



Appendix H – Types of walking and cycling mitigation measures that may be considered

JCS Transport Strategy Evidence Base

APPENDIX H – Types of walking and cycling mitigation measures that may be considered

The information contained within this appendix represents an interpretation of a high level assessment of types of layout, design and measures that may be considered as part of the JCS Transport Strategy to maintain and improve walking and cycling levels. In relation to each of the 5 sites a template or scenario is presented which may be a useful platform but which will be affected by detailed matters yet to be decided through local plan processes, design and deliverability. There may be more effective ways of achieving pedestrian and cycling-friendly environments within and in association with JCS developments.

Sites A1 – Innsworth and A1a Twigworth

Consider the following types of measures or propose other measures to achieve the objectives of permeable, quietly trafficked layouts to allow direct trips on foot or by bike

- Ensure internal layout enables motorised traffic free linkage to correspond with the public footpaths (7A and 9) where path crosses Horsbere Brook and adjoins Longford Lane via a well surfaced path. This allows simple traffic free connectivity with the City and Innsworth Lane. It also establishes link with local pedestrian and cycle network between the A40 and the City and achieves longitudinal and lateral permeability;
- Enforce two pedestrian and cycle routes from the site, across Innsworth Lane, along Motteshead Drive and bifurcating south west along pedestrian bridge across A40 and south east along Luke Lane to link with north A3 site at Parkside Close and NCN route 41. These reflect key pedestrian and cycle desire lines between the site, Gloucester City and Churchdown, using very quiet streets connecting across the A40 via a foot - and potentially cycle – bridge;
- Incorporate ‘point closures’ or control motorised traffic access at juncture(s) between new streets on the site and consider at Motteshead Drive which is an existing quietly trafficked street in Innsworth. This can enable easy movement of people without highly engineered new layouts and without impairing the residential qualities of existing streets in Innsworth;
- Provide Toucan or chicaned crossing point on Innsworth Lane to serve this desire line;
- Inbetween access arrangement on Frogfurlong Lane and access arrangements on Innsworth Lane implement significant shared space arrangement to deter unnecessary motorised trips at this point and create slow movement settlement ‘core’ between existing and new street layouts;
- Contribute to measures to upgrade the pedestrian bridge over the A40 to carry higher pedestrian flows and cyclists;
- Provide footways on Innsworth Lane and Frog Furlong Lane and appropriate cycle infrastructure when motorised traffic flows and carriageway widths are understood
- Ensure that optimal connections are created or enabled with the quiet lanes north-east of the site and with the new development at site through rural traffic calming measures and, or traffic restraint.
- Install new street lighting and signage where desire lines will form or where flows will increase.
- Improve footway on eastern side of A38. It will be difficult to address cycling conditions on the A38 south towards Gloucester. The provision of a parallel route through and south of the site onto Longford Lane/ Fircroft Road, using PRoW, upgrades may be the focus of provision for this desire line.

APPENDIX H – Types of walking and cycling mitigation measures that may be considered

A3 – South Churchdown (i) northern lobe

- Soft linkages with existing street layouts and informal paths will achieve more cost effective walk and cycle routes on this currently land use locked site and should be planned for at masterplan conception; establish pedestrian and cycle link through from Luke Lane at that north of the site to the B4063 shared use cycle path to optimise walk and cycle connectivity with the quiet streets and school on the north and eastern site edges;
- Upgrade the pedestrian bridge to carry higher pedestrian flows and cyclists – audit to assess parapet modifications;
- Provide easy connectivity with the shared use walk and cycle facility on the B4063, ensuring logical expression of pedestrian and cycle desire lines i.e. access at Elmbridge Roundabout cycle underpass and at Parkside Drive/ Close;
- Ensure that the two proposed general access arrangements onto the B4063 do not deter or endanger cycle movements on this key strategic cycle route, through incorporating speed control measures and cycle priority crossing points. Consider road arrangements which advantage pedestrians and cyclists to maintain and increase use of active travel modes on this corridor for local trips. Current street alignment and spatial arrangements lends itself to providing separate bespoke non-motorised connections onto NCN.
- Incorporate ‘point closures’ at junctures between new streets and existing quietly trafficked ones in Churchdown and Innsworth at links with e.g. Luke Street in Innsworth.. This allows high volumes of pedestrians and cyclists to flow between the new development and existing land uses without encouraging motorised vehicles and without impairing the residential qualities of these streets;
- Create pedestrian and cycle only linkages onto the B4063 shared use cycle track;
- Ensure pedestrian and cycle only access points at each ‘corner’ of the development site halves onto the B4063 shared use cycle track;
- Ensure that optimal connections are created or enabled with the quiet streets north of the site and with the new development at site (A1);
- Liaise with Sustrans to secure route improvements to NCN which may include realignment through the development site

A3 – South Churchdown (ii) central lobe

- Optimise non-motorised connectivity with Churchdown through strong links into quiet residential streets at Yew Tree Way;
- Install pedestrian crossing facility on Pirton Lane to meet pedestrian desire line needs of trip flows to Parton Manor Schools;
- Install pedestrian and cycle path from the development to adjoin the B4063 at its southern most point.
- Ensure that if the site layout is to include a ‘green’ undeveloped area where its land adjoins Elmbridge, that a bespoke pedestrian and cycle link running between here and the development’s western edge is installed.

APPENDIX H – Types of walking and cycling mitigation measures that may be considered

A3 – South Churchdown (iii) southern lobe

- Mitigation will rely heavily on site layout to ameliorate some of the significant barriers.
- Where main access onto A40 is provided, deliver a segregated cycle facility between it and the Elmbridge roundabout as the ONLY means for pedestrians and cyclists to reasonably access the City OR provide separate linkage point out of the development site to the area of the roundabout where it can connect with the Gloucester/ Churchdown cycle network (in association with Government offices?).

The key measures should include

- Upgrade Pirton Lane to safeguard and enhance it as a pedestrian and cycle environment. Carriageway does not have capacity for widening and is too narrow to accommodate cycle lanes (which would normally be advisory where traffic flows are projected to increase). Provide shared use footway on Pirton Lane between John Daniels Way and a point of site access adjacent/ south of the Pirton Lane Bridge over the A40;
- Ensure that site layout of A3 (ii) middle lobe facilitates walking and cycling through it to offset barrier effects of A3 (iii) southern lobe;
- Easy, direct access to the Elmbridge Court Roundabout from this development will be of overriding importance as there are so few opportunities to utilise or create any other linkages with the city.
- Upgrade existing pedestrian and cycling linkages around Elmbridge roundabout to ameliorate traffic impacts, create pedestrian and cycle link point where there is otherwise extremely poor provision; and confer as much benefit to non-motorised travellers in this area as is possible;
- Development design and layout should incorporate 'point closure' at junctures between new streets and existing quietly trafficked ones in Churchdown, especially to facilitate school trips to Churchdown School;
- Ensure that optimal connections are created or enabled with the quiet streets north east of the site which, in terms of movement framework, forms part of the same development;
- Install pedestrian and cycle bridge over A417 between site and Elmbridge; if a bridge is too costly use internal site development layout to bring pedestrians and cyclists directly to the Elmbridge Roundabout via both the B4063 and a new internal route.

Then consider 3 options:

- **Option 1** Provide a direct pedestrian and cycle route (greenway) that is not on a footway across residential or business accesses and which traverses the length of the development in parallel with, but not abutting, the A40. This will connect with the pedestrian and cycle underpass at Elmbridge Court roundabout. Consider building this of a quality to carry emergency vehicles if a need should arise
- **Option 2** Upgrade the route between site and B4063 which will include measures such as chicanes on Pirton Lane Bridge, routing through A (ii)3 middle lobe onto B4063 and pedestrian and cycle crossing point on B4063 to allow cyclists who do not wish to mix with traffic to use the shared use facility on western edge.

APPENDIX H – Types of walking and cycling mitigation measures that may be considered

- **Option 3** Create a series of radial quiet direct routes through the development between Pirton Lane and Elmbridge Court roundabout.

A5 – North West Cheltenham

- The scale of NW Cheltenham, its transport impacts and the need to connect with Cheltenham in particular, may enable more complex solutions to be applied such as pedestrian and cycle bridges, and whole new pedestrian and cycling corridors, mainly to the north of Cheltenham and southwards to West Cheltenham, as well as significantly upgraded public rights of ways.
- The internal layout of the development should clearly reflect a local walking and cycling strategy with targets for mode use on-site and in the vicinity of the development.
- Mitigation should thus deliver innovative measures to address the barriers to walking and cycling between the development and neighbouring land uses .

The development itself will need to:

- exhibit layouts which offer higher non-motorised permeability than motorised. It should also provide attractive multi directional walk and cycle routes from the site;
- include ‘Green corridors’ through the development serving both trip flows between Cheltenham town and the site and providing for radial flows to north east to Bishops Cleeve and south west to west Cheltenham (proposed development site).
- Provide crossing points on the A4019 and provision of shared use cycle footway where it can be installed to a high spec.;
- Install shared use facility in association with Hyde Lane or another solution which provides soft links to Bishops Cleeve and the Honeybourne cycle track north of Cheltenham;
- Implement measure to enable active travel movement through into Cheltenham town. Where the extent of penetration is limited, for example, by the railway line, propose alternatives;
- Implement measures to create pedestrian and cycling corridors across and in association with Tewkesbury Road and Hyde Lane which will be more heavily trafficked.
- Improve conditions for local non-motorised trips on these corridors into Cheltenham town– possibly on a parallel network
- Desire lines will be in all directions from a development of this scale. Measures cannot be prescribed here but the need for bespoke coherent cycle routes to Cheltenham as an overriding priority and also Bishop’s Cleeve and West Cheltenham is paramount.

West of Cheltenham

- Optimise opportunities to fit the new development to west Cheltenham with soft street connections; use ‘point closures’ to make best use of existing quiet street network;
- Identify key walking and cycling corridors and desire lines and ensure that these are reinforced, signed and unimpeded. Destinations include Cheltenham Rail Station, key employment sites, key shopping facilities;
- Identify quiet connections on or in association with Hayden Lane;
- The access arrangement at SW point for all traffic occupies a significant cycle desire line which has particular propensity to accommodate higher cycle flows. Ensure the junction arrangement favours vulnerable road uses and does not introduce obstruction or delay;

APPENDIX H – Types of walking and cycling mitigation measures that may be considered

- Assess all linkages and including the local transport relationship with land uses the other side of the Tewkesbury Road (A4019) to the north, and to the extensive development at North West Cheltenham (A5). The A4019 will require enhanced crossing points and improvements for pedestrians and cyclists either on it or parallel to it;
- Old Gloucester Road (B4634) and Pheasant Lane route/ corridors should retain or improve their cycle route qualities;
- Identify and implement measures to reduce the impact of increased motorised traffic on the local network including Hester's Way, Fiddlers Green and Springbank where roads are quietly trafficked and where pedestrian and cycle conditions are currently good.
- Implement measures to reduce barriers to cycling movement in the vicinities of Benhall and the Tewkesbury Road. Both of these sites serve key employment locations.
- Barriers on the Cheltenham and Gloucester in the A40 corridor have historically been cited. New development will reduce some of the travel distances making them more proximal to cyclists, but increased traffic flows may further exacerbate these barriers to movement and need to be identified and ameliorated.
- Establish a strong link for pedestrians and cyclists between the West Cheltenham site and the North-west Cheltenham site i.e. clear radial links as well as edge to centre
- Identify and Protect the branch of quiet lane network which favours active travel movement in this area.
- Ensure new junction arrangements at south east access – especially if they include new roundabouts – do not create new barriers to walking and cycling movement;
- Deliver improvements which enable pedestrian and cycling access onto Pheasant Lane and the Old Cheltenham Road. This road provides tolerable cycling conditions but increased traffic levels and bus service improvements will detract from this;
- Improve connectivity between Arle Court Roundabout and the site; note role of Pheasant Lane as a quiet link.
- Development design and layout should incorporate 'point closures' at junctures between new streets and existing quietly trafficked ones. This allow high volumes of pedestrians and cyclists to flow between the new development and existing land uses without encouraging motorised vehicles and without impairing the residential qualities of these streets.



Appendix I – Do something 3a scenario scheme package

JCS Transport Strategy Evidence Base

APPENDIX I – Do something 3a scenario scheme package

The following list of schemes is based on information discussed through the JCS transport evidence base working group and used to inform the published JCS Transport Evidence Base.

To aid understanding the schemes have been grouped into packages and outlined under strategic travel corridors within the JCS area. A full list of schemes has been provided including those included in the Do minimum scenario.

The strategic travel corridors used to describe this package include:

- a) Corridor A - M5 – Junctions 12, 11a, 11, 10 and 9 (SRN)
- b) Corridor B - A40 from Highnam to M5 junction 11 (SRN)
- c) Corridor C - A38 from Cross Keys roundabout to Longford (A40 / A38) Roundabout
- d) Corridor D - A430 from junction with Cole Avenue to Over (A40) Roundabout (South West bypass)
- e) Corridor E - B4063 from Elmbridge Court roundabout to Arle Court (A40) Roundabout
- f) Corridor F - A40 from M5 junction 11 through Cheltenham Town Centre to Charlton Kings;
- g) Corridor G- A4019 from M5 junction 10 to Cheltenham Town Centre
- h) Corridor H- A46 from Shurdington Road (A417 junction) to Cheltenham Town Centre
- i) Corridor I - A435 from Cheltenham Town Centre through Bishops Cleeve to Teddington Hands (A46) roundabout
- j) Corridor J - A46 from M5 Junction 9 to Teddington Hands (A435) roundabout (SRN)
- k) Corridor K - A438 from M5 junction 9 through Tewkesbury Town Centre to Mythe Road junction
- l) Corridor L- A417 from Junction 11a to Air Balloon roundabout at Crickley Hill (SRN)
- m) Non-strategic routes
- n) JCS wide

Schemes assumed to be in place by 2031:

- A419 Stonehouse to M5 route improvements*
- A40 Over Roundabout and Linton Lodge improvements*
- Staverton Bridge Junction*
- Staverton Bridge Junction*
- A40 Corridor Bus Priority*
- Metz Way*, Gloucester bus priority scheme
- Gloucester Transport Hub/Kings Quarter Bus Station*
- Cheltenham Spa Railway Station *
- A40 Elmbridge Transport Scheme*
- St Barnabas Roundabout*
- Gloucester SW Bypass (Llanthony Rd Section) road widening

APPENDIX I – Do something 3a scenario scheme package

DS3a schemes

Corridor	Scheme
A	M5 J9 - Widen existing motorway slip roads together with associated alterations to merges and diverges, assuming land requirement in ownership of HA
A	M5 J9 - Widen existing junction structure to accommodate 3 lanes on the circulatory sections
A	M5 J9 - Provision of a 'free flow left turn slip' from A46 (west) to M5 south, and signalising and optimising A46 / Roundabout circulatory approaches.
A	M5 J9 - New pedestrian and cyclist bridge crossing over M5, linking Industrial Estates either side
A	M5 J10 - Signalising the junction of the M5 Southbound off-slip with the A4019, allowing M5 exiting traffic to turn in both directions along the A4019.
A	M5 J11 -Signalising the junction of the M5 Southbound off-slip with the roundabout circulatory section, and widening the M5 Northbound off-slip and optimising the existing traffic signals.
B	Upgrade Elmbridge Park and Ride access to serve Strategic Allocation Site A3 (South Churchdown) Employment site traffic,
B	A40 Longford Roundabout – signalise junction – full signalisation prioritising A40 through traffic,
B	A40 Over Roundabout full signalisation – prioritising A40 through traffic
B	The provision of a new access onto the A40, between Elmbridge Roundabout and A38 Longford Roundabout, to serve as the primary access to/from Strategic Allocation Site 1 (Innsworth).
B	Elmbridge Roundabout - Signalise B4063 WB approach to Elmbridge Roundabout *Despite being part of DS3a this scheme was not included within the strategy cost estimates
C	C&G roundabout - Capacity Augmentation - Improvement on Pinch Point Scheme: Provision of a 'free left turn lane' from the A417 Barnwood Link and from the A417 Corinium Ave approach arms
C	Junction of A38 Tewkesbury Road/ Kingsholm Road and A417 – Increased roundabout capacity
D	Southgate Street to St Ann's Way (Gloucester) – MOVA signals with bus priority – signal improvements along corridor
E	B4063 / B4634 Staverton Crossroads - Provision of three lane approach on B4063 Cheltenham Road East from Gloucester (Left Turn, Straight Ahead, Right Turn), with Optimisation of Signal Timings.
E	B4063 / New Access Junction - The Employment development to access the B4063 Cheltenham Rd East via a new link to the south of B4063, with this junction becoming a 4-arm T/S Junction, with access to housing site to the north.
E	B4063 / Innsworth Lane T/S Junction (Hare & Hounds) - Minimum Right Turn Flare Length of 50 metres on Innsworth lane and B4063 Cheltenham Road East (to Cheltenham) approaches, with provision of three lane approach on B4063 Cheltenham Road East from Gloucester.
E	B4063 / Pirton Lane T/S Junction - Improve Right Turn Flare (75m) on Cheltenham Road East Approach from Gloucester.
E	Piton Lane (East of B4063 TS Junction), as far as Churchdown Village - Traffic management – Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
E	Parton Road (East of B4063 Hare & Hounds TS Junction) to St. Johns Avenue - Traffic management – Traffic Management Measure – Link Speeds to be reduced on the

APPENDIX I – Do something 3a scenario scheme package

	network (Both directions).
E	Improved bus service frequency on Gloucester – Cheltenham Service Route 97/ 98 via Churchdown – to improve modal shift
E	Park and Ride expansion – Arle Court – , based on assumption that the number of parking bays can only be increased by remaining within the existing site boundaries and therefore by construction of two levels of car parking
F	A40 Arle Court to Westall Green (Cheltenham) – MOVA signals and bus priority – signals improvement along corridor
G	A4019 MOVA traffic signal upgrades providing bus priority
G	Lower High Street (Cheltenham) – bus only routes inbound, reallocation of existing highway space for inbound bus lane
G	Stoke Orchard Road (Off A4019 Uckington) -Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
G	Elmstone & Hardwicke (Off A4019 Uckington) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
G	Village Road (linking Hayden Road to Princess Elizabeth Way, Cheltenham) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
G	Improved bus service frequency along the A4019 Tewkesbury Road corridor
G	Park and Ride – New site at Uckington – near to Strategic Allocation Site A5 (NW Cheltenham)
H	A46 (northbound) (Shurdington Village N/B adjacent The Bell PH, Leckhampton Lane) Additional highway space for right turning traffic into Leckhampton Lane – providing longer stacking lane
H	A46 Shurdington Road northbound approach to Moorend Park Road and Leckhampton Road – additional highway space for right turning traffic by providing a longer stacking lane accessing Moorend Park Road
H	A46 / Badgeworth Lane Junction Signalisation – Improved access to/from Badgeworth Lane
H	The Park (Off A46 Moorend Park Road) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
H	Woodlands Road (Off A46 Shurdington Road - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
I	Park and Ride expansion – Cheltenham Race Course – expansion of existing P&R facility, based on assumption that the number of parking bays can only be increased by remaining within the existing site boundaries and therefore by construction of two levels of car parking
I	Cheltenham to Bishops Cleeve Cycle Path – a package of cycle improvements along a strategic corridor
J	A46 - MOVA traffic signal improvements with bus priority – signal improvements along corridor, no reallocation of existing road space.
J	Ramped footbridge over railway (Grange Road) – Retaining existing level crossing with Grange Road as a key Bus Route.
J	New pedestrian/cycle/bus only route through MOD Ashchurch Strategic Allocation Site A8, utilising existing road infrastructure on Grange Road and linking with existing railway level crossing
J	A46 – dual carriageway from Alexandra Way to Aston Cross – upgrade of existing highway, removal of existing railway bridge
J	The Grange (North of MOD / Ashchurch Site) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
J	B4079 Pamington Lane (between A46 and A435) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).

