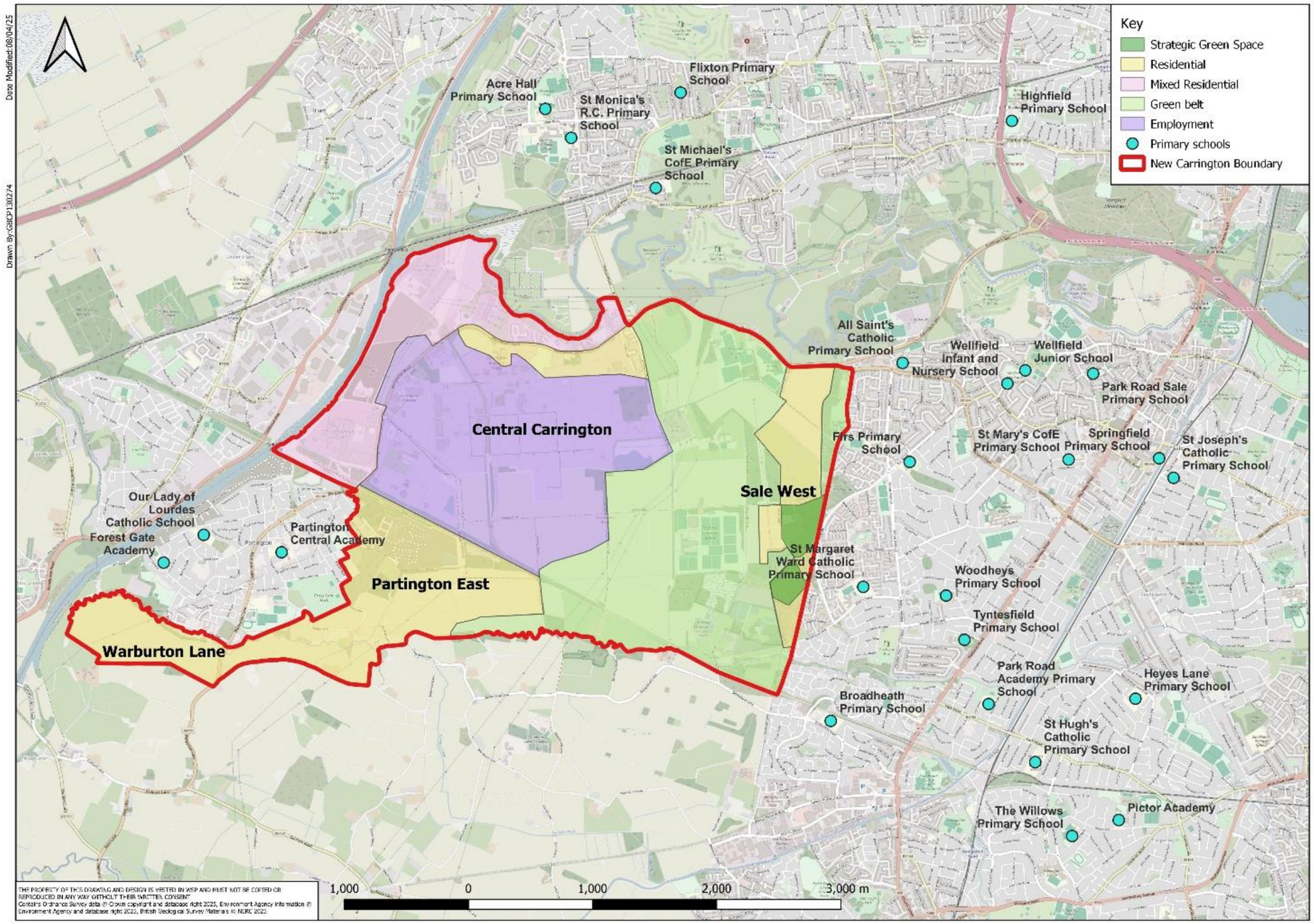
Trafford Council's Education Team are currently undertaking feasibility studies in order to understand which schools may be appropriate for expansion.

Table 3-2 – Names of nearby primary and secondary schools

New Carrington Character Area	Names of nearby primary schools	Names of nearby secondary schools
Central Carrington	St Michael's CofE Primary School St Monica's R.C. Primary School Acre Hall Primary School Flixton Primary School	Wellacre Technology Academy (Boys) Flixton Girls' School (Girls) Urmston Grammar School (Selective) St Antony's Roman Catholic School Lostock High School
Sale West	All Saint's Catholic Primary School Firs Primary School Woodheys Primary Schools St Margaret Ward Catholic School Broadheath Primary School Wellfield Infant and Nursery School Wellfield Junior School Park Road Sale Primary School St Joseph's Catholic Primary School Heyes Lane Primary School Pictor Academy The Willows Primary School St Hugh's Catholic Primary School Park Road Academy Primary School Springfield Primary School Tyntesfield Primary School	Ashton-on-Mersey School Sale Grammar School (Selective) Sale High School Stretford Grammar School (Selective) Wellington School Altrincham College North Cestrian School Loreto Grammar School (Selective) Blessed Thomas Holford Catholic College Altrincham Grammar School for Girls (Girls and Selective) Altrincham Grammar School for Boy (Boys and Selective)
Partington East	Partington Central Academy Forest Gate Academy Our Lady of Lourdes Catholic School	Broadoak School
Warburton Lane	Partington Central Academy Forest Gate Academy Our Lady of Lourdes Catholic School	Broadoak School

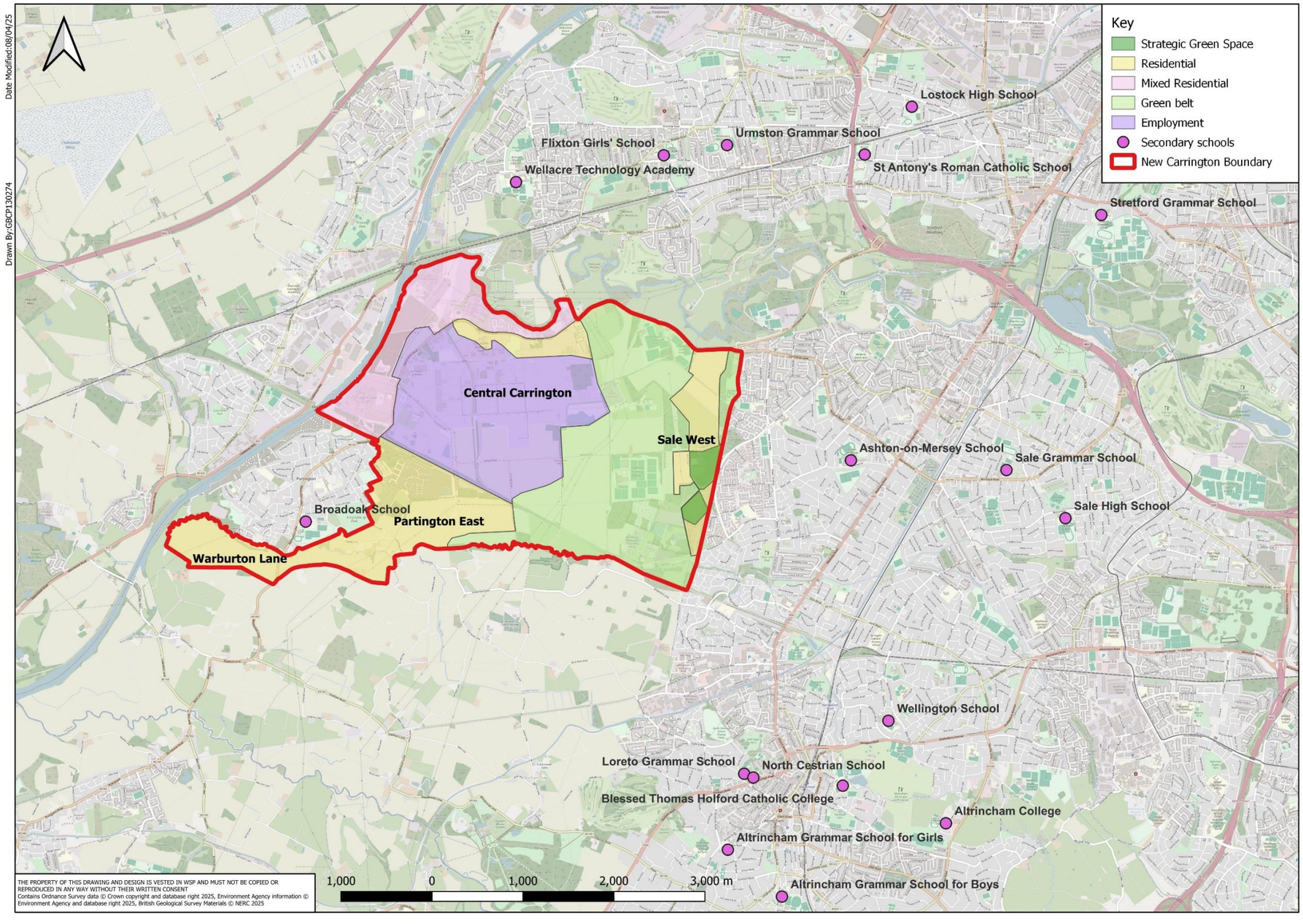
Source: WSP (2024); DfE (2024) School Census

Figure 3-1 - Locations of existing primary schools within 2 miles of New Carrington boundary



Source: (WSP) 2024; DfE (2024)

Figure 3-2 - Locations of existing secondary schools within 3 miles of New Carrington boundary



Source: (WSP) 2024; DfE (2024)

3.2.3 OPTIONS ASSESSMENT

For the purposes of this Options Report, the following options have been identified.

- Option 1: Accommodating additional pupils by expanding existing schools
- Option 2: Accommodating additional pupils by delivery of a new school(s)
- Option 3: Combination of both expansion of existing schools as well as delivery of a new school(s)

Option 1: Accommodating additional pupils by expanding existing schools

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Analysis of forecast data indicates that there is likely to be insufficient spare capacity in existing schools to accommodate the level of demand anticipated to be generated by the scale of development envisaged at New Carrington. Trafford Council's Education Team are currently conducting feasibility studies to identify both primary and secondary schools suitable for expansion. . There are currently no schools within the New Carrington development boundary. Therefore, the option to only consider expansion of existing schools could result int travel distances or travel routes considered to be unsuitable for school aged children residing at New Carrington. This is dependent on the location of schools selected for expansion.
Feedback from events with community group and stakeholders		Some stakeholder and community groups recognised that secondary-aged school pupils, compared to younger aged primary pupils, are able to travel further distances to existing schools. Some stakeholders and community groups have highlighted that access to existing schools at peak travel times could contribute to heavy traffic.
Promoting sustainable development		Depending on which schools are considered suitable for expansion; new residents at New Carrington may opt to travel to school using private vehicles instead of active travel modes, public transport and other sustainable modes of travel, due to distance.
Deliverability and operational efficiency		It may be operationally efficient to expand existing schools, however this is decided on a case-by-case basis, depending on pupil yield and which schools are considered suitable for expansion. Making use of any spare capacity in existing schools, and expanding schools which meet certain criteria, is considered to be aligned with both DfE and Trafford Council objectives however the level of demand generated by development at New Carrington could result in multiple existing schools needing to undergo an expansion project, at which point it may be more operationally efficient to invest a new school.
Alignment with local and national strategic ambitions and policy		Expansion of existing schools is aligned to Trafford Council's education strategy, should the school meet the following criteria[7]: ■ Location of the school relative to population / catchment area; ■ Access for pupils by public transport and other sustainable modes of travel; ■ Current size of the school; ■ Practicalities of expansion on the existing site; ■ Costs of expansion; and ■ Latest OFSTED judgement is good or outstanding.
Phase-ability and trigger points		Depending on the pupil yield generated by New Carrington and the number of suitable schools for expansion, it may be that there are multiple schools considered suitable for expansion. There are a range of options for school expansion, both permanent and temporary, in which case, there are likely to be multiple options that can scale in line with changing demand. Therefore, there is potential for school expansions to be planned accordingly in line with phasing and build-out timescales.

[7] Trafford Council https://democratic.trafford.gov.uk/documents/s47106/2024.01.16%20school%20place%20planning%20and%20sufficiency%20v2.pdf

Option 2: Accommodating additional pupils by delivery of a new school(s)

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Depending on the pupil yield, for both primary and secondary education provision, it may be determined that more than one new school may be required to meet the demand generated by new homes at New Carrington, if expansion is not considered. The provision of new school(s) would provide sufficient quantum of school places and would be likely to be optimally located near to new homes, compared to Option 1.
Feedback from events with community group and stakeholders		Some stakeholders and community groups have expressed that it would be favourable to locate any new education provision on-site within the New Carrington development boundary, however, other feedback has commented on the strategic objective to make best use of existing provision (through using any surplus capacity or through expansion of existing schools) before looking to build new schools.
Promoting sustainable development		Delivery of new primary school provision would likely be located within the new Local Centre, located within the New Carrington boundary. Therefore, this option could promote sustainable development through alignment with transport interventions to provide new public transport options and promote active travel within the development boundary. Once the pupil yield is determined, Trafford Council will be in a position to determine if a new secondary school could be required to meet the demand generated by new residents at New Carrington. Should a new secondary school be required, the school would likely to be located either on-site or located near to the development boundary, therefore this could support sustainable travel to school.
Deliverability and operational efficiency		Depending on the pupil yield, multiple new schools may be required to accommodate demand generated by New Carrington. Once the pupil yield is determined according to the phasing trajectory, Trafford Council will be able to determine the number of new schools that could be required, for both the primary and secondary levels. The operational efficiency would be a key consideration in the decision to provide new schools. For instance, DfE's typical position is that the minimum size of a new school is 2FE, equivalent to 420 pupils.
Alignment with local and national strategic ambitions and policy		Although the pupil yield is not yet determined, the scale of development anticipated at New Carrington over the long term is likely to trigger the need for a new school, or multiple new schools. The option to accommodate additional demand by building a new school(s), however, would therefore eliminate the possibility to invest in the existing school estate. Some schools in proximity to New Carrington could be suitable for expansion, and as set out in Option 1, it is Trafford Council's education strategy to consider the expansion of existing schools that meet the necessary criteria. Feasibility work currently ongoing by Trafford Council will determine whether existing schools are suitable for expansion.
Phase-ability and trigger points		Delivery of a new school would be aligned with the anticipated phasing of New Carrington, build-out and occupancy of new homes, ensuring that all latent surplus capacity would be used prior to the timing of a new school. Though new schools typically open in phases, it may be that new schools need to be built out ahead of new homes coming forward, if there are no other options to use spare capacity at existing schools, or expand existing schools, in order to accommodate fluctuations in demand generated by earlier phases in the short term.

Option 3: Combination of both expansion of existing schools as well as delivery of a new school(s)

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		The expansion of existing schools along with the delivery of new schools as demand triggers this need, is considered to be the optimal position to meet the needs of a growing population. Depending on the pupil yield, there may not be sufficient schools suited for expansion, therefore the additional delivery of new schools could fully mitigate new demand and provide new provision in optimal locations close to new homes.
Feedback from events with community group and stakeholders		A combination of expansions of existing schools that meet the necessary criteria, as well as delivering new schools as demand warrants the need, is considered the optimal option among many stakeholders and community groups.
Promoting sustainable development		A combination of expanding existing schools as well as providing new school provision would be likely to result in an increased number of locations of education provision and more travel options, which would support residents to access to school using sustainable modes of transport, such as public transport and active travel. .
Deliverability and operational efficiency		In the long-term, the total scale of development anticipated at New Carrington is likely to trigger the need for new schools, however the pupil yield is not yet determined therefore it is currently unknown how many school expansion or new school projects will be required. It may be operationally efficient to expand existing schools, however this is decided on a case-by-case basis, depending on pupil yield and which schools are considered suitable for expansion. Once the pupil yield is determined, Trafford Council will be able to determine appropriate mitigation solutions, including determining the level of deliverability and operationally efficiency and of multiple school expansion projects and the potential for building new schools.
Alignment with local and national strategic ambitions and policy		This option has greater alignment with policy and strategic ambitions, including DfE and Trafford Council, to balance the need to make best use of spare capacity in existing schools, expand schools that meet the necessary criteria, as well as delivering new schools close to where people live.
Phase-ability and trigger points		Option 3 offers the greatest level of flexibility to accommodate school-age pupils residing at New Carrington, with a combination of expansion of existing schools and delivering new schools in line with increasing demand as new homes are built according to the phasing trajectory.

Preferred option

The Preferred Option is Option 3. A combination of expansion of existing schools and new schools would deliver increased capacity aligned and phased with anticipated demand generated by New Carrington.

Primary schools: For earlier phases, demand will likely be accommodated by utilising spare capacity in existing schools and expanding capacity of existing schools that meet the necessary criteria.. As further development comes forward, existing schools will likely need to be expanded, and this programme of work will be informed by the feasibility studies currently being undertaken by the Trafford Education Team. In the longer term there is the potential need for a new primary school, and while the location of this is yet to be determined, the site at Moss View in Partington may provide a suitable location.

Secondary schools: For earlier phases, demand will likely be accommodated by utilising spare capacity in existing schools. As further development comes forward, extensions to existing schools may be required in line with phasing and timing of development at New Carrington – such as Broadoak School in Partington. In the later phases of the site build out there is a potential requirement for a new Secondary School, the need for this is generated by the New Carrington allocation, the Davenport Green Allocation and wider growth within Trafford. Consideration will therefore need to be given to the most appropriate location for the new school. The need for a new secondary school will be kept under review by the Trafford Education Team.

3.3 HEALTHCARE

3.3.1 ASSESSMENT CRITERIA

As set out in the Introduction, this Options Report is based on six main criteria. The relevance of these six criteria to the consideration of options for healthcare infrastructure is set out in the following table.

Table 3-3 - Commentary on the Overarching Assessment Criteria in relation to Option Review for Healthcare Infrastructure

Assessment Criteria	Commentary on Assessment Criteria in Relation to Healthcare Infrastructure
Sufficient infrastructure capacity to meet the needs of a growing population	Ensure that there is sufficient supply of health infrastructure to meet the demand of the additional population at New Carrington. This needs to consider: ▪ Timing – the phasing of New Carrington, to ensure that there is sufficient supply primary healthcare infrastructure in line with growing demand. ▪ Quantum – provision of sufficient provision primary healthcare. ▪ Location – additional supply of primary healthcare provision ideally should be located within proximity to where people live, with access options supporting active travel modes.
Feedback from events with community groups and stakeholders	To date, feedback gathered through stakeholder events has been used to inform this Options Report. The stakeholder events which took place in March and July 2024 included several community groups and local Parish Councils. It is noted that later stages of the New Carrington Masterplan and individual planning applications within the development will involve broader public engagement activities and events.
Promoting sustainable development	A key consideration in assessing the options is to support residents to be able to access primary healthcare facilities by using sustainable modes of travel, including active travel.
Deliverability and operational efficiency	It is important that the options for primary healthcare infrastructure are informed by a consideration of deliverability and operational efficiency. NHS guidance and strategic ambitions will inform the consideration of operational efficiency including minimum population sizes to support new facilities, and other metrics for instance maximum patients registered at a GP compared to the number of GPs and patient facing rooms within a medical centre.
Alignment with local and national strategic ambitions and policy	In order to identify and assess the potential options, local and national strategic ambitions and policy will be taken into account, including: ▪ PfE, Policy JP Allocation 30: New Carrington, sets out the principles regarding social infrastructure; ▪ PfE, Policy JP-P6: Health; ▪ NHS (2019) Long Term Plan. ▪ Greater Manchester Integrated Care Partnership Strategy 2023 – 2028 ▪ Greater Manchester Integrated Care Partnership Joint Forward Plan ▪ Trafford Together Locality Plan Refresh 2021
Phase-ability and trigger points	Alignment of the increasing demand for healthcare provision in line with the timing of development at New Carrington, including the quantum, tenure and type of new homes as well as their location within the development boundary.

3.3.2 ANALYSIS INFORMING OPTIONS ASSESSMENT

Demand generated by additional residential population

As the following table demonstrates, New Carrington could be home to approximately 12,300 residents[8].

It is important to note that the number of residents will depend on the mix of new homes at New Carrington, for example a larger number of family homes would result in a larger number of residents, compared to apartments.

The estimated 12,300 new residents at New Carrington will generate demand for approximately 1,000sqm of primary healthcare floorspace.

Table 3-4 - Residential population generated by New Carrington development

Parcel	Approximate number of new homes	Approximate number of residents
Central Carrington	600	1,465
Sale West	1,450	3,540
Partington East	2,600	6,345
Warburton Lane	400	975
Total	**5,050**	**12,325**

Source: WSP (2024); 2021 Census data on average household size for Trafford local authority

[8] Based on average household size at 2.44 persons per household for Trafford borough, ONS 2011 Census.

When assessing the additional primary care floorspace requirement from new housing, the ICB uses a standard requirement of 150sqm gross internal area (GIA) per 1,750 patients. This has been derived from Health Building Note 11:01: Facilities for Primary and Community Care (HBN 11-01)9 to identify the scale of additional infrastructure required to provide primary care services to a modern standard of care for residents of new housing in efficient, flexible, and user-friendly environments.

This floorspace standard is kept under review by the ICB to ensure it reflects the most up-to-date best practice guidance and may be revised accordingly. It is important to note that the approximately 1,000sqm floorspace requirement identified above is focused on GP-based primary care services and doesn't include an allowance for community health and wellbeing-based services or consideration of services such as high street dentistry or pharmacy, however provision of these services will be required.

Identifying relevant existing facilities

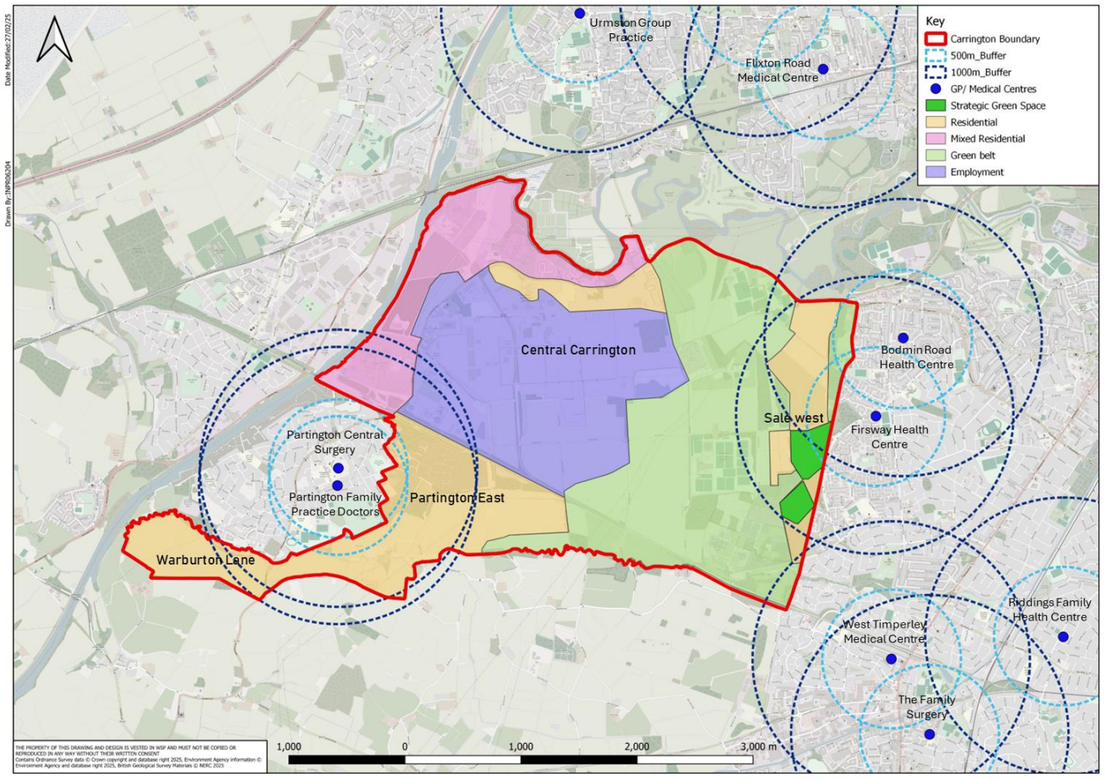
Discussions with the Greater Manchester Integrated Care Board (ICB) and Trafford Council, has identified that there is a lack of capacity at existing practices to absorb demand generated by homes at New Carrington

New Carrington will impact multiple existing GPs in the Trafford West and Sale Central Primary Care Networks (PCNs):

- The closest GP to the Central Carrington sub-area is Urmston Group Practice, with Flixton Road Medical Centre the next closest – Flixton Road is the one of the most pressured practices in the locality. The current location of Flixton Road Medical Centre is constrained, meaning that the existing premises are very limited in terms of the ability to expand.
- Partington Central Surgery and Partington Family Practice are also within the Trafford West PCN. Currently the practices are operating close to target utilisation levels, The combined weighted patient list size at these two practices is approximately 10,500 compared to the registered patient list size of approximately 9,100. The significantly higher weighted list size reflects the higher demands placed on the practices as a result of the demographic profile of the existing population.
- Most of the practices in the Sale Central PCN are currently facing severe space pressures. Overall, there is no spare capacity within the Sale Central PCN practices to accommodate future growth from New Carrington.

The following map depicts existing healthcare facilities located near to the New Carrington development boundary.

Figure 3-3 - Existing primary healthcare facilities surrounding the New Carrington boundary



Source: WSP (2024)

3.3.3 OPTIONS ASSESSMENT

For the purpose of this Options Report, the following options have been identified.

- Option 1: Expansion of provision at existing facilities
- Option 2: Delivery of a new primary healthcare facility to serve the new population at New Carrington
- Option 3: Combination of both expansion of existing facilities and delivery of a new facility

Option 1: Accommodating additional patients by expanding existing primary healthcare facilities

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Accommodating demand generated by new residents at New Carrington by expanding existing primary healthcare facilities could provide a sufficient quantum of provision, however existing facilities may not be in the most optimal locations and/or have additional limitations. For example, Flixton Road Medical Centre operates from a constrained premises that cannot be suitably expanded to meet the needs of its current patients, and the Partington surgeries would need to be able to accommodate a nearly double list size as compared to current to accommodate the expected growth within the Partington East and Warburton Lane neighbourhoods As shown in Figure 3-3, there are no existing facilities located within the New Carrington development boundary.
Feedback from events with community group and stakeholders		Based on feedback provided by community groups as well as stakeholders including the Greater Manchester ICB, this option would likely not be the preferred option, reflecting that accessing existing facilities by new residents would encourage travel by car and this would have greater negative impacts on vulnerable groups, such as elderly groups.
Promoting sustainable development		New residents at New Carrington would need to travel to existing facilities beyond the New Carrington development boundary. The provision of new sustainable travel links, as part of the New Carrington development, could help support access, however it is likely that a proportion of the community would choose to travel by private vehicles, rather than more sustainable modes of travel, such as active travel and public transport modes, if the only available healthcare facilities are located further away. .
Deliverability and operational efficiency		Making the most of any opportunities for reconfiguration at relevant nearby facilities to enable enhanced service provision is encouraged, before building new facilities, to support operational efficiency and scalability. However, the total scale of development anticipated at New Carrington would likely trigger the need for a new facility.
Alignment with local and national strategic ambitions and policy		The NHS Long Term Plan places emphasis on the importance of facilities being located near to where people live, therefore some existing facilities may not be in optimal locations.
Phase-ability and trigger points		Expanding provision within existing GP facilities, for instance through a temporary or permanent expansion of a physical building, or through expansion of an existing facility's catchment area can be quicker to implement in the early phases. Therefore, this option has the benefit of being able to scale up additional capacity according to increasing levels of new demand, as new homes are built and new residents move into New Carrington. However, this option would be less appropriate for later phases because sufficient forward planning can be factored in, to support the delivery of new facilities to accommodate demand for the long-term.

