



West Shotton, Stratford-upon Avon

Transport Appraisal and Strategy

Prepared for:

BLOOR HOMES[®]

About this document

PJA has been appointed by **Bloor Homes** to prepare a Transport Appraisal and Strategy for development at **West Shotton, Stratford-upon-Avon**.

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Introduction

PJA has been appointed by Bloor Homes to prepare a transport appraisal and strategy to support development of land at West Shottery, Stratford upon Avon.

The development proposals comprise between 510 – 600 dwellings with access via the Shottery Western Relief Road.

This report sits alongside a vision document which demonstrates how the transport strategy complements a comprehensive and deliverable masterplan for the site.

The site context has been considered in detail including an assessment of existing infrastructure. Based on this analysis, a comprehensive transport strategy has been prepared which demonstrates that:

- Vehicular, pedestrian and cycle access to the site can be delivered using land within Bloor Homes’ control and in accordance with the relevant design standards.
- The site is well located to access local facilities and employment opportunities.
- The site can help the Council deliver it’s programme of new cycle infrastructure, providing LTN 1/20 compliant cycle routes into Stratford upon Avon.
- The site can be made accessible by public transport, capitalising upon, and improving, services enabled by adjacent developments.
- The impact of the development on the local and strategic highway network can be mitigated and is not reliant on major strategic infrastructure such as the South Western Relief Road.

Site Context

Site Location

The site is bounded by the consented IM employment site ('Stratford 46 Business Park') to the north, the route of the Shotton Western Relief Road (SWRR) to the east, and fields to the south and west.

To the east of the SWRR is the new Bloor Homes mixed use development 'Shotton View', including new homes, a primary school and local centre.

Highway Network

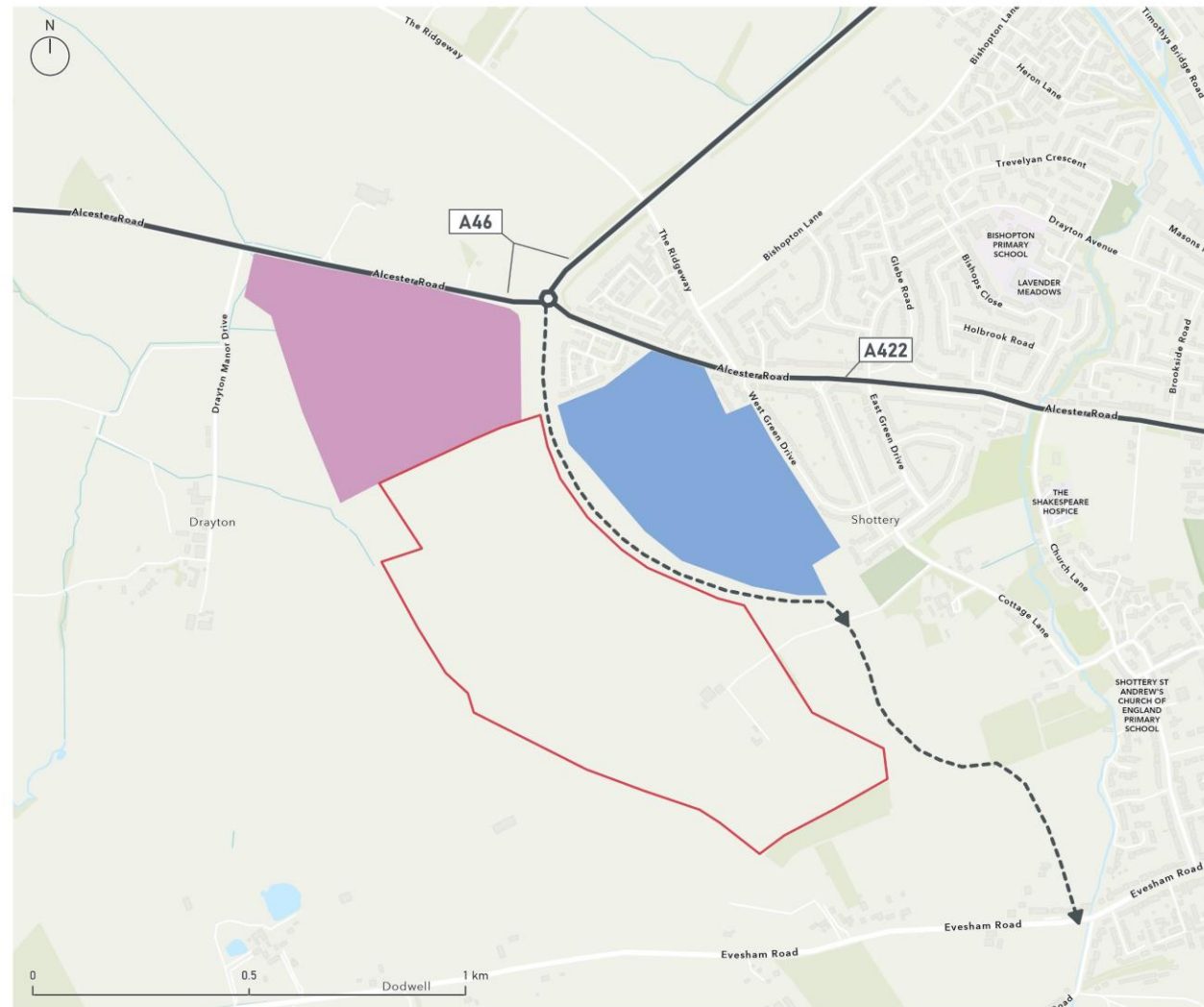
The highway network in the vicinity of the site comprises:

A46

Part of the Strategic Road Network. A single carriageway road subject to the national speed limit.

A422 Alcester Road

Leads from the A46 to Stratford town centre. Footways on both sides of the carriageway and subject to a 30mph speed limit. Intermittent cycle route (shared-use / on-carriageway). WCC has funding to provide new continuous shared use path along Alcester Road.



Context

- Site Boundary
- Highway Network
- West Shotton Relief Road
- South West Shotton Residential Development (Bloor)
- Consented Site for Employment Development

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55-52 Wharf Road
London N1 7EU

FIGURE NO. 1 REVISION C SCALE A3@1:8,000
DRAWN DB REVIEWED JW DATE 12/12/2022

Baseline Transport Conditions

Access to Local Facilities

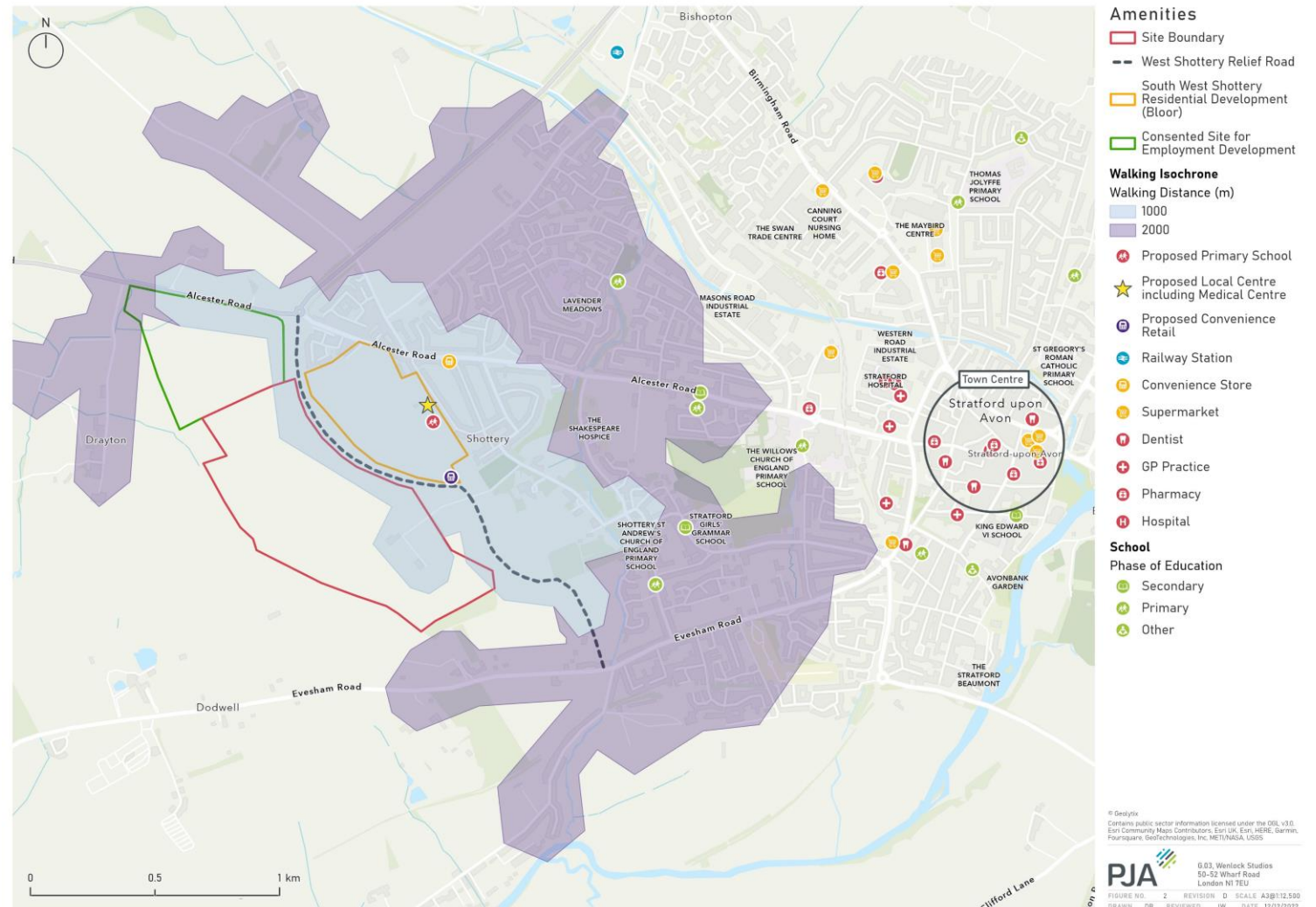
The closest local facilities, key destinations and main employment areas in relation to the site are highlighted in the adjacent figure.