APPENDIX I – Do something 3a scenario scheme package

J	A46 Teddington Hands Roundabout - Increase Roundabout capacity, particularly on the A435 northbound approach to A46 west.
J	Improved rail service frequency / stopping pattern for passenger services at Ashchurch railway station – ensuring an hourly service,
K	A438 - MOVA traffic signal improvements with bus priority – no re-designation of existing road space,
K	A438 – Improvements to Shannon Way junction – junction widening to provide longer dedicated left hand lane onto A438,
K	A438 – widening of A438 from Shannon Way to junction 9, linked to Shannon Way improvements
K	Minor Road off A38 (Odessa Pub), towards Fiddington) – Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
L	Zoons Roundabout - Changed to Signalised split circulatory - Junction Improvement: Removing the left turn slip from Brockworth (Delta Way to C&G Roundabout) and signalising the A417 approach (from Cirencester) and the opposing circulatory movement.
L	Brockworth Bypass - Signalising westbound and eastbound A417 Brockworth Bypass 'Off-slips'.
NS	Down Hatherley Lane – highway improvements to accommodate increased traffic from development sites – providing increased flow capacity and highway safety
NS	Frog Furlong Lane – highway improvements on lower section to accommodate increased traffic – widening scheme to increase flow capacity and highway safety
NS	Innsworth Lane (south of SA1), Brooklands Park, Paygrove Lane and Oxstalls Lane (south to B4063 Cheltenham Rd) - Traffic management – Traffic Management Measures – Link Speeds to be reduced on the network (Both directions)
NS	Innsworth Lane, as far as B4063 Hare & Hounds TS Junction - Traffic management – Traffic Management Measure – Link Speeds to be reduced on the network (Both directions)
NS	Brockworth Road / Hucclecote Lane (South-East of Churchdown Village) - Traffic management – Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
NS	Innsworth Lane and Oxstalls Lane – provide bus priority measures – signal improvements along corridor
JCS	Countywide branding of travel information and travel awareness
JCS	School Travel Planning – Support for schools to encourage modal shift
JCS	Personalised Travel Planning – For new developments – tailored support to inform travel choices before established travel behaviour is established
JCS	Business Travel Planning – Support for employers to encourage modal shift
JCS	Bike training for children and adults through the travel plan process
JCS	Real Time Passenger Information on Main Corridor Bus Routes – upgrade of main routes to include RTPI,
JCS	Improved bus infrastructure (RTPI, shelters, Flags and information availability) – upgrade of existing infrastructure across JCS area,
JCS	Public transport SMART Card technology roll-out – Multi-operator bus ticket
JCS	Mode Shift Point – built into local centres across the JCS area to provide park and ride (including cycle park) facilities. Enhanced public transport facilities – upgraded bus stop at local community destinations which provide bike parking / RTPI / car parking – encouraging modal shift onto bus for part of the journey
JCS	Improved cycle information / route finding – Improved signage and promotional materials within the JCS area,
JCS	Improved cycle parking – at key destinations

APPENDIX I – Do something 3a scenario scheme package

JCS	Completing gaps in existing cycle networks within the Cheltenham and Gloucester urban areas and ensuring linkages into new strategic development sites – comprising a package of small cycle improvements designed to complete any gaps in the existing network
-----	---



Appendix J – Do Something 5 Scenario Scheme package

JCS Transport Strategy Evidence Base

Appendix J – Do Something 5 Scenario Scheme package

The following list of schemes is based on information discussed through the JCS transport evidence base working group and used to inform the published JCS Transport Evidence Base.

To aid understanding the schemes have been grouped into packages and outlined under strategic travel corridors within the JCS area. A full list of schemes has been provided including those included in the Do minimum scenario.

The strategic travel corridors used to describe this package include:

- Corridor A - M5 – Junctions 12, 11a, 11, 10 and 9 (SRN)
- Corridor B - A40 from Highnam to M5 junction 11 (SRN)
- Corridor C - A38 from Cross Keys roundabout to Longford (A40 / A38) Roundabout
- Corridor D - A430 from junction with Cole Avenue to Over (A40) Roundabout (South West bypass)
- Corridor E - B4063 from Elmbridge Court roundabout to Arle Court (A40) Roundabout
- Corridor F - A40 from M5 junction 11 through Cheltenham Town Centre to Charlton Kings;
- Corridor G- A4019 from M5 junction 10 to Cheltenham Town Centre
- Corridor H- A46 from Shurdington Road (A417 junction) to Cheltenham Town Centre
- Corridor I - A435 from Cheltenham Town Centre through Bishops Cleeve to Teddington Hands (A46) roundabout
- Corridor J - A46 from M5 Junction 9 to Teddington Hands (A435) roundabout (SRN)
- Corridor K - A438 from M5 junction 9 through Tewkesbury Town Centre to Mythe Road junction
- Corridor L- A417 from Junction 11a to Air Balloon roundabout at Crickley Hill (SRN)
- Corridor M -Non-strategic routes
- Corridor N - JCS wide

Schemes assumed to be in place by 2031:

- A419 Stonehouse to M5 route improvements*
- A40 Over Roundabout and Linton Lodge improvements*
- Staverton Bridge Junction*
- A417 Missing Link scheme*
- M5 Junction 10 all movements*
- Staverton Bridge Junction*
- A40 Corridor Bus Priority*
- Metz Way*, Gloucester bus priority scheme
- Gloucester Transport Hub/Kings Quarter Bus Station*
- Cheltenham Spa Railway Station *
- A40 Elmbridge Transport Scheme*
- St Barnabas Roundabout*
- Gloucester SW Bypass (Llanthony Rd Section) road widening

Appendix J – Do Something 5 Scenario Scheme package

DS5 schemes

Corridor	Scheme
A	M5 J9 - Widen existing motorway slip roads together with associated alterations to merges and diverges, assuming land requirement in ownership of HA
A	M5 J9 - Widen existing junction structure to accommodate 3 lanes on the circulatory sections
A	M5 J9 - Provision of a 'free flow left turn slip' from A46 (west) to M5 south, and signalising and optimising A46 / Roundabout circulatory approaches.
A	M5 J9 - New pedestrian and cyclist bridge crossing over M5, linking Industrial Estates either side
A	M5 J10 - Signalising the junction of the M5 Southbound off-slip with the A4019, allowing M5 exiting traffic to turn in both directions along the A4019.
A	M5 J11 -Signalising the junction of the M5 Southbound off-slip with the roundabout circulatory section, and widening the M5 Northbound off-slip and optimising the existing traffic signals.
A	M5 – Junction 12 – junction improvement
B	Upgrade Elmbridge Park and Ride access to serve Strategic Allocation Site A3 (South Churchdown) Employment site traffic,
B	A40 Longford Roundabout – signalise junction – full signalisation prioritising A40 through traffic,
B	A40 Over Roundabout full signalisation – prioritising A40 through traffic
B	The provision of a new access onto the A40, between Elmbridge Roundabout and A38 Longford Roundabout, to serve as the primary access to/from Strategic Allocation Site 1 (Innsworth).
B	Elmbridge Roundabout - Signalise B4063 WB approach to Elmbridge Roundabout
C	C&G roundabout - Capacity Augmentation - Improvement on Pinch Point Scheme: Provision of a 'free left turn lane' from the A417 Barnwood Link and from the A417 Corinium Ave approach arms
C	Junction of A38 Tewkesbury Road/ Kingsholm Road and A417 – Increased roundabout capacity
C	New link road linking new Access road from A40 to A38 Tewkesbury Road
C	New link road linking new Access road from A40 to Innsworth Lane
C	Full signalisation of A38 Cross Keys roundabout
C	Upgrade of A38 St. Barnabas roundabout
D	Southgate Street to St Ann's Way (Gloucester) – MOVA signals with bus priority – signal improvements along corridor
E	B4063 / B4634 Staverton Crossroads - Provision of three lane approach on B4063 Cheltenham Road East from Gloucester (Left Turn, Straight Ahead, Right Turn), with Optimisation of Signal Timings.
E	B4063 / New Access Junction - The Employment development to access the B4063 Cheltenham Rd East via a new link to the south of B4063, with this junction becoming a 4-arm T/S Junction, with access to housing site to the north.
E	B4063 / Innsworth Lane T/S Junction (Hare & Hounds) - Minimum Right Turn Flare Length of 50 metres on Innsworth lane and B4063 Cheltenham Road East (to Cheltenham) approaches, with provision of three lane approach on B4063 Cheltenham Road East from Gloucester.
E	B4063 / Pirton Lane T/S Junction - Improve Right Turn Flare (75m) on Cheltenham Road East Approach from Gloucester.
E	Piton Lane (East of B4063 TS Junction), as far as Churchdown Village - Traffic management – Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
E	Parton Road (East of B4063 Hare & Hounds TS Junction) to St. Johns Avenue - Traffic management – Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
E	Improved bus service frequency on Gloucester – Cheltenham Service Route 97/ 98 via Churchdown – to improve modal shift
E	Park and Ride expansion – Arle Court – , based on assumption that the number of parking bays can only be increased by remaining within the existing site boundaries and therefore by construction of two levels of car parking
E	A40 – Gloucester Road / Lansdown Road and B4063 – Cheltenham Road (signal priorities, RTPI, bus stop upgrade) –aiding route 94
E	New radial bus service in Cheltenham
F	A40 Arle Court to Westall Green (Cheltenham) – MOVA signals and bus priority – signals improvement along corridor

Appendix J – Do Something 5 Scenario Scheme package

F	New grade separated junction on A40 to the west of Arle Court
F	New dual carriageway linking A40 to A4019 – new access to West of Cheltenham development
F	New link road from new grade separated junction on A40 to Grovefield Way
G	A4019 MOVA traffic signal upgrades providing bus priority
G	Lower High Street (Cheltenham) – bus only routes inbound, reallocation of existing highway space for inbound bus lane
G	Stoke Orchard Road (Off A4019 Uckington) -Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
G	Elmstone & Hardwicke (Off A4019 Uckington) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
G	Village Road (linking Hayden Road to Princess Elizabeth Way, Cheltenham) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
G	Improved bus service frequency along the A4019 Tewkesbury Road corridor
G	Park and Ride – New site at Uckington – near to Strategic Allocation Site A5 (NW Cheltenham)
G	A4019 – Tewkesbury Road (signal priorities, RTPI, bus stop upgrade)– aiding route 41 / 42
G	New grade separated junction on A4019 to the west of Homecroft Drive
H	A46 (northbound) (Shurdington Village N/B adjacent The Bell PH, Leckhampton Lane) Additional highway space for right turning traffic into Leckhampton Lane – providing longer stacking lane
H	A46 Shurdington Road northbound approach to Moorend Park Road and Leckhampton Road – additional highway space for right turning traffic by providing a longer stacking lane accessing Moorend Park Road
H	A46 / Badgeworth Lane Junction Signalisation – Improved access to/from Badgeworth Lane
H	The Park (Off A46 Moorend Park Road) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
H	Woodlands Road (Off A46 Shurdington Road - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
H	A46 – Shurdington Road and A38 – Barnwood Road / Hucclecote Way – (signal priorities, RTPI, bus stop upgrade) aiding route 10
H	Upgrade of Grovefield Way and Up Hatherley Way
H	Upgraded junction on A46 Shurdington Road
I	Park and Ride expansion – Cheltenham Race Course – expansion of existing P&R facility, based on assumption that the number of parking bays can only be increased by remaining within the existing site boundaries and therefore by construction of two levels of car parking
I	Cheltenham to Bishops Cleeve Cycle Path – a package of cycle improvements along a strategic corridor
I	A435 – Evesham Road (signal priorities, RTPI, bus stop upgrade) aiding route D
I	New link road linking A4019 to Hyde Lane – upgrade of existing route to A435 Evesham Road
I	Upgrade junction on Hyde Lane
J	A46 - MOVA traffic signal improvements with bus priority – signal improvements along corridor, no reallocation of existing road space.
J	Ramped footbridge over railway (Grange Road) – Retaining existing level crossing with Grange Road as a key Bus Route.
J	New pedestrian/cycle/bus only route through MOD Ashchurch Strategic Allocation Site A8, utilising existing road infrastructure on Grange Road and linking with existing railway level crossing
J	A46 – dual carriageway from Alexandra Way to Aston Cross – upgrade of existing highway, removal of existing railway bridge
J	The Grange (North of MOD / Ashchurch Site) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
J	B4079 Pamington Lane (between A46 and A435) - Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
J	A46 Teddington Hands Roundabout - Increase Roundabout capacity, particularly on the A435 northbound approach to A46 west.
J	Improved rail service frequency / stopping pattern for passenger services at Ashchurch railway station – ensuring an hourly service,

Appendix J – Do Something 5 Scenario Scheme package

J	New A46 link road linking Teddington Hands roundabout to M5 J9 – 1993 Department of Transport proposed alignment
J	New estate feeder road linking site with A46 via existing access arrangements
J	Extended junction 9 on M5 linked to new A46 link road
K	A438 - MOVA traffic signal improvements with bus priority – no re-designation of existing road space,
K	A438 – Improvements to Shannon Way junction – junction widening to provide longer dedicated left hand lane onto A438,
K	A438 – widening of A438 from Shannon Way to junction 9, linked to Shannon Way improvements
K	Minor Road off A38 (Odessa Pub), towards Fiddington) – Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
K	Northern Tewkesbury Bypass
K	New feeder route linking Mitton site with Shannon Way
L	Zoons Roundabout - Changed to Signalised split circulatory - Junction Improvement: Removing the left turn slip from Brockworth (Delta Way to C&G Roundabout) and signalling the A417 approach (from Cirencester) and the opposing circulatory movement.
L	Brockworth Bypass - Signalising westbound and eastbound A417 Brockworth Bypass 'Off-slips'.
NS	Down Hatherley Lane – highway improvements to accommodate increased traffic from development sites – providing increased flow capacity and highway safety
NS	Frog Furlong Lane – highway improvements on lower section to accommodate increased traffic – widening scheme to increase flow capacity and highway safety
NS	Innsworth Lane (south of SA1), Brooklands Park, Paygrove Lane and Oxstalls Lane (south to B4063 Cheltenham Rd) - Traffic management – Traffic Management Measures – Link Speeds to be reduced on the network (Both directions)
NS	Innsworth Lane, as far as B4063 Hare & Hounds TS Junction - Traffic management – Traffic Management Measure – Link Speeds to be reduced on the network (Both directions)
NS	Brockworth Road / Hucclecote Lane (South-East of Churchdown Village) - Traffic management – Traffic Management Measure – Link Speeds to be reduced on the network (Both directions).
NS	Innsworth Lane and Oxstalls Lane – provide bus priority measures – signal improvements along corridor
M	Junction improvement at Barrow Hill and Brockworth Road
JCS	Countywide branding of travel information and travel awareness
JCS	School Travel Planning – Support for schools to encourage modal shift
JCS	Personalised Travel Planning – For new developments – tailored support to inform travel choices before established travel behaviour is established
JCS	Business Travel Planning – Support for employers to encourage modal shift
JCS	Bike training for children and adults through the travel plan process
JCS	Real Time Passenger Information on Main Corridor Bus Routes – upgrade of main routes to include RTPI,
JCS	Improved bus infrastructure (RTPI, shelters, Flags and information availability) – upgrade of existing infrastructure across JCS area,
JCS	Public transport SMART Card technology roll-out – Multi-operator bus ticket
JCS	Mode Shift Point – built into local centres across the JCS area to provide park and ride (including cycle park) facilities. Enhanced public transport facilities – upgraded bus stop at local community destinations which provide bike parking / RTPI / car parking – encouraging modal shift onto bus for part of the journey
JCS	Improved cycle information / route finding – Improved signage and promotional materials within the JCS area,
JCS	Improved cycle parking – at key destinations
JCS	Completing gaps in existing cycle networks within the Cheltenham and Gloucester urban areas and ensuring linkages into new strategic development sites – comprising a package of small cycle improvements designed to complete any gaps in the existing network

Appendix J – Do Something 5 Scenario Scheme package

This page is intentionally left blank



Appendix K – Do Something 7 Scenario Scheme package

JCS Transport Strategy Evidence Base

Appendix K – Do Something 7 Scenario Scheme package

The following list of schemes is based on information discussed through the JCS transport evidence base working group and used to inform the published JCS Transport Evidence Base.

To aid understanding the schemes have been grouped into packages and outlined under strategic travel corridors within the JCS area. A full list of schemes has been provided including those included in the Do minimum scenario.

The strategic travel corridors used to describe this package differ from the ones used to describe the scenarios outlined in Appendices I and J. For Do Something 7 they include:

National Link (Strategic Road Network)

- Corridor 1 - M5 – between (and including) M5 Junction 9 and Junction 13
- Corridor 2 - A46 – M5 Junction 9 to county boundary (east of Teddington Hands)
- Corridor 3 - A40 – M5 Junction 11 to county boundary (east of Ross on Wye)
- Corridor 4 - A417 – M5 Junction 11a to Nettleton roundabout

Primary Link (Local Road Network)

- Corridor 5 - A438 / A38 – M5 Junction 9 to A38 Coombe Hill
- Corridor 6 - A4019 – Coombe Hill to A46 Albion Street / St Johns Avenue
- Corridor 7 - A435 – Teddington Hands (A46) to A46 St. Margaret's Road / Fairview Road
- Corridor 8 - A40 – M5 Junction 11 to A435 London Road
- Corridor 9 - A46 – Bath Road (central Cheltenham) to A417 junction
- Corridor 10 - A40 / A417 / A38 – Elmbridge Court Roundabout to A430 Cole Avenue junction
- Corridor 11 - A40 / A430 / A38 – Over Roundabout to Cross Keys Roundabout

Schemes included in the Do Nothing scenario

- A40 Elmbridge roundabout improvement scheme (currently under construction – projected opening date – August 2017)
- A40 Over roundabout improvement Phase 2 – Growth Fund Scheme;
- A40 Cheltenham Westbound Corridor Bus Priority scheme - Arle Court to Benhall section;
- Gloucester Central Transport Hub (Bus Station); Abbeymead/Metz Way bus priority scheme;
- Cheltenham Transport Plan (CTP) phases 1 to 3 only (Boot's Corner Closure - Trial Scheme excluded).

Schemes included in the Do Minimum scenario

- A417 Missing Link (previously coded for DS5 Scenario);
- St Barnabas Roundabout;
- Gloucester South West Bypass, Llanthony Road Section widening

Appendix K – Do Something 7 Scenario Scheme package

DS7 schemes

Corridor 1 - M5 – M5 Junction 13 to county boundary

Scheme ref	Junction / Corridor	Scheme description
1	M5 J9 to M6 J11a	Upgrade motorway to a smart motorway increasing capacity during peak times and controlling vehicle flows
2	M5 J9	Extended junction to accommodate new off-line A46 (Scheme ref 7).
3	M5 J10	High capacity upgrade of M5 J10 junction providing an 'All Movements' junction including three lanes on slip roads and circulatory lanes on the roundabout to accommodate the associated Cyber Park access road / A4019 junction (Scheme ref 28). This will be a high capacity signal controlled junction, with a separate left turn slip road from M5J10 northbound off-slip onto Cyber Park link road (southbound). New signals on A4019 westbound entry to upgrade motorway junction
4	M5 J11	Signalise South Bound off-slip. North Bound off slip extra lane
5	M5 11a	Optimise junction operation with improved signing and lining and area wide reassignment
6	M5 J12	Upgrade to junction to include 2 lane wide off and on slips

Corridor 2: A46 – M5 Junction 9 to county boundary

Scheme ref	Junction / Corridor	Scheme description
7	A46 Ashchurch	New dual carriageway bypass linking Teddington Hands roundabout with M5 Junction 9 and associated changes to junctions. Based on the Department for Transport's 1993 alignment.
8	Grange Road / Hardwicke Bank Road	Close Railway Level Crossing, and replace with new bridge linking Grange Road with Hardwicke Bank Road
9	Alexandra Way / A46	Upgrade signals to MOVA or SCOOT operation to optimise signal timings
10	Fiddington Lane / A46	Upgrade signals to MOVA or SCOOT operation to optimise signal timings
11	Northway Lane / A46	Upgrade signals to MOVA or SCOOT operation to optimise signal timings

Corridor 3: A40 –M5 Junction 11 to county boundary

Scheme ref	Junction / Corridor	Scheme description
12	A40/A48 Highnam Roundabout	Signalise roundabout – MOVA signals
13	A40 Over Roundabout	Add a dedicated left slip from A40 east to the south towards Gloucester
14	A40 Longford Roundabout	Existing A40 / A38 Longford junction changed from a roundabout to a signalised crossroads. Junction arrangement designed to complement the introduction of Longford Bypass. Turn from A40 east to A38 north not allowed. Bus priority – traffic signals will be used to facilitate north / south movements.
15	New junction on A40	New signalised junction on A40 between Longford and Elmbridge Court roundabouts
16	New junction on A38	New priority junction on A38 giving priority to new highway link accessing to new junction on A40 (scheme 17)

Appendix K – Do Something 7 Scenario Scheme package

17	New section of highway	New 50 mph highway link, joining upgraded junctions on A40 and A38 through development site
18	A38 Tewkesbury Road	A38 Tewkesbury Road to be downgraded between A40/A38 Longford signalised crossroads and new A38/Twigworth junction to 20mph, and encourage as a sustainable travel corridor. Access from A38 north is restricted to one lane entry to crossroads, A40 west to A38 north - right hand turn banned with alternative route via A40 / A38 Link Road.
19	A38 Tewkesbury Road	Upgrade A38 Tewkesbury Rd / Down Hatherley Lane junction, to include a dedicated right turn from A38 south.
20	A40 Elmbridge Court Roundabout	Remove B4063 Cheltenham Rd East approach arm from the junction and remove Business Park arm. . New junction east of Elmbridge – four way signals with turning restrictions. New link road from B4063 and access to Business Park. Both roads would access the new junction. New free flow left turn link from A40 East to A40 Barnwood Link and a free flow left turn link from A40 North to A40 East

Corridor 4 – A417 – M5 Junction 11a to Nettleton roundabout

Scheme ref	Junction / Corridor	Scheme description
21	A417 / Delta Way 'Zoons' Roundabout	Junction Improvement: Removing the existing left turn slip from Delta Way (Brockworth) to C&G Roundabout, and signalising the A417 approach (from Cirencester) and the opposing roundabout circulatory movement.
22	A417 Brockworth Bypass	Signalising the westbound and eastbound 'Off-slips'.