Option 2: Accommodating additional demand by delivery of a new primary healthcare facility

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		A new facility would meet the needs of a growing population as well as being optimally located near to new homes and new residents within the New Carrington development boundary.
Feedback from events with community group and stakeholders		The provision of a new facility would align with the feedback received from both community groups as well as stakeholders, as many groups would prefer to see a new facility being optimally located on-site at New Carrington, near to new homes.
Promoting sustainable development		A new facility on-site at New Carrington could be located within either the new Local Centre or new Neighbourhood Centres, therefore promoting providing a new amenity to support the new population.
Deliverability and operational efficiency		The scale of development anticipated at New Carrington would likely trigger enough demand to warrant a new facility, therefore a new facility would be deliverable, however in the short term, it is more efficient to make use of any spare capacity in existing facilities before building a new facility.
Alignment with local and national strategic ambitions and policy		The NHS Long Term Plan places emphasis on the importance of facilities being located near to where people live, therefore some existing facilities may not be in optimal locations.
Phase-ability and trigger points		In some instances, the opening of a new facility can be phased and aligned to the level and timing of development coming forward. However, a new facility may need to come forward ahead of new homes, to allow for forecast fluctuations in demand. Making best use of existing provision, whether using any surplus capacity or through expansion projects, would more easily be able to adjust supply to accommodate demand generated by earlier phases at New Carrington.

Option 3: Combination of both expansion of existing primary healthcare facilities as well as delivery of a new facility

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		This option offers the optimal position in terms of accommodating demand across a number of existing facilities as well as in a new facility at New Carrington, therefore there would be sufficient provision to accommodate new demand as well as a number of suitable locations.
Feedback from events with community group and stakeholders		Considering feedback provided by community groups and stakeholders, there is support for the provision of a new healthcare centre on-site at New Carrington. This Option also provides the benefit of making best use of existing provision to accommodate demand generated by earlier phases.
Promoting sustainable development		A greater number of facilities would be available for new residents, therefore offering more choice in terms of access by a variety of modes of transport, including active travel.
Deliverability and operational efficiency		In the long-term, the scale of development at New Carrington is likely to trigger the need for a new facility, therefore this is considered to be deliverable. In the short-term, making best use of existing facilities, through using any spare existing capacity as well as expanding existing provision, would help to accommodate demand generated by the earlier phases of New Carrington.
Alignment with local and national strategic ambitions and policy		This option has greater alignment with policy and strategic ambitions such as the NHS Long Term Plan as well as those by Trafford Council and the Greater Manchester ICB, to support new integrated care services, meet the needs of a growing population, and provide facilities close to where people live.
Phase-ability and trigger points		Option 3 offers the greatest level of flexibility to accommodate increasing demand. In the short term, additional demand could be accommodated within existing provision, potentially through expansion of existing facilities, with a long-term solution to build a new facility on-site at New Carrington.

Preferred option

The Preferred Option is Option 3, in which a new primary healthcare facility would be provided on-site at New Carrington, as well as making use of and expanding existing facilities to accommodate demand generated by earlier phases. Noting the limitations on expansion of existing facilities to the north of the Central Carrington sub-area, the ICB has indicated that it also may be necessary to consider provision of a smaller branch surgery in this neighbourhood, in addition to a new primary healthcare facility. This will be dependent on the likely phasing and future accessibility for residents of the Central Carrington sub-area to the planned local centre in Partington East.

To accommodate the residential population at New Carrington, additional healthcare provision will be required.

Based on analysis and guidance from NHS Property Services, the ICB and Trafford Council, it is anticipated that the level of demand generated by new residents at New Carrington will trigger the need for a new facility on-site. There are, however, existing GP centres nearby that may be able to accommodate a proportion of additional demand generated by the early phases, ahead of a new facility coming forward[9]

[9] As per NHS Act, GPs who are accepting new patients must register any patient who lives within their catchment area, and the ICB cannot direct patients to register at a specific GP. However, it is important to notes that practices can apply to the ICB to close their list and/or modify their practice boundary. One key reason why practices may be required to do this is because of a significant lack of physical capacity to deliver services to increasing populations.

3.4 LOCAL AND NEIGHBOURHOOD CENTRES

3.4.1 ASSESSMENT CRITERIA

As set out in the Introduction, this Options Report is based on six main criteria. The relevance of these six criteria to the consideration of options for local and neighbourhood centres is set out in the following table.

Table 3-5 - Commentary on the Overarching Assessment Criteria in relation to Option Review for Local and Neighbourhood Centres

Assessment Criteria	Commentary on Assessment Criteria in relation to local and neighbourhood centres
Sufficient infrastructure capacity to meet the needs of a growing population	Ensure that there is a sufficient number of new centres to provide new residents with access to social infrastructure and amenities. This needs to consider: ▪ Timing – the phasing of New Carrington, to ensure that new centres are delivered aligned with necessary trigger points. ▪ Quantum – there needs to be a sufficient number of new centres within the masterplan area that are at the correct scale. Consideration is given to the need to balance the type of new centres, both larger local centres and smaller neighbourhood centres are considered. ▪ Location – new centres need to be located in the right places, taking into account the locations of new homes and transport links.
Feedback from events with community group and stakeholders	Feedback gathered through stakeholder events in March and July 2024 has been used to inform this Options Report. It is noted that later stages of the New Carrington Masterplan and individual planning applications within the development will involve broader public engagement activities and events.
Promoting sustainable development	New centres should be located near to new homes and transport links, including active travel and public transport, so as to promote residents to travel to by using non-motorised forms of transport.
Deliverability and operational efficiency	Assessment of new centres will take into account potential interaction with existing facilities in local areas surrounding the New Carrington boundary.
Alignment with local and national strategic ambitions and policy	▪ PfE (2024), Policy JP Allocation 30: New Carrington ▪ Trafford Council's Core Strategy Policy W2.9 states that "there is a network of local centres where the focus will be on convenience retail facilities and services to meet local needs"10. In addition, Core Strategy Policy W2.11 is relevant, which emphasises the importance of urban design, mix of uses and active frontages11. ▪ In addition, the Trafford Council (2019), Trafford Retail and Leisure Study provides data which is used to assess the demand for retail provision, generated by New Carrington.
Phase-ability and trigger points	Delivery of new centres will align with the phasing of parcels within New Carrington and the appropriate trigger points to deliver new on-site social infrastructure.

Source: WSP (2024)

3.4.2 ANALYSIS INFORMING THE OPTIONS ASSESSMENT

Delivering new centres at New Carrington

PfE states that New Carrington will deliver both a new local centre as well as two new neighbourhood centres:

> *"Create a local centre comprising a range of small shops and services, within the Partington East development area at a scale to serve the needs of the proposed communities and improve the sustainability of the wider Partington and Carrington area;*
>
> *Provide a Neighbourhood Centre in the Central Carrington and Sale West character areas to provide local services and community facilities to meet local needs[12]"*
>
> *and*
>
> *"A new local centre, located in the Partington East character area, will be a hub for community infrastructure and will service the needs of the new community. Smaller neighbourhood centres will also provide local community hubs in the Sale West and Central Carrington character areas. The large number of new residents will also help to support existing shops and services in the surrounding area, such as the Partington Local Centre[13].*

PfE acknowledges that centres are vital in supporting new communities:

> "Varied and high-quality retail, leisure and cultural facilities are vital to providing the quality of life that will help to attract people to live in Greater Manchester and in contributing to inclusive places[14]".

Defining local and neighbourhood centres

Local centres

Trafford Council's (2019) Trafford Retail and Leisure Study defines local centres as:

> *"…including a range of small shops of a local nature, serving a small catchment. Typically, local centres might include, amongst other shops, a small supermarket, a newsagent, a sub-post office and a pharmacy. Other facilities could include a hot-food takeaway and launderette".*

The Trafford Retail and Leisure Study does not specify the size of a small supermarket, but larger supermarkets (i.e. up to c. 2,500sqm) are not normally considered appropriate in local centres.

[10] Trafford Council (2012), Trafford Local Plan Core Strategy, page 151
[11] Ibid, page 152
[12] Places for Everyone (2024), New Carrington, page 452
[13] Ibid, page 460
[14] Places for Everyone (2024), page 196

Neighbourhood centres

The Retail Study does not provide a definition of a neighbourhood centre, although these tend to a smaller number of shops and services serving the immediate surrounding residential area.

Analysis of existing nearby centres

New residents and the new local/neighbourhood centres will have a symbiotic relationship. Local and neighbourhood centres rely on demand generated by new residents living at New Carrington, and new residents will rely on local shops and services to meet their day to day and weekly shopping needs. In addition, there will also be demand generated by new workers in the employment sites across New Carrington.

The form of development proposed will need to be tailored to local needs to ensure it will not compete directly with existing surrounding centres. The increase in the local population and available expenditure resulting from the proposed housing (as well as new workers) will also benefit existing retailers and centres further afield as residents of the site will also shop elsewhere, including at other centres, increasing the turnover of these centres.

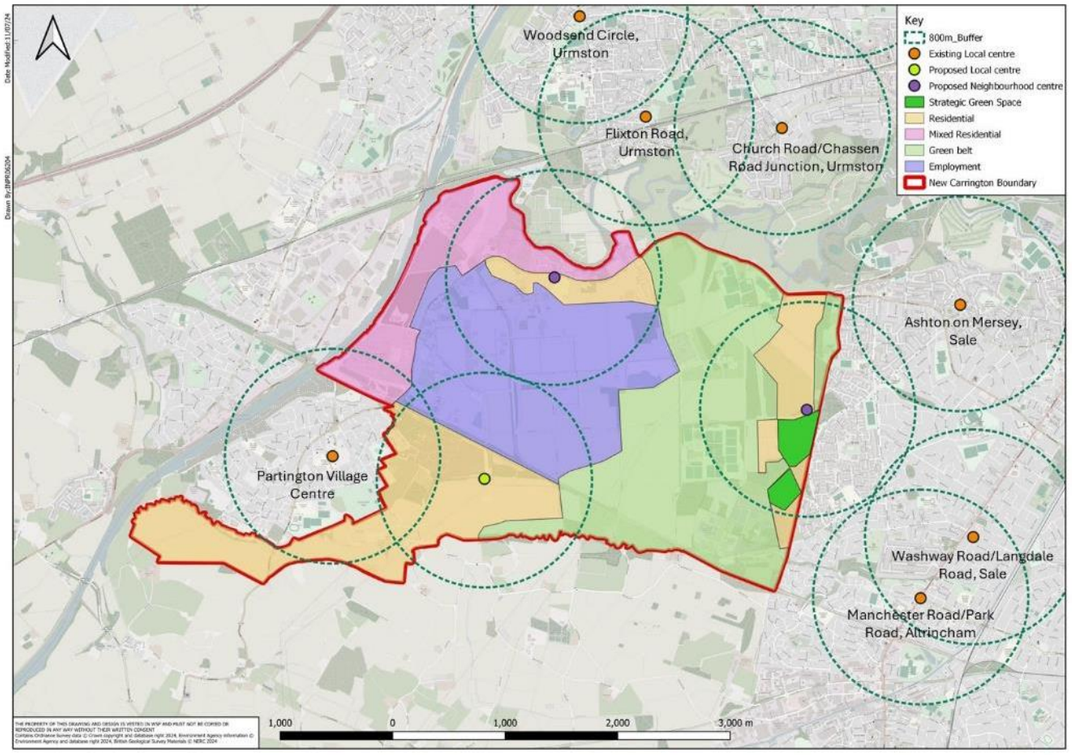
New Carrington is located near a number of existing local centres. These local centres primarily serve the immediate surrounding residential areas, meeting everyday shopping needs of local residents. Partington Local Centre is the nearest and largest centre which is 1.6km from the proposed Local Centre. The other smaller centres are all over 1.8km away.

The retail sector can be classified as comprising the following categories of businesses:

- **Convenience:** This includes food and non-alcoholic drinks and includes businesses such as supermarkets, grocers, bakers and newsagents.
- **Comparison:** This includes household goods such as books, clothing and footwear, furniture, floorcoverings & household textiles, audio-visual equipment, hardware and DIY supplies.
- **Other services:** This comprises community facilities such as schools, GPs, post offices, beauty salons and hairdressers, as well as cafés and other shops such as florists and charity shops.

The following map shows local centres in proximity to New Carrington.

Figure 3-4 - Local centres in proximity to New Carrington



Source: WSP (2024)

The following table provides a summary of the local centres in terms of their existing retail provision.

Table 3-6 - Analysis of existing local centres nearby to New Carrington

Local Centre	Convenience Retail	Comparison Retail and Other Services	Comments
Partington Local Centre (west of the site)	4 units including Heron Foods, Tesco Express, and Go Local and a bakery totalling 1,088sqm based on Trafford Retail Study which highlights that the centre is dominated by convenience goods operators.	Two retail units, a card shop and charity shop, a pharmacy as part of a doctors surgery and hardware shop. In terms of services it includes a beauty salon, hot food takeaways (HFTs), and café and restaurants.	Large local centre which serves surrounding area, with the Trafford Retail Study identifying no vacancies and that it is a well-maintained centre.
Washway Road/Langdale Road	Co-op and V&G Mega Mart	HFTs, bathroom showroom, curtain shop,	Small local centre along main road serving the needs of the immediate

Local Centre	Convenience Retail	Comparison Retail and Other Services	Comments
Local Centre (east of the site)		fireplace shop, beauty salon, and furniture shop.	surrounding residential area with limited convenience provision.
Manchester Road/Park Road Local Centre (south east of the site)	None	HFTs, hairdressers, health & beauty, kitchen showroom, café and restaurant, and car showroom.	Small parade of shops off main road serving the immediate area, but with no convenience provision.
Flixton Road, Urmston Local Centre (north of the site)	Co-op	Post office, HFTs, hairdressers, healthcare, beauty salons, mechanics, cafe, carpet and curtain shops.	Small local centre, with limited convenience provision split into two parts within residential area.
Ashton on Mersey, Sale Local Centre (east of the site)	Co-op, Tesco Express, Bargain Booze, butchers, and bakery.	Clothing shop, hairdressers, cafés and restaurants, gift shop, HFTs, opticians, beauty salon, homeware shop, pharmacy, pet shop, launderette, hardware shop, charity shops, pub, and card shop.	Larger local centre on either side of Green Lane with a number of convenience and other shops as well as services serving local area.
Woodsend Circle, Urmston Local Centre (north of the site)	Sainsburys Local (with Argos), One Stop, butchers, and Costcutter.	Pharmacy, GP, charity shop, cafes, hairdressers, beauty salon, photography studio, gift shop, HFTs, and flooring shop.	Local centre split across a roundabout.
Church Road/Chassen Road Local Centre (north east of the site)	Go Local (community convenience store), B&S Retail Convenience Store, and bakery.	Beauty salons, windows shop, dog grooming, pharmacy, charity shop, bar and restaurants, hardware shop, florist, hairdressers, and HFTs.	Local centre spread along main road within residential area with reasonable convenience retail provision.

Source: Trafford Council (2019), Trafford Retail Study; WSP (2024)

Assessment of potential demand for retail floorspace, generated by development at New Carrington

New residents at New Carrington could be expected to generate an additional £7.6m in convenience spending and £5.1m in comparison spending that would be directed towards new centres at New Carrington[15] [16] [17].

Convenience

Convenience expenditure is estimated to be c. £7.62m supporting 764sqm net of convenience floorspace (circa 1,100sqm gross).

Table 3.9 – Estimated Convenience Expenditure from New Residents

Total Available Convenience Expenditure Generated by New Residents	£25.40m
Convenience Expenditure of New Residents Spent in Local/Neighbourhood Centres (30%)	£7.62m
Convenience Floorspace Sales Density (sqm)	£9,971
Total Convenience Floorspace (GEA sqm)	1100sqm
Net Convenience Floorspace (sqm) (70% of the GEA)	764sqm

Source: WSP (2024); based on convenience and comparison per capita expenditure figures based on the Trafford Retail Study (2019) which are at 2017 prices.

Comparison

The available comparison expenditure could potentially support up 1,071sqm of net comparison floorspace (1,350sqm gross).

Table 3.10 – Estimated Comparison Expenditure from New Residents

Total Available Comparison Expenditure of New Residents	£50.86m
Comparison Expenditure of New Residents Spent at Local/Neighbourhood Centres (10% of total expenditure)	£5.09m
Comparison Floorspace Sales Density (sqm)	£4,750
Net Comparison Floorspace (sqm)	1,071sqm
Gross Comparison Floorspace (sqm)	1,350sqm

Source: WSP (2024); based on convenience and comparison per capita expenditure figures based on the Trafford Retail Study (2019) which are at 2017 prices.

3.4.3 OPTIONS APPRAISAL

At this time, the current proposed locations of the local centre and neighbourhood centres are considered appropriate and no further options are considered at this time.

[15] Note that these figures reflect an assumption that 30% of all resident expenditure could be spent on-site within the New Carrington development boundary, the total spend of new residents would exceed this, recognising that a proportion of spend (assumed to be approximately 70%) would take place in other locations outside of the New Carrington boundary, including on-line spending.

[16] Based on convenience and comparison per capita expenditure figures based on the Trafford Retail Study (2019) which are at 2017 prices.

[17] Note that the calculation of expenditure is based on the quantum and mix of new homes, therefore figure presented in this Options Report are subject to change.

Local centre

The proposed location is considered to be appropriate, given that the new local centre would be located in close proximity to the two character areas in which the highest number of new homes will be delivered. Therefore, the new local centre will be in walking distance to a large new residential population[18].

Whilst the local centre will only be located circa 1.6km from the existing Partington Local Centre, this centre appears to be performing well. The existing Partington Local Centre and proposed local centre will primarily serve local residents and workers on different sides of Partington. Until the masterplan is further developed, there is not currently a basis to challenge the current evidence that two local centres could have their own role and function in meeting the needs of immediate residents, and, therefore, will function well together.

Neighbourhood centres

The location of the proposed neighbourhood centres at Carrington Village and Sale West (which are only likely to include a small number of shops) are also considered to be acceptable within other proposed residential areas at New Carrington given they need to be located within walking distance of these.

It is important that the amount of retail and other services in the proposed centres is limited to ensure that they only serve the new residents at New Carrington rather than draw customers away from the existing surrounding centres.

Next steps

As the masterplan for New Carrington further develops, the following will inform and further test the proposed locations of the new centres:

- Range and mix of facilities and amenities: Market testing will be undertaken to understand the likely demand for a range of amenities. Once this is undertaken, it will be established what types of facilities and amenities are likely to be located on-site within the New Carrington masterplan, and this will inform further assessment of future uses at New Carrington and how this will compare and potentially compete with existing centres located nearby;
- Transport links: An assessment will be carried out to assess the exact locations of the proposed centres, in comparison to all transport links that will be taken forward for New Carrington, with a focus on public transport and active travel, to ensure that new residents, workers and visitors can safely access the centres while promoting no-motorised forms of transport.

[18] Places for Everyone (2024), New Carrington, page 452

Preferred option: Retain current proposed locations of new local centre and neighbourhood centres

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Due to the scale of development proposed at New Carrington and the distance from existing local and neighbourhood centres, there is a need for new centres to be delivered on-site to meet the needs of a growing residential population. New centres will be the locations for new social infrastructure, community facilities as well as amenities, including shops and services. A new local centre will be the larger of the new centres and would be the location of a new primary school. The two neighbourhood centres will be smaller in size than the local centre. Beyond providing facilities and amenities, new centres play an important role in helping to create social cohesion in the new community by acting as a place of congregation.
Feedback from events with community group and stakeholders		Feedback has been received that the location of the proposed local centre may be too close to the existing Partington Local Centre. At this time, the proposed location for the local centre is not expected to compete with the existing local centre. Further analysis will involve market testing to identify the range and mix of facilities and amenities that could be located at the local centre, and therefore is subject to further review.
Promoting sustainable development		The proposed locations of the new local centre and the two additional neighbourhood centres have been selected on the basis that there will be new provision to accommodate each of the four Character Areas at New Carrington. Central Carrington and Sale West will each have a new neighbourhood centre, reflecting the scale of development for each of the two parcels, at 600 homes and 1,450 homes respectively and the fact that the two parcels are severed by proposed employment uses. Character Area Partington East will deliver the highest quantum of new homes, at approximately 2,600 new homes, and this parcel is located adjacent to the Character Area Warburton Lane, for a further approximate 400 homes – therefore collectively these two parcels are for c. 3,000 homes. The scale of new homes in these two Character Areas therefore will generate a higher number of new residents and therefore this area should be the priority location for a new local centre, which will be larger in scale.
Deliverability and operational efficiency		Due to the scale of development proposed at New Carrington, it is currently considered that the level of expenditure generated by new residents will be of sufficient critical mass and economies of scale that would generate interested from private market retailers to invest in new retail units and amenities at New Carrington. Therefore, it is considered that there will be sufficient private market demand to warrant the new centres as deliverable. Further market testing will be undertaken to understand how the offer of centres at New Carrington may have potential to complement or compete with existing local centres.
Alignment with local and national strategic ambitions and policy		The proposed locations of the local and neighbourhood centres will support policy ambitions with regard to placemaking, support social cohesion among new communities as well as encourage new residents to choose public transport or active travel modes.
Phase-ability and trigger points		As new centres will involve a range and mix of different types of good and services comprising comparison, convenience retail goods and services, social infrastructure as well as other amenities, they will be delivered by a mix of future occupiers. Therefore, the components of the new centres will be able to be phased in line with the delivery and increased demand by new residents.

3.5 SUMMARY OF SOCIAL INFRASTRUCTURE REQUIREMENTS

In summary, the following social infrastructure will be required to support the new community living at New Carrington:

- Education
  - Trafford Council is currently reviewing the anticipated pupil yield generated by New Carrington, for all types of education, comprising: early years, primary, secondary, sixth form and SEN provision.
  - A combination of mitigation measures will be undertaken, to accommodate additional demand:
    - Primary schools: For earlier phases, demand will likely be accommodated by utilising spare capacity in existing schools and expanding capacity of existing schools that meet the necessary criteria.. As further development comes forward, existing schools will likely need to be expanded, and this programme of work will be informed by the feasibility studies currently being undertaken by the Trafford Education Team. In the longer term there is the potential need for a new primary school, and while the location of this is yet to be determined, the site at Moss View in Partington may provide a suitable location.
    - Secondary schools: For earlier phases, demand will likely be accommodated by utilising spare capacity in existing schools. As further development comes forward, extensions to existing schools may be required in line with phasing and timing of development at New Carrington – such as Broadoak School in Partington. In the later phases of the site build out there is a potential requirement for a new Secondary School, the need for this is generated by the New Carrington allocation, the Davenport Green Allocation and wider growth within Trafford. Consideration will therefore need to be given to the most appropriate location for the new school. The need for a new secondary school will be kept under review by the Trafford Education Team.
- Healthcare
  - Immediate interim measures will include reconfiguration and / or expansion of existing surgeries
  - A new healthcare facility on-site at New Carrington – likely location in the Local Centre. This is likely to be required in a later phase of the development.

Items taken forward for costing comprise:

- Education
  - Costing assumptions will include all types of education: early years, primary, secondary, sixth form and SEN provision
  - Feasibility studies are ongoing to determine if relevant existing schools could be expanded to accommodate additional demand.
  - Based on DfE guidance and best practice, the exercise will identify the cost for both expansion of existing school and the cost to deliver new school infrastructure, including:
    - Primary provision, which would also include on-site early years provision; and
    - Secondary provision, which would also include on-site sixth form provision.
    - SEN provision.
- Healthcare
  - The costing exercise will consider the relevant existing facilities that could be expanded in the interim
  - The exercise will also include costing for a new healthcare facility on-site at New Carrington.

4

ENERGY AND UTILITIES

4 ENERGY AND UTILITIES

4.1 INTRODUCTION

4.1.1 SCOPE OF THIS OPTIONS REPORT

The Energy and Utilities strategy aims to establish the provision of heating, hot water and cooling to meet the needs of residential and non-residential occupiers of the New Carrington development. Consideration is also given to the electrical requirements on-site regarding the need for infrastructure reinforcement and generation opportunities.

As part of the study, the energy demands of the development were estimated, the number of energy centres for a site-wide heat network was determined, and the required footprint for them was calculated. Three solutions will be considered for the delivery of heating and cooling, which are listed below, as well as local renewable energy generation. The configuration in the final design will be a mix of these solutions:

- Solution 1 – Individual heat pump
- Solution 2 – Heat network
- Solution 3 – Solar Photovoltaic (PV) Panels

Energy sources have been listed in subsequent chapters with the highest priority sources highlighted below. The use of local waste heat, electrified heat and solar photovoltaic panels have all been emphasised in the Places for Everyone policies JP-S1, JP-S2 and JP-S3 for their great potential, which has contributed to their higher priority in this report. The waste heat sources have also primarily been chosen for their significant volume of heat, and thus are likely to have the capacity to supply the site's heating needs. Individual heat pumps are much more energy efficient than the traditional gas boilers and can very effectively used in some scenarios, like in buildings with appreciable cooling demands.

- Option 1 – Waste heat from Carrington Power Station
  - …and rooftop solar photovoltaic panels
- Option 2 – Waste heat from other industrial sources (e.g. SAICA Paper Mill)
- Option 3 – Individual heat pumps for each property

Figure 4-1 Key features of the top technology options

Sources of information and assumption

- **Baseline Report** – as set out in the Introduction chapter, prior to this Options Report, a Baseline Report was first prepared, dated August 2024.
- **Stakeholder feedback** – a series of stakeholder events took place in March and July 2024, the feedback received has been considered as part of this Options Report.
- **Energy demands** – the assumptions made to determine the site's energy needs have been informed by the residential parcel densities, local centres and employment plot compositions, described in the 2020 Masterplan. Projections have been used to determine the heating profiles and electricity use of high-performing buildings, which includes EV charging points for each dwelling, as instructed by Part S of the UK building regulations. Updates to the composition of the site, such as residential density, upon submission of planning applications will require a review of the energy requirements on-site.
- **Phasing** – this Options Report is based on assumptions relating to the phasing of new homes, which is subject to change. The energy solution phasing will be influenced any changes made to the programme and may trigger a change in the final design solution or warrant an interim solution.
- **Policy** –The following policy and strategy documents have been used to inform the New Carrington energy and utilities strategy:
  - New Carrington GMSF Masterplan (Sept 2020)
  - Places For Everyone Joint Development Plan (Policies JP-S1, JP-S2, JP-S3)
  - Trafford Local Area Energy Plan 2022 (LAEP)
  - National Planning Policy Framework
  - Heat and Buildings Strategy (2021)
  - Future Homes and Buildings Standard
  - Heat Network Zoning Policy

  The Heat Network Zoning Policy is a policy currently being developed to encourage the expansion of the heat network industry in the UK, primarily by designated zones across the country where energy demand densities are high enough to indicate that a heat network would be the most cost-effective means providing low carbon heat. These zones will be established, and their requirements enforced, by local zoning coordinators or the Heat Network Zoning Authority. The conditions associated with the obligation to connect to an energy/heat/cooling network as a heat supplier or user may be modified as the policy develops, so the policy should be monitored to ensure the final energy solution is compliant and the solution phasing in appropriate.