Facilities accessible with a 1km walk of the site include:

- The local centre, including proposed medical centre and primary school within the Bloor Homes Shottery View development;
- Employment opportunities at the Stratford 46 Business Park development.

A secondary school, a grammar school, a further primary school and a further convenience store are accessible within 2km.

The facilities in Stratford town centre, and the railway station, are just outside a 2km threshold.



Baseline Transport Conditions

Public Transport Services

Existing Services

The bus services in the vicinity of the site are:

X19 Stratford – Alcester – Studley – Redditch

1 per hour

15 Stratford Town Centre – East Green Drive (town service)

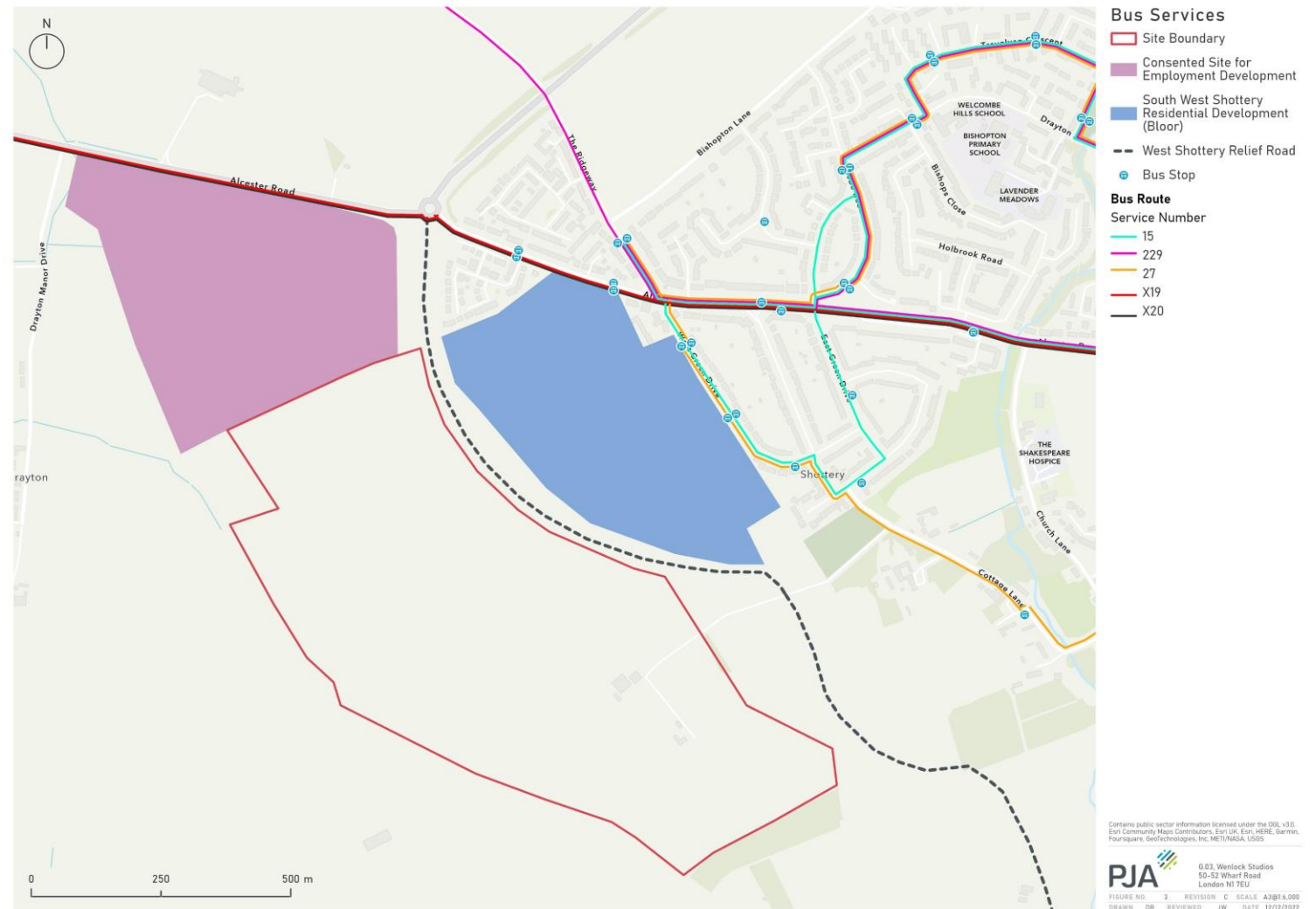
Every 40 minutes

Supplemented by 229 / 27 services

Future Services

There are s106 public transport commitments from the Shotton View and Bishopton residential developments.

Funding will be used to improve and extend the town bus service (15), subject to confirmation of the route details.



Transport Opportunities

A comprehensive transport strategy has been developed based on the site context and the following key opportunities:

| | |
|--------------------------|--|
| Access | Direct access onto the Shottery Western Relief Road, continuing to the A46 and A422, avoiding car journeys through existing residential communities. |
| Connectivity | Providing direct walking and cycling links to future facilities at the Shottery View development and potentially to the Stratford 46 business park development, creating a walkable mixed-used community to the west of Stratford. |
| Strategic Routes | Immediate access to the A46, without requiring major infrastructure such as the South Western Relief Road. |
| Cycling | Potential to join existing and future cycle routes, and opportunity to provide new routes aligning with the Council’s objectives. |
| Public Transport | Opportunities to capitalise on committed bus service improvements and to deliver improved local bus services in Stratford. |
| Mobility Services | Potential to provide mobility services for the site and the wider area, including potential mobility and work hubs, enabling modal shift. |
| Highway Capacity | Opportunity to assist the Council in delivering it’s identified, but unfunded, improvement scheme at A46 Bishopton Island |

Transport Strategy

Access

Vehicular Access

Access to the site can be provided via a new ghost island priority junction with the Shottery Western Relief Road.

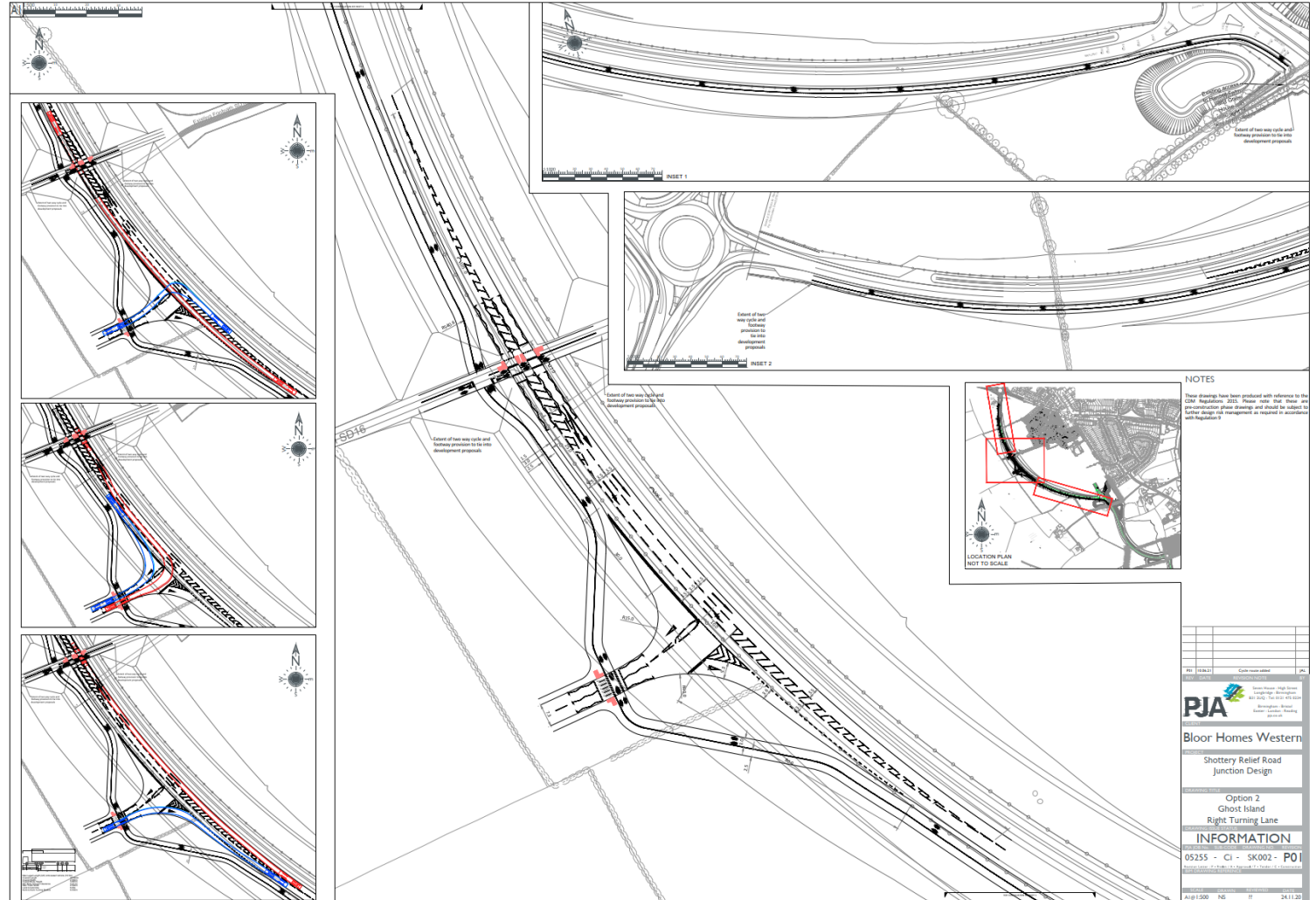
A preliminary design has been prepared which demonstrates how the access can be provided in accordance with DMRB standards and on land within Bloor Homes' control.