Corridor 5: A438 / A38 – M5 Junction 9 to A4019 Coombe Hill

Scheme ref	Junction / Corridor	Scheme description
24	Shannon Way	Improvement to the A438/Shannon Way traffic signal junction to provide an additional eastbound exit lane from the junction to M5J9; separate left turn lane from A438 (west) to Shannon Way, with two straight ahead lanes eastbound. Upgrade signals to MOVA or SCOOT operation to optimise signal timings
26	A438/A38 Tewkesbury Bypass	Upgrade signals to MOVA to optimise signal timings
27	A38 Coombe Hill	Optimise signals

Corridor 6: A4019 – Coombe Hill to A435 Portland Street, Cheltenham

Scheme ref	Junction / Corridor	Scheme description
28	New junction west of M5 J10	New 50 mph dual carriageway two-lane link road, providing free-flow access from A4019 / M5J10 to West of Cheltenham site only.
29	West of M5 J10	Major/Minor Priority Junction on new 50 mph dual carriageway two-lane link road, with Minor junction arm for West of Cheltenham residential site access only.
30	West of M5 J10	Change to highway priorities west of M5J10, with a new Major/Minor Priority Junction, with A4019 (West) as Minor junction arm.

Appendix K – Do Something 7 Scenario Scheme package

31	A4019 / A4013 Kingsditch	A4019 / A4013 Kingsditch (Centrum Park) Roundabout – replacing existing roundabout with traffic signals,
32	West of B4634 Old Gloucester Road	New A4019 traffic signals site access junction, west of B4634 Old Gloucester Rd
33	A4019 / B4634 Gallagher Retail Park	Revised A4019 traffic signals site access junction at B4634 Old Gloucester Rd / Gallagher Retail Park
34	A4019 Tewkesbury Road	Upgrade signals to SCOOT operation to optimise signal timings with bus priority along A4019 corridor junctions including: <ul style="list-style-type: none"> ○ B4634 Old Gloucester Rd/A4019 Junction ○ Hayden Road/A4019/Manor Road Junction ○ A4019 / Elm Street Junction ○ B4633 Gloucester Rd / A4019 /Townsend Street
35	Withybridge Lane	Close access onto A4019

Corridor 7: A435 – Teddington Hands (A46) to A46 St. Margaret’s Road / Fairview Road

Scheme ref	Junction / Corridor	Scheme description
36	A435 / Hyde Lane / Southam Lane Signalised Junction	Signalised Junction -Upgraded to provide additional straight ahead lanes on all junction approaches
37	A435/ Stoke Road and A435 / Finlay Way Roundabouts	Capacity Improvements by approach arm widening
38	A435/GE Aviation Roundabout	Capacity Improvements by increasing the number of circulatory lanes to 2, and the A435 south bound exit to two lanes
39	A435 / Racecourse Roundabout	Capacity Improvements by approach arm widening

Corridor 8: A40 – M5 Junction 11 to A435 London Road

Scheme ref	Junction / Corridor	Scheme description
40	Arle Court Park and Ride	Expansion of existing Arle Court P&R parking facilities (100% Increase in Capacity), and new walking and cycling improvements to link P&R site with the new West of Cheltenham Employment site
41	Arle Court Park and Ride / A40 Arle Court Roundabout	New signalised junction on the A40 to the west of Arle Court roundabout to provide access into Park and Ride site only. With left turn out and right turn in only. This will not allow through traffic into Hatherley Lane.

Corridor 9: A46 – Bath Road (central Cheltenham) to A417 junction

Scheme ref	Junction / Corridor	Scheme description
42	Leckhampton Lane	Upgrade A46 / Leckhampton Lane priority junction, to include a dedicated right turn from A46 south into Leckhampton Lane.
43	Moorend Park Road	A46 Shurdington Road northbound approach to Moorend Park Road – additional highway space for right turning traffic by providing a longer stacking lane.
44	Badgeworth Lane	A46 / Badgeworth Lane priority Junction – Signalisation of junction to provide improved access to/from Badgeworth.

Appendix K – Do Something 7 Scenario Scheme package

Corridor 10: A40 / A417 / A38 – Elmbridge Court Roundabout to A430 Cole Avenue junction, Gloucester

Scheme ref	Junction / Corridor	Scheme description
45	A40 / A417 C&G roundabout	A40 / A417 C&G roundabout –Capacity Improvement on 2014 Pinch Point Scheme, by provision of a ‘free left turn lane’ from the A40 Barnwood Link approach arm to A417 Barnwood Bypass, and from A417 Corinium Avenue approach arm to A40 Barnwood Link.
46	A38 / Walls roundabout	Capacity Improvement on 2014 Pinch Point Scheme, by providing 3 lane circulatory on the roundabout between Barnwood Rd / A38 Eastern Avenue approaches.
47	A38 / A4173 St. Barnabas roundabout	Remove roundabout and signalling junction(with removal of Reservoir Rd approach arm
49	A38 / A430 / B4008 Cole Avenue	A38 / A430 / B4008 Cole Avenue Junction - Grade separation to allow straight through movement of north / south traffic on A38 Southern Connector/A430 corridor

Corridor 11: A40 / A430 / A38 – Over Roundabout to Cross Keys Roundabout, Quedgeley

Scheme ref	Junction / Corridor	Scheme description
51	A40 / A417 Over Roundabout	Upgrade signals to MOVA or SCOOT operation to optimise signal timings
52	A430/A417 Castlemeads	Upgrade signals to MOVA or SCOOT operation to optimise signal timings
53	A38 Crosskeys Roundabouts	Upgrade signals to MOVA or SCOOT operation to optimise signal timings

Area wide Improvements

Scheme ref	Mode	Scheme description
54	Cycling	<ul style="list-style-type: none"> • Completing gaps in existing cycle networks within the Cheltenham and Gloucester urban areas and ensuring linkages into new strategic development sites – comprising a package of small cycle improvements • Improved cycle parking – at key destinations • Cheltenham to Bishops Cleeve Cycle Path
55	Passenger Transport	<ul style="list-style-type: none"> • Improved rail service frequency / stopping pattern for passenger services at Ashchurch railway station – ensuring an hourly service • Improved frequency and review bus service coverage of 41/42 and review of existing services • Improved bus service frequency on Gloucester – Cheltenham Service Route 97/ 98 via Churchdown • Mode Shift Points – built into local centres across the JCS area to provide local park and ride (including cycle park) facilities. Enhanced public transport facilities – upgraded bus stop at local community destinations which provide bike parking / RTPI / car parking – encouraging modal shift onto bus for part of the journey
56	Thinktravel	<ul style="list-style-type: none"> • School Travel Planning – Support for schools to encourage modal

Appendix K – Do Something 7 Scenario Scheme package

		<p>shift</p> <ul style="list-style-type: none"> • Personalised Travel Planning – For new developments – tailored support to inform travel choices before established travel behaviour is established • Business Travel Planning – Support for employers to encourage modal shift • Bike training for children and adults through the travel plan process • Improved cycle information / route finding – Improved signage and promotional materials within the JCS area
57	Highway operation	<ul style="list-style-type: none"> • Urban Traffic Control Centre – including full review of traffic signals including expansion of SCOOT and MOVA signals where not covered in elsewhere

Appendix K – Do Something 7 Scenario Scheme package

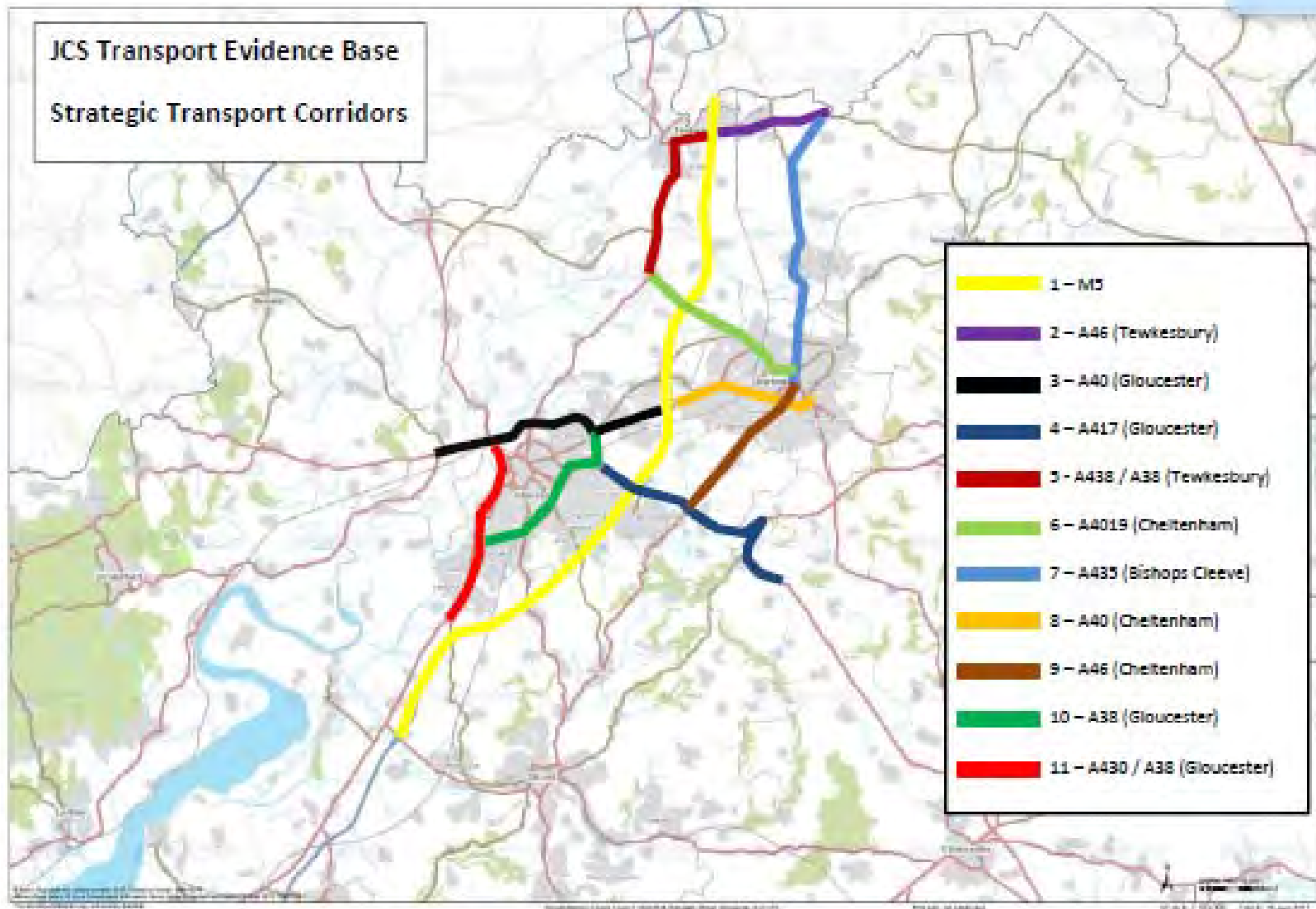
This page is intentionally left blank



Appendix L – Strategic transport corridors in the JCS area

JCS Transport Strategy Evidence Base

APPENDIX L – Strategic Transport Corridors in the JCS area





Appendix M – DS7 Scheme cost assumptions

JCS Transport Strategy Evidence Base

Appendix M – DS7 Scheme cost assumptions

As many of the schemes outlined in DS7 are for the moment concepts there are no scheme designs available to inform likely costs. To address this, a series of high level cost bandings have been used and allocated to each of the scheme elements.

This information has been tabulated to aid understanding of these assessments.

The following cost banding assumptions have been used:

Cost banding	Mid point used a cost of scheme
<£1m	£1m
£1m to £5m	£3
£5m to £10m	£7.5
£10m to £15m	£12.5
£15m to £30m	£23
>£30m	See individual scheme

Appendix M – DS7 Scheme cost assumptions

DS7 – JCS Transport Strategy

Scheme ref	Junction / Corridor	Scheme description	Estimated cost banding	Mid-point value (if banding used) (£M)	Likely primary funding source
1	M5 J9 to M6 J11a	Upgrade motorway to a smart motorway increasing capacity during peak times and controlling vehicle flows	Estimated Cost £15-30M	22.5	Highways England Funding
2	M5 J9	Extended junction to accommodate new off-line A46 (Scheme ref 7).	No additional cost estimate required as scheme will be included within scheme design of scheme 7	0	Highways England Funding
3	M5 J10	High capacity upgrade of M5 J10 junction providing an 'All Movements' junction including three lanes on slip roads and circulatory lanes on the roundabout to accommodate the associated Cyber Park access road / A4019 junction (Scheme ref 28). This will be a high capacity signal controlled junction, with a separate left turn slip road from M5J10 northbound off-slip onto Cyber Park link road (southbound). New signals on A4019 westbound entry to upgrade motorway junction	Estimated Cost £45M	45	Ad-hoc funding opportunities
4	M5 J11	Signalise South Bound off-slip. North Bound off slip extra lane	Estimated Cost <£1M	1	Ad-hoc funding opportunities
5	M5 11a	Optimise junction operation with improved signing and lining and area wide reassignment	Estimated Cost <£1M	1	Ad-hoc funding opportunities
6	M5 J12	Upgrade to junction to include 2 lane wide off and on slips	Estimated Cost £10-15M	12.5	Ad-hoc funding opportunities

Appendix M – DS7 Scheme cost assumptions

7	A46 Ashchurch	New dual carriageway bypass linking Teddington Hands roundabout with M5 Junction 9 and associated changes to junctions. Based on the Department for Transport's 1993 alignment.	Estimated Cost £70M	70	Highways England Funding
8	Grange Road / Hardwicke Bank Road	Close Railway Level Crossing, and replace with new bridge linking Grange Road with Hardwicke Bank Road	Estimated Cost £5-10M	7.5	Local Growth Fund
9	Alexandra Way / A46	Upgrade signals to MOVA or SCOOT operation to optimise signal timings	Estimated Cost <£1M	1	Ad-hoc funding opportunities
10	Fiddington Lane / A46	Upgrade signals to MOVA or SCOOT operation to optimise signal timings	Estimated Cost <£1M	1	Ad-hoc funding opportunities
11	Northway Lane / A46	Upgrade signals to MOVA or SCOOT operation to optimise signal timings	Estimated Cost <£1M	1	Ad-hoc funding opportunities
12	A40/A48 Highnam Roundabout	Signalise roundabout – MOVA signals	Estimated Cost £1-5M	3	Ad-hoc funding opportunities
13	A40 Over Roundabout	Add a dedicated left slip from A40 east to the south towards Gloucester	Estimated cost £5-10M	7.5	Ad-hoc funding opportunities
14	A40 Longford Roundabout	Existing A40 / A38 Longford junction changed from a roundabout to a signalised crossroads. Junction arrangement designed to complement the introduction of Longford Bypass. Turn from A40 east to A38 north not allowed. Bus priority – traffic signals will be used to facilitate north / south movements.	Estimated Cost £1-5M	3	Local Growth Fund
15	New junction on A40	New signalised junction on A40 between Longford and Elmbridge Court roundabouts	Estimated Cost £1-5M	3	Developer Contributions
16	New junction on A38	New priority junction on A38 giving priority to new highway link accessing to new junction on A40 (scheme 17)	Estimated Cost £1-5M	3	Developer Contributions

Appendix M – DS7 Scheme cost assumptions

17	New section of highway	New 50 mph highway link, joining upgraded junctions on A40 and A38 through development site	Estimated Cost £5-10M	7.5	Developer Contributions
18	A38 Tewkesbury Road	A38 Tewkesbury Road to be downgraded between A40/A38 Longford signalised crossroads and new A38/Twigworth junction to 20mph, and encourage as a sustainable travel corridor. Access from A38 north is restricted to one lane entry to crossroads, A40 west to A38 north - right hand turn banned with alternative route via A40 / A38 Link Road.	Estimated Cost <£1M	1	Developer Contributions
19	A38 Tewkesbury Road	Upgrade A38 Tewkesbury Rd / Down Hatherley Lane junction, to include a dedicated right turn from A38 south.	Estimated Cost <£1M	1	Developer Contributions
20	A40 Elmbridge Court Roundabout	Remove B4063 Cheltenham Rd East approach arm from the junction and remove Business Park arm. . New junction east of Elmbridge – four way signals with turning restrictions. New link road from B4063 and access to Business Park. Both roads would access the new junction. New free flow left turn link from A40 East to A40 Barnwood Link and a free flow left turn link from A40 North to A40 East	Estimated cost £10-15M	12.5	Local Growth Fund
21	A417 / Delta Way 'Zoons' Roundabout	Junction Improvement: Removing the existing left turn slip from Delta Way (Brockworth) to C&G Roundabout, and signalising the A417 approach (from Cirencester) and the opposing roundabout circulatory movement.	Estimated Cost £1-5M	3	Local Growth Fund
22	A417 Brockworth Bypass	Signalising the westbound and eastbound 'Off-slips'.	Estimated Cost <£1M	1	Ad-hoc funding opportunities
24	Shannon Way	Improvement to the A438/Shannon Way traffic signal junction to provide an additional eastbound exit lane from the junction to M5J9; separate left turn lane from A438 (west) to Shannon Way, with two straight ahead lanes eastbound. Upgrade signals to MOVA or SCOOT operation to optimise signal timings	Estimated Cost £1-5M	3	Local Growth Fund
26	A438/A38 Tewkesbury Bypass	Upgrade signals to MOVA to optimise signal timings	Estimate cost <£1m	1	Ad-hoc funding opportunities

Appendix M – DS7 Scheme cost assumptions

27	A38 Coombe Hill	Optimise signals	Estimate cost <£1m	1	Ad-hoc funding opportunities
28	New junction west of M5 J10	New 50 mph dual carriageway two-lane link road, providing free-flow access from A4019 / M5J10 to West of Cheltenham site only.	Estimated Cost -£15-30M	22.5	Developer contributions
29	West of M5 J10	Major/Minor Priority Junction on new 50 mph dual carriageway two-lane link road, with Minor junction arm for West of Cheltenham residential site access only.	Estimated Cost - £1-5M	3	Developer contributions
30	West of M5 J10	Change to highway priorities west of M5J10, with a new Major/Minor Priority Junction, with A4019 (West) as Minor junction arm.	Estimated Cost - £5-10M	7.5	Developer contributions
31	A4019 / A4013 Kingsditch	A4019 / A4013 Kingsditch (Centrum Park) Roundabout – replacing existing roundabout with traffic signals,	Estimated Cost - £1-5M.	3	Developer contributions
32	West of B4634 Old Gloucester Road	New A4019 traffic signals site access junction, west of B4634 Old Gloucester Rd	Estimated Cost - £1-5M.	3	Developer contributions
33	A4019 / B4634 Gallagher Retail Park	Revised A4019 traffic signals site access junction at B4634 Old Gloucester Rd / Gallagher Retail Park	Estimated Cost - £1-5M.	3	Developer contributions
34	A4019 Tewkesbury Road	Upgrade signals to SCOOT operation to optimise signal timings with bus priority along A4019 corridor junctions including: <ul style="list-style-type: none"> ○ B4634 Old Gloucester Rd/A4019 Junction ○ Hayden Road/A4019/Manor Road Junction ○ A4019 / Elm Street Junction ○ B4633 Gloucester Rd / A4019 /Townsend Street 	Estimated Cost - £5-10M.	7.5	Ad-hoc funding opportunities
35	Withybridge Lane	Close access onto A4019	Estimated Cost < £1M.	1	Developer contributions
36	A435 / Hyde Lane / Southam Lane Signalised Junction	Signalised Junction -Upgraded to provide additional straight ahead lanes on all junction approaches	Estimated Cost <£1M	1	Developer contributions
37	A435/ Stoke Road and A435 / Finlay Way Roundabouts	Capacity Improvements by approach arm widening	Estimated Cost <£1M	1	Developer contributions