4.2 PREFERRED OPTION

4.2.1 REQUIREMENTS

The New Carrington development should follow the energy hierarchy by reducing the building energy demands, seeking high efficiency in energy delivery and using renewable energy, where possible. To reduce energy demand, buildings should strive for low heat loss and low energy lighting and appliances. To deliver energy "cleanly", opportunities for heat and energy networks need to be assessed due to their ability to supply low carbon energy with efficient operation. New developments of 10 or more dwellings must connect, or be able to connect, to a heat network as part of JP-S3 compliance.

And finally, the generation and procurement of energy should come from low carbon sources, where possible, with the utilisation of waste heat sources and solar PV taking priority. Additionally, provision needs to be made for Electric Vehicle (EV) charging according to JP-S2.

4.2.2 HEAT NETWORK

Heat networks, also known as district heating, distribute heat from a central source, AKA an "energy centre", to multiple buildings through insulated buried pipes. They provide hot water and space heating, eliminating the need for individual boilers. Cooling networks specifically distribute chilled water for air conditioning and refrigeration. Both heating and cooling functions can be combined into a single energy network, often using reversible heat pumps. Both systems aim to improve energy efficiency and reduce carbon emissions.

Networks come in two main forms:

- 4th generation which uses pre-insulated pipework to reduce heat losses
- 5th generation which is an ambient system using uninsulated pipework and capable of providing both heating and cooling

New Carrington has been identified as an energy network opportunity area within PfE policy JP-S3, . This considers the substantial energy sources on the site as well as the considerable future energy demand from the residential plots. The policy proposal includes the requirement that buildings within a "heat network zone" connect to an existing or new network. Given that there are no existing energy networks in the area, the construction of a new network in the New Carrington is very likely, with the buildings on-site obligated to connect to it also.

The preferred option described below considers an energy centre at Carrington Power Station, which is explored further in 0, to extract waste heat that has been produced during the operation of its power generation equipment via its cooling system for a heat network stretching across the whole of New Carrington.

Figure 4-2 - The main spine of pipework for a full-site heat network

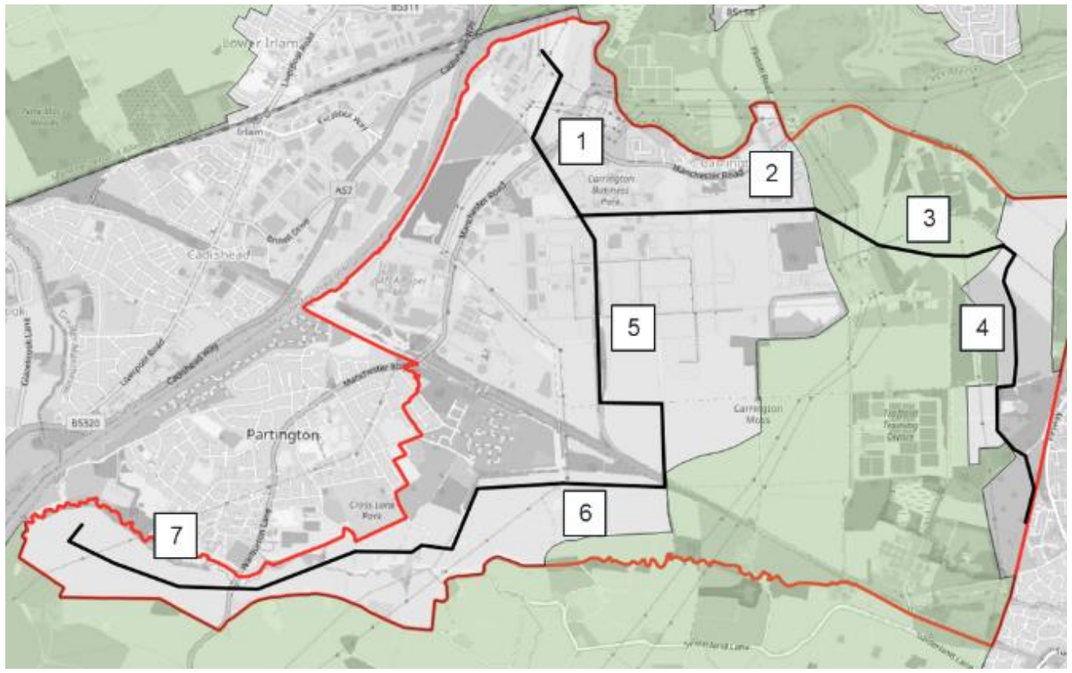


Figure 4-2 shows the potential mainlines of a single site-wide heat network which deliver heat to Sale West via a pipe buried under the Carrington Relief Road and to the Partington East and Warburton Lane parcels after the employment plots at point 5 on the figure.

The employment plots will consist of a mix of B2 and B8 buildings. It is likely that a heat network would only suitably provide heat for a portion of the employment area, due to the nature of the energy needs of B2 (general industry) and B8 (storage facilities) buildings, i.e. large internal spaces which generally lend themselves to radiant heating solutions. This means that the pipe running through the employment plots may not be serving many demand points and may be primarily a transmission pipe to the southern residential parcels.

The overall diversified peak demand for a whole-site network would be approximately 28MW. For a whole-site network, an estimated 14MW of WSHP would supply the base load with 11MW electric boilers providing top-up for peak demand and back-up. Two 100m^3 thermal stores would supplement the peak and back-up supply by retaining a volume of heated water to be discharged at optimum times for network demand buffering.

A heat network benefits from demand diversity, which refers to the variation in peak demand times among different consumers. Since not all consumers use their maximum power simultaneously, the total peak demand on the network is lower than the sum of individual peak demands. This concept, also known as the diversity factor, allows for a more efficient design by reducing the required capacity of the central heating plant.

An energy centre at Carrington Power Station would house the heat generation equipment with a building footprint of about 1,200m2 and a total land area of roughly 2,200m2. A second energy centre approximately half the size of the primary energy centre is likely to be needed in Partington East to maintain adequate pipe pressure and supplement the heat from the power station. Further work will determine if the network can be optimised to remove the need for a second pumping station.

4.2.3 SOLAR PV

The Places for Everyone policy document outlines the best practice for onsite residential renewable energy generation – 40% ground floorspace covered with photovoltaic panels – and JP-S2 states that there is an expectation that new developments will deliver that generation threshold.

Solar photovoltaic (PV) systems convert sunlight into electricity, offering a renewable and sustainable energy source. They help reduce electricity bills, lower carbon footprints by producing clean energy, and can increase energy independence. However, the initial installation cost can be high, and their efficiency depends on weather conditions and available roof space. Regular maintenance is also necessary to ensure optimal performance, although they can operate at optimum efficiency for 25 years with some panel lifespans extending longer. Despite these challenges, solar PV systems are a cost-effective option for decarbonisation and satisfy the local and national policy requirements.

Assuming 40% of the residential ground floorspace is occupied by solar PV, 25-30 MWp (peak output) of solar PV capacity could be installed, producing approximately 26-31 GWh of electricity annually. Additionally, the Masterplan designates 152 ha gross developable area for the employment area, of which 377,972m^2 is occupied as building footprint. If the same 40% assumption is used for the buildings which could occupy that area, another 16-20 MWp of photovoltaic panels could be added.

The largest solar array in the UK has an installed peak capacity of 72 MWp, so installing the proposed capacity of solar PV system in New Carrington could represent a sizeable investment but also a substantial opportunity for low carbon electricity generation. The surplus electricity produced can also be sold back to the grid (at a rate set by the household's electricity supplier), thereby reducing energy bills and demand from the national grid. The solar PV output should be considered in the design of plots and buildings, such as the roof orientation and angle, in order to optimise the energy generation from the PV panels.

4.2.4 DISCUSSION

It may be demonstrated that multiple heat networks, potentially using another energy source, or individual heat pumps (Solution 1) are a more cost-effective approach to avoid unnecessary pipe-routing. For example, Sale West represents a quarter of the proposed residential allocation. However, to connect Sale West to the waste heat from Carrington, a transmission pipe across the green belt would need to be installed. At an estimated 1.2 km, the transmission pipe could cost £2-2.5m, and at periods of low demand, it would become inefficient to pump heat through this pipe. Further work may show that Sale West is more economically served with its own energy centre.

The Warburton Lane residential parcels are made up of low-density dwellings. Heat networks generally suit areas of high-density energy demand. Higher plot density requires less pipework to deliver the same amount of heat, making the network more cost-effective. Low-density plots may consist of luxury properties with cooling demands which would benefit from individual heat pumps with reversible heating/cooling capability. Given that these parcels are the furthest from the Carrington Power Station and are low density, individual heat pumps could be a more economical solution.

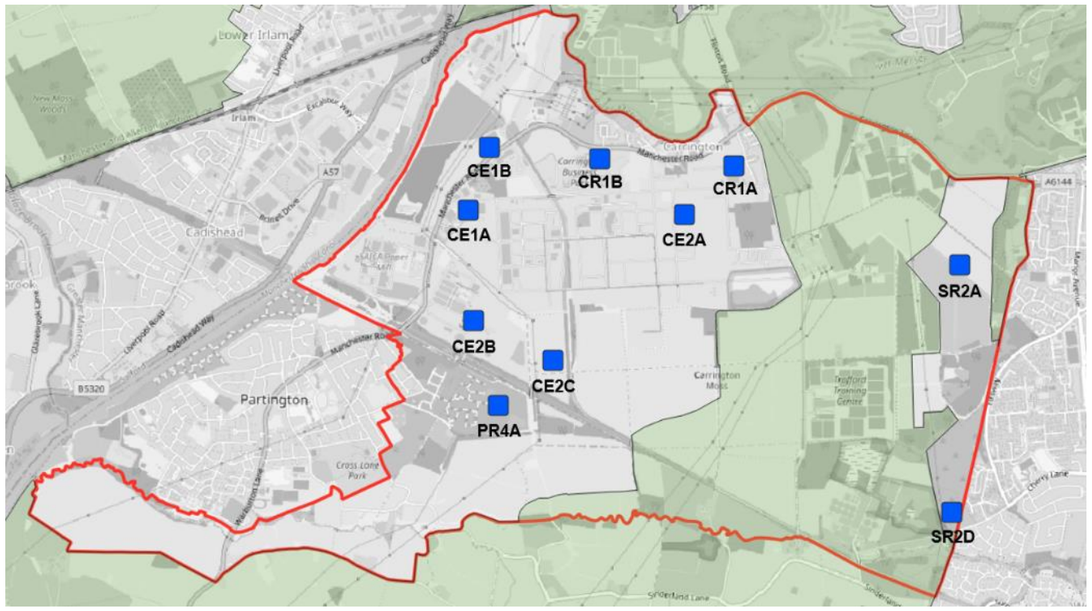
The phasing of a heat network would involve physically over-sizing the energy centre for the early stages of the development and embedding the ability to divert more of the power station's cooling water than is needed to achieve the earlier peak heat demands. This would allow for capacity growth through the years. As demands grows, more cooling water would be diverted, and more heat pumps can come online to satisfy the load on the energy centre. By over-sizing the extraction equipment capacity in the power station, operational disruption would be minimised.

The pipe network would need to be expanded in conjunction with the development build-out to enable parcels to connect to the primary energy centre when it is ready. The primary energy centre design, construction and commissioning will take 3-5 years, so any houses which finish construction before it is operational will require an interim solution, such as a temporary energy centre.

The Carrington Village plots (CR1A, CR1B) and a Partington East plot (PR4A) have gained planning permission and will begin delivering houses before the primary energy centre is expected to commence operation. Therefore, the completed houses will require an alternative heat supply before they are able to connect to the main network.

In year 5, the current phasing programme indicates that Sale West and some employment plots will begin completing buildings as well, as seen in Figure 4-3.

Figure 4-3 - Year 5 parcel delivery locations based on currently assumed phasing



It may be necessary to install temporary measures in/near these plots to serve their energy demands as well.

It is recommended that temporary energy centres are constructed in Partington East, Carrington Village and Sale West to allow for interim heating. Pipework can therefore be laid and used for the temporary networks before the main network is operational. If networks are not ready before houses are completed, individual heating solutions will be utilised, and home owners will need to be convinced to connect at a later point. This will be a difficult task and may affect the feasibility or viability of the network.

Approximately a third of the heat demand is located downstream (South) of the Partington East plot PR4A, more than 3km away from the primary energy centre at the power station. To maintain adequate hydraulic conditions and supply heat effectively, a second energy centre is likely to be required in Partington East which would house pumping equipment and potentially supplement the heat supply with Air-Source or Ground-Source Heat Pumps.

Pipe routing assessments through the design and development of this scheme will need to be undertaken to ensure safe, efficient and low impact routing, taking into account the environmental constraints of contaminated soil, peat moss, flood zones and wildlife disruption.

It is important to maintain a flexible approach and recognise the potential change in the status of individual buildings in relation to the zoning policy. In the future some buildings may not be mandated to connect to a heat network, and it may not be financially beneficial to do so.

4.3 TECHNOLOGY OPTIONS

4.3.1 ASSESSMENT CRITERIA

Assessment Criteria	Commentary on Assessment Criteria in relation to Energy and Utilities
Sufficient infrastructure capacity to meet the needs of a growing population	Sufficient supply of energy infrastructure means meeting the demands of the additional population at New Carrington. This needs to consider: ▪ Output – there is a need for an energy source of sufficient size to supply the heat demands of the site. ▪ Peak loading and redundancy – the energy solution should be able to meet user needs when the demand is at its peak and have a back-up option. ▪ Location – the energy source should be close by to minimise system losses.
Feedback from events with community group and stakeholders	To date, feedback gathered through stakeholder events has been used to inform this Options Report. The stakeholder events which took place in March and July 2024 included several community groups and local Parish Councils. It is noted that later stages of the New Carrington Masterplan and individual planning applications within the development will involve broader public engagement activities and events. Feedback focussed on noise and ecological concerns, development timescales, the use of hydrogen, stakeholder asset protection.
Promoting sustainable development	Proposed infrastructure should minimise adverse impacts and maximise economic, social and environmental benefits: ▪ Emissions – GHG and other emissions, including the risk from heat pump refrigerants. ▪ Spatial efficiency – the footprint taken up by the Energy Centre and distribution pipework should be minimised and avoid intrusion into protected areas. ▪ Noise – particularly close to residential and wildlife areas. ▪ Electrical upgrades – if more reinforcements on the electrical infrastructure are necessary for an option, there will be an associated cost increase. ▪ Interaction with adjacent schemes – this considers a potential benefit to surrounding neighbouring
Deliverability and operational efficiency	▪ Deliverability of an energy solution includes consideration for the energy source's availability, technical complexity and reliability. ▪ Efficiently producing and delivering energy is also an important factor that is dependent on the energy source and demands and composition of the site.
Alignment with local and national strategic ambitions and policy	In order to identify and assess the potential options, local and national strategic ambitions and policy will be taken into account, including: ▪ PfE Policy JP-S1: Sustainable Development. ▪ PfE Policy JP-S2: Carbon and Energy – Operational net zero from adoption, low carbon energy network priority and energy demand reduction. ▪ PfE Policy JP-S3 and UK Gov Heat Network Policy – Mandatory heat network connection in New Carrington identified zone, unless more effective alternatives can be demonstrated. Local waste industrial heat is expected to be connected.
Phase-ability and trigger points	Solution should be scalable and compatible with the development phasing approach at New Carrington. The options will be judged against the ease with which they can be phased.

4.3.2 OPTION 1 - WASTE HEAT FROM CARRINGTON POWER STATION AND SOLAR PV

Using waste heat from Carrington Power Station would likely involve abstracting the flow from the cooling system. The cooling system currently abstracts from the River Mersey and returns it at a higher temperature, so diverting some of the cooling water through Water-Source Heat Pumps (WSHP), where it is upgraded to a higher temperature, could provide heat to a heat network. The warmer the water temperature, the greater the Coefficient of Performance (CoP) of the WSHP, so the heat delivered would be efficiently generated, and more efficient than an equivalently sized Air-Source Heat Pump (ASHP). The power station has an 884 MW nameplate capacity, which is substantial and presents the opportunity to meet a considerable portion of the New Carrington site's energy demands. If the station runs at 60% efficiency, 589 MW is wasted as heat, so recovering less than 5% of that would satisfy the needs of the proposed network described in 4.2.

ESB has a stated objective of net zero emissions by 2040. By recovering wasted energy like the waste heat from their power generation operations, they would contribute to this objective.

Solar photovoltaics panels, are an economically attractive solution for generating electricity which is low carbon and low risk. Installing them on rooftops allows them to occupy no additional footprint and reduce the energy bills of the building's occupants by exporting generated electricity back to the grid when demand is low and supply is high. Solar PV panels can also achieve spatial efficiency through their installation over car parks and farmland, causing minimal disruption to the land below and allowing effective operations to continue. The available rooftop and floorspace on the New Carrington site for double use thus presents a huge opportunity for renewable energy supply.

If solar PV panels are installed on the energy centre rooftop or a contractual agreement is made to utilise the electricity generated by other panels on-site, the energy centre can be operated using locally generated renewable energy. This would reduce the carbon intensity of the heat pump operation.

Figure 4-4 - Example of a solar carport, giving the land a double use

Table 4-1 – Option 1 (Waste Heat from Carrington Power Station and solar PV) assessment

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Carrington Power Station has significant potential capacity to meet the heating and hot water demands of a site-wide network, given its very large power output. WSHPs connected to the cooling system would likely serve most of the site's annual demand with electric boiler providing peak and back-up heat supply. The power station is in a good location to deliver energy to a large demand network. If it is determined later in the design process that a more fragmented energy solution, i.e. smaller, segregated networks and heat pumps, the cost of installing equipment in the power station and transmitting it about 1km before any demand is served may become less economically viable. There is also little/no potential for cooling from an energy centre connected to the power station. Rooftop solar PV panels could generate a large amount of electricity for New Carrington. Due to the variability of sunshine, oftentimes temporally misaligned to the demands of a house, e.g. higher evening demands when the house occupancy is higher and the sun is down, it is unlikely that the photovoltaic panels will be able to meet a building's demands all of the time, but surplus electricity exported back to the grid will offset some of the generation deficit.
Feedback from events with community group and stakeholders		There was moderate concern with the timing and flexibility of this option. Concerns were raised by some stakeholders about the timescales of a heat network, wary that the delivery may delay development parcel. Further details of the phasing plans will be delivered in the delivery strategy. Heat networks are not necessarily less flexible at delivering heat and will be able to deliver the required heat just as quickly and more efficiently overall than individual heat pumps. The need for assessment of the pipe routing was highlighted in stakeholder feedback to ensure environmental constraints, for example on the land of the former Shell oil refinery, are carefully considered. The extent of rooftop solar panels use was also enquired upon by stakeholders.
Promoting sustainable development		As the heat is electrified, the emissions associated with this energy source are tied to the carbon intensity of the electricity supply. As the national grid decarbonises with time, so will the carbon intensity, unless local renewable energy is used to directly power the energy centre. There is also a risk from the Global Warming Potential (GWP) of the refrigerants used within the heat pumps, which would result in high Greenhouse Gas emissions in the event of a refrigerant leak. It is thus recommended that low GWP refrigerants are used, where possible. The location of the energy centre in the industrial area will have a low negative impact on the residents and wildlife of New Carrington and surrounding neighbourhoods. A heat network will have a positive environmental impact by using otherwise wasted heat, and it will economically benefit the users of that heat. The impact of pipework will be minimised by installing it

Criteria	Score	Comment
		under or close to travel routes, where possible. Future design stages will determine exact pipe routing. There may be disruptive work on the power station in the construction process, but in the long term, net carbon emissions for the station's generated energy will be reduced. Electrical reinforcement associated with energy solutions will also be minimised due to network's operational efficiency. There is potential for network growth into the surrounding neighbourhoods, where there are currently no schemes, so that the local community can also benefit from low-cost decarbonised heat. Solar PV panels are spatially efficient by using rooftops and other areas for double use. There is no noise associated with them and they will help to decarbonise every user's electricity consumption plus the national grid at-large.
Deliverability and operational efficiency		Heat network demand diversity reduces the required installed capacity. More work is needed to determine the availability profile of the power station and the technical complexities of installing equipment to ensure a reliable source of heat throughout the day and year. However, the potential magnitude of high grade (high temperature) available heat would induce high WSHP and heat network operational efficiency. Solar PV panels installation is well-established and growing every year in the UK. They can maintain their high efficiency for up to 25 years and relieve pressure on the grid.
Alignment with local and national strategic ambitions and policy		Despite the power station's fuel input, the energy fed into the heat network would otherwise be wasted so recovering the waste heat supports decarbonisation objectives. Heat networks are seen as a high priority in Greater Manchester's future, and buildings within the incoming Heat Network Zoning Policy's zones, which New Carrington is likely to become, will be mandated to connect to a heat network. Increased renewable energy generation is also an ambition for Greater Manchester, prioritising solar PV and encouraging its uptake through the PfE policies (JP-S2). The use of waste heat requires a heat network, and coupled with the installation of solar panels, this option is strongly aligned to national and local policies.
Phase-ability and trigger points		The upsizing of heat extraction equipment can be phased, but this will cause disruption to the power station's operations. To minimise disruption, the energy centre capacity may need to be oversized at each phase to allow for network expansion as more demand comes online. The pipework can be extended in line with phasing timetables, although the cost of pipe installation will define the trigger points in the programme where an alternative or interim solution may be necessary before some buildings are connected. Solar panels can easily be phased directly with building construction.

4.3.3 OPTION 2 - WASTE HEAT FROM OTHER INDUSTRIAL SOURCES

There are several potential sources of waste heat from industry which can be recovered for use in a heat network. Multiple wastewater treatment plants are within proximity of the New Carrington site, including Altrincham Wastewater Treatment Works, which sits within the site boundary, and the Davyhulme Sewage Works, which is one of the largest in Europe. The SAICA Paper Mill is located quite centrally on the site, and due to the energy-intensive paper drying process, it could be a large source of waste heat.

To extract waste heat from the wastewater treatment process involves intervening in the pre-treatment or final effluent flow. The flow is diverted through WSHP. For heat pump performance, pre-treatment flow is preferred due to higher flow temperature. However, sewage is a regulated asset which needs careful handling. Furthermore, additional filtration is required to protect the integrity of the heat pumps, and flow must be carefully managed to maintain stability for the treatment process. Abstracting final effluent will yield lower heat pump performance than pre-treatment flow, but it is less intrusive and therefore more feasible and likely has a lower capital cost.

The location of heat sources is important for the economics of the final solution. The further the heat source, the longer the pipe needs to be to transport that heat to the site, which can be costly. A larger pipe may also be needed and/or a pumping station to avoid excessive pressure losses which increases the expense. Davyhulme is 3.5km away from New Carrington, which could necessitate up to 10km of pipes to be buried to deliver and return water, at a cost of up to £35m. The benefits of a reliable, consistent, sizeable resource could make this a worthy expense.

The paper mill's location and potentially substantial source of heat makes this a compelling option which won't require as large a capital investment for a transmission pipe. More work is required to determine the mill's capacity and the feasibility of utilising it waste heat.

The following is a list of potential industrial waste heat sources in the area:

- SAICA Paper Mill
- Davyhulme Sewage Works
- Altrincham Wastewater Treatment Works
- Partington Wastewater Treatment Works
- Stretford Wastewater Treatment Works
- Sewer pipes throughout the site
- Air Products Carrington (Industrial gas production)
- Green Hydrogen Park (Hydrogen production)

The Heat Network Zoning policy currently under development will introduce measures to grow the number of heat networks nationwide including mandating low carbon heat sources, such as waste heat sources, to connect to a network. The sources identified above may be required to provide heat to a heat network in the future and so they should be considered in future New Carrington energy studies.

Table 4-2 - Option 2 (Waste Heat from other industrial sources) assessment

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		The industrial waste heat sources identified have the potential to serve the proposed network in 4.2, especially SAICA Paper Mill and Davyhulme Sewage Works. The capacity of the former, however, is unknown currently, but it is unlikely to be as significant as the power station. Davyhulme is one of the largest sewage works in Europe, so it is conceivable that a large amount of heat is available, but the significant distance from the site reduces its economic viability. Further investigation into all of the alternative sources could return a more favourable view of them. There is also little potential to satisfy any cooling demands within an energy network.
Feedback from events with community group and stakeholders		The feedback related to this option can mostly be read across from Option 1, giving the similarity of the technology. Additionally, the feasibility of the connecting the United Utilities wastewater treatment works was questioned given the current configuration of the plant. Further conversations and studies are required to assess the capacity of the local treatment plants for waste heat extraction.
Promoting sustainable development		As with Option 1, the emissions for this option include the carbon intensity of the heat network operation, which is predominantly tied to the carbon intensity of the electricity supply, and the GWP of the refrigerant used in the heat pumps. It is thus recommended that low GWP refrigerants are used, where possible. Low impact to the immediate area relative to other heat network options, but it may impact the industrial processes from which heat is extracted. There will be minimal additional noise as there is already machinery on-site at the plant/mill. The equipment will be located on-site or in an Energy Centre close to the plant/mill. There is potential for network growth into the surrounding neighbourhoods so that the local community can also benefit from low-cost decarbonised heat. There are currently no network schemes in the area.
Deliverability and operational efficiency		As with Option 1 (Carrington Power Station), a heat network can take advantage of network diversity to reduce installed capacity. This is dependent on available capacity and technical complexities of equipment installation at the source(s). As with the waste heat at Carrington Power Station, the energy efficiency of a heat network connected to identified sources above would be higher than ASHP or the technologies listed in 0.
Alignment with local and national strategic ambitions and policy		As with Option 1, using waste heat meets the net zero emissions ambitions of Trafford and the UK Government. The proposed heating solution is 100% electrified, so their carbon intensity would be dependent on the electricity grid. As the national grid decarbonises, the energy centre's carbon factor also reduces. Heat networks are seen as a high priority in Greater Manchester's future, and buildings within the incoming Heat Network Zoning Policy's zones, which New Carrington is likely to become, will be mandated to connect to a heat network. The use of waste heat requires a heat network, thereby aligning this technology to national and local policies.
Phase-ability and trigger points		As with connecting to the power station, the upsizing of heat extraction equipment can be phased, but this will cause disruption to the industrial process involved in the waste heat source. To minimise disruption, the energy centre capacity may need to be oversized at each phase to allow for network expansion as more demand comes online. The pipework can be extended can be extended in line with phasing timetables.

4.3.4 OPTION 3 – INDIVIDUAL HEAT PUMPS FOR EACH PROPERTY

Individual heat pumps can be installed in the home or office building to deliver energy-efficient, low carbon heat at a reasonable cost. If the building is energy-efficient, the operational costs make heat pumps an attractive alternative to the traditional gas boiler. With individual heat pumps, there is an opportunity for providing both heating and cooling for a building using a reversible unit.

Air-Source Heat Pumps (ASHP) are the most common form of heat pump used in dwellings. They are a higher-performing energy source than boilers. Gas boiler efficiencies are usually about 80% while ASHP use an electrical input to produce potentially 3 times as much heat (300% efficiency).

Ground-Source Heat Pumps can also be used in homes and larger buildings to improve heat pump performance. The ratio of electrical input to heat output is known as the Coefficient of Performance (CoP). CoP is often appreciably lower for ASHPs than WSHPs and GSHPs due to their susceptibility to outside air temperature which has high seasonal variability. However, using Ground-Source Heat Pumps requires costly boreholes to be constructed to extract the heat.

A building being served by its own heat pump unit(s) usually means that the heat pumps will be sized to the peak demand of the building meaning it will operate over a large range of energy outputs. This results in a reduction in the average CoP, increased electrical demand on the building and the entire site, potentially as much as 30% more; and increased cost.