Pedestrian and Cycle Access

The design includes a new signal controlled pedestrian crossing connecting the site to the 'Shottery View' development.

A new segregated pedestrian and cycle route would be provided along the site frontage.

A copy of the design is provided in **Appendix A**.



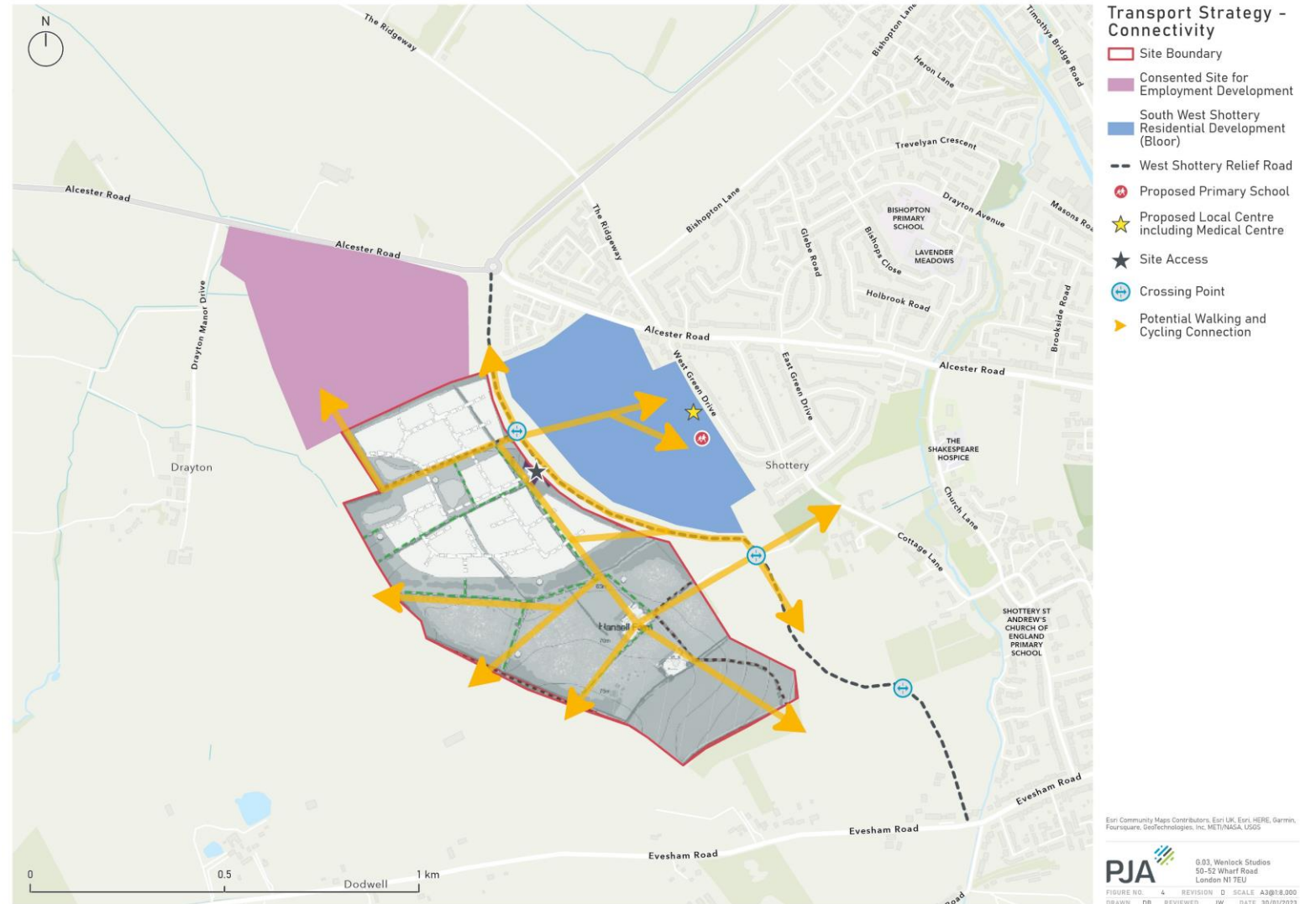
Transport Strategy

Connectivity

The site is well placed to provide improved walking and cycling connectivity to the west of Stratford.

This includes:

- Connections to the local centre and primary school in the Bloor Homes Shottery View development;
- Potential connections into the Stratford 46 Business Park development to the north of the site;
- Improvements to existing Public Rights of Way to provide new leisure routes in the southern part of the site, which has potential to provide a new community park.



Transport Strategy

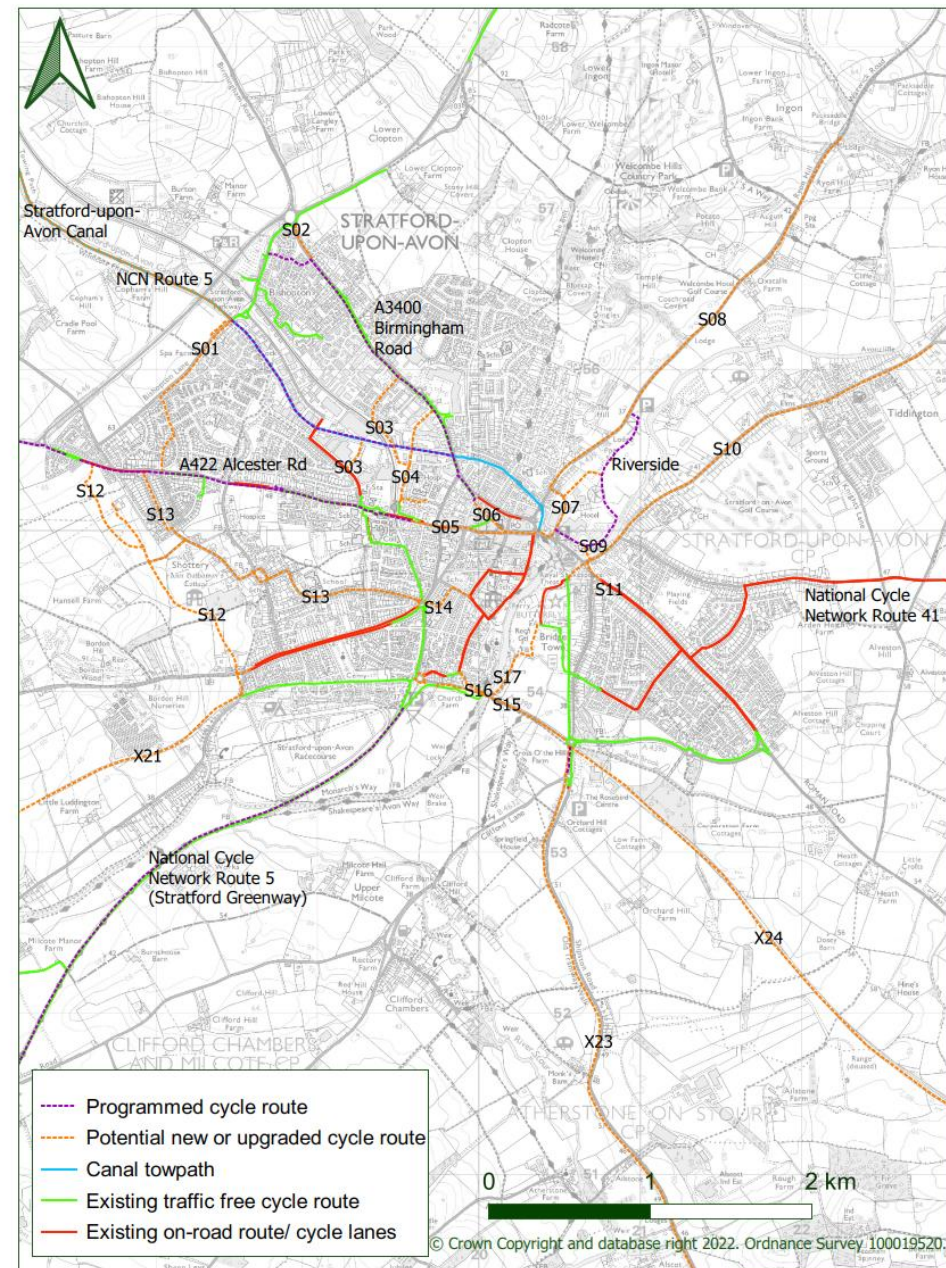
Cycling Infrastructure

Local Cycling and Walking Infrastructure Plan (LCWIP)

WCC's LCWIP (draft June 2022) provides a walking and cycling network development plan for Stratford-upon-Avon.