Appendix M – DS7 Scheme cost assumptions

38	A435/GE Aviation Roundabout	Capacity Improvements by increasing the number of circulatory lanes to 2, and the A435 south bound exit to two lanes	Estimate cost £1 – 5M	3	Developer contributions
39	A435 / Racecourse Roundabout	Capacity Improvements by approach arm widening	Estimated Cost <£1M	1	Developer contributions
40	Arle Court Park and Ride	Expansion of existing Arle Court P&R parking facilities (100% Increase in Capacity), and new walking and cycling improvements to link P&R site with the new West of Cheltenham Employment site	Estimated Cost £5-10M	7.5	Local Growth Fund
41	Arle Court Park and Ride / A40 Arle Court Roundabout	New signalised junction on the A40 to the west of Arle Court roundabout to provide access into Park and Ride site only. With left turn out and right turn in only. This will not allow through traffic into Hatherley Lane.	Estimated Cost £5-10M	3	Local Growth Fund
42	Leckhampton Lane	Upgrade A46 / Leckhampton Lane priority junction, to include a dedicated right turn from A46 south into Leckhampton Lane.	Estimated Cost £1-5M	3	Developer contributions
43	Moorend Park Road	A46 Shurdington Road northbound approach to Moorend Park Road – additional highway space for right turning traffic by providing a longer stacking lane.	Estimated Cost £1-5M	3	Developer contributions
44	Badgeworth Lane	A46 / Badgeworth Lane priority Junction – Signalisation of junction to provide improved access to/from Badgeworth.	Estimated Cost <£1M	1	Ad-hoc funding
45	A40 / A417 C&G roundabout	A40 / A417 C&G roundabout –Capacity Improvement on 2014 Pinch Point Scheme, by provision of a ‘free left turn lane’ from the A40 Barnwood Link approach arm to A417 Barnwood Bypass, and from A417 Corinium Avenue approach arm to A40 Barnwood Link.	Estimated Cost £1-5M	3	Ad-hoc funding
46	A38 / Walls roundabout	Capacity Improvement on 2014 Pinch Point Scheme, by providing 3 lane circulatory on the roundabout between Barnwood Rd / A38 Eastern Avenue approaches.	Estimated Cost £1-5M	3	Ad-hoc funding
47	A38 / A4173 St. Barnabas roundabout	Remove roundabout and signalising junction(with removal of Reservoir Rd approach arm	Estimated Cost £5-10M	7.5	Developer contributions
49	A38 / A430 / B4008 Cole Avenue	A38 / A430 / B4008 Cole Avenue Junction - Grade separation to allow straight through movement of north / south traffic on A38 Southern Connector/A430 corridor	Estimated Cost £5-10M	7.5	Local Growth Fund

Appendix M – DS7 Scheme cost assumptions

51	A40 / A417 Over Roundabout	Upgrade signals to MOVA or SCOOT operation to optimise signal timings	Estimates cost <£1m	1	Ad-hoc funding
52	A430/A417 Castlemeads	Upgrade signals to MOVA or SCOOT operation to optimise signal timings	Estimates cost <£1m	1	Ad-hoc funding
53	A38 Crosskeys Roundabouts	Upgrade signals to MOVA or SCOOT operation to optimise signal timings	Estimates cost <£1m	1	Ad-hoc funding
54	Cycling	<ul style="list-style-type: none"> • Completing gaps in existing cycle networks within the Cheltenham and Gloucester urban areas and ensuring linkages into new strategic development sites – comprising a package of small cycle improvements • Improved cycle parking – at key destinations • Cheltenham to Bishops Cleeve Cycle Path 	Estimated cost -£10-15M	12.5	Ad-hoc funding
55	Passenger Transport	<ul style="list-style-type: none"> • Improved rail service frequency / stopping pattern for passenger services at Ashchurch railway station – ensuring an hourly service • Improved frequency and review bus service coverage of 41/42 and review of existing services • Improved bus service frequency on Gloucester – Cheltenham Service Route 97/ 98 via Churchdown • Mode Shift Points – built into local centres across the JCS area to provide local park and ride (including cycle park) facilities. Enhanced public transport facilities – upgraded bus stop at local community destinations which provide bike parking / RTPi / car parking – encouraging modal shift onto bus for part of the journey 	Estimated cost -£10-15M	12.5	Passenger Transport Operators
56	Thinktravel	<ul style="list-style-type: none"> • School Travel Planning – Support for schools to encourage modal shift • Personalised Travel Planning – For new developments – tailored support to inform travel choices before established travel behaviour is established • Business Travel Planning – Support for employers to encourage modal shift 	Estimated cost -£1-5M	3	Developer contributions

Appendix M – DS7 Scheme cost assumptions

		<ul style="list-style-type: none"> Bike training for children and adults through the travel plan process Improved cycle information / route finding – Improved signage and promotional materials within the JCS area 			
57	Highway operation	Urban Traffic Control Centre – including full review of traffic signals including expansion of SCOOT and MOVA signals where not covered in elsewhere	Estimated cost -£15-30M	22.5	Ad-hoc funding opportunities
Total				361.5	

This page is intentionally left blank

APPENDIX 8

HIGHWAYS ENGLAND POSITION STATEMENT

Highways England Position Statement in Respect of the JCS Transport Strategy - Saturn 2013 Modelling Outputs

Highways England has been appointed by the Secretary of State under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network. Within the Plan area, the Strategic Road Network comprises the M5 from junction 9 to the north of Gloucester and junction 12 to the south of Gloucester, the A40 to the north of Gloucester and the A46 in Tewkesbury.

The Strategic Road Network (SRN) is a critical national asset and Highways England is responsible for ensuring that it operates and is managed in the public interest, both in respect of current activities and needs, and in providing effective stewardship of its long term operation and integrity.

Highways England has no specific policies relating to the requirements of infrastructure within Local Plans. DfT Circular 02/2013 “The Strategic Road Network and the delivery of sustainable development” is, however, clear on the infrastructure requirements of individual developments at Planning Application stage. Paragraph 9 of the Circular states:

Development proposals are likely to be acceptable if they can be accommodated within the existing capacity of a section (link or junction) of the strategic road network, or they do not increase demand for use of a section that is already operating at over-capacity levels, taking account of any travel Plan, traffic management and/or capacity enhancement measures that may be agreed. However, development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

It therefore follows that a transport strategy which achieves the same requirement on a Plan wide basis would be acceptable to Highways England. Paragraph 18 of Circular 02/2013, recommends that capacity enhancements and infrastructure required to deliver strategic growth should be identified at the Local Plan stage, which provides the best opportunity to consider development aspirations alongside the associated strategic infrastructure needs.

Applying the principles of paragraph 9 of Circular 02/2013, development proposals would be likely to be unacceptable, by virtue of a severe impact, if they increase demand for use of a section that is already operating at over-capacity levels, or cannot be safely accommodated, i.e., a development which adds traffic to a junction which already experiences road safety issues, or would increase the frequency of occurrence

of road safety issues or would in itself cause those road safety issues to arise, would be considered to have a severe impact.

Previous Representations

Unfortunately, the data presented in the evidence base which used the 2008 SATURN model as a basis did not include information which specifically related to this requirement. Highways England accepted the Transport Strategy in broad terms (exam 233A) on the basis that the Policy requirement for the highway network as included in Policy INF1 was more onerous than that of Highways England as contained within Circular 02/2013, and on this basis and the evidence presented, it was concluded that Highways England was broadly content with the available transport evidence base and the Transport Strategy to support the Submission version of the Plan.

Since then, the Joint Planning Authorities have consulted on the proposed main modifications to the Plan. These main modifications included a proposed increase to 33,500 houses and employment land for 39,500 jobs which introduced a significant degree of uncertainty about the suitability of the accepted Transport Strategy to accommodate the modified Plan.

In our consultation response 5 April 2017 we expressed concern that the main modifications to the Plan were being consulted on in the absence of evidence of the transport impacts of the increased housing and employment targets. Of specific concern were the following key points :-

- PMM035 includes reference to the upgrading of M5 Junction 10 to all movements. At the time of consultation, Highways England's position on M5 Junction 10 was that the case for its conversion to all movements was yet to be made.
- PMM106 introduces the Twigworth strategic Allocation. Highway interventions capable of accommodating the growth included in the pre-submission version of the Plan (absent Twigworth) had not been identified and the addition of second strategic allocation impacting on the same junction introduced a significant degree of uncertainty in relation to the likelihood that a solution for both allocations could be found. The necessary evidence to identify the impact and mitigation requirement of this proposed modification was not available at the time of consultation.
- PMM118 introduces the West Cheltenham Strategic Allocation in the absence of evidence on highway impacts, access strategies or mitigating measures.

Since responding to the consultation on the main modifications, Highways England has continued to work with the JCS authorities and Gloucestershire County Council to understand the implications of the proposed modifications. During that time, the updated 2013 Central Severn Vale Saturn model has also become available and this has been used to re-consider the impacts of the modified Plan.

Refresh of Issues Raised at Consultation Stage

In response to Highways England's three main concerns listed above, the evidence document entitled "JCS Transport Strategy Summary" identifies that :-

- the conversion of M5 Junction 10 to a full-movements junction is included in the transport strategy;
- The solution to Longford Roundabout consists of a new link road from the new A40 Innsworth site access junction through the Innsworth and Twigworth Strategic Allocations to the A38, together with the downgrading of the existing A38 Tewkesbury Road link north of Longford roundabout and alterations to the Longford junction itself;
- The conversion of M5 Junction 10 to a full-movements junction will incorporate the additional measures necessary to enable that junction to form the principle point of access to West Cheltenham from the motorway network, via a new link road which connects with the A4019 local road network.

Each of these points is further considered below in light of the latest transport evidence and revised conclusions are presented in relation to each.

Other parts of the JCS Transport Strategy Mitigation Package, in so far as they relate to the Strategic Road Network remain largely unchanged and are as per the schemes that Highways England was previously broadly content with. It was previously the case that all junctions, with the exception of M5 junction 12, had been identified as requiring improvement in order to enable Core Strategy growth. Junction 12 has also now been identified as requiring improvement.

The Case for Junction 10 All Movements

In Highways England's consultation response to the main modifications Consultation we stated that our position at that time was that the case for the conversion of Junction 10 to an all movements junction had yet to be made. This was on the basis of early evidence which suggested that such a scheme would place additional significant stress on the M5 mainline between J10 and J11.

Section 5 of the evidence document entitled "JCS Transport Evidence Base – May 2017" describes that the conversion of Junction 10 to all movements was introduced to the Strategic Transport Modelling in scenario DS5. This was done primarily as a means of resolving the significant congestion issues arising from the development included in the proposed main modifications observed in scenario DS5a, principally due to the West Cheltenham Strategic Allocation. The results showed a slight reduction in northbound M5 flows, with an increase in southbound M5 flows.

Scenario DS6 retained junction 10 all movements and tested the junction improvement included in DS5 using the updated 2013 CSV model. As reported in paragraph 5.7.4 of the evidence document, the modelling exercise recorded excessive queuing on the M5 Southbound and Northbound off-slips in the AM peak hour at Junction 10, with major

queuing on the A4019 Tewkesbury Road at the new junction with the West of Cheltenham distributor road. The conclusion reached was that the scheme for J10 assumed in this scenario was insufficient in terms of reducing traffic impact on both the Strategic Road Network and local road network to a reasonable level. A developed version of the scheme was included in Scenario DS7 which is the JCS team's preferred package of transport improvements.

As described in paragraph 6.2.5 of the evidence document, the alterations to M5 J10 assumed in Scenario DS7 comprise a high capacity upgrade of M5 J10 junction including three lane motorway off slips and a three circulatory lane grade separated roundabout with the A4019. To provide access to the West Cheltenham Strategic Allocation a new signal controlled junction immediately west of the M5 is assumed to accommodate the associated access road.

In order to demonstrate the case for an all movements junction at M5 J10, an alternative West Cheltenham access arrangement was tested in Scenario DS6a which (as confirmed at paragraph 5.8.3) assumed M5 J10 would remain in its current arrangement. As described in Paragraph 5.8.7, the West Cheltenham Access Strategy assumed in Scenario DS6a was forecast to have significant implications on the motorway network operational performance. It is therefore clear from the evidence available that the conversion of Junction 10 to all movements is necessitated by the West Cheltenham Strategic Allocation and therefore the operational case for the scheme has been made. Therefore, subject to the overall economic, environment and commercial cases being proven, the conversion of J10 to all movements would be acceptable to Highways England.

The conversion does, however, have implications for the operation of the M5 mainline and measures are included within the JCS transport strategy to resolve these implications, consisting of the upgrade of the motorway links to "smart motorway" standards between Junction 9 and Junction 11a.

Longford Roundabout

As set out in Exam 233A, Longford Roundabout, which is adjacent to the Innsworth and Twigworth Strategic Allocation (SA1 and SA1a) is one of the locations for which adequate highway intervention to satisfy Policy INF1 of the submission version of the Plan, had not been identified. Whilst Highways England was broadly content that a solution to Longford Roundabout was achievable which satisfied its own requirements, in terms of DfT Circular 02/2013, the introduction of a second strategic allocation on an adjacent site and which would also impact on the operation of Longford Roundabout, introduced a significant degree of uncertainty in relation to the likelihood that a solution for both allocations can be found.

All modelled scenarios up to and including Scenario DS6 had shown the junction to be operating over capacity and not able to accommodate the impact of the JCS allocations. The Twigworth allocation was introduced in Scenario DS4.

Scenario DS7 introduced significant change to the highway network in the vicinity of Longford Roundabout in an effort to identify measures to accommodate the Innsworth

and Twigworth Strategic Allocations. These changes are detailed in the evidence reports and can be summarised as the diversion of the A38 through both sites to a new junction on the A40. Longford Roundabout itself is then proposed to be converted to a signalised cross roads with bus priority on the current A38 North. The DS7 modelling results show that these changes would satisfactorily accommodate the JCS allocations.

Access Strategy for West Cheltenham

In Highways England's consultation response to the main modifications, we stated our position at that time that the inclusion of an additional strategic allocation as a main modification without the evidence to support its inclusion is a notable risk to the Plan. This was on the basis that initial option testing for possible access solutions had revealed the need for infrastructure of a substantial scale.

As set out above, in relation to M5 Junction 10, the access arrangements for the West Cheltenham Strategic Allocation, identified through the development of the JCS transport evidence base consist of the following :-

- A high capacity upgrade and conversion of M5 Junction 10 to all movements
- A new high capacity link road from the A4019 west of M5 Junction 10, across the M5 into the strategic allocation.
- A high capacity signal controlled junction, with a separate left turn slip road from M5 J10 northbound off-slip onto the A4019 Cyber Park link road (southbound).
- New traffic signals on the A4019 westbound entry to upgraded motorway junction

It also needs to be re-iterated that the conversion of M5 Junction 10 to all movements necessitates the upgrade of the motorway links to "smart motorway" standards. While the above schemes are substantial in scale, the transport evidence base now shows that a package of suitable interventions can be delivered which would accommodate the impact the West Cheltenham Strategic Allocation on the SRN.

Updated Evidence base

It is noted that the onerous policy requirement included in Policy INF1 relating to the future operation of the highway network (Policy INF1.1b, which defines a severe increase in congestion as being a highway junction no longer operating within their design capacity) has been removed. This definition has been removed as part of the modification to the policy which now reads at Policy Inf1:2 –

Planning permission will be granted only where the impact of development is not considered to be severe. Where severe impacts that are attributable to the development are considered likely, including as a consequence of cumulative impacts, they must be mitigated to the satisfaction of the Local Planning Authority in consultation with the Highway Authorities and in line with the Local Transport Plan.

Highways England would consider a development to have a severe impact where the requirements of Circular 02/2013 are not met. How the information contained in the updated evidence base relates to this requirement is described below.

The updated transport evidence base was published at the end of May 2017. The data in this evidence base is now aligned with providing Highways England with the information necessary to determine compliance with its specific requirements as set out in DfT Circular 02/2013.

Taking the DfT's guidelines into account, it is first necessary to assess the quality and capacity of existing transport infrastructure and its ability to meet forecast demands. In relation to the JCS, this process is now reported in evidence document entitled "Technical Note for the 'Do Nothing' and 'Do Minimum' Model JCS Transport Evidence Base - May 2017". A comparison of the Do Nothing and Do Minimum assessments identifies the direct impact of the allocations included in the Plan on the existing highway network.

Measures to offset any severe impacts are then assessed through the Do Something Scenarios. A comparison of the Do Nothing and Do Something scenarios establishes the success or otherwise of the measures/interventions proposed; measures should be identified such that capacity is increased to meet the assessed increase in demand taking into account any spare capacity that may exist.

Where this target is achieved through the transport interventions included within the JCS Transport Strategy, Highways England will be content with the soundness of the Plan.

It is, however, recognised that the cost of transport interventions necessary to achieve this target could be significant, or that deliverability challenges may exist.

In these cases, it may be appropriate to consider the impacts of the development in greater detail with an increased focus on the actual impact on driver experience. In such cases, road safety remains paramount to the determination of acceptability of proposals for highway intervention and all schemes must be assessed in terms of the road safety risk they present.

At "at grade" junctions, as traffic flow increases, queue length and travel time also increase. When queue length and travel time become significant this can lead to driver frustration which then leads to drivers attempting to pull out of give way controls using gaps of insufficient length or drivers not paying due attention to signal aspects. Nominal queue length increases rarely result in a measurable or significant road safety risk increases. It is not however possible to identify a cut-off point which identifies when, under such circumstances, an increase in road safety risk becomes unacceptable. Where measures cannot be identified to offset the increase in demand, then further consideration of the harm caused by development traffic would have to be on a case by case basis.

Queue length increases can also affect upstream network operation, with queues extending back to the upstream junction, for example. At grade separated junctions, queues can increase such that stationary traffic comes into conflict with mainline high speed through traffic. Such cases represent a significant and unacceptable road safety risk.

For the purpose of the current exercise, spare capacity has been assumed to exist where the forecast traffic flow is less than 100% of the junction or link capacity assumed in the model. This is referred to as the volume/capacity ratio or v/c. The evidence document entitled “Amey JCS Tech Note Do Something DS7 report 3” shows the v/c’s for each junction in the Plan area broken down into route corridors. These tables show that the following junctions do not meet the targets referred to above :-

- M5 Junction 12
- A40/ A48 Highnam Roundabout
- A40/ B4215 Newent Junction
- A40/ A38 Longford Roundabout
- A417/ A46 Junction
- M5 Junction 11a/A417/B4641

Each of these is considered further below :-

M5 Junction 12

The operation of this junction is shown to worsen in both peak periods due to the JCS allocations and transport mitigation package. Junction performance in the AM peak is shown to worsen from a v/c of 99.3% to 102.1% due to the JCS allocations and mitigation package. In the PM peak, performance worsens from 95.5% to 105%. A more detailed examination of the SATURN outputs however shows the reported worsening of junction performance would not result in any issues on the Strategic road network. There would however be an increase in queuing and delay on the B4008 northbound approach to the junction.

A40/ A48 Roundabout Highnam Roundabout

The operation of this junction is shown to worsen in both peak periods due to the JCS allocations and transport mitigation package. Junction performance in the AM peak is shown to worsen from 134.7% to 153.6% due to the JCS allocations and mitigation package. In the PM peak, performance worsens from 102.9% to 131.7%. A more detailed examination of the SATURN outputs shows that this worsening of performance is likely to lead to significant problems on the A40(T) westbound and A48 approaches in both peak periods.

The JCS transport strategy includes the signalisation of the roundabout to accommodate traffic growth due to the JCS. The evidence report entitled “Technical Note for the ‘Do Something 7’ model” notes however that Highnam Roundabout is a known congestion point operating over 100% in the Do Nothing and Do Minimum scenarios and concludes that the failure of the junction is not therefore directly caused by the JCS allocation.