Table 4-3 - Option 3 (Individual heat pumps) assessment

Criteria	Score	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Individualised heat pump solutions can be sized and fitted for each building's energy needs, including cooling. They will need to be slightly oversized for everyday use to satisfy the building's demand at peak times. Larger buildings will often have multiple heat pumps, so if one requires repairs there is another to provide a base load. Dwellings however would usually be fitted with a single heat pump, so they don't have a redundancy unless a buffer tank or thermal store is installed as well. This increases the space needed in the household.
Feedback from events with community group and stakeholders		Most of the stakeholders preferred the flexibility and phase-ability that individual heat pumps would bring. Some stakeholders considered smaller scale heat pump systems using either boreholes or local rivers to be more flexible than a heat network. There is delivery flexibility with installing individual heat pumps, so concerns surrounding the timescales of energy infrastructure are mitigated due to their integrated delivery with properties.
Deliverability and operational efficiency		Heat pumps can be installed simultaneously with each property, which increases deliverability. A ground-source system would necessitate a ground assessment and the installation of 50-200m deep boreholes. Liability for each heat pump will fall on the building owner, although they are very reliable. The operational efficiency will be lower than in a heat network. Each building's installed capacity would need to satisfy the building's peak demand, so the site's overall installed capacity would be substantially larger than an equivalent heat network, which can take advantage of demand diversity. This would result in more reinforcement in the electrical infrastructure.
Promoting sustainable development		As with Option 1, the emissions for this option include the carbon intensity of the heat network operation, which is predominantly tied to the carbon intensity of the electricity supply. Given the greater cumulative electrical load of the site compared to a heat network, if the individual heat pumps are operated using an electrical input from the grid, the CO2 emissions associated with the site could be slightly higher. As the national grid carbon intensity reduces, so will the use of individual heat pumps. The Global Warming Potential (GWP) of the refrigerant used in the heat pumps means there is a risk of high Greenhouse Gas emission in the event of a refrigerant leak. It is recommended that low GWP refrigerants are used, where possible. No additional pipes need laying, no space is required for an Energy Centre and a single heat pump unit takes up a small area in the home. The required space increases if buffer tanks or thermal stores are deemed necessary or if a borehole is installed for a ground-source system. Heat pumps produce a low volume hum, similar to a fridge, noise should not be a major concern. There is little benefit or negative interaction with neighbouring communities given that the solution is self-contained within each building's footprint.
Alignment with local and national strategic ambitions and policy		This option is compliant with the local and national policies for decarbonisation as heat pumps operation produce no direct CO2e emissions, and the emissions associated with the electrical input will reduce as the national grid decarbonises. Heat networks are a recognised priority in local and national policies, but individual heat pumps may be required in some buildings where it is proved more a cost-effective means of low carbon energy compared to a heat network.
Phase-ability and trigger points		This option is easily phase-able because only the capacity for built properties is required. Electrical infrastructure would be phased with building development. More electrical infrastructure may be required relative to a heat network.

4.4 OTHER TECHNOLOGIES OPTIONS

4.4.1 GROUND SOURCE

Ground source energy comes in multiple forms. The four most prominent methods include: open-loop, vertical closed-loop, horizontal closed-loop and deep geothermal.

In open-loop systems water is abstracted from an aquifer through boreholes, pumped through a Water-Source Heat Pump (WSHP) and the cooled water is then re-injected into the aquifer. They have significant heat capacity; however, they require a large amount of ground space for boreholes.

A vertical closed-loop system requires vertical boreholes extending 50-100m into the ground carrying thermal transfer fluid through pipework to collect underground heat. The sandstone rock foundation under the New Carrington site would allow for relatively generous heat transfer, but to extract the necessary heat to meet site demands, a very large number of boreholes would be required, occupying an excessive area of land and demanding a large cost.

A horizontal collector system involves burying pipes in a loop in shallow ground to pick up heat. They also require a prohibitively large area of land to collect enough heat to supply the demands of the site, which is difficult in densely built areas, such as a residential plot, due to the space required for other buried assets. Additionally, the disturbance of peat, which takes up a portion of the site's superficial land cover, is undesirable.

There are risks associated with the ground requiring "recharging" with heat following periods of peak use, though these may be mitigated in a development. For example, heat rejected from the cooling system in summer can be used for seasonal balancing, returning heat back to the ground. In New Carrington, however, there will be significant heating requirements but limited cooling potential as the majority of the buildings are residential. For open-loop system, the aquifer needs sufficient inflow from the surrounding area to replenish itself enough to compensate for the heat being taken out.

The Environment Agency has designated the area as having a "Good" aquifer for abstraction and as being "Favourable" for a GSHP system. There is currently a license to abstract 960m^3/day in the area. It is estimated that about 40 boreholes would be required to abstract the 34.5 Ml/day needed to meet the demands of the New Carrington site with an open-loop system. It may be possible and preferential to utilise open-loop ground-source systems to supplement a site-wide network or serve smaller networks.

Deep geothermal energy is obtained via the extraction of heat stored more than 500m below the Earth's surface. At this depth the temperatures are much higher than at shallower depths, allowing heat to be directly distributed to users on the surface. There are few deep geothermal projects in the UK owing to the specific geological requirements to use this energy source, although studies have shown there is potential in some areas of the country. Due to the high drilling costs of deep geothermal energy and the infancy of the industry in the UK, it is not currently being recommended as part of the energy strategy.

4.4.2 RIVER/CANAL SOURCE

Utilising a water course for heating involves the use of WSHPs. These can be a highly efficient solution but relatively expensive to install.

The two significant water courses in the area are the Red Brook and the River Mersey. Recorded data shows the Sinderland Brook, slightly upstream of the Red Brook, has a 14.7Ml/day Q95 flowrate (95% of all recorded flow is above this flow rate) and the River Mersey, on the north of the site, has a Q95 flowrate of at least 330Ml/day.

Flow required from a water course is around 34.5 Ml/day, so it is not possible to rely solely on the Red Brook, and an offtake from the River Mersey may be insufficient due to restrictions in place which may only allow a licence holder to abstract during periods of medium to high flow. Additionally flooding around these two rivers may make an energy centre near them unfeasible.

4.4.3 ELECTRIC BOILERS

Electric boilers use electricity to heat water within the boiler directly. They are a highly versatile heating technology that are capable of significant modularity, allowing for instantaneous supply of heat across the full load demand profile of the network.

Electric boilers are highly resilient – they are relatively simple to run and maintain and can be connected to multiple electrical supply circuits to ensure redundancy in the event of failures in the energy supply system. As a result, electric boilers are increasingly being used as the preferred solution to provide peak and backup heat provision within energy centres.

As with other electric solutions electric boilers produce no emissions at point of use meaning they do not have an impact on air quality in the locality and their CO2e emissions will reduce in line with the decarbonisation of the national electrical grid.

Compared to heat pumps, they are inefficient. While heat pumps convert 1kWh of electricity to 1.5-3kWh of heat, electric boilers are limited to a 1:1 energy conversion. This makes them less attractive for an individualised energy solution, but their resiliency and flexibility make them a good option for complementing a wider heating solution as a source of top-up heat in New Carrington's energy centre.

4.4.4 SOLAR THERMAL HEATING

Solar thermal generation involves capturing solar radiant heat to preheat or heat domestic hot water. Correctly located and orientated, solar thermal systems can meet a proportion of the networks low temperature hot water dependent on the expected demand profile and available space for locating collectors.

A solar thermal system can work well alongside several different heating solutions including electric boilers or heat pumps. Thermal storage systems would be required for each building to meet heating and hot water requirements, and they are restricted by the roof space available. Although this technology would be most effective during the summer months it is still capable of providing a level of heating load during the peak winter period and has potential for improving the overall efficiency of the wider heating solution.

Further study during design development is recommended to thoroughly assess the benefits and feasibility of a solar thermal system to make an informed decision.

4.4.5 GAS BOILER

Traditionally gas boiler would be the most common option for heating new buildings. They are no longer compatible with the strategic direction of the UK Government and Trafford Council. As part of Greater Manchester's Places for Everyone strategy, Trafford intends to reach carbon neutrality by 2038 and for new developments to be net zero carbon from adoption ("Policy JP-S2: Carbon and

Energy"). This includes an expectation that renewable energy and low carbon energy will be prioritised above other energy sources.

4.4.6 CHP

Combined Heat and Power (CHP) units simultaneously generate electricity and heat from a fuel input. Most commonly the fuel used is natural gas, but biogas and hydrogen can be used also, as well as other fuels. They can be scaled from a few kW to more than 100MW in capacity.

CHP units are very efficient as they minimise losses and recover otherwise wasted heat, which can be delivered to buildings via a heat network. As a result, they can have a lower carbon intensity than gas boilers.

They have a high upfront cost, and their technical complexity increases the maintenance/repair costs. However, primarily the use of carbon emitting fuel, as with gas boilers, makes a CHP unsuitable for a new development in Trafford. Further work could be completed to assess the viability of sourcing biogas from municipal waste sites, such as the Davyhulme and Altrincham wastewater treatment works.

4.4.7 HYDROGEN

Hydrogen can be produced as a means of carrying energy. It is then converted into another form at a later date for multiple purposes. If produced using renewable energy, hydrogen can be considered "green", i.e. zero carbon. If fossil fuel is used in its generation and the carbon emissions are offset, the hydrogen is "blue", and it is considered low carbon.

There are multiple methods of using hydrogen to provide low carbon heat for buildings. It can replace natural gas for use in hydrogen-ready boilers or CHP engines, or it can be used in a fuel cell to output heat and electricity. Using these technologies for heating is not an established option.

There are projects in proximity of New Carrington which involve the production and distribution of hydrogen, but these are not currently strategically aligned with the New Carrington development. The HyNet North West Hydrogen Pipeline Project proposes to deliver blended hydrogen to industry. It proposes to run through the New Carrington site to connect to an Above Ground Installation in Partington. Carlton Power's "Trafford Green Hydrogen" project intends to produce up to 200MW of green hydrogen using electrolysers. Neither of these projects have the strategic ambition to deliver pure green hydrogen to residential customers or businesses for its use as a heating source. Unless their strategic objectives change, hydrogen would need to be delivered by road in order to use it in New Carrington. Hydrogen is therefore not considered a viable energy source for the development at this time.

4.5 SUMMARY OF INFRASTRUCTURE REQUIREMENTS

The following section summarises the utilities and energy infrastructure related requirements taken from the analysis within this chapter, which are further summarised at Section 6 and Appendix E.

The preferred option for an energy solution on the New Carrington site is a district heating network using waste heat from the Carrington Power Station. This would provide low carbon heat to a mixture of buildings across the site with potential savings in electrical infrastructure upgrades; and unless found to be unfeasible or financially unviable upon assessment, a heat network connection or future connection compatibility is obligated by Places for Everyone policy JP-S3. Temporary energy centres are likely required before a main network can be completed and operational.

This should be accompanied by maximising available rooftop and other double-use space occupied by solar Photovoltaic panels to meet the site's electrical needs. As per best practice target associated with JP-S2, it is proposed that developers installed solar PV panels across 40% of residential ground floorspace.

- Energy (Permanent)
  - Energy Centre (EC) building
  - 14MW heat pumps, 11MW electric boilers, 200m3 thermal storage
  - Ancillary equipment
  - Distribution pipe network
  - Pumping station
- Energy (Temporary)
  - Three temporary ECs may be required for first three-five years until Primary EC is operational, located in Partington East, Sale West, Carrington Village
  - The Partington East temporary centre can be converted into a pumping station for the main network
- Electricity
  - 132kV grid supply point and connection to primary substation (assumed length 2km)
  - 1 x primary substation
  - 11kV infrastructure from primary to distribution substations (total length 8,000m)
  - 19 x distribution substations
  - GSP and primary substation costs advised by ENWL
- Potable Water
  - Potable water supply from existing trunk mains within the allocation boundary as advised by UU
  - 180 / 250 / 315mm dia. distribution mains (total length 6,000m)
  - Allowance made for connections, valves, etc

5

FLOOD RISK AND DRAINAGE

5 FLOOD RISK AND DRAINAGE

5.1 INTRODUCTION

5.1.1 SCOPE

The flood risk and drainage strategy for the site aims to locate the residential and commercial developments in appropriate areas of the site with respect to flood risk, in addition to serving the development with sustainable and commercially viable foul and surface water drainage systems which meet national and local planning policy requirements as well as the needs of relevant stakeholders including Trafford Lead Local Flood Authority (LLFA), United Utilities (UU) and the Environment Agency (EA).

Where infrastructure options are available, these have been assessed using the specified criteria. However, in some instances, options are not currently available and hence the preferred strategy only has been outlined. Further detail is provided below.

5.1.2 SOURCES OF INFORMATION AND ASSUMPTIONS

- **Baseline Report** – as set out in the Introduction chapter, prior to this Options Report, a Baseline Report was first prepared, dated August 2024.
- **Stakeholder feedback** – a series of stakeholder events took place in March and July 2024, the feedback received has been considered as part of this Options Report. In addition, a meeting was held with UU in July 2024.
- **Phasing** – reflecting the scale and complexity of development at New Carrington, this Options Report is based on assumptions relating to the phasing of new homes, which is subject to change.
- **Policy** –The following policy and strategy documents have been used to inform the New Carrington flood risk and drainage strategy:
  - New Carrington GMSF Masterplan (Sept 2020)
  - Places For Everyone Joint Development Plan (Policies JP-S1, JP-S4)
  - National Planning Policy Framework

5.1.3 ASSESSMENT CRITERIA

Where infrastructure options are available, these have been assessed using criteria defined in Table 5-1.

Table 5-1 – Options assessment criteria for flood risk and drainage infrastructure

Assessment Criteria	Commentary on Assessment Criteria in relation to flood risk and drainage infrastructure
Sufficient infrastructure capacity to meet the needs of a growing population	Flood risk and drainage infrastructure should be planned to consider the needs of the development for its lifetime, including the potential for urban creep
Feedback from events with community group and stakeholders	Stakeholder engagement sessions have taken place during 2024 and included several community groups and local Parish Councils.
	It is noted that later stages of the New Carrington Masterplan and individual planning applications within the development will involve broader public engagement activities and events.
Promoting sustainable development	A key aspect of flood risk and drainage infrastructure is to mitigate the impact of development through consideration of future climate change, water quality within local rivers, and multi-functional SuDS to encourage amenity and biodiversity.
Deliverability and operational efficiency	Infrastructure should be cost effective to build and maintain, whilst maximising developable area. Infrastructure should also avoid the requirement for maintenance by private management companies wherever possible.
Alignment with local and national strategic ambitions and policy	In order to identify and assess the potential options, local and national strategic ambitions and policy will be taken into account, including: ▪ PfE, Policy JP-S1: Sustainable Development ▪ PfE, Policy JP-S4: Flood Risk and the Water Environment ▪ NPPF Guidance Document “Flood Risk and Coastal Change”
Phase-ability and trigger points	Infrastructure should have the ability to be extended to suit a phased delivery and be flexible enough to allow the sequencing of phases to be varied.

5.2 FLOOD RISK

The approach to managing flood risk to the development will be carried out in accordance with the National Planning Policy Framework (NPPF). The principles of the NPPF are to guide development towards areas of least flood risk, i.e. Flood Zone 1. This has been achieved within the PfE policy masterplan, albeit an assessment of future climate change is required. Hence, there are no flood risk mitigation infrastructure options to be assessed.

In due course, a site-specific Flood Risk Assessment (FRA) will need to be prepared to assess potential flood risk from all sources, and identify design measures to ensure the development is sustainable for its lifetime.

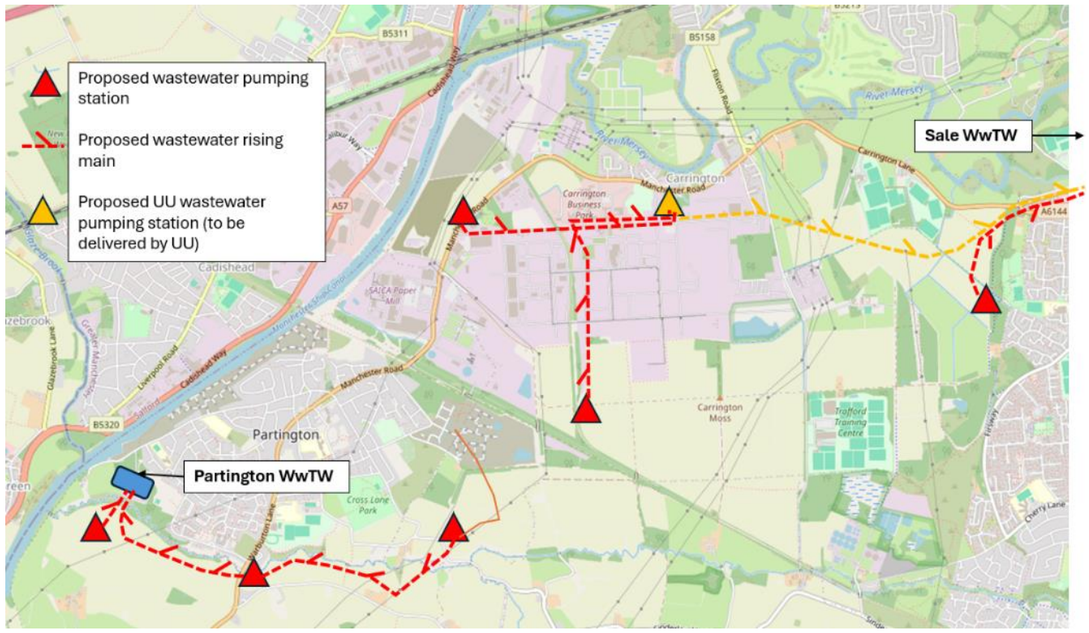
5.3 FOUL WATER DRAINAGE

The foul water drainage strategy will be developed in conjunction with UU. The strategy will consider a number of factors including:

- UU preference on point of connection to public sewerage network. This is based on capacity within the network and the potential for future upgrades at Wastewater Treatment Works (WwTW’s) and pumping stations.
- Ensuring all development plots have access to a point of connection to avoid “land locking”.
- Minimising the number of pumping stations required. This will need consider development phasing, drainage catchments and the potential for multiple parcels to be served by common wastewater infrastructure.
- Groundwater levels and the potential for ground contamination to enter into the UU network.

These issues will be addressed through detailed assessment and further engagement with UU. Hence there are no current options for the foul water drainage strategy able to be assessed at this stage. Based on the information available at the current time, an outline strategy for the foul water drainage infrastructure is shown below, subject to further assessment as describe above.

Figure 5-1 - Strategic Foul Water Drainage Infrastructure

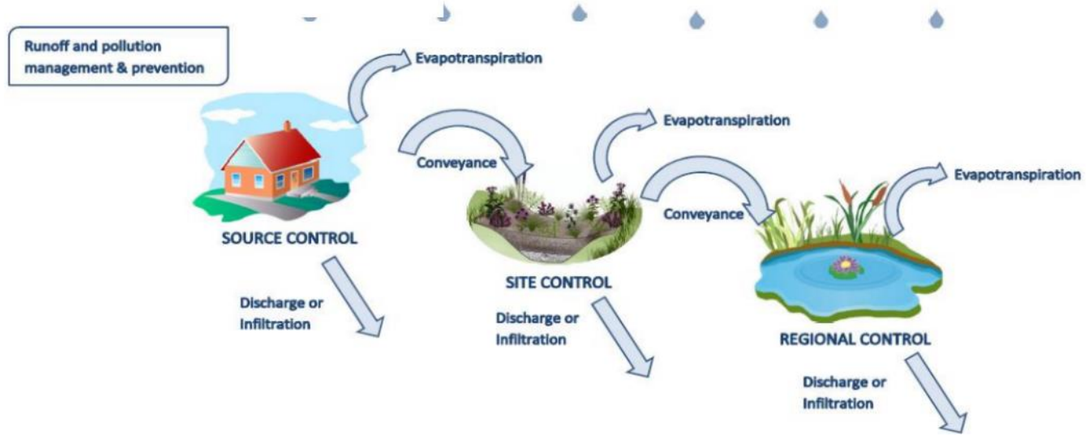


UU have advised that development north of the former railway shall discharge wastewater flows to Sale WwTW, via a proposed UU pumping station to be located near Carrington Village.
Sale West will also discharge to Sale WwTW, though this may be via existing wastewater networks in Sale, rather than directly to the WwTW.
UU are yet to indicate a preferred strategy for the Warburton Lane and Partington East areas of the development. For current purposes, it is assumed these areas will discharge wastewater flows towards the Partington WwTW.

5.4 SURFACE WATER DRAINAGE

Surface water runoff is to be managed according to the principles of Sustainable Drainage Systems (SuDS) using the SuDS “management train”, as depicted in Figure 5-2. Surface water runoff from the site shall be limited to existing greenfield runoff rates to mitigate against increase in flood risk downstream.

Figure 5-2 - SuDS Management Train



In accordance with PfE Policy JP-S4, surface water runoff is to be managed as close to source as possible, hence for residential parcels source control features, such as permeable paving, rain gardens and swales, are to be a significant feature of individual development parcels with SuDS woven into the streetscape, public realm and public open space provision.

However, source control features may only contribute a relatively modest proportion of the overall attenuation storage requirement for the masterplan. Further, more detailed masterplanning will be required to understand the potential for this, however for current purposes it is assumed that source control features will contribute 20% of the overall requirement.

The majority of the attenuation storage requirement for the site is likely to be met through site control or regional control features, e.g. basins, ponds, wetlands. The balance of site control or regional control features is dependent on more detailed masterplanning and an assessment of development phasing.

A preliminary estimate of the potential attenuation storage volumes required is provided in Table 5-2 and is split by development parcel. The location of each parcel mentioned in Table 5-2 is referenced in Figure 5-3. It is possible that the site / regional control attenuation volumes for some parcels may be combined should this suit the masterplan and phasing requirements.

The viability of each outfall will need to be assessed and proven in due course to ensure that the runoff can be managed in accordance with existing catchments and greenfield runoff rates.

The site is known to contain peat reserves and also has areas of ground contamination associated with the site’s historic use. This presents both constraints and opportunities for SuDS within the development that will need to be carefully considered through the design process.

Figure 5-3 - New Carrington Site Parcels

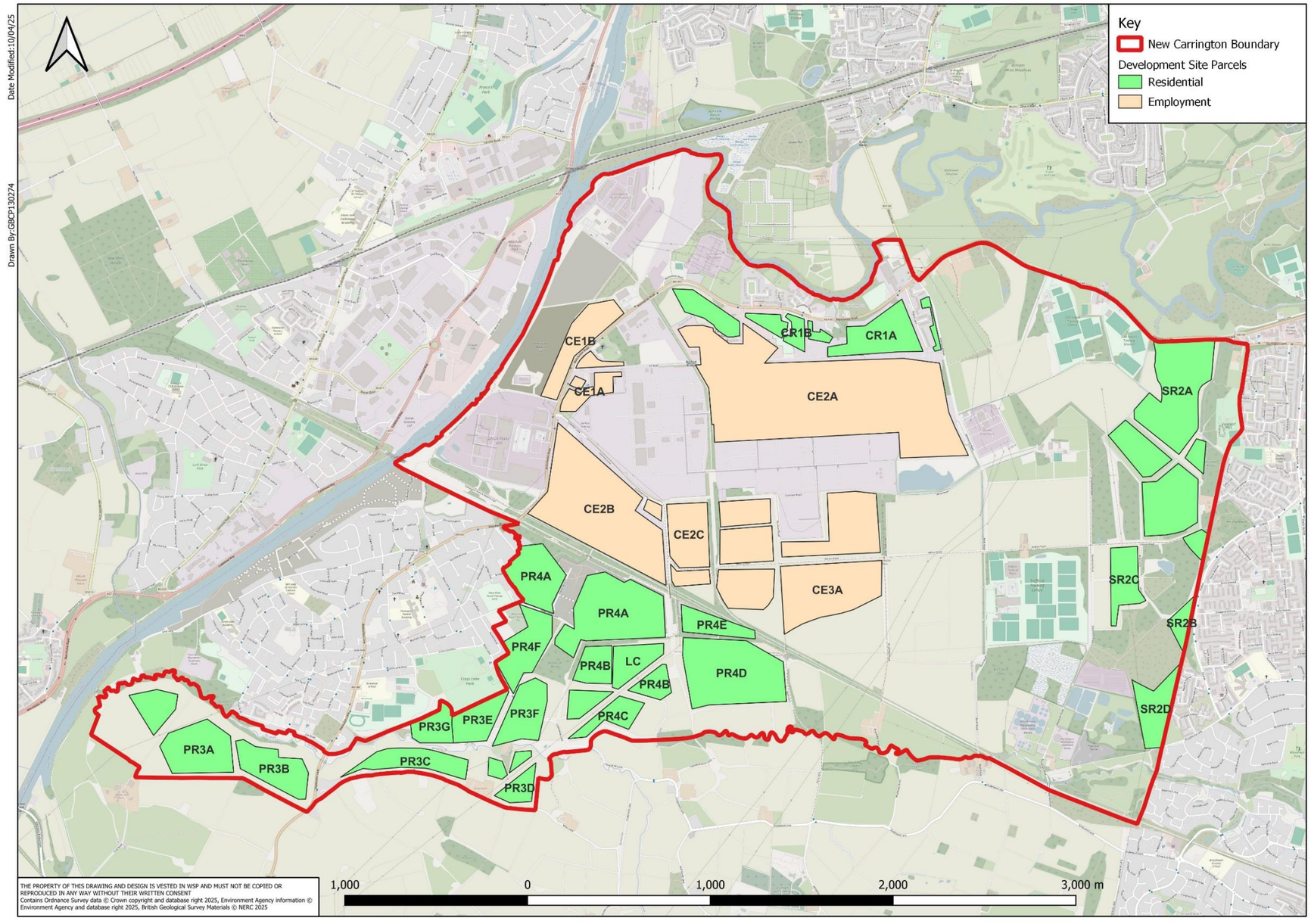


Table 5-2 – Preliminary Surface Water Attenuation Storage Volumes

Parcel	Gross developable area (Ha)	Greenfield runoff rate @ 1.6 l/s/ha (l/s)	Impermeable area (Ha)	Inc. Urban Creep (+10%) (Ha)	Overall attenuation volume (m3)	Source Control Volume (20%) (m3)	Site Control / Regional Control Volume (80%) (m3)
CR1A	9.1	14.56	5.46	6.006	5199	1039.8	4159.2
CR1B	9.9	15.84	5.94	6.534	5569	1113.8	4455.2
SR2A	26.9	43.04	16.14	17.754	15131	3026.2	12104.8
SR2B	1.9	3.04	1.14	1.254	1069	213.8	855.2
SR2C	6	9.6	3.6	3.96	3375	675	2700
SR2D	5.6	8.96	3.36	3.696	3150	630	2520
PR3C	5.8	9.28	3.48	3.828	3262	652.4	2609.6
PR3D	4.6	7.36	2.76	3.036	2687	537.4	2149.6
PR3E	5.2	8.32	3.12	3.432	2925	585	2340
PR3G	3.3	5.28	1.98	2.178	1856	371.2	1484.8
PR4A	23.7	37.92	14.22	15.642	13332	2666.4	10665.6
PR4B	8	12.8	4.8	5.28	4500	900	3600
PR4F	7	11.2	4.2	4.62	3937	787.4	3149.6
Local Centre	5.1	8.16	4.59	4.59	4072	814.4	3257.6
PR3A	13.7	21.92	8.22	9.042	7706	1541.2	6164.8
PR3B	7.6	12.16	4.56	5.016	4275	855	3420
PR3F	6.9	11.04	4.14	4.554	3881	776.2	3104.8
PR4D	14	22.4	8.4	9.24	7875	1575	6300
PR4C	6.3	10.08	3.78	4.158	3544	708.8	2835.2
PR4E	5.2	8.32	3.12	3.432	2925	585	2340
CE1A	5.2	8.32	4.68	4.68	4152	830.4	3321.6
CE1B	7.4	11.84	6.66	6.66	5909	1181.8	4727.2
CE2A	53.9	86.24	48.51	48.51	43033	8606.6	34426.4
CE2B	29.3	46.88	26.37	26.37	23396	4679.2	18716.8
CE2C	11.1	17.76	9.99	9.99	8863	1772.6	7090.4
CE3A	45.9	73.44	41.31	41.31	36648	7329.6	29318.4
Total	**332.6**	**532.16**	**248.13**	**258.372**	**225715**	**45143**	**180572**

5.5 OPTIONS ASSESSMENT

The following options have been identified for the delivery of SuDS infrastructure:

- Option 1 – Site Control features on a parcel-by-parcel basis;
- Option 2 – Site / Regional Control features on a communal infrastructure basis.