The plan includes:

- A new shared use cycle route on A422 Alcester Road, replacing existing sub-standard facilities. The route is fully funded and will be delivered by WCC.
- A new route through the Shotton View development, and alongside the Shotton Western Relief Road (Route S12), which will be provided by Bloor Homes.
- A new route through Shotton (S13 and S14) connecting to the southern part of Stratford town centre.



**Draft LCWIP
Stratford cycle network plan**

Date: 20/04/2022 Contact: 01926 413950 alisonkennedy@warwickshire.gov.uk



Transport Strategy

Cycling Infrastructure

Shottery Cycle Routes S13 / S14

Routes S13 / S14 are currently unfunded and the proposed development at West Shottery is well placed to assist WCC deliver this scheme.

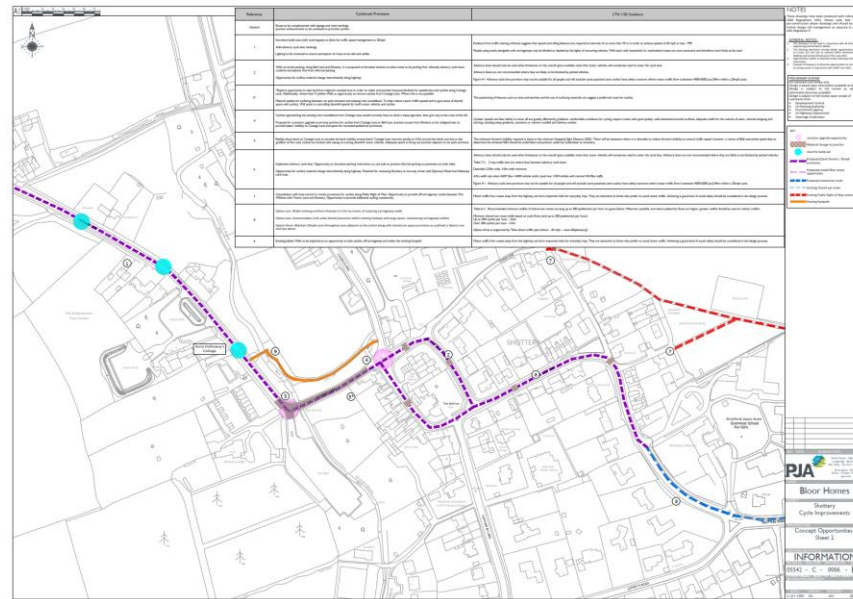
A study has been prepared to identify a concept scheme for this route.

The route would be predominantly on-carriageway, using traffic calming measures to create a signed quiet route into the town centre over a distance of approximately 3.5km, or 10-minute cycle.

There are further opportunities to provide additional connections into existing routes through Shottery Field, connecting to the National Cycle Network.

On busier sections, there are opportunities to provide an off-carriageway route.

A full concept scheme is provided in **Appendix B**, which includes tables setting out how, subject to further traffic surveys, the scheme would comply with the requirements of LTN 1/20.



Concept Scheme Example (see Appendix B)



Typical route details [Image – LTN 1/20]

Transport Strategy

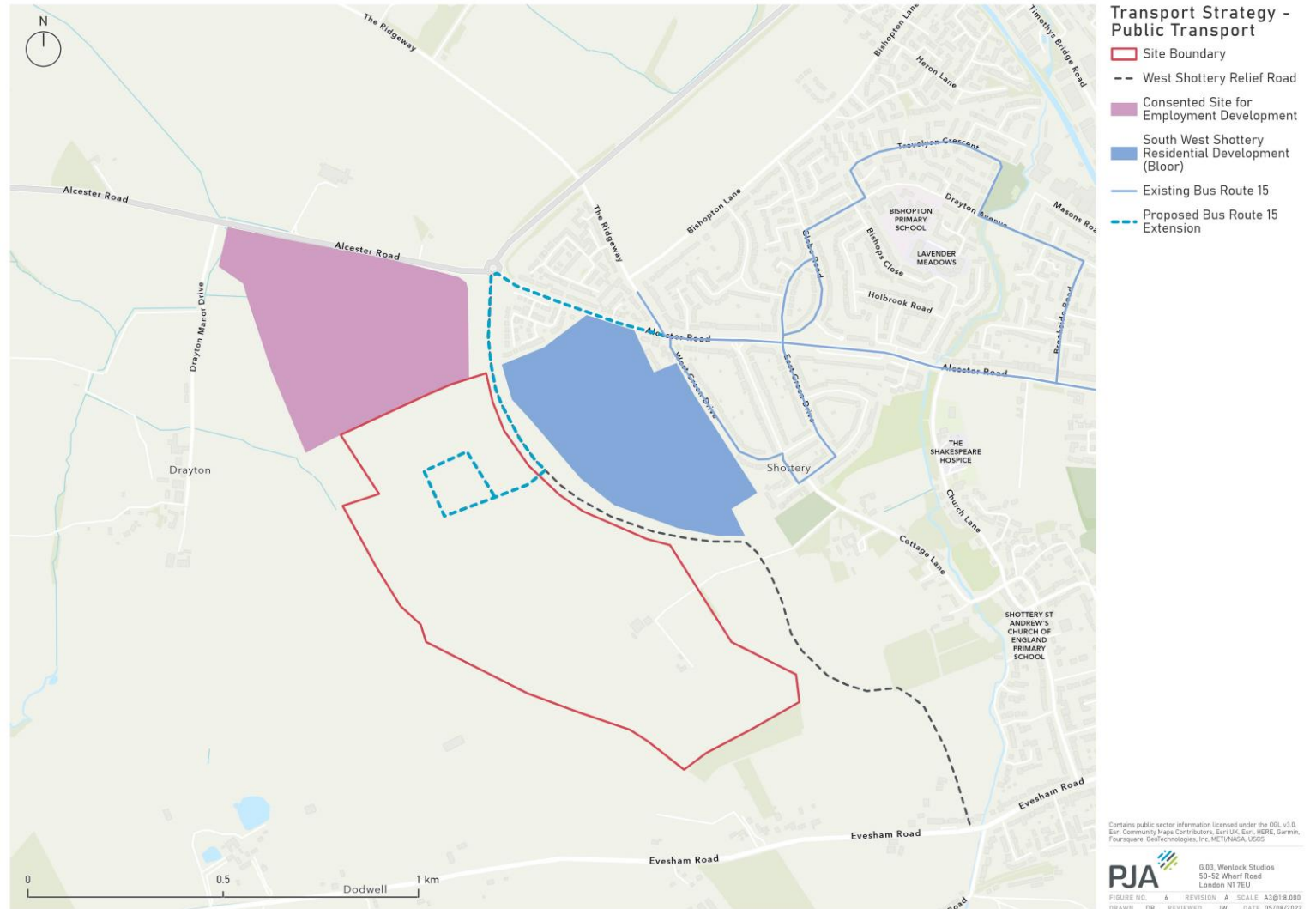
Public Transport

There are s106 public transport commitments from Shotton View and Bishopton residential developments.

Funding will be used to improve and extend the town bus service (15), subject to confirmation of the route details.

Further funding from the proposed development could be used to extend this service further and provide additional services. The figure highlights a potential route the service could follow.

It is anticipated that ultimately a 20 minute frequency bus service into Stratford town centre could be provided from the site.



Transport Strategy

Mobility Services

The proposed development would provide a **mobility hub**.

Mobility hubs are highly visible, safe and accessible spaces where public, shared and active travel modes are co-located alongside improvements to public realm and enhanced community facilities.

These community facilities would internalise trips within the site and reduce the need to travel.

In this location, a ‘workhub’ and car club are likely to be particularly successful in reducing car journeys.

The mobility hub could potentially be complemented with innovative parking solutions, ensuring that a public realm first approach can be pursued, alongside prioritisation of active travel modes within the residential development.

The development would provide strong linkages to the local centre and primary school in the Bloor Homes Shotton View development and potentially the Stratford 46 business park development as part of a sustainable community west of Stratford.

The development would act as a catalyst for the creation of a new, sustainable, mixed-use community to the west of Stratford.