From the modelling results presented it is difficult to agree this conclusion. It is noted that the JCS growth, in the absence of the transport mitigation package causes a minor detriment to junction operation. It is however, the JCS transport package that would appear to have the effect of making routes via this junction much more attractive than

would otherwise be the case and it is this that causes the worsening of junction performance. Therefore, as part of the JCS transport package, it is apparent that a larger scheme is required than has been assumed in DS7.

A40/ B4215 Newent Junction

The operation of this junction is shown to worsen in the AM peak period due to the JCS allocations and transport mitigation package. Junction performance is shown to worsen from 115.1% to 128.4% due to the JCS allocations and mitigation package. In the PM peak performance is shown to be unchanged. A more detailed examination of the SATURN outputs shows that this worsening of performance is likely to lead to an increase in congestion on the B4215 approach to the junction and at the right turn from the A40(T) onto the B4215.

The JCS transport strategy does not include a scheme to offset the detriment caused by the traffic growth due to the JCS. The evidence report entitled “Technical Note for the ‘Do Something 7’ model” again notes however that Newent Junction is a known congestion point operating over 100% in the Do Nothing and Do Minimum scenarios and concludes that the failure of the junction is not directly caused by the JCS allocation.

However, as with Highnam junction it would appear may be the JCS transport package is forecast to have the effect of making routes via this junction much more attractive than would otherwise be the case and it is this that causes the worsening of junction performance. Therefore, as part of JCS transport package, it is apparent that a scheme is required.

A40/ A38 Longford Roundabout

The operation of this junction is shown to worsen in the PM peak period due to the JCS allocations and transport mitigation package. Junction performance is shown to worsen from 99.1% to 100.5% due to the JCS allocations and mitigation package. In the AM peak performance is shown to be within capacity. A more detailed examination of the SATURN outputs shows that the junction is actually forecast to operate satisfactorily in both peak periods with the JCS growth and transport package in place and it is unclear where the reported performance parameters have been taken from.

A417/ A46 Junction

The operation of this junction is shown to worsen in both peak periods due to the JCS allocations and transport mitigation package. Junction performance in the AM peak is shown to worsen from 100.5% to 104% due to the JCS allocations and mitigation package. In the PM peak, performance worsens from 88.9% to 102.9%. A more detailed examination of the SATURN outputs shows that this worsening of performance is likely to lead to increased congestion on the A46 approaches to the junction.

The JCS transport strategy includes the signalisation of the westbound and eastbound A417 ‘Off-slips’ at the junction. The evidence report entitled “Technical Note for the ‘Do Something 7’ model” accepts that minor issues remain during both peaks for the A417 /

A46 junction with both A46 approaches and concludes that signalisation of these approaches may mitigate the scale of delay forecast.

M5 Junction 11a/A417/B4641

The operation of this junction is shown to worsen in the AM peak period due to the JCS allocations and transport mitigation package. Junction performance is shown to worsen from 71.3% to 103.4% due to the JCS allocations and mitigation package. In the PM peak performance is shown to be within capacity. A more detailed examination of the SATURN outputs shows that the main issue in so far as the operation of the Strategic Road Network is concerned is the movement from the M5 South to the A417 East. All other movements on or from the Strategic Road Network appear satisfactory.

The JCS transport strategy does not include a scheme to offset the detriment caused by the traffic growth due to the JCS. The evidence report entitled “Technical Note for the ‘Do Something 7’ model” makes no mention of the junction.

The forecast worsening of performance will be due to two separate issues. Firstly an increase in the number of vehicles doing the M5 to A419 movement due to the opening of the “Missing Link” as referred to in the evidence report. Secondly, traffic growth due to the JCS allocations would have the effect of reducing capacity as it would oppose the M5 to A419 movement. How much of the forecast worsening is due to the JCS is unclear from the information available and this should be given further consideration.

Conclusions from Updated Evidence Base

It is apparent from the evidence presented in support of the main modifications to the Joint Core Strategy that the transport strategy set out in the reports describing Scenario DS7, resolve the majority of the traffic issues forecast to arise as a result of the revised allocations. As described above and as noted in the evidence base itself, further work is needed to identify additional highway schemes to resolve residual issues. Additional highway schemes should be investigated for the following locations :-

- A40/ A48 Highnam Roundabout
- A40/ B4215 Newent Junction
- M5 Junction 11a/A417/B4641

Highways England are of the view that these residual issues are capable of resolution and subject to these schemes being identified and forming part of the transport strategy, Highways England are content with the soundness of the Plan.

It is accepted that the schemes identified as part of the JCS Transport Strategy represent one possible package of transport interventions and that alternatives may exist. Mitigation measures identified in Transport Assessments supporting planning applications will be required to be developed to a much greater level of detail than has been done for the JCS and through the necessary design process, other equally suitable measures may be identified.

APPENDIX 9
TECHNICAL NOTE

Project:	Elms Park, Cheltenham, Gloucestershire	Job No:	60531723
Subject:	Review of Elms Park Planning Application (Reference: 16/02000/OUT)		
Prepared by:	Matthew Davies (Senior Consultant)	Date:	13/01/2017
Checked by:	James Neville (Principal Consultant)	Date:	16/01/2017
Approved by:	Jeremy Douch (Regional Director)	Date:	17/01/2017

1. Introduction

This Technical Note has been prepared by AECOM on behalf of Spirax Sarco (the Client) as part of a review of the potential transport and traffic impacts of an outline planning application (Reference: 16/02000/OUT) submitted by Bloor Homes and Persimmon Homes (the 'Developers') to Cheltenham Borough Council (CBC) in September 2016. AECOM is a multidisciplinary engineering company, with the team undertaking this review specialising in transportation planning.

The planning application is for an urban extension at northwest Cheltenham (NWC) known as 'Elms Park'. The land is allocated for strategic development in the emerging Joint Core Strategy (JCS) prepared by Gloucester City, Cheltenham and Tewkesbury Borough Councils (Submission Version published November 2014). The application is for an urban extension comprising up to 4,115 dwellings, 24 ha of employment uses, a hotel, primary and secondary education, and retail and community facilities. The development area lies to the north of the A4019 Tewkesbury Road corridor, which connects the centre of Cheltenham with the M5 motorway (via a restricted movement junction). The Illustrative Masterplan (Barton Willmore Drawing No. 9925, dated 07/10/2016) and Land Use and Access Plan (Barton Willmore Drawing No. 9401, dated 12/09/2016) for Elms Park are reproduced at **Appendix A**.

Our Client owns two land parcels to the east of proposed Elms Park development. The location of these parcels in the context of Elms Park and the surrounding highway network is shown on **Figure 1**. These areas of land are currently occupied and are undertaking commercial activities (business and general industrial) and are separated by Runnings Road. Manor Road links our Client's premises with the A4019 Tewkesbury Road to the south. The northern parcel is accessed via two priority junctions on Runnings Road, located between Manor Road and Malmesbury Road. The southern parcel is accessed via Manor Road (serving the premises of VW), Mackenzie Way (serving the premises of Hylton) and Malmesbury Road.

This review sets out the implications of the urban extension proposals to our Client's land interests. The documents submitted as part of the application which have been reviewed in this Technical Note include the Transport Assessment (TA) dated 20/05/2016, the Framework Travel Plan (FTP) dated 20/05/2016, and a number of supporting drawings.

This Technical Note is structured as follows:

- Section 2: Development Proposals – provides a summary of the Elms Park development proposals including the proposed access arrangements, parking strategy, development phasing, and off-site highway measures;
- Section 3: Sustainable Transport – reviews the sustainable transport strategy for Elms Park, including the provision for walking, cycling and public transport;
- Section 4: Highway Impact – provides a review of the assessment methodology and impact of Elms Park on the operation of the highway network; and
- Section 5: Summary and Conclusions – sets out the key findings of the review and implications for our Client's land interests.

Each section of the report is populated with a Table highlighting key risks and implications to Spirax Sarco's business interests.

2. Development Proposals

Chapter 5 of the TA sets out the development proposals. These are summarised below in terms of the development mix, access arrangements, parking strategy, and development phasing. A number of off-site highway measures to mitigate the impacts of traffic generated by Elms Park are also proposed; these are set out at Chapter 11.2 of the TA and are also summarised in this section.

Development Mix

The development proposals are as follows:

- Up to 4,115 dwellings (C3) (mixed tenure, including affordable housing) and elderly persons accommodation (C2 up to 200 rooms);
- A 10 ha Business Park (B1), providing up to 40,000 sqm of employment floorspace;
- A hotel (C2) with up to 100 rooms (3,500 sqm);
- Mixed use centres providing retail uses and community facilities (A1-A5 up to 6,150 sqm, D1/D2 up to 1,000 sqm);
- A transport hub and public transport interchange;
- Primary and secondary school education (D2);
- New areas of green infrastructure, including areas of play, sports hub, woodland planting, allotments and habitat at creation; and
- Creation of new means of access onto A4019 Tewkesbury Road and Manor Road, new footways and cycleways, and drainage infrastructure.

The TA submitted has considered a level of development above that included in the planning application, taking account of the potential for additional residential development. The level of residential development assessed in the TA is 4,800 dwellings, compared with 4,115 dwellings in the planning application. The assessment is therefore considered robust in terms of the transport impact development assumptions.

Access Arrangements

The proposed access arrangements are set out in Chapter 5.2 of the TA, and are summarised on the Land Use and Access Plan reproduced at **Appendix A**. Four primary vehicle access points are proposed; these are shown on the drawings reproduced at **Appendix B** and are as follows:

- Proposed Site Access A: New four-arm signal-controlled junction on the A4019 Tewkesbury Road, opposite Homecroft Drive (Phil Jones Associates Drawing No. 2314-01);
- Proposed Site Access B: New three-arm signal-controlled junction on the A4019 Tewkesbury Road, near LA Fitness (Phil Jones Associates Drawing No. 2314-02);
- Proposed Access C: New four-arm roundabout on the A4109 Tewkesbury Road at the B4634 Hayden Road/Gallagher Retail Park junction (Phil Jones Associates Drawing No. 1041-102); and
- Proposed Access D: New compact roundabout on Manor Road (Phil Jones Associates Drawing No. 1041-114).

The proposed compact roundabout on Manor Road (Proposed Site Access D) will be located along the frontage of the southern parcel of our Client's land. The construction of the roundabout will require the realignment of Manor Road. The TA is not clear as to how this will tie-in with the existing access to the VW premises; this will need to be addressed. Modifications are also proposed at the existing secondary access to the Evans Halshaw premises in terms of tie-in of the realigned carriageway/footway; these changes will not be detrimental in terms of access to our Client's land. Construction of the roundabout will result in some disruption and delays due to associated traffic management; activities will therefore need to be managed so as to not compromise access to our Client's land. Once constructed, the roundabout will have a positive effect by reducing vehicle speeds along Manor Road. The TA shows that

any delay associated with negotiating the roundabout will be negligible; AECOM agrees with this conclusion. The impact of Proposed Site Accesses A, B and D in terms of the operation of the highway network are discussed at Section 4.

Pedestrian and/or cyclist only access points are located at multiple points around Elms Park. These include pedestrian and/or cycle accesses on Manor Road in the vicinity of the northern parcel of our Client's land, with one being along our Client's site frontage. These will be of benefit in terms of providing connections between our Client's land and the various land uses associated with Elms Park; the residential component will bring a new source of potential staff, while users of our Client's land may utilise the various land uses including education, community, retail and leisure. However, the TA is not clear at this stage how these accesses will integrate with existing pedestrian infrastructure.

Parking Strategy

The application is in outline; therefore, details of parking provision have not yet been submitted. The Developers will need to demonstrate that sufficient parking is provided within the new urban extension, so as to ensure that this does not take place on the surrounding public highway. This will be required as development parcels come forward with individual reserved matters applications.

Development Phasing

Chapter 5.4 of the TA states that Elms Park is likely to be constructed over a 15-year period between 2017 and 2031. This is likely to be in four phases, with the potential for further phases associated with the wider masterplan area (i.e. that for potential additional residential development). Construction activities could extend beyond 2031 if development of the wider masterplan area comes forward.

Construction traffic will be less than that associated with the development when in operation, but this is not quantified in the TA. Construction activities will result in an increase in larger vehicles (i.e. for deliveries of materials, plant and equipment, etc) on the local highway network and associated issues (dust, noise, delays on the network). AECOM therefore consider that the volumes of construction traffic (particularly larger vehicles) should be set out so that the effects can be fully understood. These will need to be carefully managed through a Construction Traffic Management Plan (CTMP) to ensure that any impact on surrounding land uses (including our Client's land) can be mitigated by the Developers

Furthermore, the TA has not included scenarios where there will be a mixture of construction and operational traffic. AECOM consider it appropriate to assess such scenarios as the addition of construction traffic (and associated vehicle types) to operational traffic may have a greater impact on the network than that associated with the completed.

Off-Site Highway Measures

The key off-site highway measures (i.e. those that do not form part of the access arrangements set out above) included as part of the package to mitigate the impacts of development traffic are shown on **Figure 2** and are as follows:

- Improvements to the A4019 Tewkesbury Road/B4634 Hayden Road signal-controlled junction, incorporating bus priority measures;
- Improvements to the A4019 Tewkesbury Road/Hayden Road/Manor Road signal-controlled junction, with bus priority measures on both the eastbound and westbound approaches;
- Replacement of the A4019 Tewkesbury Road/Kingsditch Lane/Princess Elizabeth (PE) Way roundabout with a signal-controlled junction, incorporating bus priority measures on the eastbound approach;
- Replacement of the Wymans Lane/Kingsditch Lane mini-roundabouts with a four-arm signal-controlled junction; and
- Replacement of the Staverton Bridge signal-controlled junction with a four-arm roundabout.

Key Implications for Client – Development Proposals:

- The construction of the site accesses and off-site highway measures will result in disruption and delays in the short-term due to associated traffic management; activities will need to be managed so as to not compromise access to our Client’s land, particularly with regard to the proposed roundabout on Manor Road.
- Construction traffic will be less than that associated with the development when in operation. Construction activities will result in an increase in larger vehicles on the local highway network and associated issues (dust, noise, potential delays on the network). This increase should be quantified so that the effects can be fully understood. These will need to be carefully managed through a CTMP to ensure that there is no impact on surrounding land uses (including our Client’s land).
- It is not clear how the proposed roundabout on Manor Road will tie-in with the existing access to the VW premises. Construction of the roundabout will result in disruption and delays due to associated traffic management. Once constructed, the roundabout on Manor Road will have a positive effect by reducing vehicle speeds. The TA shows that any delay associated with negotiating the roundabout will be negligible.
- Pedestrian and/or cyclist accesses on Manor Road will be of benefit in terms of providing connections between our Client’s land and the various land uses associated with Elms Park. The residential component will bring a new source of potential staff, while users of Spirax Sarco’s businesses may utilise the various land uses including education, community, retail and leisure.
- Sufficient parking will need to be provided on-site, so as to ensure that this does not take place on the surrounding public highway.

3. Sustainable Transport Strategy

The sustainable transport strategy for Elms Park is set out at Chapter 6 of the TA and in the FTP. It comprises a mixture of ‘hard’ measures (i.e. infrastructure provision/improvements to facilitate walking, cycling and use of public transport), and ‘soft’ measures (i.e. measures aimed at helping/encouraging people to choose to reduce their car use).

Framework Travel Plan

A FTP was submitted as part of the planning application, the primary objective of which is to “*reduce the amount of single occupancy car travel to and from a site*”. The FTP has been prepared with reference to the *National Planning Policy Framework (NPPF)* and Gloucestershire County Council’s (GCC’s) local travel plan guidance.

The FTP forms an overarching document for Elms Park as a whole, to inform the development of individual travel plans for specific components, i.e. residential, employment and education. The proposed package of measures to encourage sustainable travel and monitoring strategy is typically what AECOM would expect for a development of this nature. However, the FTP makes no reference as to how the development of individual travel plans and implementation of measures will be secured. AECOM would expect this to be secured through a legal obligation enshrined within tenancy agreements; reference to this should be included in the FTP.

The implementation of the individual travel plans will be the responsibility of Travel Plan Coordinators (TPCs). It is stated that GCC will act as the TPC for the residential and education components, while the Developers will appoint a TPC for the entire employment component. Whilst the FTP states that there will be close liaison between the TPCs, it does not set out how this relationship will be established and maintained. Given the scale and uses, AECOM consider that close coordination will be required to ensure that a consistent approach is taken in terms of measures and their implementation, monitoring, etc; this can be achieved by forming a Travel Plan Working Group that would meet on a regular basis. This will be particularly important, as the success of the sustainable transport strategy (in terms of mode shift) has been assumed in assessing the impact of Elms Park on the highway network. The FTP and associated measures may provide some benefits to our Client’s land; for example, car sharing initiatives may provide the opportunity for users of our Client’s land to car share with users of the employment uses associated with Elms Park.

The specific elements of the strategy relevant to our Client’s land are identified in the following paragraphs.

Walking

Chapter 3.3 of the TA and FTP identifies locations in the vicinity of our Client’s land where there may be barriers to pedestrian movement. These are summarised in **Table 1**, along with the proposed improvements as part of the development proposals.

Table 1: Locations of Issues and Proposed Improvement (identified in the TA/FTP)

Issue	Proposed Improvement
No crossing facilities west of the A4019 Tewkesbury Road/Hayden Road/Gallagher Retail Park access signal-controlled junction.	New signal-controlled pedestrian/cyclist (toucan) crossing on A4019 Tewkesbury Road, adjacent to Sandpiper Drive.
Double mini-roundabout junction of Wyman Lane/Runnings Road/Swindon Road/Kingsditch Lane is difficult for pedestrians to cross.	Replacement of the double mini-roundabouts with a four-arm signalised junction incorporating improved pedestrian and cyclist facilities.
Sections of Manor Road, Runnings Road, Wymans Lane, Swindon Lane and Swindon Road have footways only on one side.	Not addressed by the TA/FTP.

Cycling

A number of off-site cycle connections/improvements are proposed. These will enhance the connectivity of our Client’s land with key destinations such as Cheltenham Town Centre. These include a proposed extension to National Cycle Route (NCR) 41. A section of the proposed extension runs adjacent to the northern boundary of the northern parcel of our Client’s land. It is not clear whether this will utilise The Runnings or land between The Runnings and the River Swilgate; this should be clarified.

Public Transport

As part of the development proposals, a number of new bus services changes are proposed as follows:

- E (new service) – this will be the main route between residential Phases 2, 3 and 4 and the town centre, and will also serve part of Phase 1; it will also be a key route for those travelling to the Elms Park employment area and the sixth-form college on the site;
- H (revised service) – connection between Elms Park, Hesters Way and Benhall, for access to Gloucestershire College and GCHQ. If resource scheduling permits, this could be extended to the railway station;
- Service 40 (new service) – this will connect the local Park and Ride (P&R), jointly with Service 41/42, and part of residential Phase 1 with the town centre; and
- Service 41/42 (revised service) jointly operated with Service 40 – this will serve P&R travel to/from the town centre and will be a supplementary service for parts of residential Phase 1.

From a comparison of current bus timetable information (Source: Traveline) and that presented in the TA, it appears that the H service is no longer in operation, and has been replaced by the B service. The proposed rerouting of the H service is still likely to apply to the B service. This will result in the removal of a section of route along Manor Road between Gallagher Retail Park and Stantons Drive/Church Road. As a result, access to this service from our Client’s land will become less convenient as the walking distance from the southern parcel will be increased, while the walking distance from the northern parcel will be above 400m (the recommended maximum walking distance to a bus stop set out in the IHT’s *Guidance for Providing for Public Transport in Developments*, published in 1999). The northern parcel will no longer be within 400m of any bus stops. The southern parcel will benefit from improved service frequencies on those services that follow the A4019 Tewkesbury Road (Services E, 40 and 41/42), although these will only be accessible from bus stops beyond the recommended maximum walking distance. A summary of the proposed changes in bus service provision and frequency is shown in **Table 2**.