The potential for the above options to be delivered will depend on further masterplanning and site surveys to establish:

- Outfall locations
- Site topography
- Physical constraints
- Parcel boundaries

Therefore, this options assessment can only be provisional until the above is established and a drainage strategy for the site can be developed. It should be noted that the approach may vary across the site depending on constraints and hence a blended approach of Options 1 and 2 may be likely.

5.5.1 OPTION 1

In this option, Site Control features such as basins and ponds will be provided within each development parcel. This is inefficient in terms of the excavation and land take required across the masterplan, however there are potential advantages in delivery and phasing if each parcel has access to a suitable discharge location.

Table 5-3 – Assessment of Site Control SuDS features delivered parcel-by-parcel

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Consideration has been given to the full development requirements including potential for urban creep.
Feedback from events with community group and stakeholders		UU have expressed their desire to avoid a piecemeal approach to the drainage strategy which is a risk of this approach, leading to potential compromised drainage solutions.
Promoting sustainable development		Multi-functional SuDS encompassing biodiversity and amenity benefits are encouraged. The results of this may be variable with many different parties involved in SuDS delivery.
Deliverability and operational efficiency		Access to a suitable outfall location may be problematic for some parcels and hence there is potential reliance on joining of parcels or 3rd party agreements to deliver this strategy.
Alignment with local and national strategic ambitions and policy		PfE Policy JP-S4 required SuDS to be delivered in a holistic and integrated manner. There is a risk that this approach my not achieve this requirement if each parcel is left to develop its own solution. PfE Policy JP-S4 also requires appropriate maintenance of SuDS systems. The more separate SuDS systems provided is likely to result in some relying on maintenance by private management companies which risks adequate maintenance over the lifetime of the development.
Phase-ability and trigger points		Each parcel will provide its own SuDS requirements and hence phasing can be flexible with this approach.

5.5.2 OPTION 2

In this option, Site and Regional Control features such as wetlands, basins and ponds will be provided in communal infrastructure areas outside parcel boundaries. This has potential issues associated with phasing and may require funding of up-front infrastructure prior to parcel development. However, it is possibly more efficient in terms of land take across the whole masterplan, and also has benefits in terms of assurance of long-term maintenance.

Table 5-4 – Assessment of Site Control / Regional Control communal infrastructure

Criteria	Rating	Comment
Sufficient infrastructure capacity to meet the needs of a growing population		Consideration has been given to the full development requirements including potential for urban creep.
Feedback from events with community group and stakeholders		This option will simplify the drainage strategy for the site, and avoids a piecemeal approach as requested by UU.
Promoting sustainable development		Reducing the number of parties involved in SuDS delivery will help to ensure the wider aspects of biodiversity and amenity are met to ensure SuDS are truly multi-functional.
Deliverability and operational efficiency		Efficiency of land take and excavation for SuDS features is improved using larger, regional features. A reduced number of discharge locations improves the deliverability of the infrastructure and reduces the likelihood of 3rd party ransoms.
Alignment with local and national strategic ambitions and policy		This approach promotes a holistic and integrated approach to SuDS delivery, as required by PfE Policy JP-S4. Suitability for adoption of SuDS systems by relevant authorities can be designed in, ensuring appropriate maintenance as required by PfE Policy JP-S4.
Phase-ability and trigger points		Phasing may be problematic with this option. SuDS infrastructure will need to be in place prior to development of parcels, requiring upfront investment. In addition there may be technical challenges on increasing SuDS provision whilst maintain the existing SuDS function.

5.6 SUMMARY OF INFRASTRUCTURE REQUIREMENTS

The following section summarises the flood and drainage infrastructure related requirements taken from the analysis within this chapter, which are further summarised at Section 6 and Appendix E.

The drainage infrastructure requirements are subject to further survey, design and assessment, including co-ordination with the individual plot layouts. Hence assumptions on the infrastructure requirements for costing purposes have been made as follows:

- Surface Water Drainage
  - Attenuation storage is assumed to be provided to greenfield runoff rates within basins on each development plot (site control) accounting for 80% of total storage requirement. Total vol 161,292m3.
  - It is assumed that source control features (20% of total storage requirement) will be provided on-plot and will be accounted for within the building, road or public realm.
  - An allowance has been made for connection of SuDS to a local watercourse including headwalls, pipework, flow controls.
- Foul Water Drainage
  - A total of 6 no. adoptable foul water pumping stations has been assumed as required to serve the development
  - Pumping stations include emergency storage tanks
  - Arising mains from the pumping stations to suitable outfall locations has been considered, subject to agreement with United Utilities.

6

SUMMARY AND CONCLUSIONS

6 SUMMARY AND CONCLUSIONS

The infrastructure solutions drawn from each chapter of this report have been collated and cost analysis has been undertaken by WSP and Amey (in relation to the roads, active travel links and off site highway works).

The overall infrastructure solutions are summarised below, and in Appendix E.

Transport

- On Site Highway Improvements
  - Sale West Link Road
  - Southern Link Road (inc structures)
  - Eastern Link Road (inc structures)
- Active Travel Improvements
  - Existing footpath improvements
  - Existing rides improvements
  - New active travel links (inc structures)
- Off Site Highway Improvements
- Public Transport Improvements (bus service operational costs)

Social Infrastructure

- Education
  - Consideration of impact upon all types of education: Early years, primary, secondary, sixth form and SEN provision
  - To accommodate additional demand:
  - Feasibility studies are ongoing to determine if relevant existing schools could be expanded to accommodate additional demand.
  - Based on DfE guidance and best practice, the exercise will identify the cost for both expansion of existing school and the cost to deliver new school infrastructure, including:
    - Primary schools: For earlier phases, demand will likely be accommodated by utilising spare capacity in existing schools and expanding capacity of existing schools that meet the necessary criteria.. As further development comes forward, existing schools will likely need to be expanded, and this programme of work will be informed by the feasibility studies currently being undertaken by the Trafford Education Team. In the longer term there is the potential need for a new primary school, and while the location of this is yet to be determined, the site at Moss View in Partington may provide a suitable location.
    - Secondary schools: For earlier phases, demand will likely be accommodated by utilising spare capacity in existing schools. As further development comes forward, extensions to existing schools may be required in line with phasing and timing of development at New Carrington – such as Broadoak School in Partington. In the later phases of the site build out there is a potential requirement for a new Secondary School, the need for this is generated by the New Carrington allocation, the Davenport Green Allocation and wider growth within Trafford. Consideration will therefore need to be given to the most appropriate location for the new school. The need for a new secondary school will be kept under review by the Trafford Education Team.
- Healthcare
  - Immediate interim measures will include reconfiguration and / or expansion of existing surgeries
  - A new healthcare facility on-site at New Carrington, as a longer-term opportunity for new health centre, likely in Phase 3.

Energy and Utilities

The preferred option for an energy solution on the New Carrington site is a district heating network using waste heat from the Carrington Power Station. This would provide low carbon heat to a mixture of buildings across the site with potential savings in electrical infrastructure upgrades; and unless found to be unfeasible or financially unviable upon assessment, a heat network connection or future connection compatibility is obligated by Places for Everyone policy JP-S3. Temporary energy centres are likely required before a main network can be completed and operational.

This should be accompanied by maximising available rooftop and other double-use space occupied by solar Photovoltaic panels to meet the site's electrical needs. As per best practice target associated with JP-S2, it is proposed that developers installed solar PV panels across 40% of residential ground floorspace.

- Energy (Permanent)
  - Energy Centre (EC) building
  - 14MW heat pumps, 11MW electric boilers, 200m3 thermal storage
  - Ancillary equipment
  - Distribution pipe network
  - Pumping station
- Energy (Temporary)
  - Three temporary ECs may be required for first three-five years until Primary EC is operational, located in Partington East, Sale West, Carrington Village
  - The Partington East temporary centre can be converted into a pumping station for the main network

Flood and Drainage

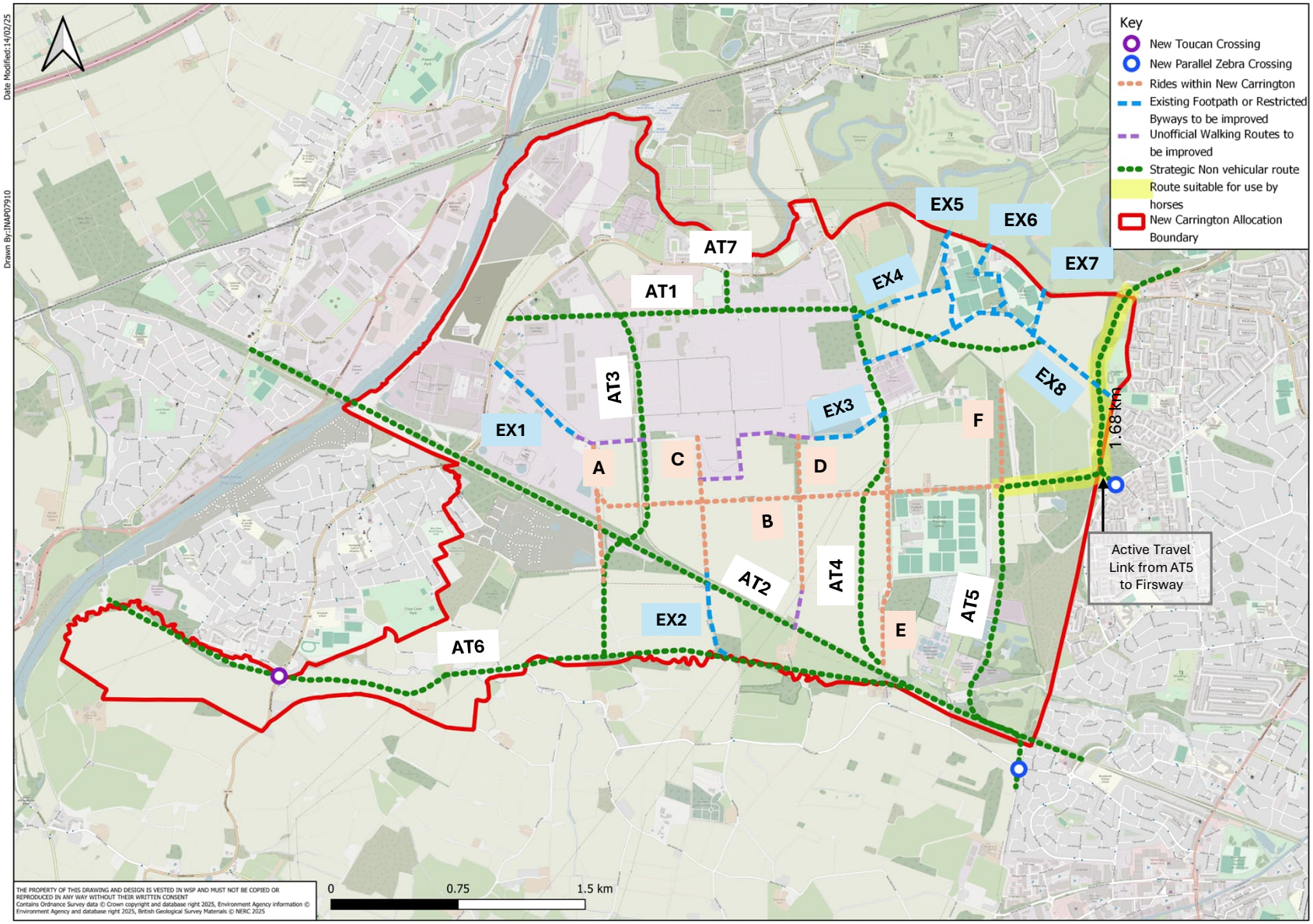
The drainage infrastructure requirements are subject to further survey, design and assessment, including co-ordination with the individual plot layouts. Hence assumptions on the infrastructure requirements for costing purposes have been made as follows:

- Surface Water Drainage
  - Attenuation storage is assumed to be provided to greenfield runoff rates within basins on each development plot (site control) accounting for 80% of total storage requirement. Total vol 161,292m3.
  - It is assumed that source control features (20% of total storage requirement) will be provided on-plot and will be accounted for within the building, road or public realm.
  - An allowance has been made for connection of SuDS to a local watercourse including headwalls, pipework, flow controls.
- Foul Water Drainage

- A total of 6 no. adoptable foul water pumping stations has been assumed as required to serve the development
- Pumping stations include emergency storage tanks
- Arising mains from the pumping stations to suitable outfall locations has been considered, subject to agreement with United Utilities.

Appendix A

ROUTES AND CROSS SECTIONS: ACTIVE TRAVEL


Date Modified:14/02/25
Drawn By:INAP07910
Key
New Toucan Crossing
New Parallel Zebra Crossing
Rides within New Carrington
Existing Footpath or Restricted Byways to be improved
Unofficial Walking Routes to be improved
Strategic Non vehicular route
Route suitable for use by horses
New Carrington Allocation Boundary
AT1
AT2
AT3
AT4
AT5
AT6
AT7
EX1
EX2
EX3
EX4
EX5
EX6
EX7
EX8
A
B
C
D
E
F
1.68 km
Active Travel Link from AT5 to Firsway
0
0.75
1.5 km
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Details of Active Travel Links to be costed – To be read in conjunction with pdf "Plan showing Active Travel Links_v4"

Rides with New Carrington	**Length**
A	0.8 km
B	2.4 km
C (excluding overlap with Eastern Link)	0.38 km
D (including extension to connect to AT2)	1.1 km
E	N/A
F (omitting overlap with AT5)	0.5 km

Existing Footway or Restricted Byway	**Length**
EX1 (includes length of unofficial walking route connecting to AT3)	1.01 km
EX2	0.55 km
EX3 (excluding length of overlap with Eastern Link but including length of unofficial walking route at west end of path – potential for some overlap with Eastern Link in this section too but can't rely on this as final route is subject to further work)	0.82 km
EX4 (not required: improved as part of CRR scheme)	N/A
EX5 (excluding 250m section improved as part of CRR scheme)	0.37 km
EX6	0.58 km
EX7	0.27 km
EX8	1.6 km

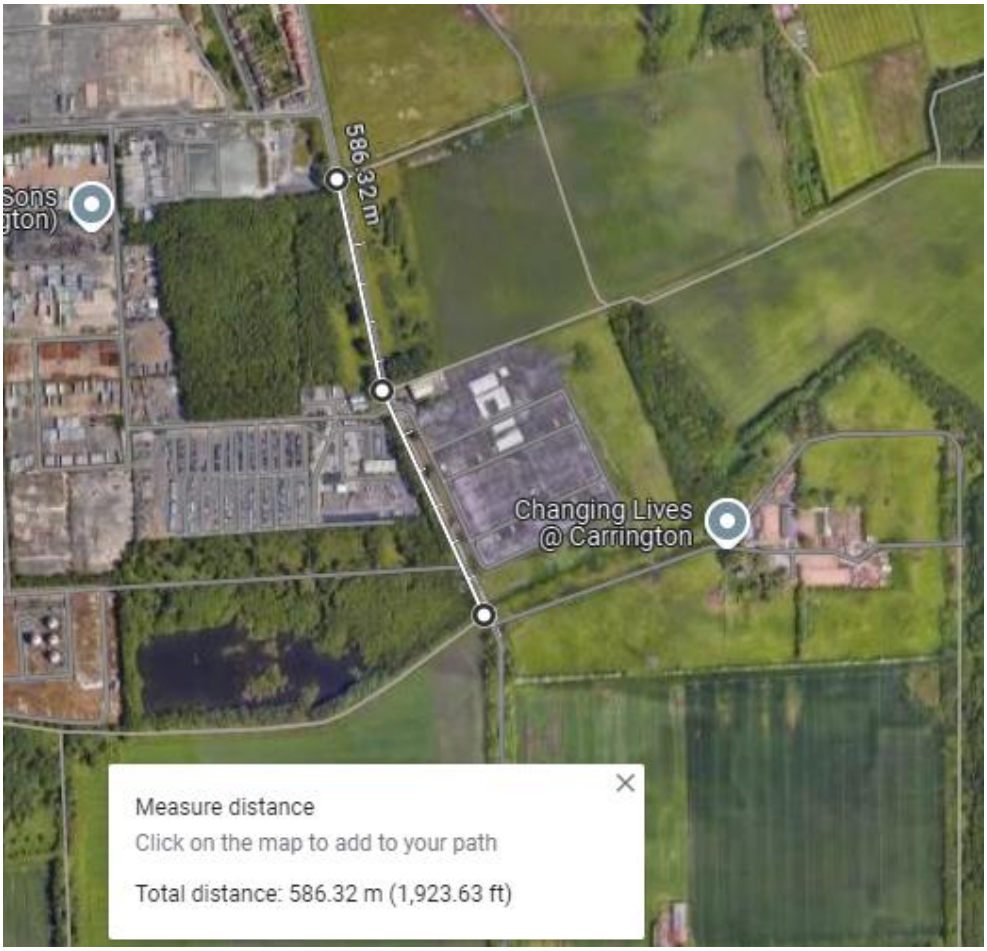
Strategic Active Travel links (and existing conditions)	**Length**
AT1 – fully provided as part of CRR scheme	N/A
AT2 – wooded areas, vegetation clearance, moderate earthworks to make good.	5.6 Km
AT3 – wooded areas, vegetation clearance, moderate earthworks to make good.	2.5 Km
AT4 – From Birch Road: Vegetation clearance, through green fields	1.05 km
AT5 – (shared way construction) Through Trafford millennium woodland, Vegetation clearance. Includes link to Firsway.	2.37 km
AT5 – (bridleway construction) Through Trafford millennium woodland, Vegetation clearance	1.68 km
AT6 – (excluding section that overlaps with Southern Link) Alongside Red Brook, wooded areas, vegetation clearance, earthworks required	4.15 Km
AT7 – already has hardstanding and lighting, so no significant additional cost.	N/A

Notes

1. With the exception of AT2 and AT5, Strategic Active Travel Links are to be provided in line with the details shown on drawing 0204-WSP-CV-SK04:
   Active Travel Pavement Typical Section; and
   Full Depth Shared Way Construction.
2. AT2 is to be costed in line with point 1 above, but for a width of 4m rather than the 3m width shown on the typical section. Western end of AT2 requires a link down from the viaduct to Liverpool Road.
3. AT5 is to be costed in line with point 1 above for 2.37km. The remaining 1.68km section that will be used by horses to be costed in line with the details shown on drawing 0204-WSP-CV-SK04:
   Active Travel Pavement Typical Section; and
   Full Depth Bridleway Construction.
4. Rides Within New Carrington and Existing Footpath or Restricted Byways to be Improved are to be costed in line with the details shown on drawing 0204-WSP-CV-SK04:
   Active Travel Pavement Typical Section (without lighting); and
   Full Depth Bridleway Construction.
5. Provision of streetlighting on Isherwood Road/Birch Road is to be costed for – from Flixton Lights to tie-in point of AT4;

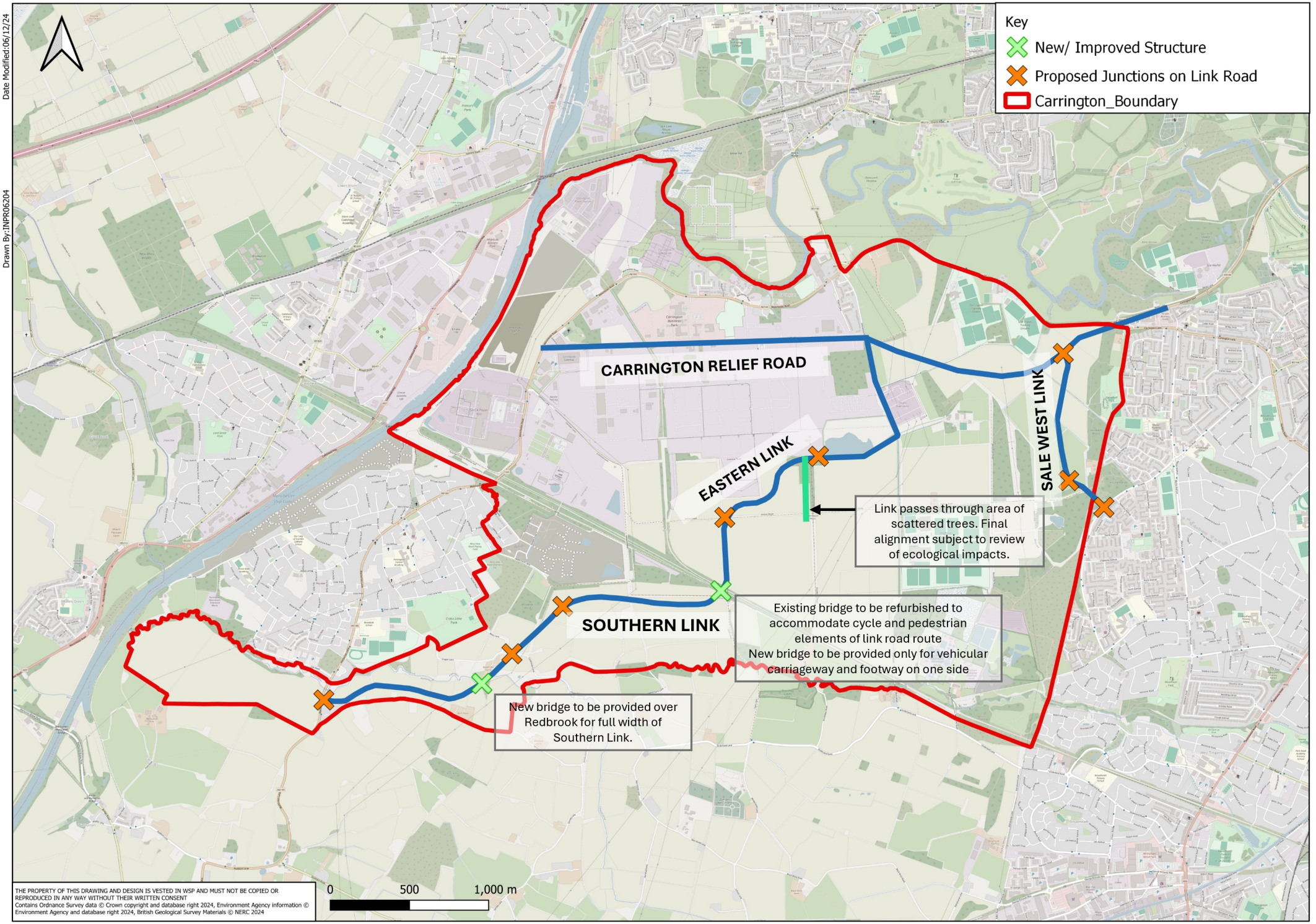
6. Length of AT4 listed above is only from Carrington Greenway (AT2) to tie-in to Birch Road – sufficient level of provision is already in place beyond there (with exception of lighting as per point 4 above);
7. Improvements to Ride E are not required due to existing provision;
8. Ride F as existing terminates at Carrington Riding College – acts as a horse-friendly route from there to the Carrington Rides;
9. Accompanying figure "Plan showing Active Travel Links_v4" shows 3No. active travel crossings to be provided on existing roads that are to be costed for;
10. The AT2 route uses the Cadishead Viaduct crossing of the Manchester Ship Canal. For purposes of costing exercise, assume that structure is sound (subject to inspection) and that only surfacing and barriers need to be provided;
11. The plan "Indicative Link Road Routes_v3" includes a note regarding the existing bridge over the Greenway to be used for active travel provision. This relates to the Active Travel elements of the link roads, and should be costed for as part of the Link Road package.

12. 
Trafford Veterinary Centre, Carrington
A6144
Manchester Rd
Carrington Business Park
Sale Sharks Rugby Club Training Ground
0
0.50 km
J. Fisher & Sons Ltd (Carrington)
1.00 km
Changing Lives @ Carrington
2.00 km
1.50 km
Carrington Moss
2.59 km
Carrington Training Centre
Measure distance
Click on the map to add to your path
Total distance: 2.59 km (1.61 mi)

13. 
586.32 m
Changing Lives
@ Carrington
Measure distance
Click on the map to add to your path
Total distance: 586.32 m (1,923.63 ft)

Appendix B

ROUTES AND CROSS-SECTIONS: LINKS

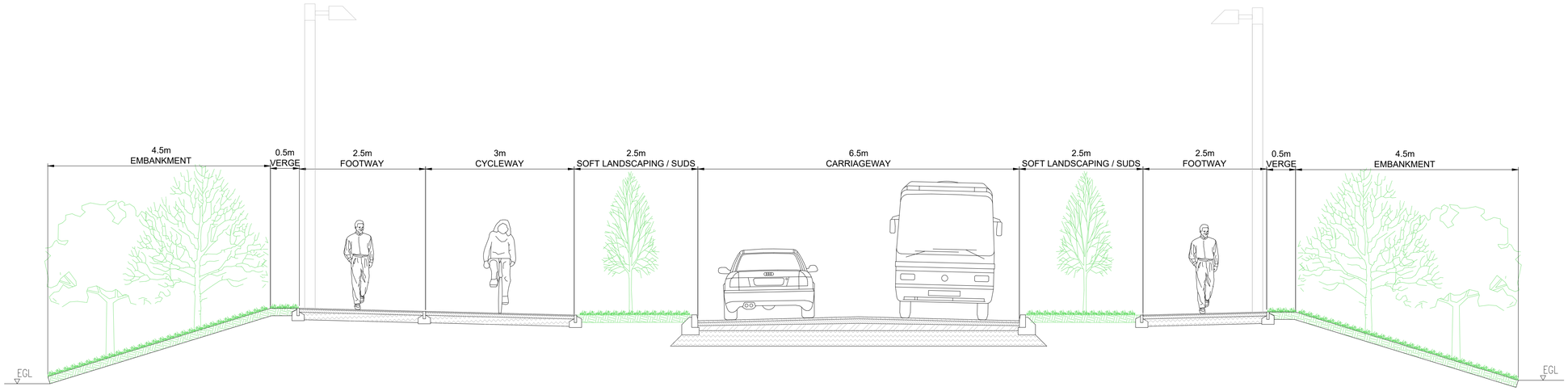


Details of Road Links to be costed – To be read in conjunction with pdf "Indicative Link Road Routes_v2"

Link	**Length**
Southern Link	2.85 km
Eastern Link	2.55 km
Sale West Link	1.20 km

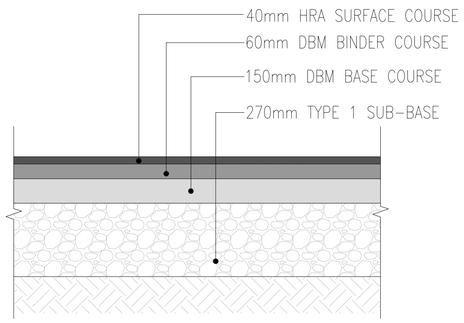
Notes

1. Routes shown are indicative and are for costing purposes only. Final Routes are yet to be determined but are expected to be a similar length to those shown on the Indicative Link Road Routes plan;
2. Typical Cross-Section and construction details for the Southern Link and Sale West Link are shown on drawing 0204-WSP-CV-SK03;
3. Typical Cross-Section and construction details for the Eastern Link are shown on drawing 0204-WSP-CV-SK02;
4. The junction at the north end of the Sale West Link will be a fourth arm formed on the currently planned three-arm signal controlled Carrington Lane junction (assumed to be in place before construction of Sale West Link). All other Proposed Junctions on Link Roads will be priority-controlled;
5. Active Priority measures for buses on CRR junctions: Indicative cost estimate required for installation of bus detector systems installed at the Flixton Lights junction and the Carrington Relief Road/Isherwood Lane junction. System would prioritise buses at each junction by extending the current green or changing to the relevant stage to give the bus progression through the junction.