Components of mobility hubs

Mobility hubs can be seen as an interface between the transport network and spatial structure of an area. Mobility hubs include a range of different components, This diagram illustrates some of the most commonly used components:

- A1: Mobility components: Public Transport**
- A2: Mobility components: Non - public transport**
- B: Mobility related components**
- C: Non-mobility & Urban realm improvement**

A2: MOBILITY COMPONENT: SHARED MOBILITY

- Car share: back to base, one way, electric.
- Bike share: back to base, one way, electric.
- Cargo bike share, cargo bike logistics store
- Other future micro-mobility options e.g. e-scooters, moped share
- Ride sharing

Branded pillar

Mobility hubs require a prominent sign or pillar with a common brand to make them visible to the public. The inclusion of a digital elements in a pillar can provide:

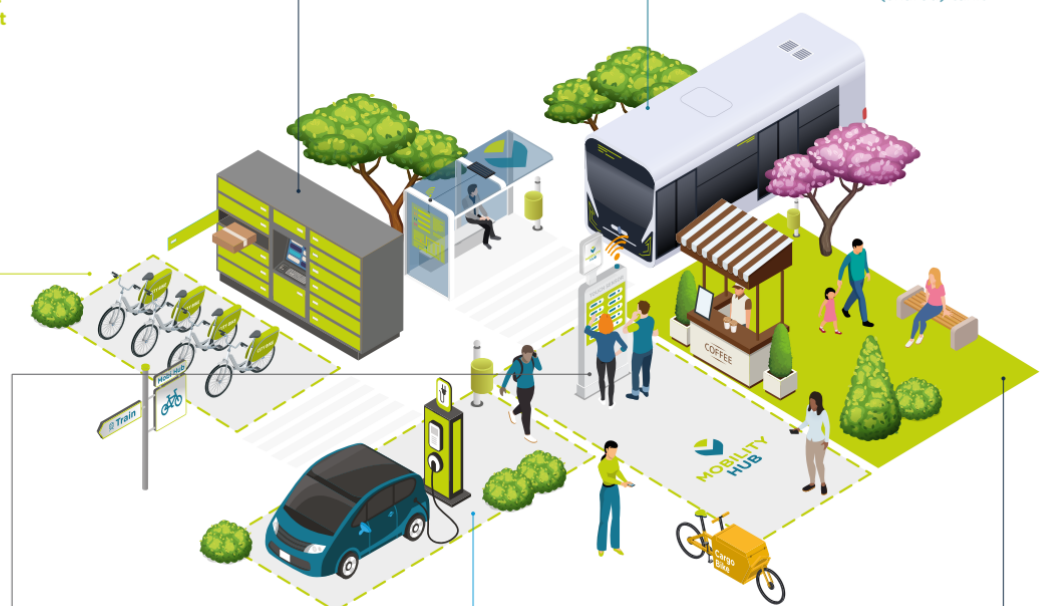
- Access to a local transport website for information on services
- A way finding option for local walking and cycling trips
- Registration and ticketing
- Customer services.
- A journey planning service for multi-modal trips

C: NON-MOBILITY & URBAN REALM IMPROVEMENT

- Package delivery lockers
- Mini fitness or play area
- Café and Co-working space
- Outdoor water fountain

A1: MOBILITY COMPONENTS - PUBLIC TRANSPORT MODES & OTHER PICK UP /DROP OFF:

- Bus
- Tram
- Rail
- Demand responsive mini-buses (all one points)
- Ride hailing, (shared) taxis



B: MOBILITY RELATED COMPONENTS

- EV car charging
- Bike parking, (Standard, covered, restricted access, EV charging)
- Bike repair, pumps
- Digital pillar, (transport info, ticketing, way finding, walk distances, local services)
- Child car seats, bike seats & trailers
- Community concierge parcel last mile delivery

C: NON-MOBILITY & URBAN REALM IMPROVEMENT

- Improved public realm, safer crossings, step free access, road repairs, adjustments for disabilities.
- Waiting area space, covered, seating, planting, artwork, kiosks for coffee etc.
- Wi-Fi, phone charging

Highway Capacity

Paramics Model Overview

The impact of the development has been tested using the Stratford upon Avon Wide Area Paramics model, for both 510 and 600 dwellings (the lower and upper limit of the site's capacity).

This assessment tests four main scenarios:

2017 Base Year – representing existing conditions.

2031 Reference Case – which includes committed developments and associated infrastructure. It excludes the proposed Stratford South Western Relief Road (SWRR), which is subject to planning and funding approval.

2031 Reference Case + Development (510 Dwellings)

2031 Reference Case + Development (600 Dwellings)

The Reference Case assessment demonstrates that the development is not reliant on the SWRR.



Paramics Modelling

Reference Case

Committed Developments

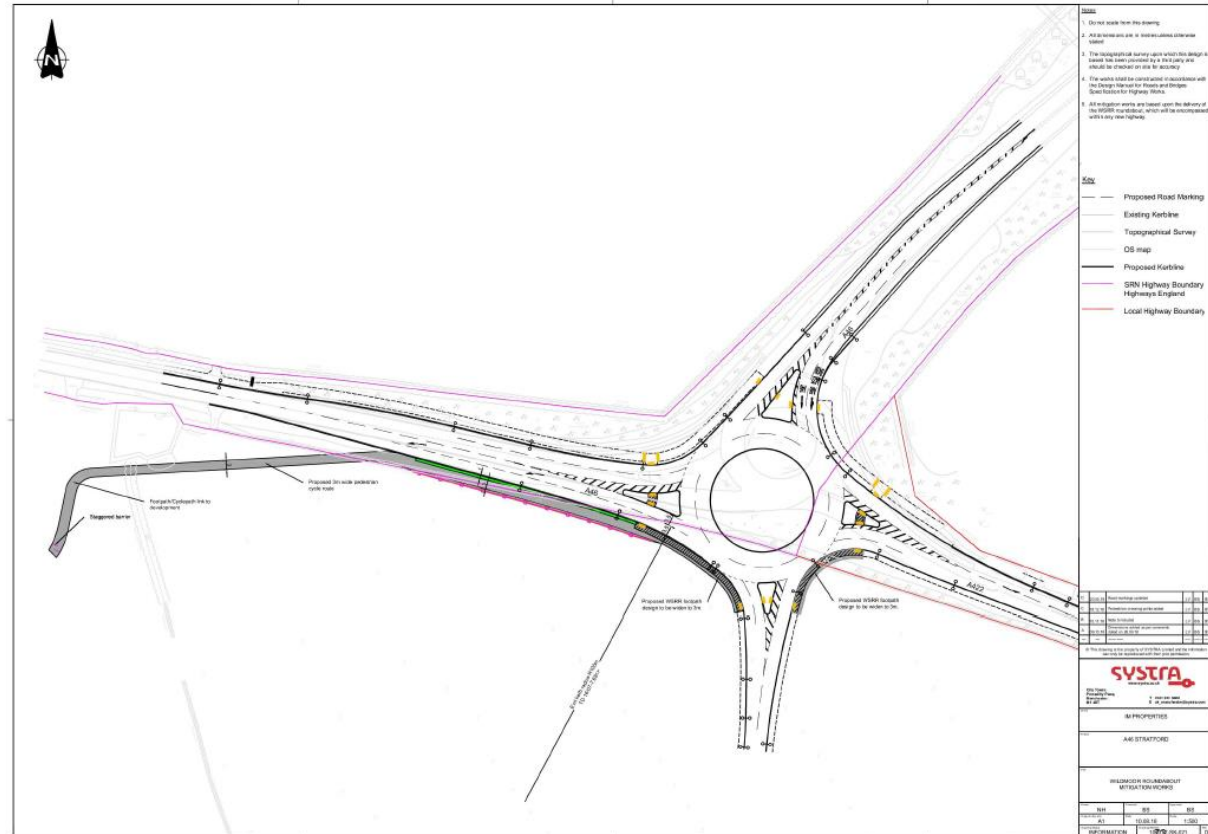
The reference case scenario includes 38 **committed developments** to 2031, including:

- Shotton View (Bloor Homes) and The Chancery (Bovis) – 800 dwellings
- North of Bishopton Lane (Taylor Wimpey / Miller Homes) – 500 dwellings
- Long Marston Airfield – 400 dwellings
- Land off Alcester Road (IM Land – Stratford 46) – mixed employment.

Committed Infrastructure

The Reference Case includes the following committed infrastructure:

- West of Shotton Relief Road (associated with Bloor Homes Shotton View development)
- A46 / Wildmoor roundabout widening (associated with the 'Stratford 46' employment site).



A46 / Wildmoor committed improvement scheme

Paramics Modelling

Mitigation Schemes

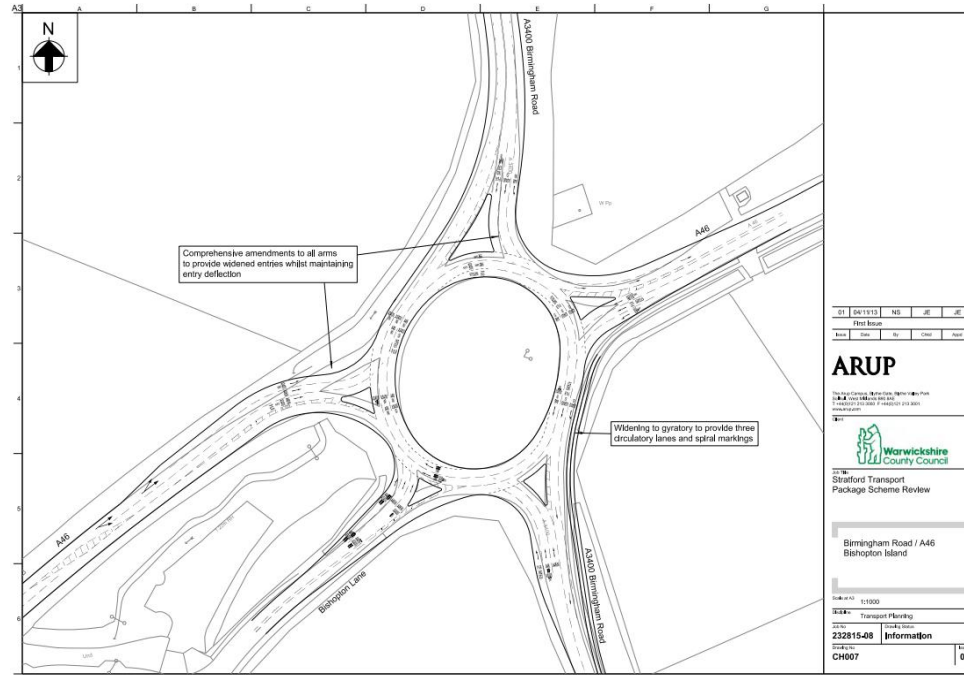
Bishopton Island

The Local Plan Core Strategy Infrastructure Delivery Plan scenario includes a mitigation scheme at the Bishopton Island (A46 / Birmingham Road roundabout). The Infrastructure Delivery Plan identifies a £2.5m cost for this scheme, which is not yet funded.