Table 2: Existing and Proposed Bus Frequencies

Bus Service	New/Revised Service	Existing Daytime Frequency		Proposed Daytime Frequency	
		Mon-Sat	Sun	Mon-Sat	Sun
41/42	Revised	4 per hour	1 per hour	5 per hour	2 per hour
E	New	N/A	N/A	5 per hour	2 per hour
H/B	Revised	2 per hour	1 per hour	2 per hour	No services

Key Implications for Client – Sustainable Transport:

- A FTP has been prepared for the Elms Park development as a whole, to inform the development of individual travel plans for specific components. However, this does not include reference to how this will be secured. AECOM consider that the FTP should include reference to the need for a legal obligation enshrined within tenancy agreements to ensure deliverability. The FTP should also set out how liaison and coordination between TPCs will be established and maintained. The measures contained in the FTP may have implications for our Client; AECOM therefore recommend that our Client be invited to any stakeholder forums/discussion group meetings.
- Pedestrian and cyclist access to our Client’s land will be improved. The proposed improvements include a new toucan crossing on the A4019 Tewkesbury Road, and replacement of the double mini-roundabouts of Wyman Lane/Runnings Road/Swindon Road/Kingsditch Lane with a signal-controlled junction, which will incorporate improved pedestrian and cyclist facilities. However, there are existing issues regarding footway provision in the vicinity of our Client’s land that the TA and FTP have not addressed.
- Proposed off-site cycle connections/improvements will enhance the connectivity of our Client’s land with key destinations such as Cheltenham Town Centre. These include a proposed extension to NCR 41, a section of which runs adjacent to the northern boundary of the northern parcel of our Client’s land. Clarification should be provided by the Developers as to whether this will utilise The Runnings or land between The Runnings and the River Swilgate.
- It is proposed that the B/H bus service will be rerouted and no longer serve a section of route along Manor Road between Gallagher Retail Park and Stantons Drive/Church Road. Access to this service from our Client’s land will be less convenient, and walking distances to nearest bus service will be increased (the northern parcel no longer be within the recommended distance to a bus stop). The southern parcel of our Client’s land will benefit from improved bus service frequencies on those services that follow the A4019 Tewkesbury Road. AECOM suggest that our Client enter discussions with the Local Authorities and bus operations should they see a rerouted bus service as a risk to their business.

4. Highway Impact

The methodology for assessing the impact of Elms Park and the results of this assessment are set out in following chapters of the TA:

- Chapter 7: Assessment Methodology;
- Chapter 8: Trip Generation – No Mode Shift;
- Chapter 9: Trip Generation – With Mode Shift;
- Chapter 10: Trip Distribution;
- Chapter 11: Local Highway Assessment; and
- Chapter 12: Strategic Highway Assessment

Key issues and findings from these chapters are summarised below.

Assessment Methodology

GCC’s 2008 Base Central Severn Vale (CSV) SATURN model forms the basis of the assessment methodology. Future assessment scenarios have been developed from this model and vehicle traffic generated by Elms Park has been applied. The outputs from SATURN have then been used as inputs into the following:

- Highways England's Paramics model for assessment of the M5 corridor;
- Phil Jones Associates Paramics model for assessment of the A4019 Tewkesbury Road corridor; and
- Standalone junction models of both junctions internal and external to Paramics model for the A4019 Tewkesbury Road corridor.

SATURN is the UK-industry standard software for strategic highways assignment and is capable of assessing the impacts of highways design interventions, strategy and traffic management measures with traffic flow inputs. It comprises a number of different algorithms that allow for the modelling of complex interactions between traffic in urban settings and their effects on highway capacity. This means that SATURN can be used in conjunction with more detailed operational models to provide key insights into the strategic re-routeing impacts of interventions (both highway infrastructure and development) but also to provide flow-changes into standalone junction appraisal.

Paramics is the most widely applied microsimulation package in the UK, used by many Local Authorities for the detailed analysis and design of urban road networks. Paramics can be applied to a variety of different schemes and is routinely used to examine the detailed operational impacts of traffic signal interventions, bus priority measures, traffic calming and car park location and control amongst others. Unlike strategic models, Paramics is able to model the individual components of traffic flow and congestion and can therefore provide key insights into the many different causes of congestion in urban road networks. Paramics has frequently been used for the successful implementation of schemes and developments, providing robust evidence base for Transport Assessments.

It is understood that both the Local Highway Authority (GCC) and Strategic Highway Authority (Highways England) have recently raised concerns regarding the suitability of the 2008 CSV model for the assessment of strategic allocations. Highways England's consultation response to the planning application (dated 07/11/2016) identifies that *"the CSV model validation is now more than 8 years old, with some data in the model being 10 years old"*. The response also references the Department for Transport's (DfT's) WebTAG guidance, stating that *"trip matrices used for modelling should be based on survey data which are less than six years old"*. It concludes that *"the model can no longer be considered sufficiently robust to inform traffic assessment work"* and recommends that the new 2013 Base Model should be used for assessment purposes. The testing of strategic allocations using the new 2013 Base Model (once available) has been promoted by GCC in its statements during the examination of the JCS.

These concerns are shared by AECOM; the 2008 Base CSV SATURN model informs all components of the assessment, and therefore the conclusions of the TA in terms of the impact on the operation of the highway network should be treated with caution. AECOM therefore agree that the assessment should be updated to be based on the new 2013 Base Model. Given that the base model is now circa nine years old, there are significant margins of error in the modelling/traffic forecasting. A more up to date base model would significantly reduce errors in economic and land use assumption changes between 2008 and the present day.

Whilst the TA includes a number of supporting technical notes in respect of the modelling, no information is provided in respect of how well the existing SATURN model validates in the area of interest (i.e. is it representative of existing traffic conditions and does it form a solid base to then assess future changes in traffic conditions and changes to land uses). As discussed, this is important as outputs from the SATURN model have been used to inform the Paramics models.

The TA does include a validation note for the Paramics model of the A4019 Tewkesbury Road corridor (at Appendix L of the TA). This concludes that the model validates well with data collected from traffic surveys. On review it is noted that, across the network as a whole, the journey times in the model achieve an acceptable level of validation with observed journey times; however, there are a number of locations within the network where an acceptable level of validation is not achieved (i.e. where modelled journey times are not within 15% of observed journey times). These include locations in the vicinity of our Client's land such as the A4019 between Hayden Road and The Green, and Runnings

Road/Swindon Road between Manor Road and Richards Road; these should be reviewed. This brings risks in the reliability of the projected local traffic forecasts.

The assessment considers three forecast years (2021, 2026 and 2031) and two time periods (weekday road network AM and PM peaks). A number of development scenarios have been assessed; the key scenarios for comparison are as follows:

- Do Minimum (DM): Includes background traffic growth and traffic associated with JCS strategic allocations (not including Elms Park); and
- Do Something 1 (DS1): DM + Elms Park + Interventions (these include proposed changes to highway infrastructure and mode shift arising from the sustainable transport strategy).

Trip Generation

The TA sets out the proposed multi-modal (including vehicle) trip generation for the various land uses during their operational phase. The issues identified in the assumptions and resulting trip rates are set out in the following paragraphs.

Education

Person trip rates for both the primary and secondary education have been derived from the TRICS database (contains trip generation information for surveyed sites by land uses). With regard to the secondary education, only three sites have been selected, which does not meet good practice guidance, as this is a very small sample size; AECOM therefore consider that the TRICS analysis should be revisited.

The mode split has been derived from data provided by GCC. In the case of the secondary education, this has been based on schools within Cheltenham only; AECOM do not consider this to be appropriate, as many of these schools are positioned in more sustainable locations, surrounded by residential development, and therefore warrant a higher proportion of walking/cycling trips. Whilst this could apply to Elms Park, this is partly taken into account through the level of self-containment and internal trips assumed later in the trip generation calculation. The TA may therefore have underestimated the level of vehicle trip generation from the secondary education. AECOM therefore consider that more robust assumptions should be adopted for the mode split.

Employment

The TA has assessed a level of employment use greater than that what is proposed, and has assumed that all employment will be B1 Office; this land use has been chosen to provide a robust assessment and to ensure flexibility of employment land uses. Person trip rates have been derived from the TRICS database. Sites from the 'Office' dataset have been selected; this dataset should only be used when considering a single office building in isolation. It is AECOM's view that the 'Business Park' dataset should have been utilised for this element of the proposed development, as this includes sites containing a series of buildings hosting separate organisations, which is more representative of Elms Park. Furthermore, AECOM has identified that the office vehicle trip rates presented in the TA are lower than those utilised for the transport assessment work for the JCS (contained in *JCS Model Output Report V7*, dated March 2014). The TA has therefore **underestimated** the vehicle trip generation for office uses; the risk of this is that actual traffic flows may be higher leading to more significant highway capacity issues and constraints to other future local developments, including any potential development aspirations of our Client. AECOM therefore consider that the employment trip rates should be revisited.

Other Land Uses

AECOM has reviewed the trip generation methodology for the other land uses (residential, hotel, community, etc) and consider this to be appropriate.

Site Containment and Mode Split

The TA does not present the total trip generation for each land use proposed following the deductions for internal trips. This should be presented to provide clarity in terms of the trips modelled in capacity assessments.

The DS1 assessment scenario includes mode shift (i.e. a reduction in vehicle trips) arising from implementation of the sustainable transport strategy and the mixed-use nature of the proposed development. The assumptions include:

- A 20-30% reduction in vehicle trips associated with residential land uses;
- A 20% reduction in vehicle trips associated with education land uses; and
- A 15% reduction in vehicle trips associated with employment land uses.

Evidence from research into the effectiveness of travel plans has been used to justify the reduction in vehicle trips associated with the education land uses. This evidence is from a national report of case studies for England. AECOM is of the view that local evidence (i.e. from similarly located schools in Gloucestershire) should be utilised. It is understood that that GCC typically cite 10% as a reasonable level of reduction in vehicle trips as a result of travel plan measures. This is consistent with Smarter Choices' report *Changing the way we travel* (2004). On this basis, it is considered that the TA has **overestimated** the reduction in vehicle trips from education land uses. The risk of this is that actual traffic flows may be higher leading to more significant highway capacity issues and constraints to other future local developments, including any potential development aspirations of our Client.

No evidence has been presented for the assumed reductions in vehicle trips associated with residential and employment land. AECOM consider that the mode shift assumptions should be justified with supporting evidence. Again, it is considered that the TA has **overestimated** the reduction in vehicle trips from these land uses given existing publications on the effectiveness of travel plan measures. Furthermore, the reductions have been applied to all trips irrespective of their origin/destination. This is not considered to be suitable as the sustainable transport strategy focuses largely on facilitating the use of sustainable modes to/from Cheltenham town centre. Reductions for other trips, such as those to/from the strategic road network (SRN), are not considered appropriate. AECOM is also of the view that there is potential for double counting in terms of the reductions that have been applied; a level of self-containment has been assumed for the development and a reduction has therefore already been applied to the trip generation. As previously stated, the risk of this is that actual traffic flows may be higher leading to more significant highway capacity issues and constraints to other future local developments, including any potential development aspirations of our Client.

Trip Distribution

The distribution of trips generated by the residential element of the proposed development has been based on the distribution of trips from existing residential development in the SATURN model. This distribution has also been applied to the education trips. For the reasons discussed above, this should be updated to be based on the new 2013 Base Model.

Local Highway Assessment

The TA presents results for the 2026 and 2031 assessment scenarios. However, a consistent approach has not been taken in terms of what is presented. The TA is not clear as to why these forecast years have been selected, and why results from only certain forecast years have been presented. Results for the Paramics modelling are presented for 2026, but results from standalone junction models for junctions within the Paramics model network are presented for 2031. The results from standalone junction models for junctions external to the Paramics model network are presented for 2026. Given that construction on Elms Park is not expected to be completed until 2031, it is considered that results for this forecast year should be presented across the board.

As discussed, the results set out in the TA should be treated with caution given the concerns identified with regard to the assessment methodology and validity of the base SATURN model.

Paramics

The Paramics model shows that average journey times within the network will increase by 15% between the DM and DS1 scenarios in 2026. On the A4019 Tewkesbury Road eastbound (between The Green and the High Street, a distance of approximately 4km), there will be an increase in AM (weekday 07:00-10:00) journey times of up to three minutes between the DM and DS1 scenarios in 2026. The increases

in PM (weekday 16:00-19:00) journey times will be greater (up to five minutes). On the A4019 Tewkesbury Road westbound, there will be a reduction in weekday AM journey times between the DM and DS1 scenarios as a result of the highway mitigation measures, but an increase in the weekday PM of up to three minutes.

Standalone Junction Models – Internal to the Paramics Network

Standalone junction models have been prepared for a number of junctions internal to the Paramics network. These include Site Access A, B and D. The results show that all of these junctions will operate within theoretical capacity in the DS1 scenario in 2031. Site Access B and D will operate well within capacity and will be able to accommodate future growth, while certain movements along the A4019 Tewkesbury Road will be close to capacity at Site Access A.

Standalone junction models have not been prepared for Site Access C or for those junctions within the Paramics model at which improvements/mitigation measures are proposed. Of particular concern is the absence of a model for the proposed improvements at the A4019 Tewkesbury Road/PE Way junction. There are existing queues northbound on PE Way on the approach to the junction, as identified in Chapter 4 of the TA. Although the Paramics model incorporates this junction improvement scheme, the PE Way corridor is not included within the model and therefore the impact on and interaction with this corridor cannot be established based on the results presented.

AECOM consider that standalone junction models should be prepared for Site Access C and for those junctions within the model at which improvements/mitigation measures are proposed.

Standalone Junction Models – External to the Paramics Network

Standalone junction models have been prepared for a number of junctions external to the Paramics network. **Table 3** provides a summary of the junction modelling results presented in the TA for 2026. As discussed, it is considered that all results should be updated to 2031.

Table 3: Summary of Junction Modelling Results

Junction	Key Findings
A38/A4019 Coombe Hill	<ul style="list-style-type: none"> • Within capacity in the weekday AM in both the DM and DS1 scenarios. Increases in delay of less than one minute in the DS1 scenario. • Exceeds capacity in the PM in both the DM and DS1 scenarios. Significant delays in both the DM and DS1 scenarios. Some reductions in delay (of less than one minute) in the DS1 scenario compared to the DM scenario. • Summary: Elms Park will result increases in delay of less than one minute. The junction will have limited spare capacity in the AM.
B4063/B4634 Old Gloucester Road	<ul style="list-style-type: none"> • Exceeds capacity in the DM scenario resulting in significant delays (based on existing signal-controlled conversion). • Proposed roundabout junction (in DS1) provides significant capacity improvements and associated reductions in delay (in excess of five minutes for some movements). • Summary: Elms Park will result in improvements to the operation of the junction, but it will have limited spare capacity in the AM and PM.
PE Way/ Edinburgh Place/ Marshland Road	<ul style="list-style-type: none"> • Exceeds capacity in both the DM and DS1 scenarios. In general, the gyratory will operate better in the DS1 than the DM scenario due to the reassignment of traffic. • Summary: Impact of Elms Park will not be material.
PE Way/ Shakespeare Road	<ul style="list-style-type: none"> • Within capacity in the AM in both the DM and DS1 scenarios. Increases in delay of less than one minute in the DS1 scenario. • Within capacity in the PM in the DM scenario, but exceeds capacity in the DS1 scenario. Increases in delay of less than one minute in the DS1 scenario. • Summary: Elms Park will result increases in delay of less than one minute.
PE/Hubble Road	<ul style="list-style-type: none"> • Well within capacity in both the DM and DS1 scenarios. Negligible increase

	<p>(less than 10 seconds) in delay on some arms in the DS1 scenarios.</p> <ul style="list-style-type: none"> • Summary: Elms Park will result in a negligible increase in delay
A40 Gloucester Road/PE Way	<ul style="list-style-type: none"> • Exceeds capacity in both the DM and DS1 scenarios. Increase in delay of c.90 seconds along PE Way in the AM in the DS1 scenario, but a significant reduction (in excess of five minutes) in the PM. • The TA states that changes to the junction would adversely impact on bus priority measures. • Summary: Elms Park will result in increases in delay in the AM, but reductions in delay in the PM.

The standalone junction modelling has shown that most junctions on the network will be operating either close to or in excess of capacity both without and with Elms Park (including the associated highway improvements). The risk of this is that there will be constraints in terms of the ability to accommodate traffic from other future local developments, including that associated with any potential development aspirations of our Client.

Strategic Highway Assessment

The TA draws on the Paramics model report included at Appendix Q in its discussion of the impact of Elms Park on the SRN. This concludes that the Elms Park will not hinder the operation of the A40 and M5.

Highways England has expressed concerns in its consultation response to the planning application regarding the suitability of the model to assess the impact at the M5 Junction 10. It states that the model is not reflective of existing operational conditions at the junction and does not include the junction of the A4019/Withybridge Lane; u-turning movements at this junction can disrupt eastbound movements on the A4019 and increase congestion at the M5 southbound off-slip. Highways England has therefore requested that the impact of Elms Park at the M5 Junction 10 be remodelled, with the requirement for mitigation measures reviewed following the remodelling exercise.

Other Matters

Chapter 4.3 of the TA provides a review of highway safety. This identifies no existing safety issues on the roads in the vicinity of our Client’s land (Manor Road, Runnings Road, Malmesbury Road); however, the review is based only on data for the three year period between 1 July 2011 and 30 June 2014. AECOM consider that more recent data should be obtained and the study period extended to five years in order to confirm the conclusions of the analysis.

Elms Park will result in an increase in traffic on the highway network and therefore the potential for conflict between road users. However, the TA concludes that the package of off-site measures proposed, which includes revisions to junctions and provision of new pedestrian/cyclist infrastructure, will mitigate the increased risk of conflict associated with increases in traffic. AECOM consider that further analysis should be undertaken using the DfT’s COBALT computer program (this predicts collision rates based on traffic flows and junction/road types) to support this claim.

Key Implications for Client – Highway Impact:

- All components of the assessment are informed by GCC’s 2008 Base Central Severn Vale (CSV) SATURN model; this model is based on data that is no longer considered suitable by AECOM and the Highway Authorities (GCC and Highways England). Until the assessment work has been repeated using the new 2013 Base model, it will not be possible to confirm the impact of the Elms Park proposals on the operation of the highway network. In addition, there are concerns regarding the trip generation methodology that should be addressed. In view of these issues, the results presented in the TA should be treated with caution. This all leads to significant risk in the validity of the traffic forecasts.
- The local highway assessment has included Paramics modelling of the A4019 Tewkesbury Road corridor and a number of standalone junction models. The Paramics modelling has shown that average journey times in the study area network will increase by 15% with Elms Park proposals; between The Green and the High Street there will be increase for eastbound traffic of up to three

minutes in the AM and up to five minutes in the PM, and an increase for westbound traffic of up to three minutes in the PM. The standalone junction modelling has shown that most junctions on the network will be operating either close to or in excess of capacity both without and with Elms Park (including the associated highway improvements); Elms Park will result in increases in queuing and delay, but these are not considered to be significant when mitigation measures are taken into account. The strategic highway assessment suggests that Elms Park will not hinder the operation of the A40 and M5, although Highways England has requested that this be remodelled.

- The constraints identified on the local highway network have implications in terms of the ability to accommodate development traffic from further development. Should our Client pursue further development on its land interests in the future, an assessment of the impact of proposals on the highway network will need to be undertaken, the level and methodology of which will be dependent on the scale of proposals and subject to agreement with the Highway Authorities. Any assessment work will need to demonstrate that the impact of proposals will not be 'severe' in planning terms. Given that the surrounding highway network is shown to be approaching operational capacity it is likely that any additional development will need to be accompanied with a suite of highway mitigation measures. This could lead to significant planning and assessment work and infrastructure costs.
- The TA does not highlight any existing safety issues on the roads in the vicinity of our Client's land; however, it is considered that more recent data should be obtained and the study period extended to five years in order to confirm the conclusions of the analysis. Elms Park will result in an increase in traffic on the highway network and associated general risk of conflict, although the TA concludes that this be mitigated by the proposed package of off-site measures proposed. Evidence should be presented to support this claim.