EASTERN LINK ROAD TYPICAL SECTION

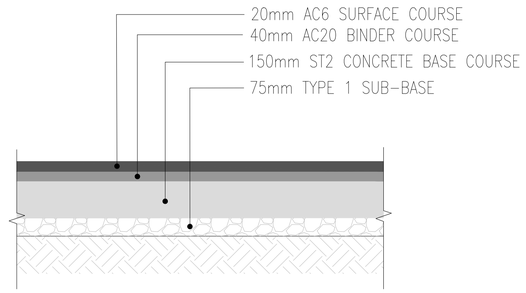
SCALE 1:50



FULL DEPTH CARRIAGEWAY CONSTRUCTION

SCALE – 1:20

LAYER	CLAUSE	MATERIAL	BINDER	THICKNESS	SPECIAL REQUIREMENTS
SURFACE COURSE	910	HOT ROLLED ASPHALT HRA 30/14 F SURF 40/60 REC	40/60 PEN	40mm	BS EN/13108-4, 20/14 PRECOATED CHIPPINGS. PSV 50
BINDER COURSE	906	DENSE MACADAM BINDER COURSE AC20 DENSE BIN 40/60	40/60 PEN	60mm	BS 13108, PD 6691 HARDSTONE AGGREGATE. MIN PSV 50
BASE COURSE	906	DENSE MACADAM BASE AC20 DENSE BIN 40/60	40/60 PEN	150mm	BS 13108, PD 6691
SUB-BASE	803	TYPE 1 UNBOUND GRANULAR MATERIAL	N/A	270mm	BASED ON 5% CBR (CONTRACTOR TO CONFIRM ON SITE)



FOOTWAY / CYCLEWAY CONSTRUCTION

SCALE – 1:20

LAYER	SHW CLAUSE	MATERIAL	BINDER	THICKNESS	SPECIAL REQUIREMENTS
SURFACE COURSE	1105	AC6 DENSE SURF	110/150 PEN	20mm	PD 6691 TABLE B.16
BINDER COURSE	906	AC20 DENSE BIN 40/60	10/60 PEN	40mm	BS 13108, PD 6691
BASE	–	ST2 CONCRETE	N/A	150mm	
SUB-BASE	803	GRANULAR MATERIAL TYPE 1	N/A	75mm	

DO NOT SCALE

NOTES

1. LINK ROADS TO BE IN LINE WITH PRINCIPLES FOR CONNECTOR STREETS AS SET OUT IN TFGM'S GREATER MANCHESTER'S STREETS FOR ALL DESIGN GUIDE.
2. MINIMUM FOOTWAY WIDTH OF 2.5M IN LINE WITH TABLE 3.4 OF TFGM'S GREATER MANCHESTER'S STREETS FOR ALL DESIGN GUIDE.
3. MINIMUM CYCLEWAY WIDTH OF 3.0M IN LINE WITH TABLE 3.5 OF TFGM'S GREATER MANCHESTER'S STREETS FOR ALL DESIGN GUIDE.
4. MINIMUM CARRIAGEWAY WIDTH OF 6.5M IN LINE WITH SECTION 3.6 OF TFGM'S GREATER MANCHESTER'S STREETS FOR ALL DESIGN GUIDE.
5. THE SUDS/PLANTING STRIP WILL ALSO BE USED FOR PROVISION OF BUS SHELTERS, WITH STOPS ASSUMED TO BE PROVIDED EVERY 300M ALONG THE ROUTE (THIS IS TAKEN FROM THE CIHT DOCUMENT WHICH STATES IN A.4.4 THAT "DISTANCES BETWEEN BUS STOPS WILL GENERALLY BE IN THE RANGE OF 200–400 METRES.")

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	01/10/2024	SS	MINOR AMENDMENTS	RV	RV
P01	29/08/2024	SS	FIRST ISSUE	RV	RV

DRAWING STATUS: S2 - FOR INFORMATION

wsp
8 First Street, Manchester, M15 4GU, UK
T+ 44 (0) 161 200 5000
wsp.com

CLIENT: TRAFFORD COUNCIL

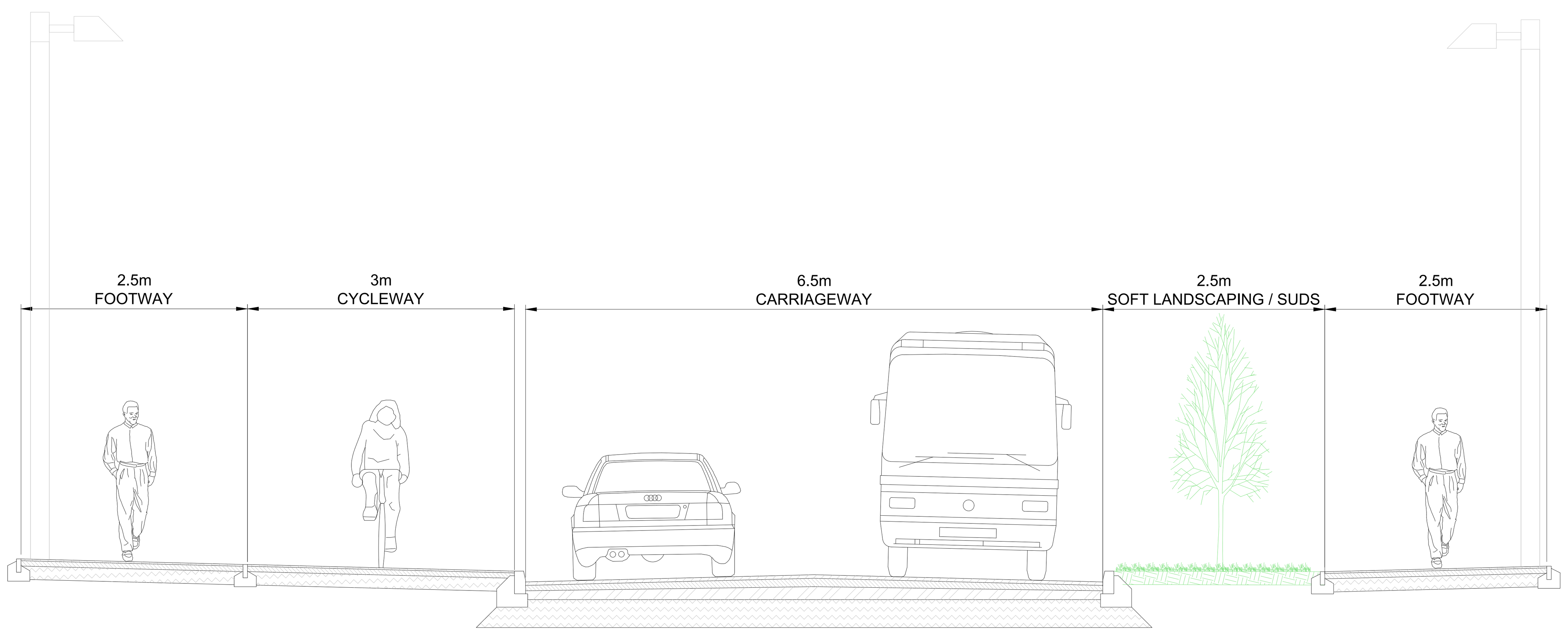
ARCHITECT:

SITE/PROJECT: NEW CARRINGTON MASTERPLAN

TITLE: EASTERN LINK ROAD TYPICAL SECTION AND DETAILS

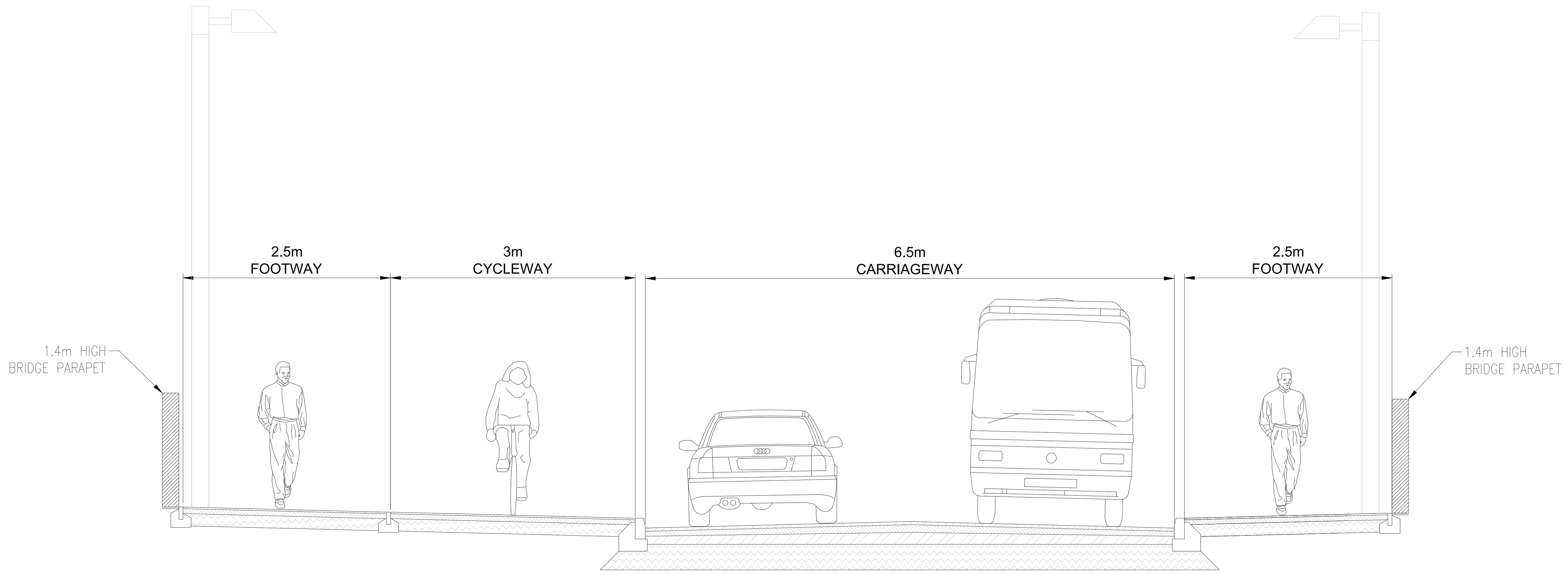
SCALE @ A1:	CHECKED:		APPROVED:
AS SHOWN	RV		RV
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
70120204	SS	SS	AUGUST 2024

DRAWING No: 0204-WSP-CV-SK02 REV: P02



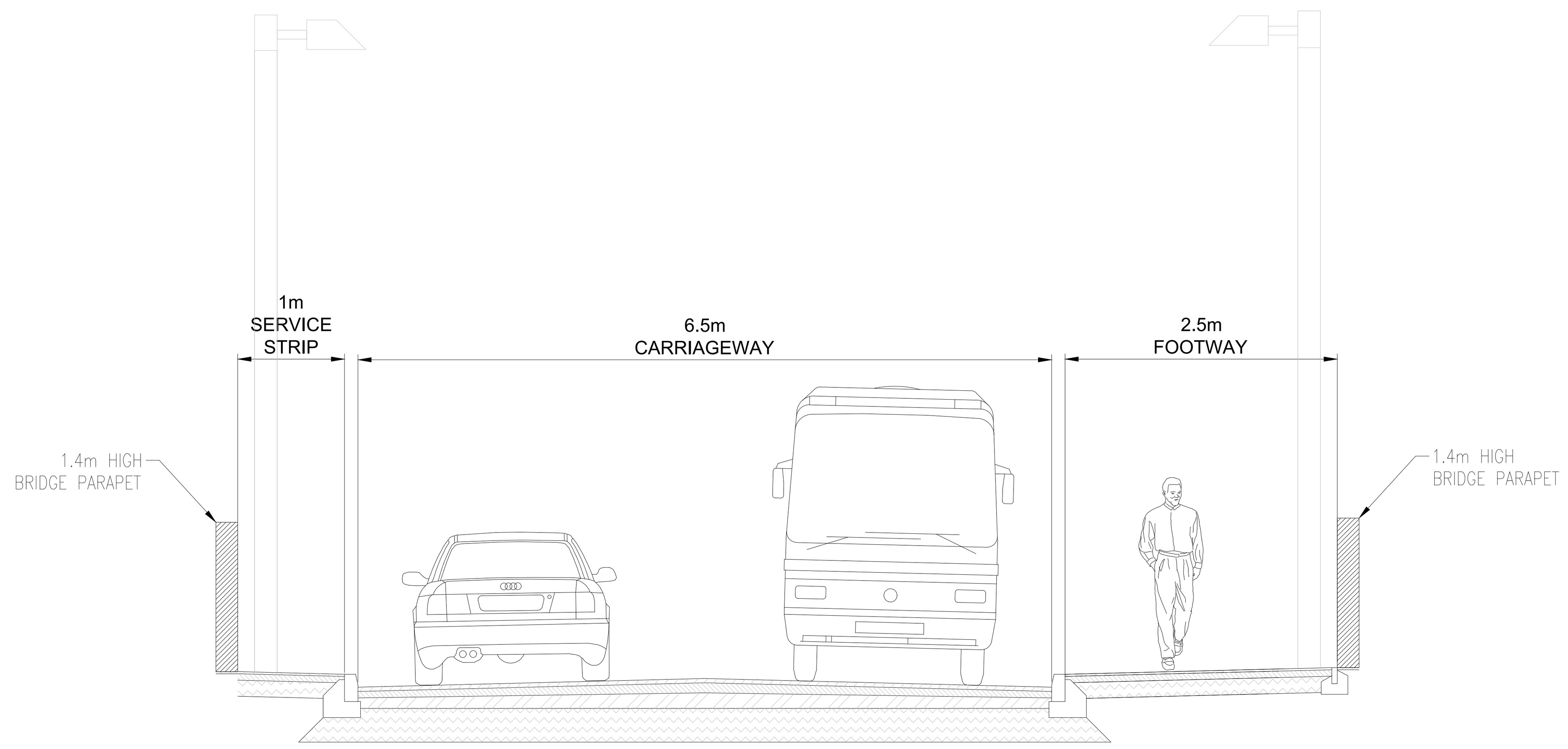
TYPICAL SECTION: SALE WEST LINK ROAD AND SOUTHERN LINK ROAD

SCALE 1:50



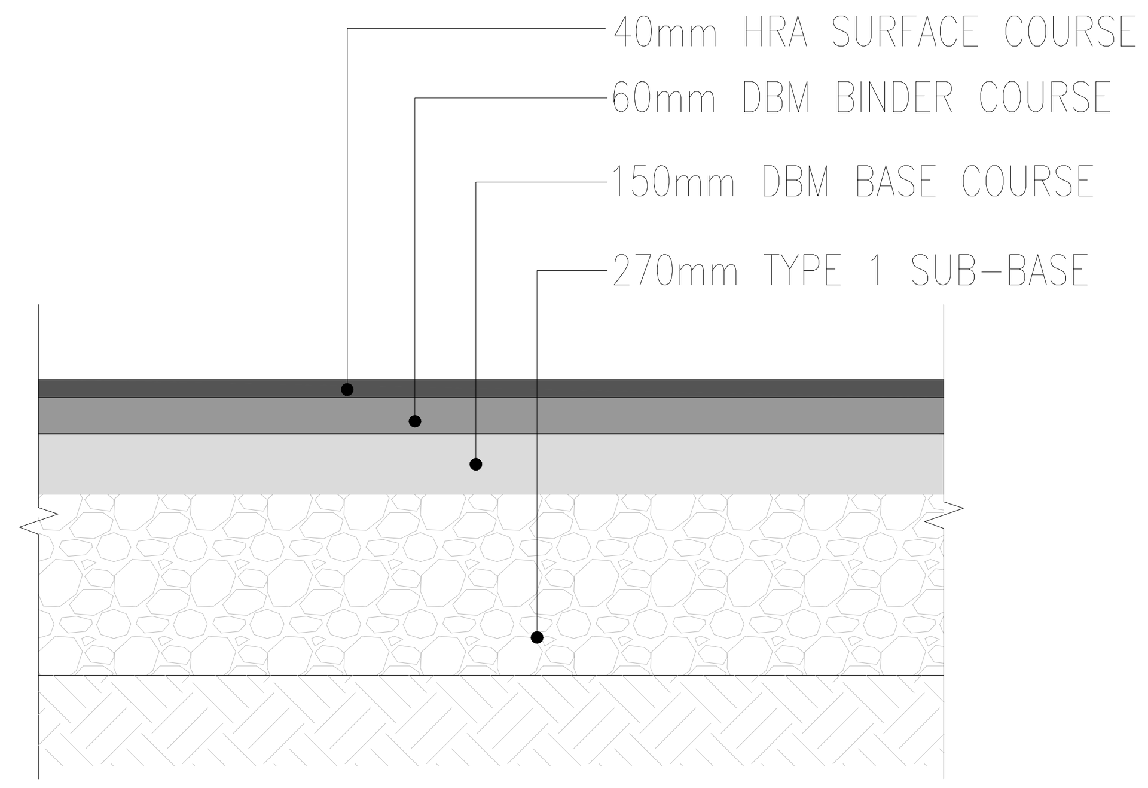
INDICATIVE SECTION: SOUTHERN LINK ROAD BRIDGE OVER RED BROOK

SCALE 1:50



INDICATIVE SECTION: NEW BRIDGE CROSSING OF GREENWAY AT MEETING POINT OF SOUTHERN LINK AND EASTERN LINK

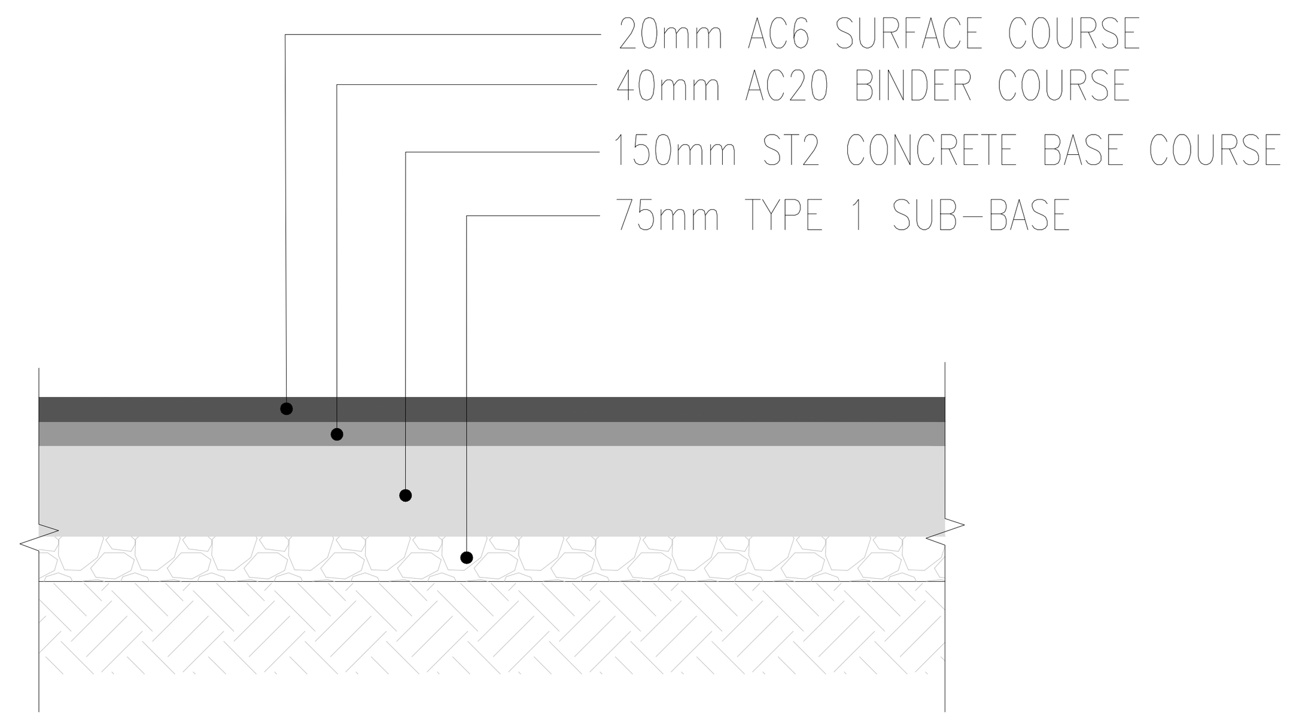
SCALE 1:50



FULL DEPTH CARRIAGEWAY CONSTRUCTION

SCALE – 1:20

LAYER	CLAUSE	MATERIAL	BINDER	THICKNESS	SPECIAL REQUIREMENTS
SURFACE COURSE	910	HOT ROLLED ASPHALT HRA 30/14 F SURF 40/60 REC	40/60 PEN	40mm	BS EN/13108-4, 20/14 PRECOATED CHIPPINGS. PSV 50
BINDER COURSE	906	DENSE MACADAM BINDER COURSE AC20 DENSE BIN 40/60	40/60 PEN	60mm	BS 13108, PD 6691 HARDSTONE AGGREGATE. MIN PSV 50
BASE COURSE	906	DENSE MACADAM BASE AC20 DENSE BIN 40/60	40/60 PEN	150mm	BS 13108, PD 6691
SUB-BASE	803	TYPE 1 UNBOUND GRANULAR MATERIAL	N/A	270mm	BASED ON 5% CBR (CONTRACTOR TO CONFIRM ON SITE)



FOOTWAY / CYCLEWAY CONSTRUCTION

SCALE – 1:20

LAYER	SHW CLAUSE	MATERIAL	BINDER	THICKNESS	SPECIAL REQUIREMENTS
SURFACE COURSE	1105	AC6 DENSE SURF	110/150 PEN	20mm	PD 6691 TABLE B.16
BINDER COURSE	906	AC20 DENSE BIN 40/60	10/60 PEN	40mm	BS 13108, PD 6691
BASE	–	ST2 CONCRETE	N/A	150mm	
SUB-BASE	803	GRANULAR MATERIAL TYPE 1	N/A	75mm	

DO NOT SCALE

NOTES

1. LINK ROADS TO BE IN LINE WITH PRINCIPLES FOR CONNECTOR STREETS AS SET OUT IN TFGM'S GREATER MANCHESTER'S STREETS FOR ALL DESIGN GUIDE.
2. MINIMUM FOOTWAY WIDTH OF 2.5M IN LINE WITH TABLE 3.4 OF TFGM'S GREATER MANCHESTER'S STREETS FOR ALL DESIGN GUIDE.
3. MINIMUM CYCLEWAY WIDTH OF 3.0M IN LINE WITH TABLE 3.5 OF TFGM'S GREATER MANCHESTER'S STREETS FOR ALL DESIGN GUIDE.
4. MINIMUM CARRIAGEWAY WIDTH OF 6.5M IN LINE WITH SECTION 3.6 OF TFGM'S GREATER MANCHESTER'S STREETS FOR ALL DESIGN GUIDE.
5. THE SUDS/PLANTING STRIP WILL ALSO BE USED FOR PROVISION OF BUS SHELTERS, WITH STOPS ASSUMED TO BE PROVIDED EVERY 300m ALONG THE ROUTE (THIS IS TAKEN FROM THE CIHT DOCUMENT WHICH STATES IN A.4.4 THAT "DISTANCES BETWEEN BUS STOPS WILL GENERALLY BE IN THE RANGE OF 200-400 METRES.")