WCC has prepared a deliverable improvement scheme design.

Initial model runs identified the Bishopton Island scheme will be required to ensure continued effective operation of the highway network following completion of the development at West Shottery.

This scheme is therefore included as additional mitigation in the Reference Case + Development scenario.



Bishopton Island Scheme (Reference Case + Development Scenario)

Paramics Modelling

Scenario Summary

The table below summarises the key components of each scenario.

| Scenario | Committed Developments (inc. Shotton Western Relief Road) | Bishopton Island Scheme | Wildmoor Junction IM Land Scheme | 510 Dwellings | 600 Dwellings |
|---|--|----------------------------|-------------------------------------|---------------|---------------|
| 2017 Base | × | × | × | × | × |
| 2031 Ref Case | ✓ | × | ✓ | × | × |
| 2031 Ref Case + 510 Dwellings + Mitigation | ✓ | ✓ | ✓ | ✓ | × |
| 2031 Ref Case + 600 Dwellings + Mitigation | ✓ | ✓ | ✓ | × | ✓ |

Paramics Modelling

Trip Generation and Distribution

Trip Generation is based on trip rates provided by WCC.

Trip Distribution is based on WCC’s Mobile Network Database (MND) , which provides trip distribution for existing car trips originating in the west Stratford area.

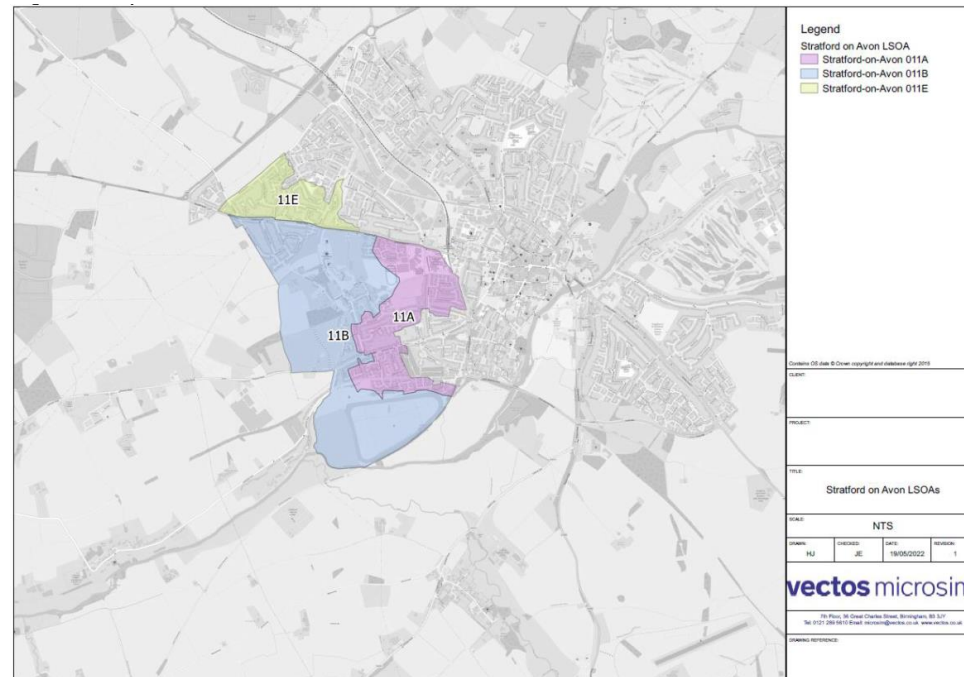
The trip rates do not, at this stage, take account of potential for mobility measures which would reduce trip generation, such as potential mobility hubs or co-working spaces.

This methodology does not take account of internalisation of trips to committed local developments, including the local centre and primary school in the Bloor Homes Shottery View development, or to new employment opportunities in the Stratford 46 business park development.

This assessment therefore provides a robust assessment of the impact of the development.

| Period | Trip Rate | | Trip Generation | | | |
|---------------|-----------|------------|-----------------|------------|---------------|------------|
| | | | 510 Dwellings | | 600 Dwellings | |
| | Arrivals | Departures | Arrivals | Departures | Arrivals | Departures |
| 07:00 - 08:00 | 0.100 | 0.391 | 51 | 199 | 60 | 235 |
| 08:00 - 09:00 | 0.152 | 0.406 | 78 | 207 | 91 | 244 |
| 09:00 - 10:00 | 0.118 | 0.154 | 60 | 79 | 71 | 92 |
| AM Total | 0.370 | 0.951 | 189 | 485 | 222 | 571 |
| 16:00 - 17:00 | 0.288 | 0.171 | 147 | 87 | 173 | 103 |
| 17:00 - 18:00 | 0.395 | 0.122 | 201 | 62 | 237 | 73 |
| 18:00 - 19:00 | 0.301 | 0.164 | 154 | 84 | 181 | 98 |
| PM Total | 0.984 | 0.457 | 502 | 233 | 590 | 274 |

Trip Rates and Trip Generation



MND Donor Zones

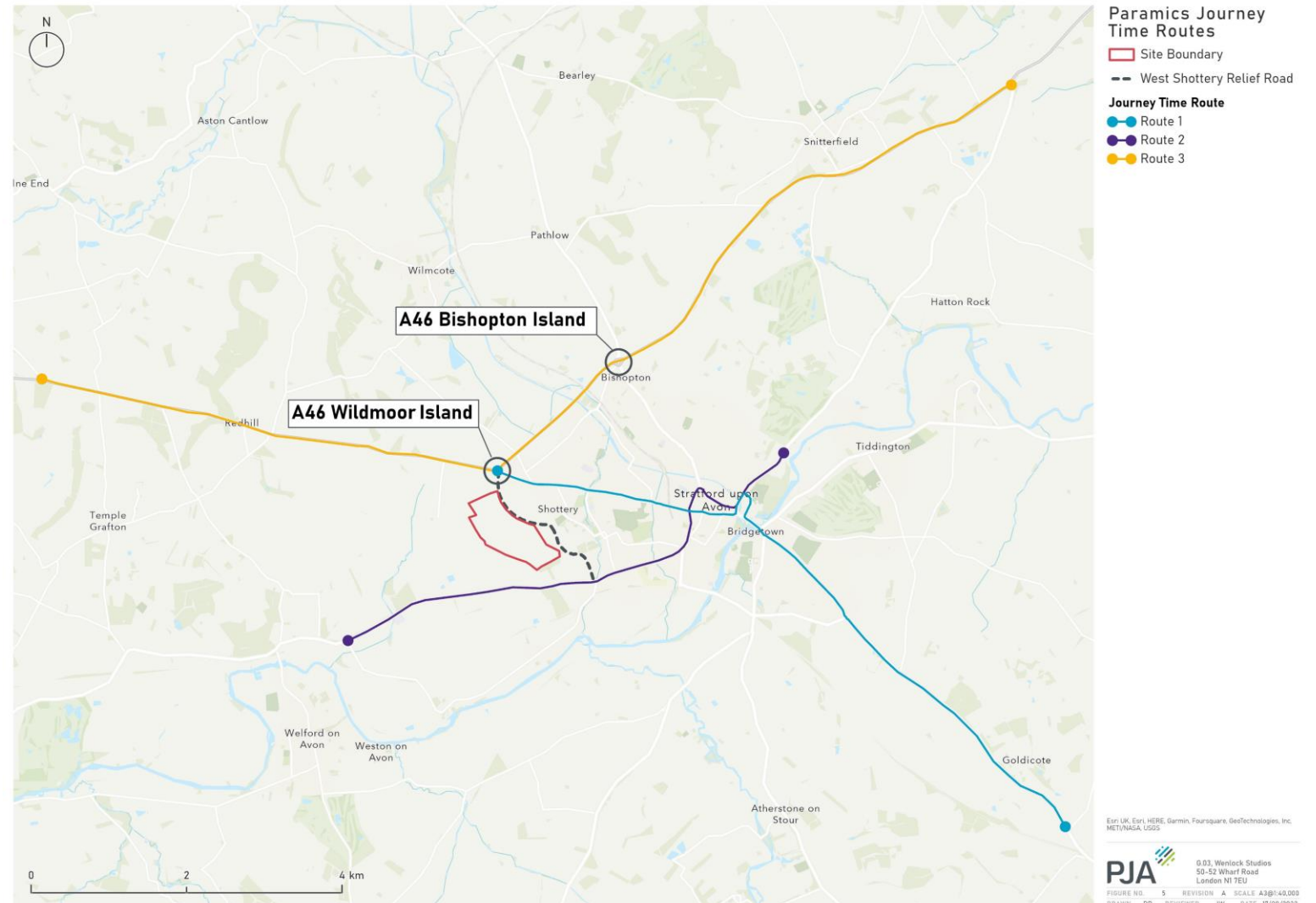
Paramics Modelling - Results

Results Overview

This section presents the results of the assessment using average delay per vehicle on key routes.

The figure highlights the key routes that have been considered as part of this transport appraisal:

- Route 1 – A46 to south-east Stratford via A422 Alcester Road and Town Centre
- Route 2 – Evesham Road (via southern end of Western Relief Road) to north-east Stratford via Town Centre
- Route 3 – A46 West to A46 North-East



Delay by Route

Route 1 – A46 to south-east of Stratford, via A422 Alcester Road and town centre

AM Peak Westbound: There would be reduced delay in the Reference Case and Development scenarios compared to the Base.