5. Summary and Conclusions

The key implications and risks of the Elms Park development proposals to our Client's land are summarised as follows:

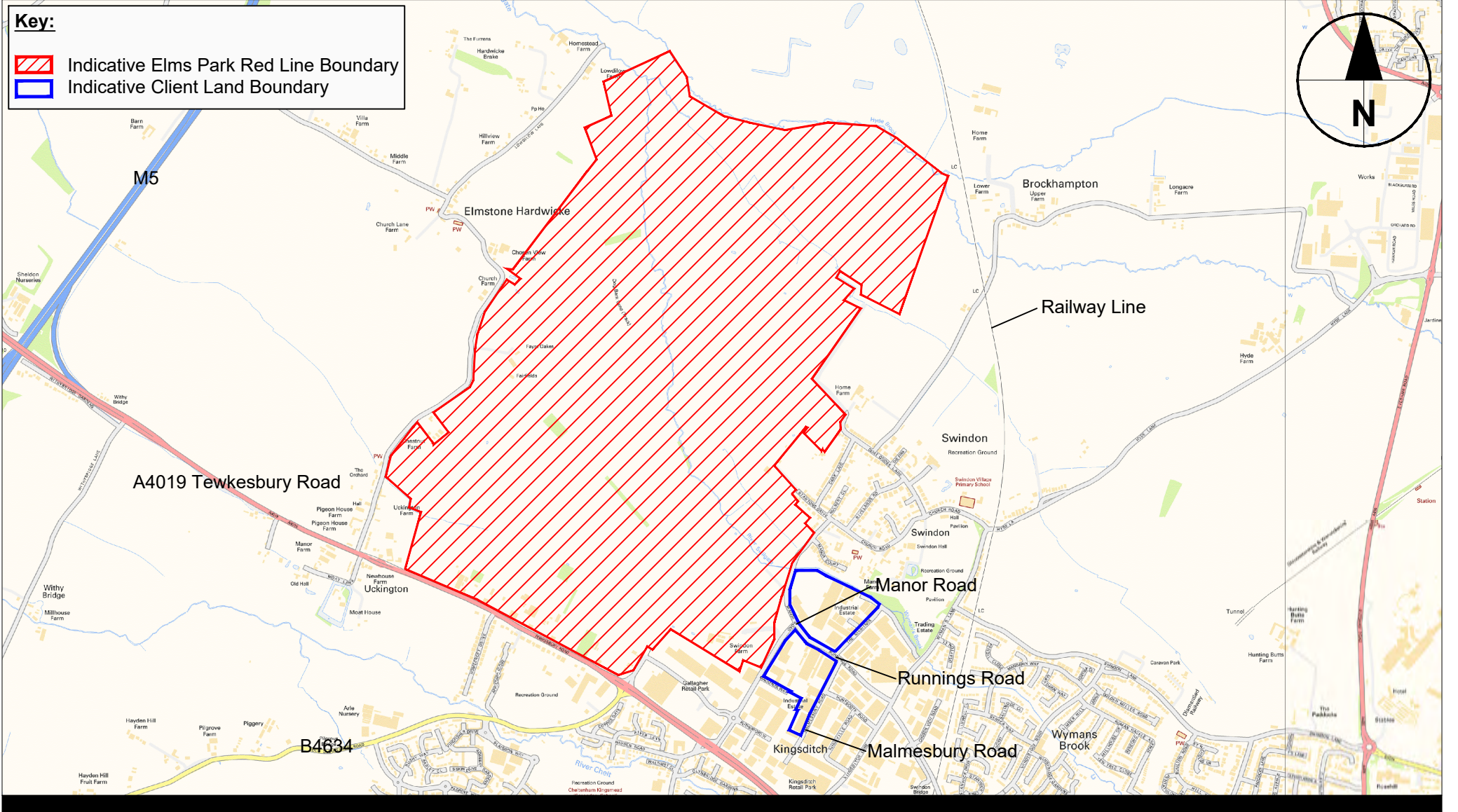
- Construction activities (including those associated with the site accesses and off-site highway measures) will result in disruption and delays in the short-term due to associated traffic management; activities and the effects of construction will need to be managed through a CTMP to ensure that there is no impact on surrounding land uses (including our Client's land). This is particularly important with regard to the proposed roundabout on Manor Road; further detail should be provided to show how this would tie-in with the existing access to the VW premises. Once constructed, the roundabout on Manor Road will have a positive effect by reducing vehicle speeds. The TA shows that any delay associated with negotiating the roundabout will be negligible.
- Pedestrian and/or cyclist accesses on Manor Road will be of benefit in terms of providing connections between our Client's land and the various land uses associated with Elms Park. The residential component will bring a new source of potential staff, while users of Spirax Sarco's businesses may utilise the various land uses including education, community, retail and leisure.
- Pedestrian and cyclist access to our Client's land will be improved. The proposed improvements include a new toucan crossing on the A4019 Tewkesbury Road, replacement of the double mini-roundabouts of Wyman Lane/Runnings Road/Swindon Road/Kingsditch Lane with a signal-controlled junction (which will incorporate improved pedestrian and cyclist facilities) and a proposed extension to NCR 41. However, there are existing issues regarding footway provision in the vicinity of our Client's land that the TA and FTP have not addressed. Clarification should also be provided as to whether the route of the proposed extension to NCR 41 will utilise The Runnings or land between The Runnings and the River Swilgate.
- It is proposed that the B/H bus service will be rerouted and no longer serve a section of route along Manor Road between Gallagher Retail Park and Stantons Drive/Church Road. Access to this service from our Client's land will be less convenient, and walking distances to nearest bus service will be increased (the northern parcel no longer be within the recommended distance to a bus stop). The

southern parcel of our Client's land will benefit from improved bus service frequencies on those services that follow the A4019 Tewkesbury Road. AECOM suggest that our Client enter discussions with the Local Authorities and bus operations should they see a rerouted bus service as a risk to their business.

- A FTP has been prepared for the Elms Park development as a whole, to inform the development of individual travel plans for specific components. However, this does not include reference to how it will be secured. AECOM consider that the FTP should include reference to the need for a legal obligation enshrined within tenancy agreements to ensure deliverability. The FTP should also set out how liaison and coordination between TPCs will be established and maintained. The measures contained in the FTP may have implications for our Client; AECOM therefore recommend that our Client be invited to any stakeholder forums/discussion group meetings.
- All components of the assessment are informed by GCC's 2008 Base Central Severn Vale (CSV) SATURN model; this model is based on data that is no longer considered suitable by AECOM and the Highway Authorities (GCC and Highways England). Until the assessment work has been repeated using the new 2013 Base model, it will not be possible to confirm the impact of the Elms Park proposals on the operation of the highway network. In addition, there are concerns regarding the trip generation methodology that should be addressed. In view of these issues, the results presented in the TA should be treated with caution. This all leads to significant risk in the validity of the traffic forecasts.
- The local highway assessment has included Paramics modelling of the A4019 Tewkesbury Road corridor and a number of standalone junction models. The Paramics modelling has shown that average journey times in the study area network will increase by 15% with Elms Park proposals. Between The Green and the High Street there will be increase for eastbound traffic of up to three minutes in the AM and up to five minutes in the PM, and an increase for westbound traffic of up to three minutes in the PM. The standalone junction modelling has shown that most junctions on the network will be operating either close to or in excess of capacity both without and with Elms Park (including the associated highway improvements); Elms Park will result in increases in queuing and delay, but these are not considered to be significant when mitigation measures are taken into account. The strategic highway assessment suggests that Elms Park will not hinder the operation of the A40 and M5, although Highways England has requested that this be remodelled.
- The constraints identified on the local highway network have implications in terms of the ability to accommodate development traffic from further development. Should our Client pursue further development on its land interests in the future, an assessment of the impact of proposals on the highway network will need to be undertaken, the level and methodology of which will be dependent on the scale of proposals and subject to agreement with the Highway Authorities. Any assessment work will need to demonstrate that the impact of proposals will not be 'severe' in planning terms. Given that the surrounding highway network is shown to be approaching operational capacity it is likely that any additional development will need to be accompanied with a suite of highway mitigation measures. This could lead to significant planning and assessment work and infrastructure costs.
- The TA does not highlight any existing safety issues on the roads in the vicinity of our Client's land; however, it is considered that more recent data should be obtained and the study period extended to five years in order to confirm the conclusions of the analysis. Elms Park will result in an increase in traffic on the highway network and associated general risk of conflict, although the TA concludes that this be mitigated by the proposed package of off-site measures proposed. Evidence should be presented to support this claim.
- It is key that we gain confidence in the forecast traffic levels, construction impact, highway safety and sustainable transport opportunities in order to protect Spirax Sarco's business interests going forwards. Our Client's premises need to be accessible and have opportunities to expand (if need be) and not with the risk of significant mitigation and infrastructure costs in the future.

Figures

Printed on 100% Post-Consumer Recycled Content Paper



Elms Park, Cheltenham, Gloucestershire

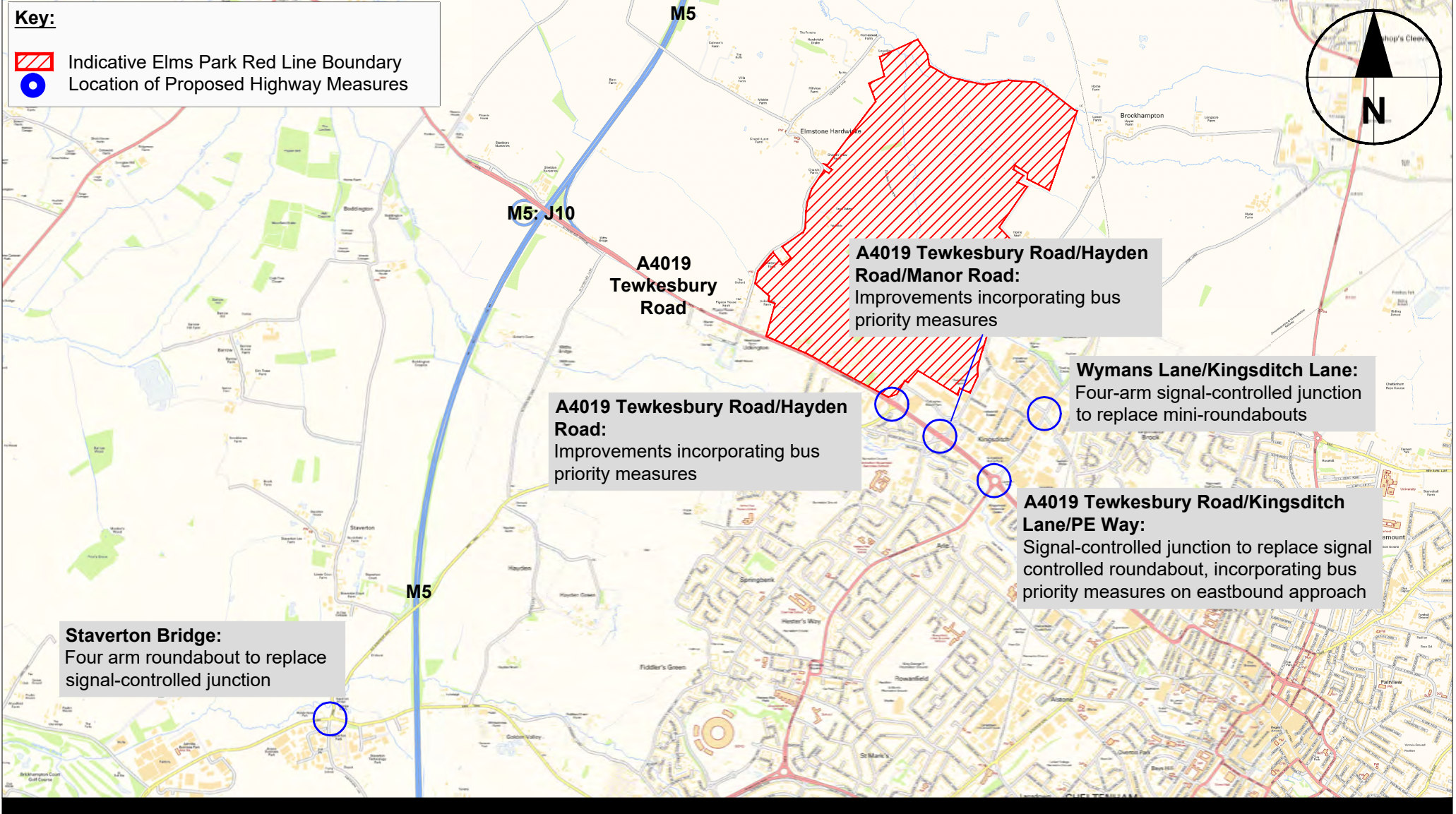
Review of Elms Park Planning Application

Figure 1 Context Plan



Project No.: 60531723
A9.15

Printed on % Post-Consumer Recycled Content Paper



Elms Park, Cheltenham, Gloucestershire

Review of Elms Park Planning Application

Figure 2 Key Off-Site Highway Measures (Not Including Access Arrangements)



Project No.: 60531723
A9.16

Appendix A: Illustrative Masterplan, and Land Use and Access Plan



Project
Elms Park (NWC)

Drawing Title
Illustrative Masterplan

Date 07.10.16	Scale 1:10,000 @ A3	Drawn by PT	Check by BW
Project No 21614	Drawing No 9925	Revision -	

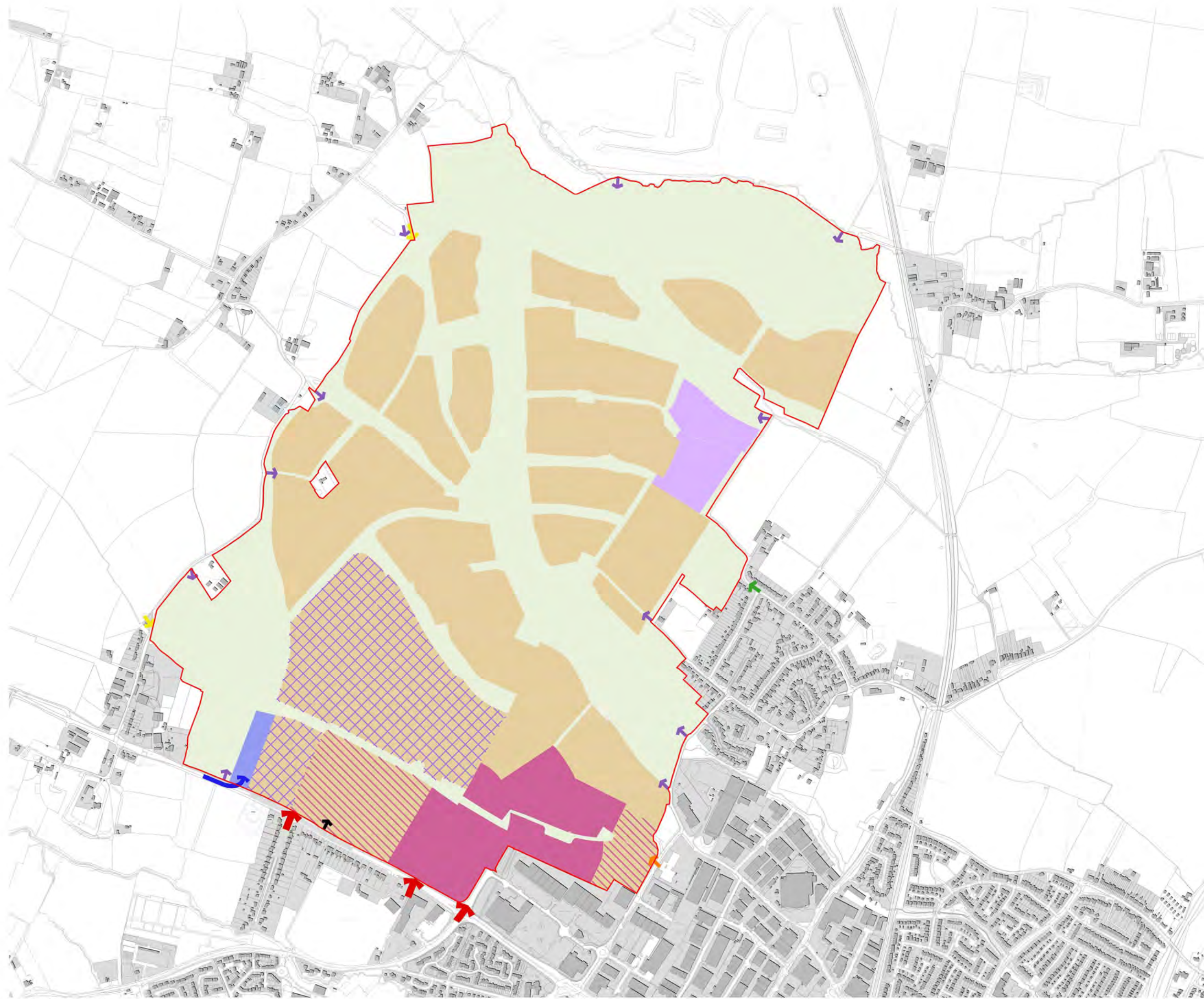
**BARTON
 WILLMORE**

Planning • Master Planning & Urban Design
 Architecture • Landscape Planning & Design • Project Services
 Environmental & Sustainability Assessment • Graphic Design

bartonwillmore.co.uk



Offices at Reading London Bristol Cambridge Cardiff Ebbsfleet Edinburgh Leeds Manchester Solihull



- Residential
(Inc. care facilities)
- Mixed Use: Commercial
(Inc. business park, neighbourhood centre retail and community uses, residential and infrastructure)
- Mixed Use: Residential, Education and Commercial
(to include business, retail and residential)
- Transport Hub
- Mixed Use: Residential and Education
(to include All-through school and Care Village)
- Mixed Use: Local Centre (to include employment, retail and community uses, primary school, residential and infrastructure)
- Area of Infrastructure
(inc. green, crossing points, roads & footpaths)
- Main Signalised Vehicular Access
- Secondary Vehicular Access
- Restricted or Emergency Access
- Public Transport, Pedestrian & Cycle Only Access
- Transport Hub Entry Access
- Signalised Pedestrian and Cycle Access
- Pedestrian and/or Cycle Access

Project
Elms Park (NWC)

Drawing Title
Parameter Plan 01 : Land Use and Access

Date	Scale	Drawn by	Check by
12.09.16	1:5000@A1	PT	BW
Project No	Drawing No	Revision	
21614	9401	L	

BARTON WILLMORE

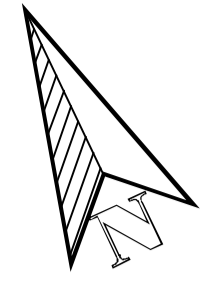
Planning • Master Planning & Urban Design
 Architecture • Landscape Planning & Design • Project Services
 Environmental & Sustainability Assessment • Graphic Design

A9:19 ©.co.uk

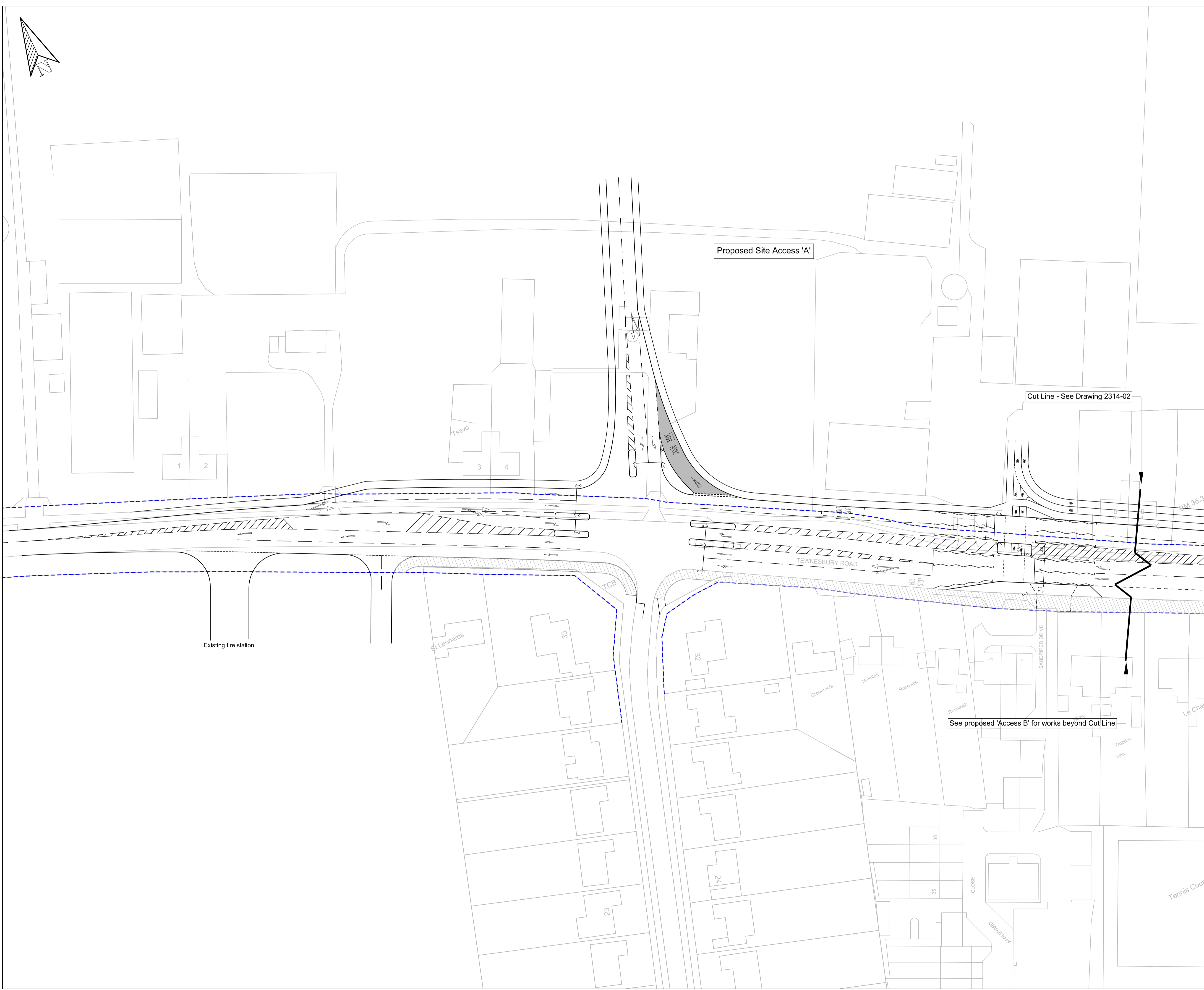
Office at Reading London Bristol Cambridge Cardiff Edinburgh Leeds Manchester Solihull