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
P02	01/10/2024	SS	MINOR AMENDMENTS	RV	RV
P01	29/08/2024	SS	FIRST ISSUE	RV	RV

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CLIENT: TRAFFORD COUNCIL

ARCHITECT:

SITE/PROJECT: NEW CARRINGTON MASTERPLAN

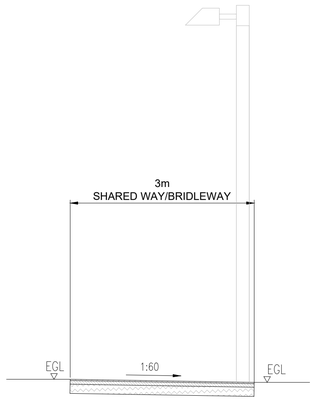
TITLE: TYPICAL SECTION: SALE WEST LINK ROAD AND SOUTHERN LINK ROAD

SCALE @ A1:	CHECKED:		APPROVED:
AS SHOWN	RV		RV
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
70120204	SS	SS	AUGUST 2024

DRAWING No: 0204-WSP-CV-SK03

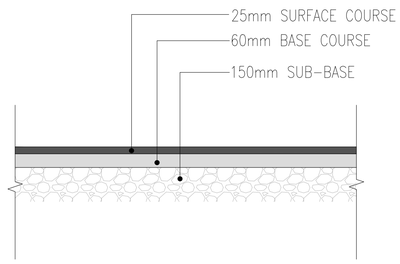
REV: P02

File name C:\USERS\UKSKS006\WSP O365\70120204 - NEW CARRINGTON MASTERPLAN PT 1 - DOCUMENTS\03 WIP\DEVELOPMENT\03 DRAWINGS\0204-WSP-CV-SK03.DWG, printed on 01 October 2024 16:35:26, by Shahid, Sulaiman



ACTIVE TRAVEL PAVEMENT TYPICAL SECTION

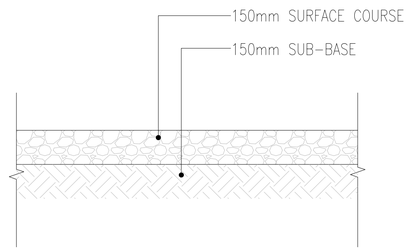
SCALE 1:50



FULL DEPTH SHARED WAY CONSTRUCTION

SCALE – 1:20

LAYER	CLAUSE	MATERIAL	BINDER	THICKNESS	SPECIAL REQUIREMENTS
SURFACE COURSE	910	HOT ROLLED ASPHALT HRA 30/14 F SURF 40/60 REC	40/60 PEN	25mm	BS EN/13108-4
BASE COURSE	906	DENSE MACADAM BASE AC20 DENSE BIN 40/60	10/60 PEN	60mm	BS 13108, PD 6691
SUB-BASE	803	TYPE 1 UNBOUND GRANULAR MATERIAL	N/A	150mm	



FULL DEPTH BRIDLEWAY CONSTRUCTION

SCALE – 1:20

LAYER	CLAUSE	MATERIAL	BINDER	THICKNESS	SPECIAL REQUIREMENTS
SURFACE COURSE	806, 618	AGGREGATE WITH 25% TOPSOIL	–	150mm	–
SUB-BASE	805	DOT TYPE 3 GRANULAR MATERIAL	–	150mm	–

DO NOT SCALE

NOTES

1. 3m FOOTWAY/CYCLEWAY WIDTH IS IN LINE WITH E3.5 OF DMRB CD 143 – DESIGNING FOR WALKING, CYCLING AND HORSE-RIDING

UNTIL TECHNICAL APPROVAL HAS BEEN OBTAINED FROM THE RELEVANT LOCAL AUTHORITIES OR STATUTORY BODIES, IT SHOULD BE UNDERSTOOD THAT ALL DRAWINGS ARE ISSUED AS PRELIMINARY AND NOT FOR CONSTRUCTION. SHOULD THE CONTRACTOR AND / OR EMPLOYER COMMENCE WORK PRIOR TO APPROVAL BEING GIVEN, IT IS ENTIRELY AT THEIR OWN RISK

REV	DATE	BY	DESCRIPTION	CHK	APP
P01	29/08/2024	SS	FIRST ISSUE	RV	RV

DRAWING STATUS: S2 - FOR INFORMATION

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ARCHITECT:

SITE/PROJECT: NEW CARRINGTON MASTERPLAN

TITLE: ACTIVE TRAVEL TYPICAL SECTION AND DETAILS

SCALE @ A1:	CHECKED:		APPROVED:
AS SHOWN	RV		RV
PROJECT NO:	DESIGNED:	DRAWN:	DATE:
70120204	SS	SS	AUGUST 2024

DRAWING No: 0204-WSP-CV-SK04 REV: P01

Appendix C

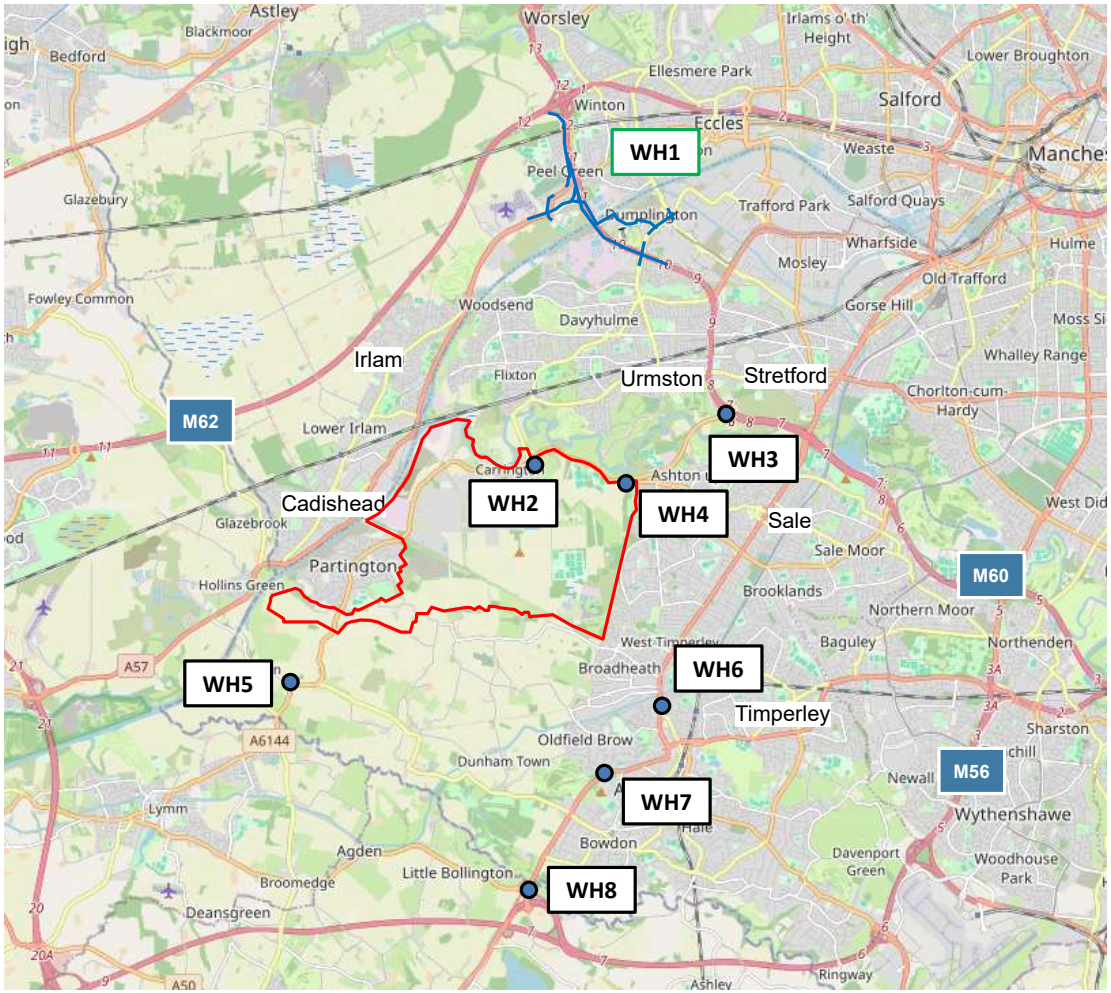
REVIEW OF OFF-SITE HIGHWAY IMPROVEMENTS

New Carrington Masterplan

Off-site Highway Improvements

wsp Deloitte.

Wider Highway Improvements



Schemes identified in the Locality Assessment for PfE:

WH1 - Western Gateway Infrastructure Scheme. New Carrington is not dependent on WGIS: it is only mentioned in Masterplan documents because it is committed as part of Trafford Waters, so as a result was included in both Reference and Forecast scenarios for the PfE traffic modelling.

WH2 - Flixton Road signalised junction upgrade with lane widening on approaches.

WH3 - Carrington Spur widening on eastbound approach to M60 Junction 8

WH4 - Carrington Link / Carrington Spur / Banky Lane

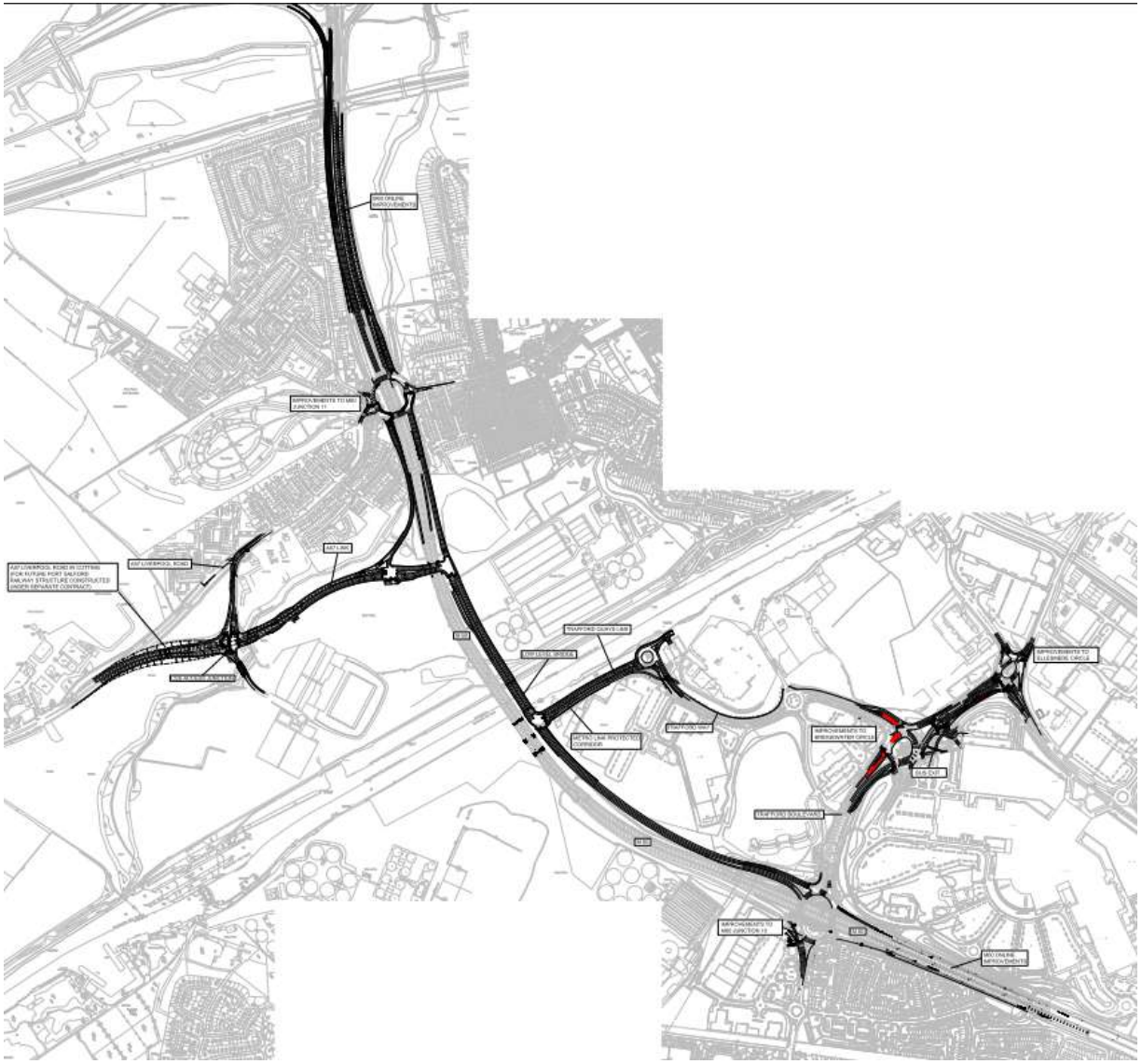
WH5 - Heatley — Paddock Lane — Bent Lane junction improvements

WH6 - A56 Junction — Manchester Road — Barrington Road. Upgrade of signal equipment

WH7 - Altrincham — A56 Dunham Road — Highgate Road. Realignment of Highgate Road

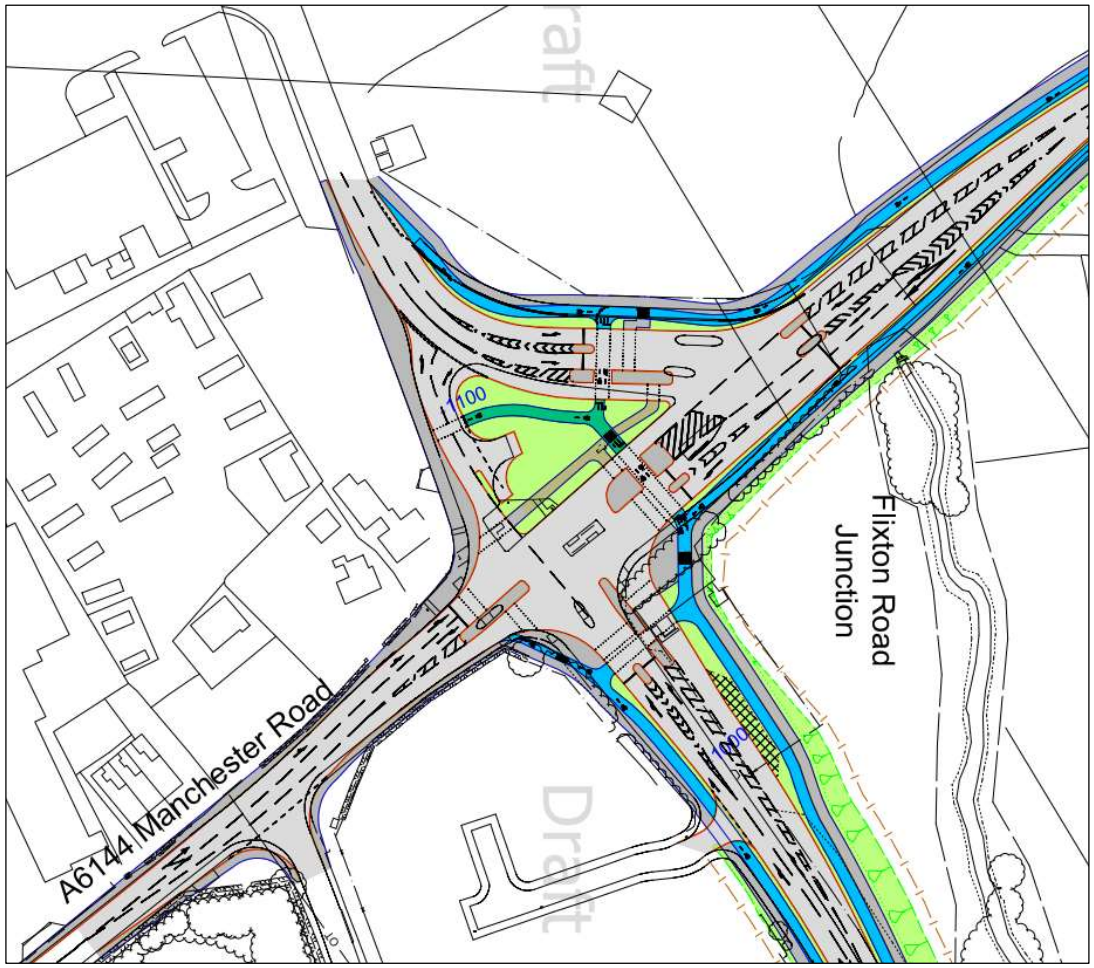
WH8 - M56 Bowden Roundabout — Circulatory Widening

WH1 - Western Gateway Infrastructure Scheme



WH1 - New Carrington is not dependent on WGIS: it is only mentioned in Masterplan documents because it is committed as part of Trafford Waters, so as a result was included in both Reference and Forecast scenarios for the PfE traffic modelling.

WH2 Flixton Road Signals



WH2 - Flixton Road signalised junction upgrade with lane widening on approaches.

Details shown on Amey drawing CO_00201460/R00/08

Need to check if this is already being delivered as part of CRR

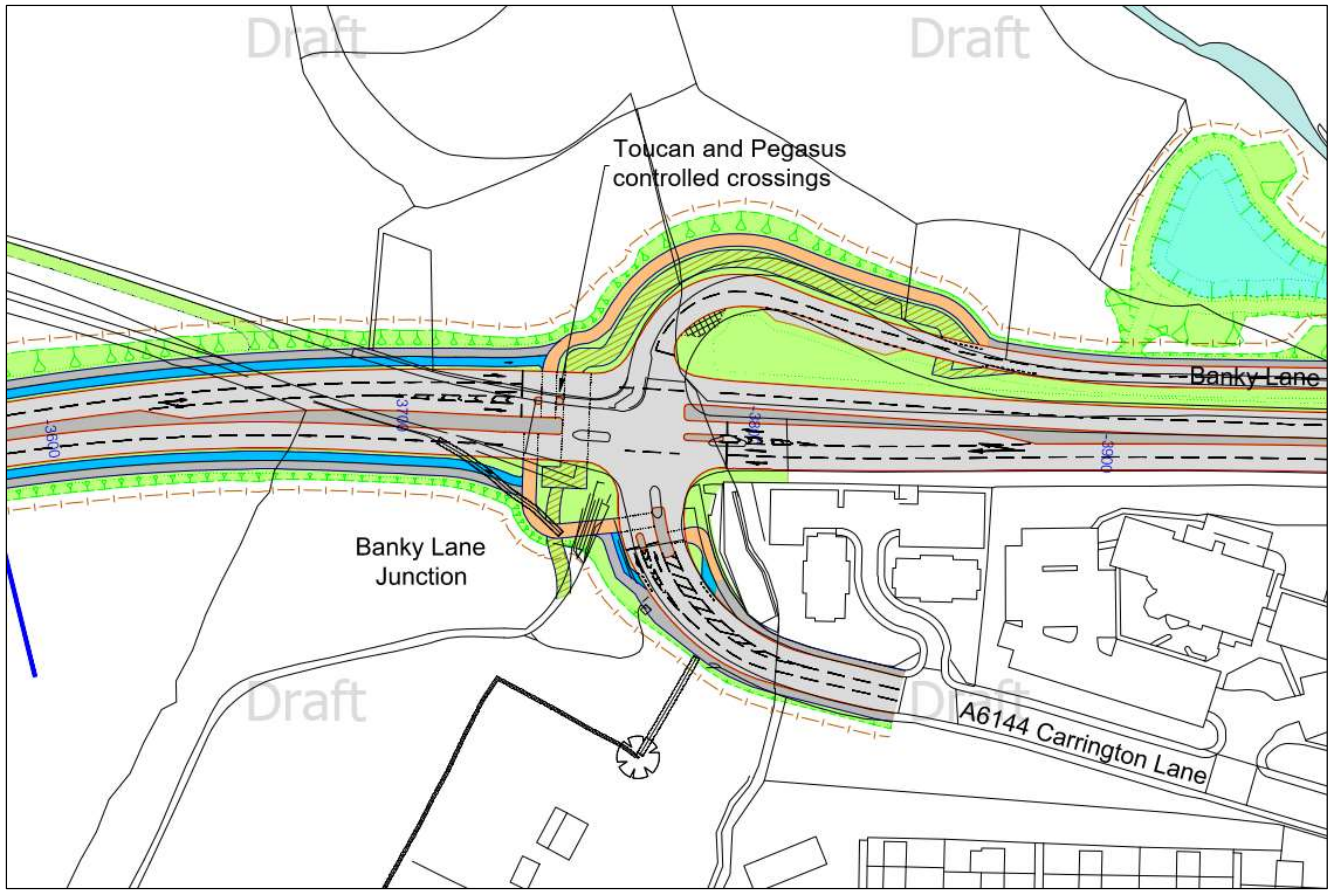
WH3 - Carrington Spur widening on approach to M60 J8

WH3 - Carrington Spur widening on approach to M60 J8
Yellow box marking on circulatory carriageway adjacent to Carrington Spur entry.

Widen eastbound approach to extend provision of two entry lanes to roundabout.

Works required to extend underpass to accommodate widening.

WH4 - Carrington Link / Carrington Spur / Banky Lane



WH4 - Carrington Link / Carrington Spur / Banky Lane
Upgrade of signal equipment at the junction; widen the approaches from both the east and west to extend the right turn lanes and separately control the right turn lanes in the signal sequence. Right turn lanes extended to 70m length.

Details shown on Amey drawing CO_00201460/R00/07

Need to check if this is already being delivered as part of CRR

WH5 - Heatley — Paddock Lane — Bent Lane junction improvements

WH5 - Heatley — Paddock Lane — Bent Lane junction improvements
Introduce a right turn lane on Bent Lane utilising the available verge area around the junction and minor alignment modification at the Paddock Lane approach.

WH6 - A56 Junction — Manchester Road — Barrington Road.
Upgrade of signal equipment

WH6 - A56 Junction — Manchester Road — Barrington Road. Upgrade of signal equipment. Upgrade of signal equipment and signal heads at junction to include an indicative arrow signal for northbound right turning traffic into Barrington Road.

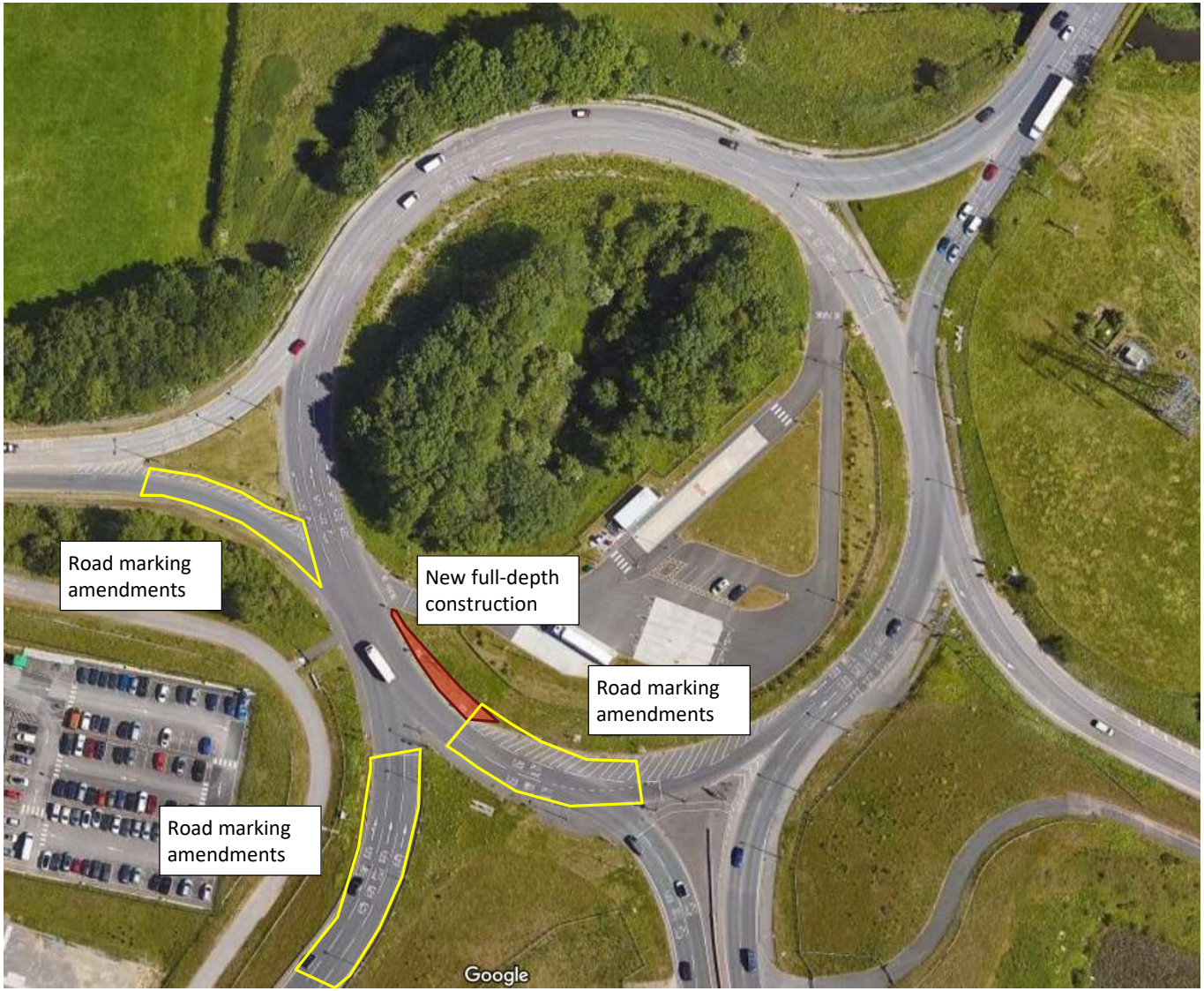
WH7 - Altrincham — A56 Dunham Road — Highgate Road. Realignment of Highgate Road

WH7 - Altrincham — A56 Dunham Road — Highgate Road. Realignment of Highgate Road

Proposed realignment of the Highgate Road approach to increase the length of the flare at mouth of junction and the provision of a right turn pocket to improve capacity and safety at the junction.

Localised widening to facilitate short right-turn lane on approach to A56

WH8 - M56 Bowden Roundabout — Circulatory Widening

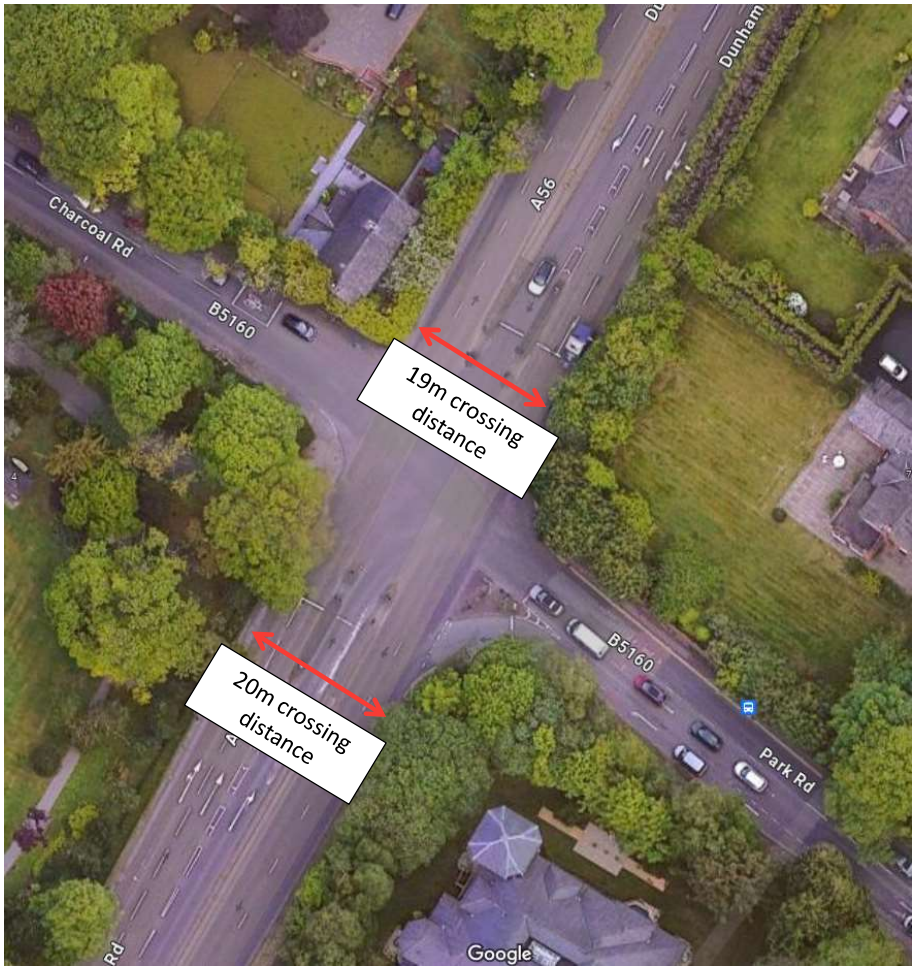


WH8 - M56 Bowden Roundabout — Circulatory Widening

Localised widening in the circulatory carriageway at the south west side from 2 lanes to 3 lanes and provide a two-lane exit into Lymm Road. Proposal will require new lane makings and designation on roundabout.

Also, on the A556 offslip (NB) approach the long lanes should be lane 1 and 2 and lane 3 should be changed to a short lane (based on the traffic demand). On the circulatory, lane 1 will feed Lymm Road only and lane 2 will feed Lymm Road and circulatory and lane 3 circulatory only.

Additional item - Altrincham - A56 Dunham Road - Park Road - Charcoal Road



Locality Assessment States: *"Though the capacity results show that the junction requires intervention, due to its urban location on A56 corridor the junction is too constrained by active third party lands for further improvements. Controlled pedestrian crossings are not provided at this signalised junction which would indicate the throughput on the A56 is a priority. Intervention has been identified. To improve accessibility for all road users the junction the signals will be upgraded to include controlled crossings."*

However:

1. There is no notable level of pedestrian demand at this junction currently, nor arising from the New Carrington Allocation
2. Crossing distances on A56 are too long to be accommodated in a single movement (15m max usually adopted);
3. There is insufficient room for staggered crossings to be accommodated. Staggered refuge islands are 3m wide, existing islands for signal equipment are only 1.5m wide.
4. Impact of Allocation Flows on the operation of the junction is relatively minor (see below). Improvement requirements are not considered to be a result of PfE allocations.

Therefore, propose not to take this measure forward.