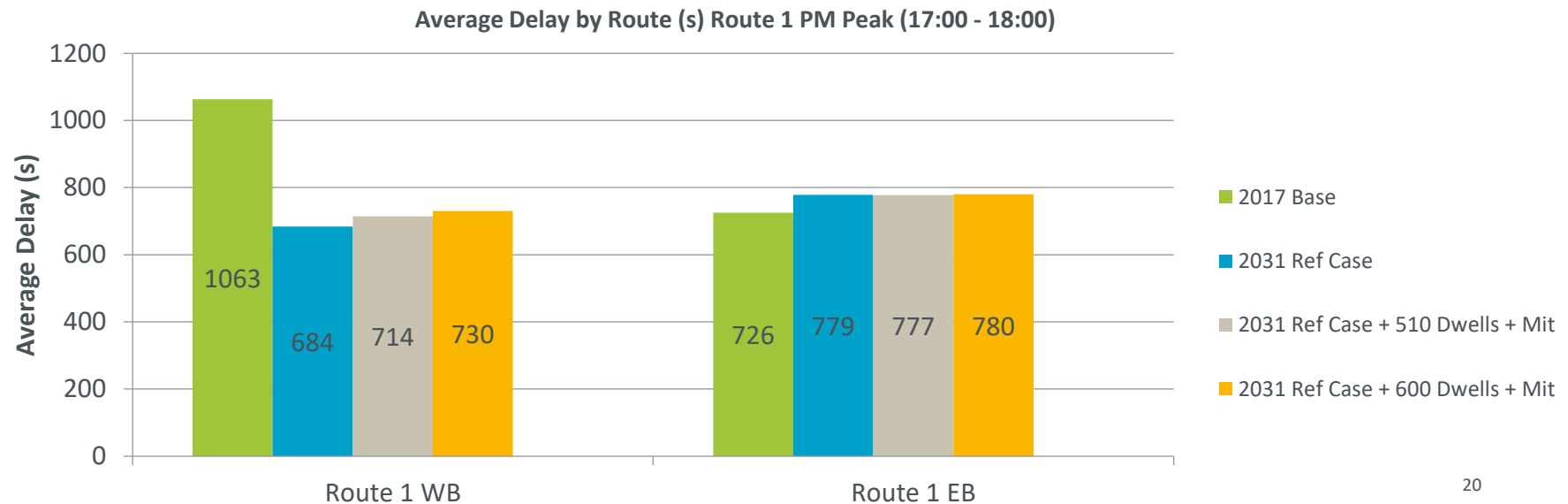
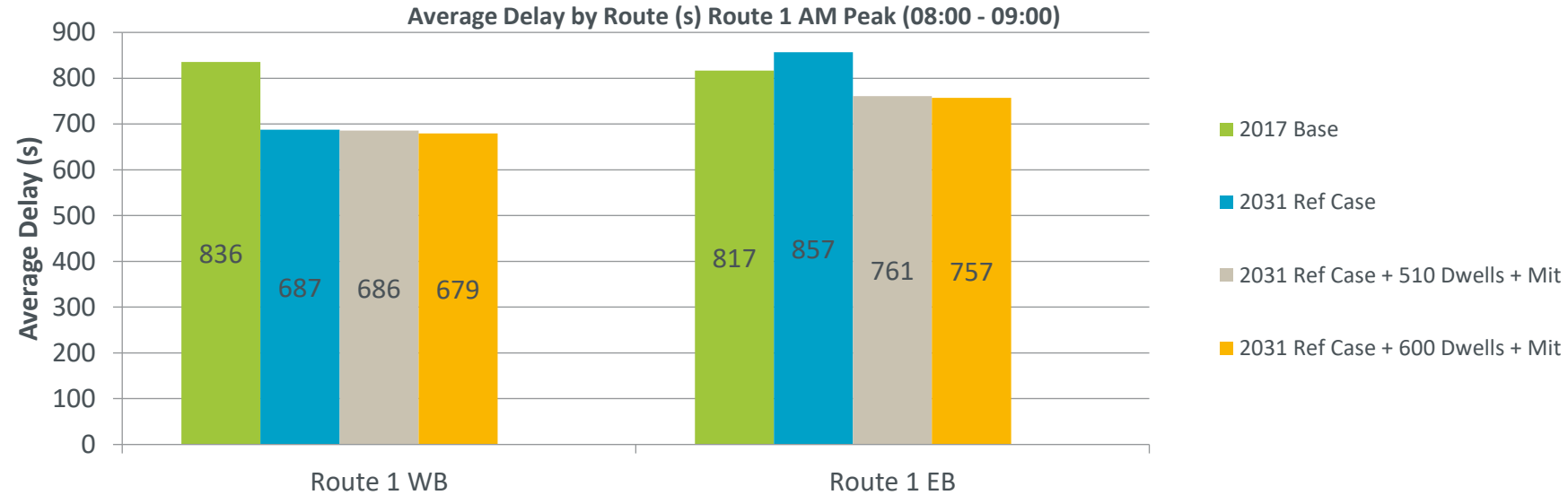
This is due to benefits provided by the committed Wildmoor junction scheme and the Shotton RR.

AM Peak Eastbound: Delay is reduced in the development scenarios compared the Reference Case, due to the benefits of the Bishopton mitigation scheme.

PM Peak Westbound: Delay is substantially reduced in the Reference Case and development scenarios compared to the base.

PM Peak Eastbound

Delay is unchanged in the development scenarios compared to the Reference Case.



Delay by Route

Route 2 – Evesham Road to north east Stratford via town centre

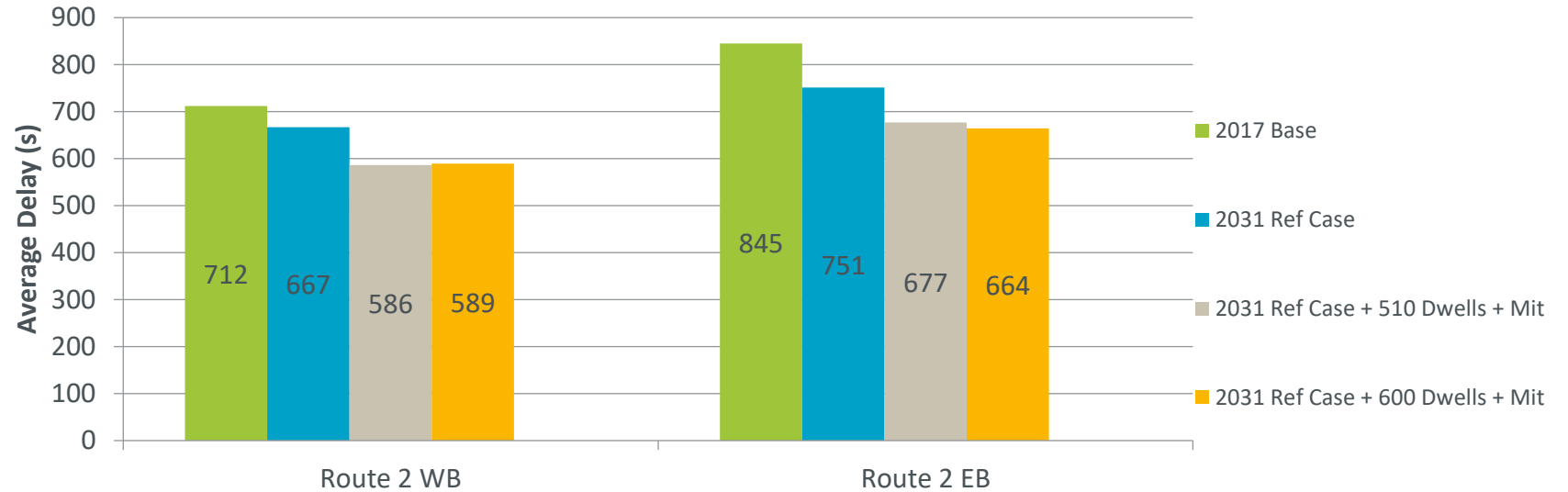
AM Peak Westbound: Delay reduces in the development scenarios compared to the Reference case. This is because the Bishopton mitigation scheme draws traffic away from the town centre to the A46.

AM Peak Eastbound: Delay again reduces in the development scenarios compared to the Reference case. This is because the Bishopton mitigation scheme draws traffic away from the town centre to the A46.