Table 15: Results of Strategic Junctions Capacity Analysis Before Mitigation: New Carrington

Junction	Ref Case AM	Ref Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
22 - Altrincham - A56 Dunham Road - Park Road - Charcoal Road	109.4%	113.3%	111.3%	114.1	245	139

Additional item - Rixten - Manchester Road - Warburton Bridge Road Junction

Locality Assessment States: *"Rixton - Manchester Road - Warburton Bridge Road Junction - Intervention has been identified. In 2025 there is no capacity impact, however in 2040 the junction is approaching its design capacity and therefore intervention has been explored. A flow comparison indicates that GMSF traffic will have an impact in the AM peak (7% additional traffic) and negligible impact in the PM peak. Mitigation at junction has been identified in form of widening on the Warburton Bridge Road - extend length of two-lane approach; and widening of the eastbound Manchester Road approach to lengthen the right turn lane."*

It is important to note the reference to the junction approaching capacity in 2024, not exceeding capacity. Also, whilst the allocation may route additional traffic through the junction, the impact on operation is not significant, as shown below (extract from Table 12: 2040 Results of Local Junction Capacity Analysis Before Mitigation)

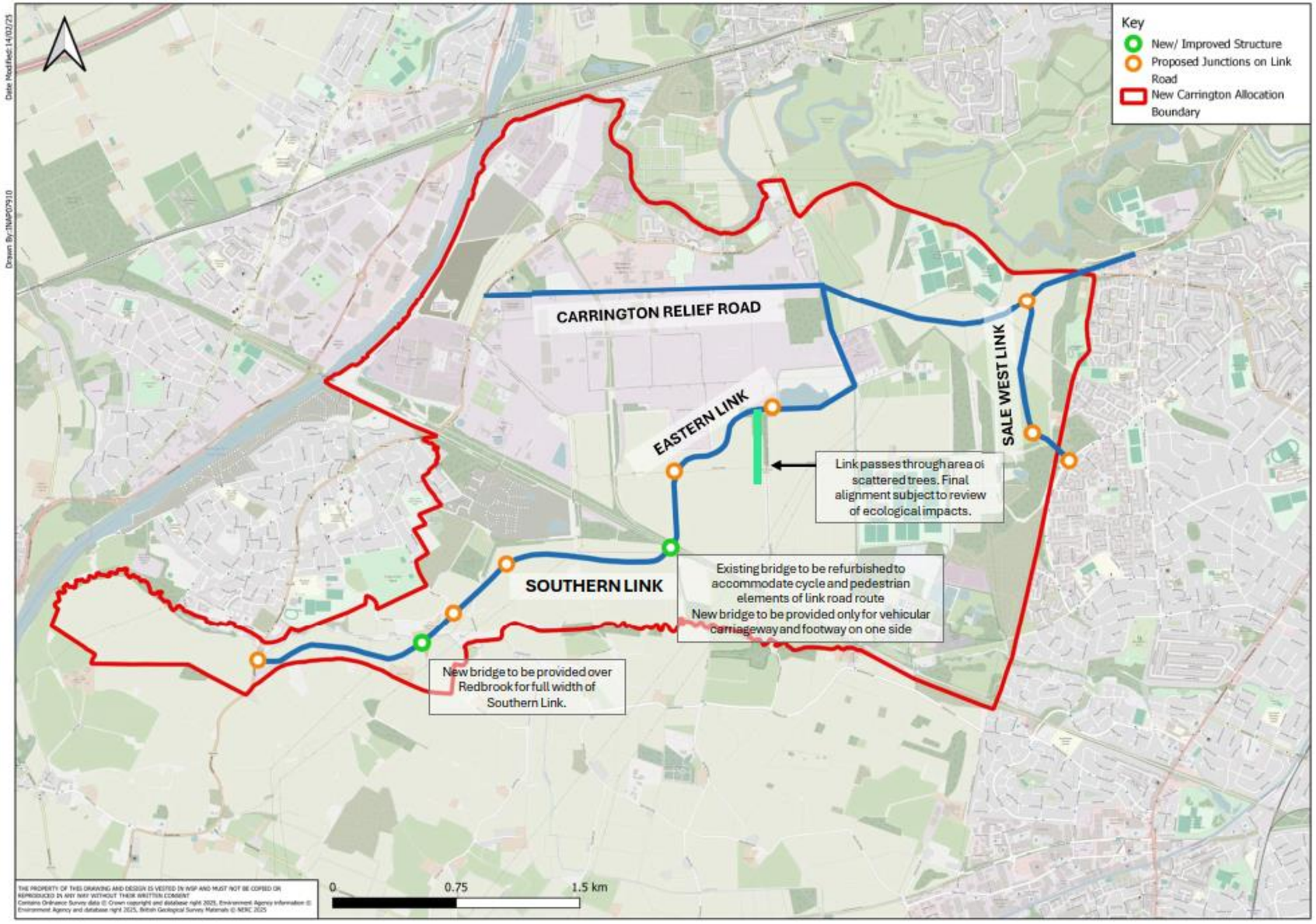
Therefore, propose not to take this measure forward.

Junction (Based on All 6100 Res Units)	Ref Case AM	Ref Case PM	GMSF High AM	GMSF High PM	Allocation Flows AM	Allocation Flows PM
28 - Rixten - Manchester Road - Warburton Bridge Road Junction	98.5%	96.1%	94.1%	97.6%	189	26

Appendix D

SUMMARY OF INFRASTRUCTURE REQUIREMENTS

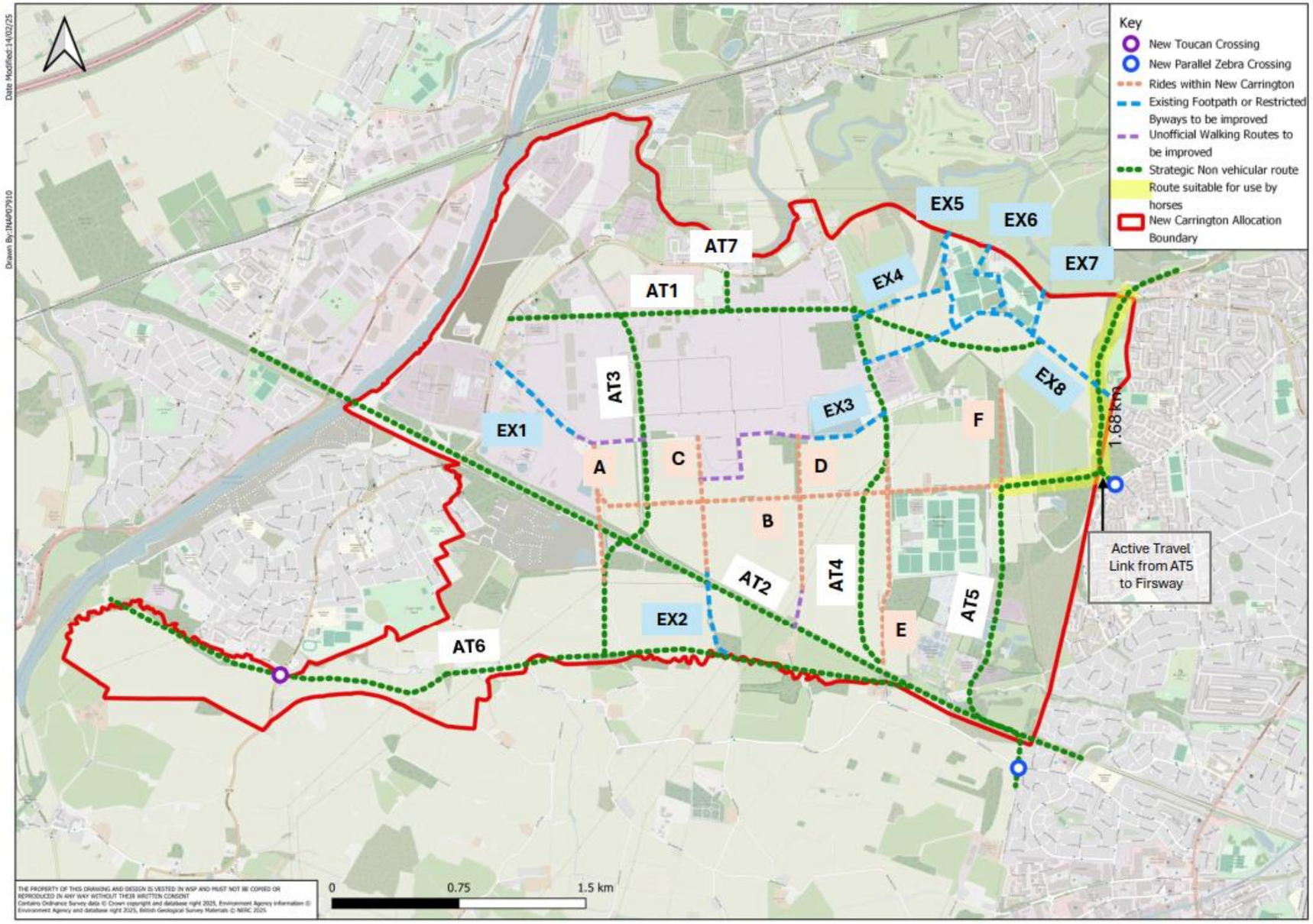
Transport – On Site Highways Improvements



On Site Highway Improvements

- Sale West Link Road
- Southern Link Road (inc structures)
- Eastern Link Road (inc structures)

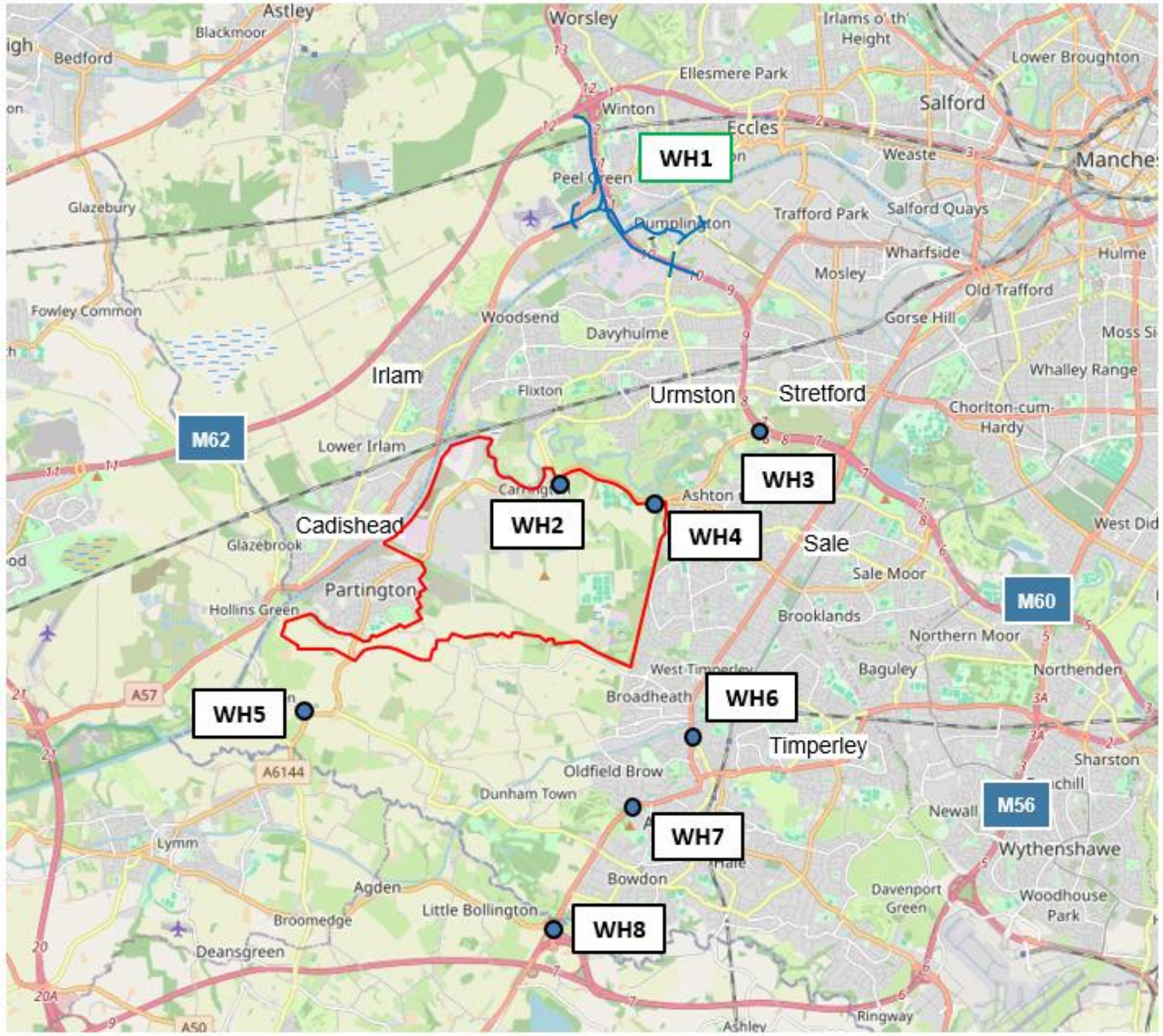
Transport - Active Travel Improvements



Active Travel Improvements

- Existing footpath improvements
- Existing rides improvements
- New active travel links (inc structures)

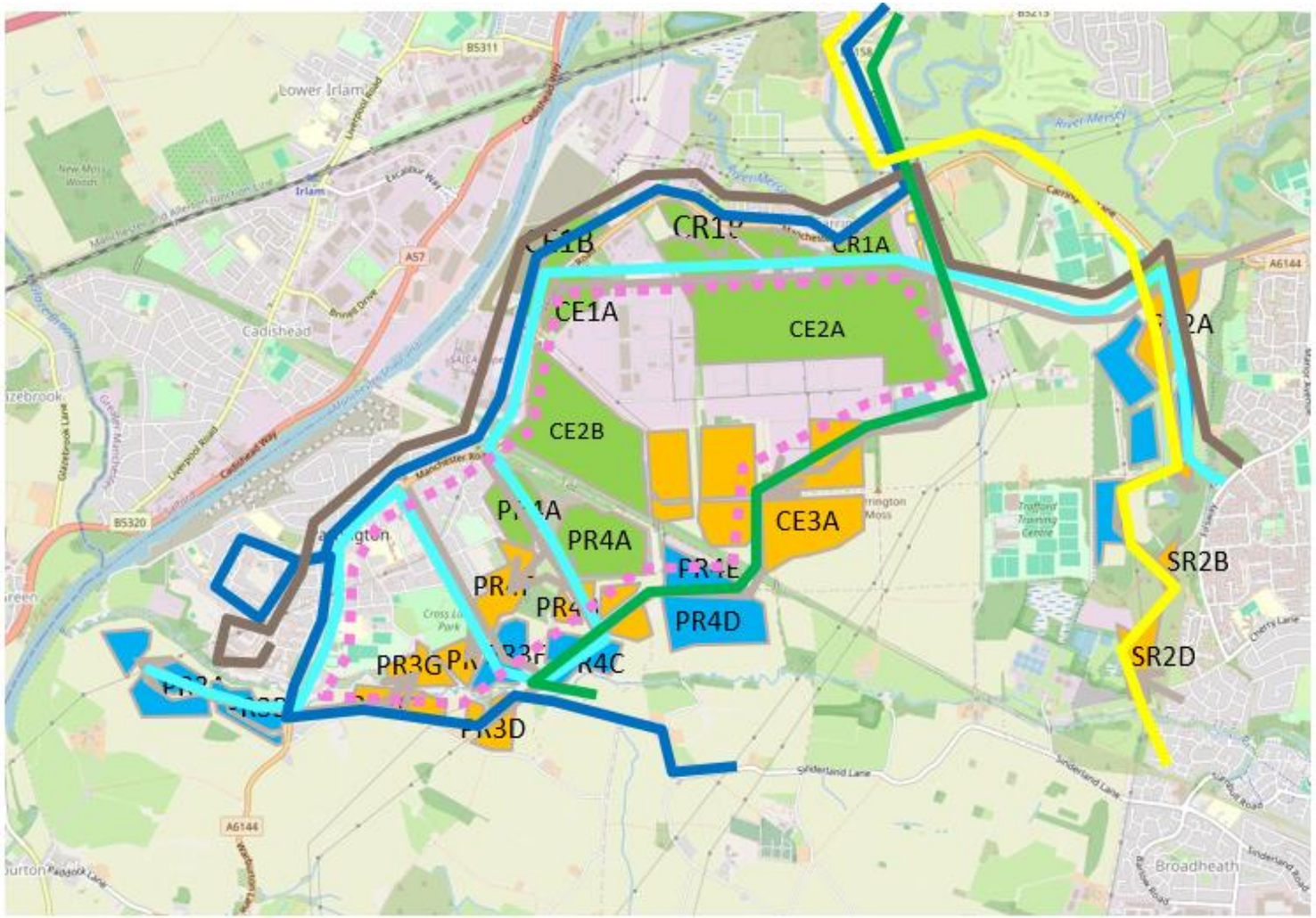
Transport – Off Site Highways Improvements



Off Site Highway Improvements

- Off site highway improvements

Transport – Public Transport Improvements



Public Transport Improvements

- Bus service contributions (over five years)

18A
20
21/21A
246
247
253

Drainage

The drainage infrastructure requirements are subject to further survey, design and assessment, including co-ordination with the individual plot layouts. Hence assumptions on the infrastructure requirements for costing purposes have been made as follows:

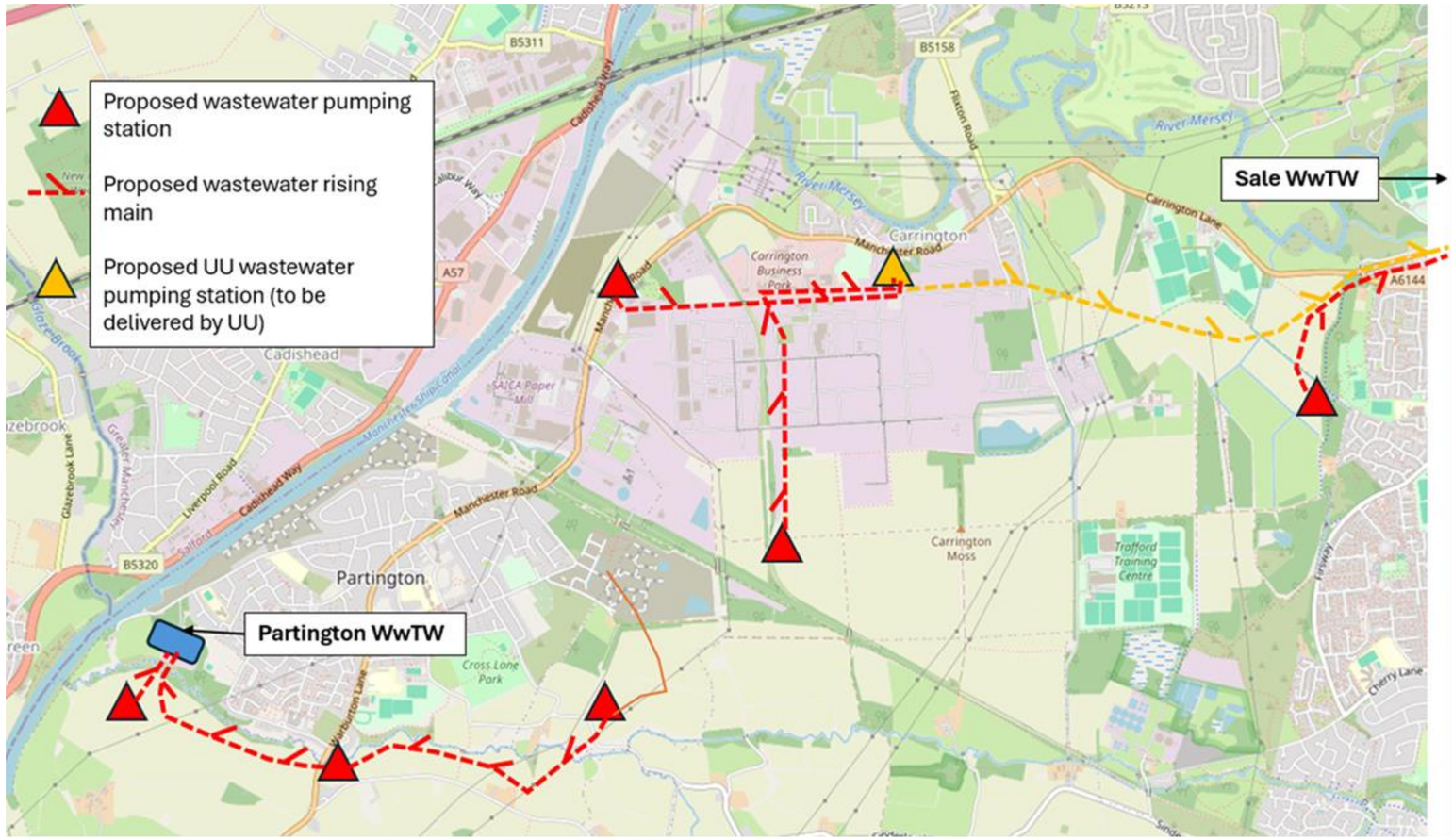
Surface Water Drainage

- Attenuation storage is assumed to be provided to greenfield runoff rates within basins on each development plot (site control) accounting for 80% of total storage requirement. Total vol 161,292m3.
- It is assumed that source control features (20% of total storage requirement) will be provided on-plot and will be accounted for within the building, road or public realm.
- An allowance has been made for connection of SuDS to a local watercourse including headwalls, pipework, flow controls.

Foul Water Drainage

- A total of 6 no. adoptable foul water pumping stations has been assumed as required to serve the development
- Pumping stations include emergency storage tanks
- Arising mains from the pumping stations to suitable outfall locations has been considered, subject to agreement with United Utilities.

Strategic Foul Water Pumping Stations (indicative only)



Utilities & Energy

Electricity

- 132kV grid supply point and connection to primary substation (assumed length 2km)
- 1 x primary substation
- 11kV infrastructure from primary to distribution substations (total length 8,000m)
- 19 x distribution substations
- GSP and primary substation costs advised by ENWL

Potable Water

- Potable water supply from existing trunk mains within the allocation boundary as advised by UU
- 180 / 250 / 315mm dia. distribution mains (total length 6,000m)
- Allowance made for connections, valves, etc

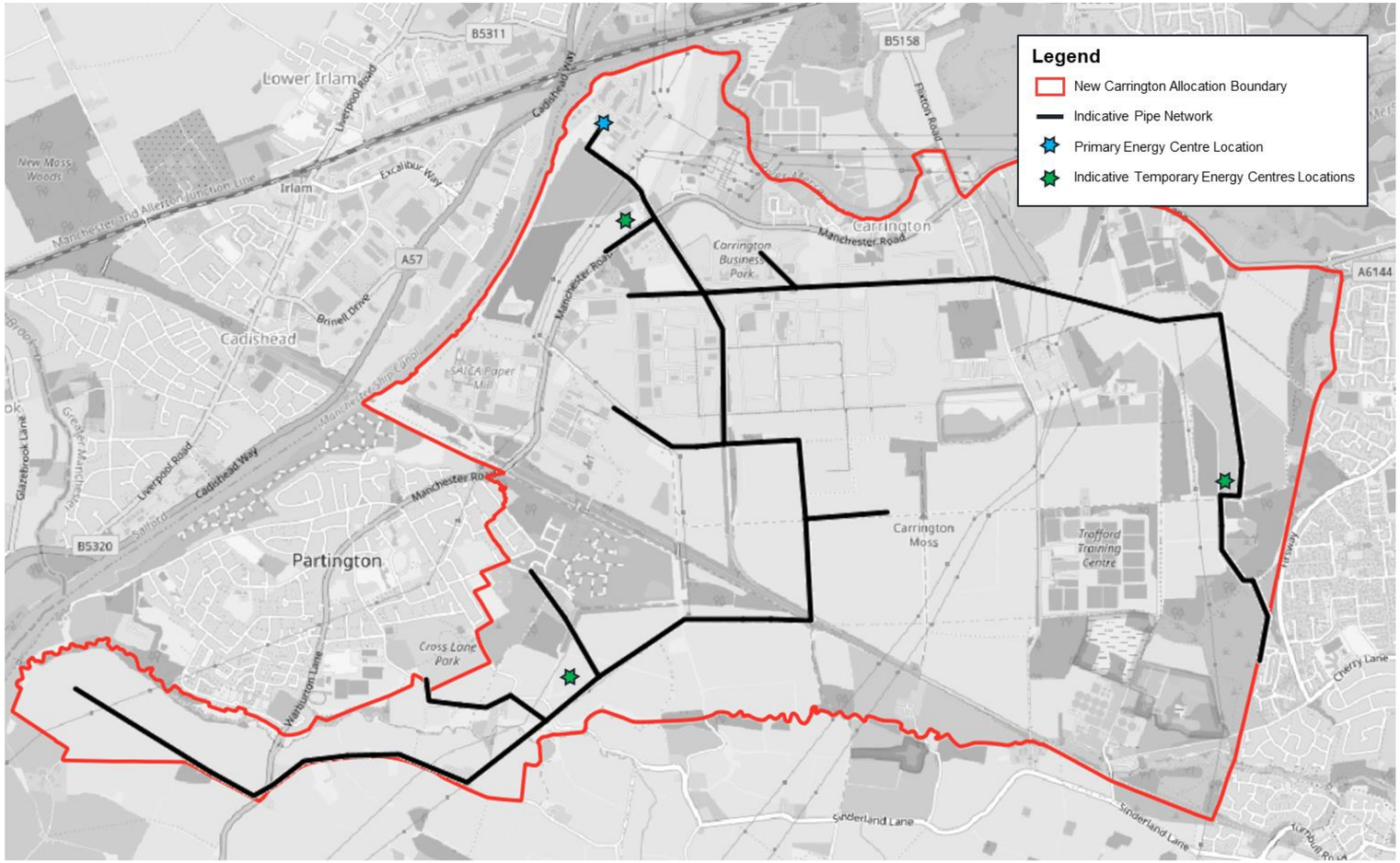
Utilities & Energy

Energy (Permanent)

- Energy Centre (EC) building
- Heat generation and storage equipment (heat pumps, electric boilers, thermal storage, heat exchanger)
- Ancillary equipment
- Distribution network
- Pumping station
- Project costs

Energy (Temporary)

- Three temporary ECs may be required for first three years before Primary EC is operational
- These will be required in Partington East, Sale West, Carrington Village
- Building costs
  - Assumed that Partington East temporary EC will become the pumping station, so some costs are already included in “Pumping Station” costs above
- Equipment costs
- Project costs
- Distribution network costs included above



Social Infrastructure

Education

- Early years, primary, secondary, sixth form and SEN provision
- Currently working to a higher end cost assumption
- The mitigation will comprise:
    - Feasibility studies are ongoing to determine if relevant existing schools could be expanded to accommodate additional demand.
    - Primary schools: For earlier phases, demand will likely be accommodated by utilising spare capacity in existing schools and expanding capacity of existing schools that meet the necessary criteria.. As further development comes forward, existing schools will likely need to be expanded, and this programme of work will be informed by the feasibility studies currently being undertaken by the Trafford Education Team. In the longer term there is the potential need for a new primary school, and while the location of this is yet to be determined, the site at Moss View in Partington may provide a suitable location.
    - Secondary schools: For earlier phases, demand will likely be accommodated by utilising spare capacity in existing schools. As further development comes forward, extensions to existing schools may be required in line with phasing and timing of development at New Carrington – such as Broadoak School in Partington. In the later phases of the site build out there is a potential requirement for a new Secondary School, the need for this is generated by the New Carrington allocation, the Davenport Green Allocation and wider growth within Trafford. Consideration will therefore need to be given to the most appropriate location for the new school. The need for a new secondary school will be kept under review by the Trafford Education Team.

Healthcare

- GP provision
- Potential for more immediate interim measures around reconfiguration/expansion of existing surgeries
- A new healthcare facility on-site at New Carrington, as a longer-term opportunity for new health centre, likely in Phase 3 could support estate consolidation

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