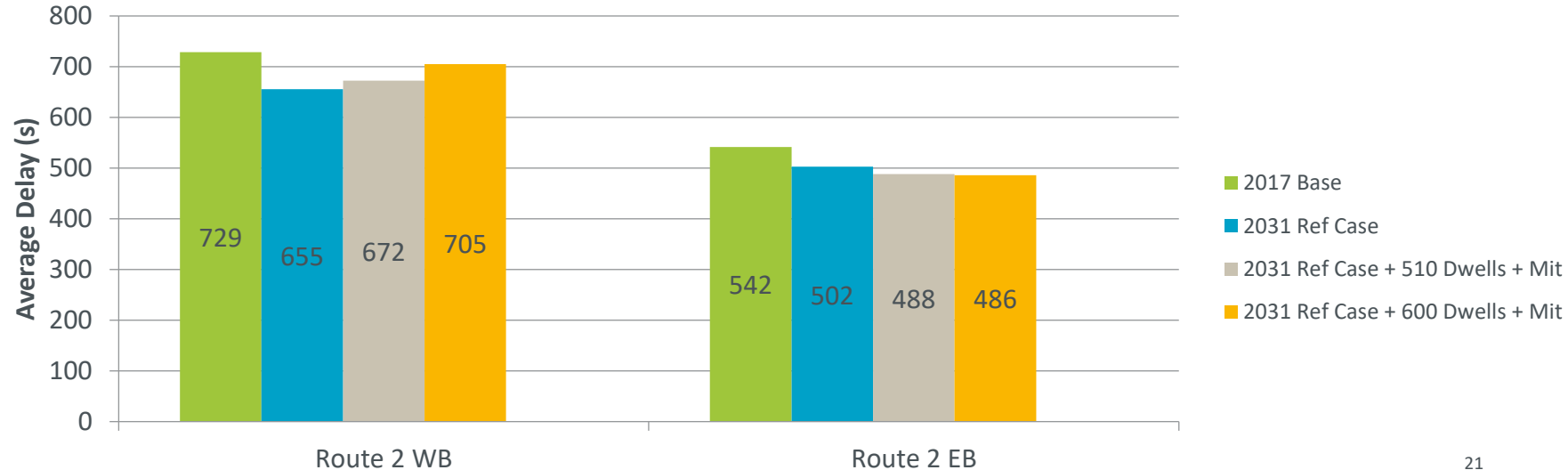
PM Peak Westbound: Delay is not significantly different in the development scenarios compared with the Reference Case, and remains less than the Base scenario.

PM Peak Eastbound: Delay is slightly reduced in the development scenarios compared to the Reference Case.

Average Delay by Route (s) Route 2 AM Peak (08:00 - 09:00)



Average Delay by Route (s) Route 2 PM Peak (17:00 - 18:00)



Delay by Route

Route 3 – A46 West to A46 North East

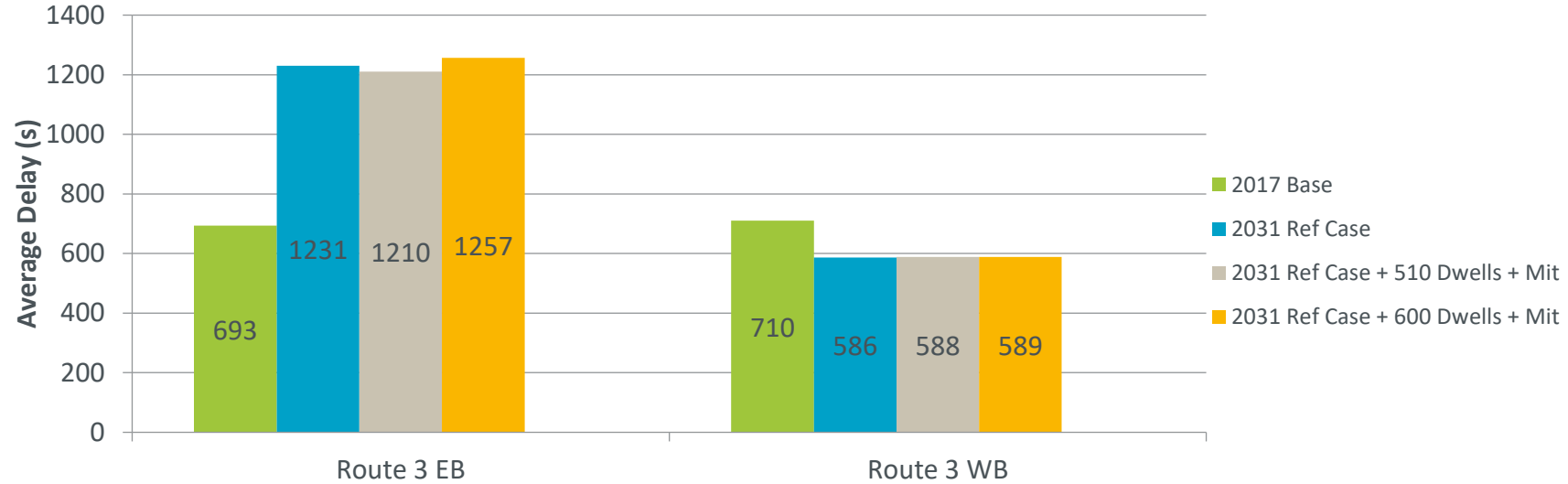
AM Peak Eastbound: There is no significant change in delay in the development scenarios compared to the Reference Case.

AM Peak Westbound: There is no significant change in delay in the development scenarios compared to the Reference Case. Delay is reduced compared to the base.

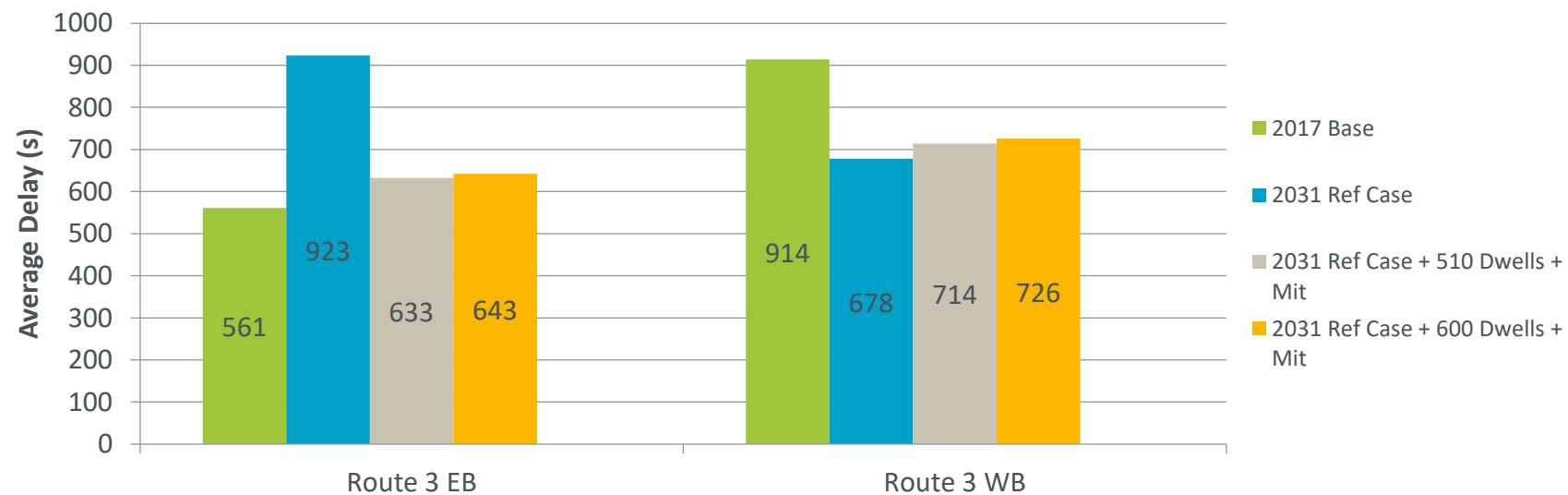
PM Peak Eastbound: Delay is significantly reduced in the development scenarios compared to the Reference Case, due to the benefits of the Bishopton mitigation scheme.

PM Peak Westbound: Delay is reduced in the Reference Case compared to the base. There is no significant change in the development scenarios compared to the reference case.

Average Delay by Route (s) Route 3 AM Peak (08:00 - 09:00)



Average Delay by Route (s) Route 3 PM Peak (17:00 - 18:00)



Paramics Modelling Summary

The proposed development is capable of providing funding through S106 agreement(s) attached to any forthcoming planning consent towards the Bishopton Island improvement – a capital project identified by WCC which is currently unfunded. The scheme will reduce queueing on the A46, releasing capacity for new development.

The development will gain access from the Shottery Relief Road, which itself will provide capacity improvements compared to the base scenario.

The Paramics modelling demonstrates that with the Bishopton scheme, the proposed development would have a minimal impact on local journey times.

Conclusions

This table below summarises the findings of the transport appraisal and strategy, which support the site’s allocation in the emerging South Warwickshire Local Plan.

| | |
|-------------------|--|
| Access | Access can be provided onto a new high quality road, in accordance with the relevant standards, and using only land within Bloor Homes’ control. |
| Connectivity | The site can provide connections into surrounding developments, creating a new walkable community to the west of Stratford. |
| Cycling | The site can assist WCC in delivering a LTN 1/20 compliant cycle route aligning with it’s LCWIP. |
| Public Transport | The site can provide further funding to build upon committed service improvements, which will ultimately deliver a regular bus service from the site into Stratford throughout the day. |
| Mobility Services | The development can support a mobility hub which will reduce reliance on private car ownership within both the site and surrounding area. |
| Highway Capacity | The site can assist the County Council in delivering it’s planned improvement at Bishopton Island. Once delivered, the development would have a minimal impact on the capacity of the highway network. |

It is considered that the proposed development can directly deliver and contribute to a range of measures that would provide a positive contribution to transport in Stratford-upon-Avon and is, therefore, suitable for allocation in the Local Plan.

Appendices

Appendix

Site Access Drawing

Appendix

Cycling Improvements Drawings

Document control

| Client information and references | |
|-----------------------------------|---------------|
| Client | Bloor Homes |
| Project | West Shottery |

| Our Information and references | |
|--------------------------------|-----------------|
| Issue | Revision G |
| Date of Issue | 30 January 2023 |
| Prepared by | JW |
| Checked by | ME |
| Approved by | ME |
| PJA Prospect number | 05442 |
| PJA Report reference | R-001-G |



Park Point
High Street
Longbridge
Birmingham
B31 2UQ
UK