Appendix B: Site Access Drawings



KEY :
 - - - Existing highway boundary



Rev / Date	Description	Dm	Chck'd

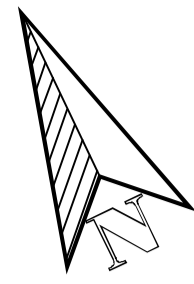
PHIL JONES ASSOCIATES
 transport planning consultants
 Seven House, High Street,
 Longbridge, Birmingham, B31 2UQ
 Tel: 0121 475 0234 Fax: 0121 475 2027
 admin@philjonesassociates.co.uk
 www.philjonesassociates.co.uk

Client
**Bloor Homes /
 Persimmon Homes**

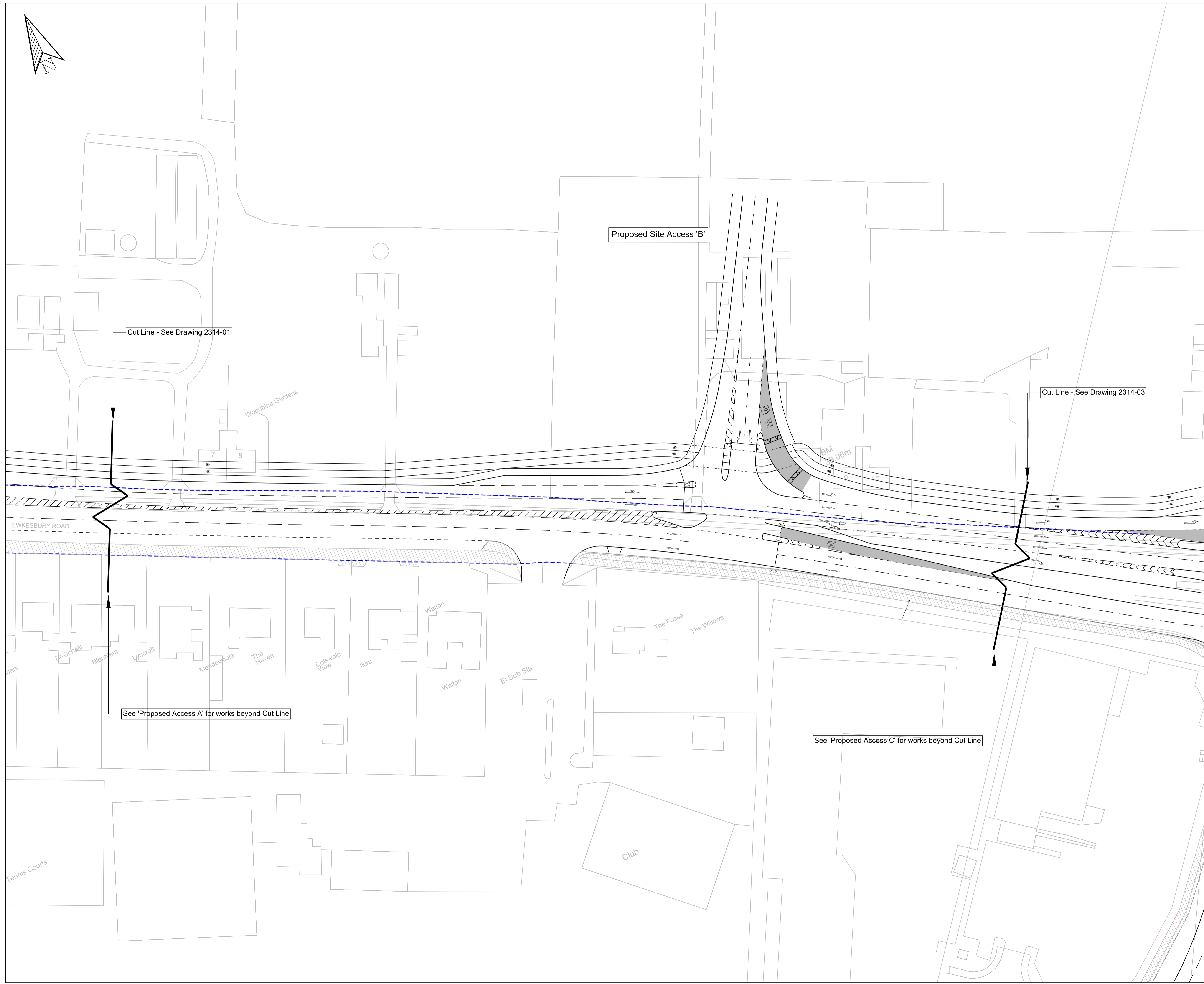
Project
**Elms Park
 Cheltenham**

Drawing
Proposed Site Access A

Drawn by: PAS 27/09/16	Scale: 1:500 @ A1
Checked by: NM 27/09/16	Revision: -
Drawing No. 2314-01	



KEY :
- - - Existing highway boundary



Proposed Site Access 'B'

Cut Line - See Drawing 2314-01

Cut Line - See Drawing 2314-03

See 'Proposed Access A' for works beyond Cut Line

See 'Proposed Access C' for works beyond Cut Line

Rev / Date	Description	Dm	Chck'd

PHIL JONES ASSOCIATES
transport planning consultants

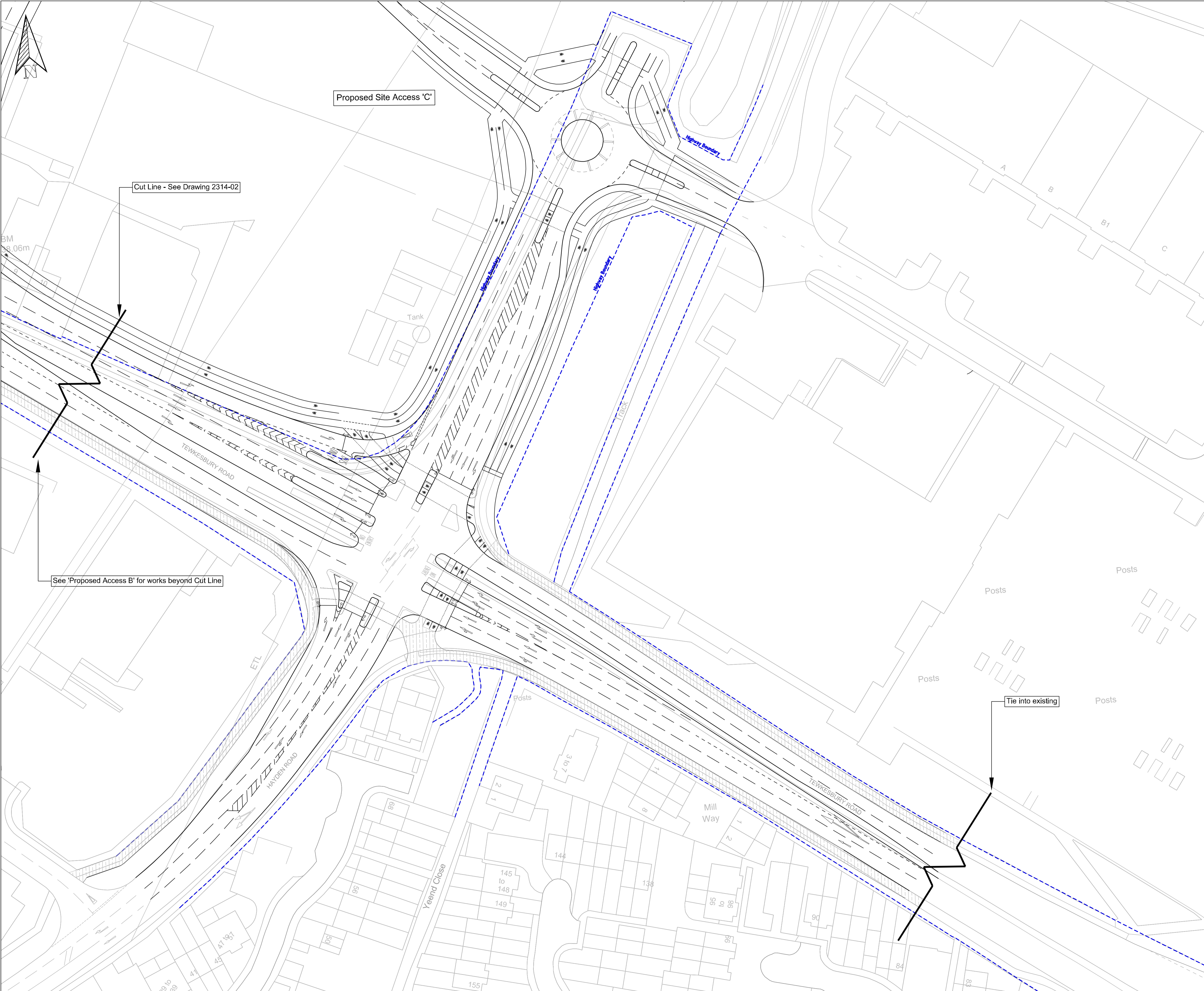
Seven House, High Street,
Longbridge, Birmingham, B31 2UJ
Tel: 0121 475 0234 Fax: 0121 475 2027
admin@philjonesassociates.co.uk
www.philjonesassociates.co.uk

Client
**Bloor Homes /
Persimmon Homes**

Project
**Elms Park
Cheltenham**

Drawing
Proposed Site Access B

Drawn by: PAS 27/09/16	Scale: 1:500 @ A1
Checked by: NM 27/09/16	Revision: -
Drawing No. 2314-02	



Proposed Site Access 'C'

Cut Line - See Drawing 2314-02

See 'Proposed Access B' for works beyond Cut Line

Tie into existing

KEY :
 --- Existing highway boundary

Rev / Date	Description	Drm	Chck'd
------------	-------------	-----	--------

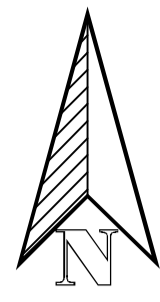
PHIL JONES ASSOCIATES
 transport planning consultants
 Seven House, High Street,
 Longbridge, Birmingham, B31 2UG
 Tel: 0121 475 0234 Fax 0121 475 2027
 admin@philjonesassociates.co.uk
 www.philjonesassociates.co.uk

Client
**Bloor Homes /
 Persimmon Homes**

Project
**Elms Park
 Cheltenham**

Drawing
Proposed Site Access C

Drawn by: PAS 27/09/16	Scale: 1:500 @ A1
Checked by: MN 27/09/16	Revision: -
Drawing No. 2314-03	



Rev / Date	Description	Dm	Chck'd
------------	-------------	----	--------



Seven House, High Street
 Longbridge, Birmingham, B31 2UQ
 Tel: 0121 475 0234 Fax 0121 475 2027
 admin@philjonesassociates.co.uk
 www.philjonesassociates.co.uk

Client
**Bloor Homes /
 Persimmon Homes**

Project
**Elms Park
 Cheltenham**

Drawing
Proposed Site Access D

Drawn by: PAS 27/09/16	Scale: 1:500 @ A1
Checked by: NM 27/09/16	

Drawing No. 2314-04	Revision -
-------------------------------	---------------

APPENDIX 10
HIGHWAYS CORRESPONDENCE

From: John Hinett
Sent: 4 Sep 2017 14:16:33 +0100
To: Development Applications
Subject: FW: Elms Park - Traffic Modelling 16/02000/OUT

Please IDOX as Consultee (Traffic Modelling correspondence)

From: Gorski, Nigel/BHX [REDACTED]
Sent: 21 August 2017 08:50
To: Nigel Millington
Cc: Tracey.Crews@cheltenham.gov.uk; Paul Skelton; 'Owen Jones'; Chris Stack; WATTS, Ben; 'Craig.Hemphill@cheltenham.gov.uk'; John Hinett; WALKER, Brian; 'Rob White'; amanda.lawson-smith@gloucestershire.gov.uk; Rachel.Sandy@highwaysengland.co.uk; TROUGHTON, Neil; Jamie.Mattock@gloucestershire.gov.uk; Davies, Howard/CWL
Subject: FW: Elms Park - Traffic Modelling

Nigel,

Further to your email dated 08 August (copied below), Highways England has now set out comments on your Technical Note (TN) detailing the various modelling scenarios to be provided for the NW Cheltenham (Elms Park) proposals. Comments are provided below referencing the relevant paragraph numbers for which they appear in your TN:

Para. 3.12 - you reference a development opening year as being 2018. Given that it is now August 2017, it is believed unrealistic for planning permission to be granted and an initial phase of your development built and occupied by 2018. Highways England would recommend that 2019, if not 2020 would be a more reasonable 'opening year' timescale. Irrespective of phasing, the opening year scenario will need to take account of the Full Elms Park development proposals.

Para. 4.1.3 – The TN states that the 'model will be extended to include the southbound off-slip from M5 Junction 10 and the right-turn lane into Withybridge Lane'. This is acceptable to Highways England, but the model will also need to take into account any U-turning movements at the Withybridge Lane junction, as it is believed that these make up a high proportion of vehicles making this movement.

It is also requested that M5 J10 northbound on-slip traffic volumes are reported for each scenario, to determine the suitability of the on-slip in terms of the relevant DMRB design standards.

Para. 4.1.5 states that ‘traffic flows for use in the VISSIM model are extracted from the relevant SATURN models’. The VISSIM model will however require validation prior to its use with forecast development flows. The note makes no reference to how the VISSIM model will be validated to ensure queues in the baseline model, replicate those observed on the ground. For the southbound off-slip at J10 in particular, Highways England will need to ensure that the queues on this approach are correct. Clarification on the VISSIM models validation specification is requested.

Para. 4.1.4 - The TN suggests the model will include the currently proposed minor mitigation scheme at the M5 J10 southbound off-slip.

Please could you elaborate on what this scheme includes?

Para. 4.1.4 - The TN states that the model will not include major schemes such as an ‘all-moves’ junction at J10 and access to West of Cheltenham, as the details are currently unavailable and these are not matters relevant to the determination of the Elms Park application*.

** It was made clear at the recent Hearing Sessions by Highways England in their Position Statement submitted to the Examination, that ‘the conversion of Junction 10 to all movements is necessitated by West Cheltenham Strategic Allocation’. The merits or otherwise of this infrastructure scheme is therefore not a matter for the Elms Park application to consider.*

Highways England is due to prepare an updated position statement to the Planning Inspector on this point. PJA misinterpret this point in suggesting that an ‘all movements J10’ is only a consideration for the West Cheltenham proposals. As discussed in subsequent emails (also copied below), we shall meet with you to discuss this point in more detail.

Para. 5.1.1 - The committed development to be included within the assessment will vary for each of the scenarios set out in paragraph 4.1.2 above. The key consideration for each scenario will be the inclusion or otherwise of Strategic Site Allocation A11 – West Cheltenham, and to a lesser extent, the Arle Nurseries site.

A revised 'Opening year' of 2019 or 2020 would alter the amount of committed development included in this traffic scenario. It is suggested that committed developments are included in accordance with the JCS housing trajectories.

TEMPro should also be applied to background traffic flows, taking into account committed employment proposals in the local area. Developments such as West Cheltenham include a high proportion of employment development, and therefore this traffic should be included in the model. Highways England will need to review and agree the TEMPPro factors before these are applied.

Para. 6.1.4 - This section of the TN includes a review of the Future of the Year scenarios, with bullet point 3 referring to this scenario providing information on *'network performance including JCS allocations and required infrastructure as identified in Scenario DS7 (including the proposed development). This scenario includes a 10% reduction in inter-urban trips within the model to reflect mode shift away from the car'*.

Highways England has no requirement for interim assessment years, and therefore GCC will provide comments on these.


Highways England has previously dismissed the suggestion of a 10% model shift can be applied to development trips travelling through or past M5 J10. Whilst a 10% mode shift value is believed to be optimistic, travel planning measures would unlikely affect strategic car journeys on the SRN, with mode shift more likely to be concentrated on journeys between the site and Cheltenham. As such, Highways England requests that this scenario assumes no mode shift for SRN trips.

If you have any comments on the above email, or would like to discuss in more detail, please do not hesitate to contact me.

Regards

Nigel Gorski

CH2M




7th Floor Lyndon House

58-62 Hagley Road

Edgbaston

Birmingham B16 8PE



www.ch2m.com | [LinkedIn](#) | [Twitter](#) | [Facebook](#)

From: Sandy, Rachel [<mailto:Rachel.Sandy@highwaysengland.co.uk>]

Sent: 17 August 2017 13:22

To: 'Nigel Millington' <nigel@philjonesassociates.co.uk>; 'MATTOCK, Jamie' <Jamie.Mattock@gloucestershire.gov.uk>

Cc: SIMMONS, Dave <Dave.Simmons@gloucestershire.gov.uk>; Tracey.Crews@cheltenham.gov.uk' <Tracey.Crews@cheltenham.gov.uk>; 'Paul.Skelton@tewkesbury.gov.uk' <Paul.Skelton@tewkesbury.gov.uk>; 'owenjones@lrmpplanning.com' <owenjones@lrmpplanning.com>; Chris Stack <chris@philjonesassociates.co.uk>; WATTS, Ben <Ben.Watts@gloucestershire.gov.uk>; 'craig.hemphill@cheltenham.gov.uk' <craig.hemphill@cheltenham.gov.uk>; 'John.Hinett@tewkesbury.gov.uk' <John.Hinett@tewkesbury.gov.uk>; WALKER, Brian <Brian.WALKER@gloucestershire.gov.uk>; 'RobW@whitepeakplanning.co.uk' <RobW@whitepeakplanning.co.uk>; 'RobW@whitepeakplanning.co.uk' <RobW@whitepeakplanning.co.uk>; LAWSON-SMITH, Amanda <Amanda.LAWSON-SMITH@gloucestershire.gov.uk>; Gorski, Nigel/BHX <Nigel.Gorski@ch2m.com>; Ball, Andrew/UKS <Andrew.Ball@ch2m.com>; Davies, Howard/CWL <Howard.Davies@ch2m.com>

Subject: RE: Elms Park - Traffic Modelling [EXTERNAL]

Hi Nigel

Agreed that the way forward is to discuss in a meeting as Highways England's position is that the upgrade to M5 J10 included within DS7 and the JCS transport strategy is part

of a strategic infrastructure package required to support the strategic allocations set out within the JCS, of which NW Cheltenham is an allocation.

We have stated that it is necessitated by the West Cheltenham development, though we will clarify this statement in our updated position statement requested by the Inspector, as it is over simplistic to interpret this to mean it is only required for West Cheltenham and not as a result of the cumulative impact of planned growth.

We will be in touch next week.

Regards

Rachel

Rachel Sandy

Spatial Planning Manager – South West

Highways England | Brunel House | 930 Aztec West | Bristol | BS32 4SR

From: Nigel Millington [<mailto:nigel@philjonesassociates.co.uk>]

Sent: 17 August 2017 11:04

To: Sandy, Rachel; 'MATTOCK, Jamie'

Cc: SIMMONS, Dave; 'Tracey.Crews@cheltenham.gov.uk'; 'Paul.Skelton@tewkesbury.gov.uk'; 'owenjones@lrmpplanning.com'; Chris Stack; WATTS, Ben; 'craig.hemphill@cheltenham.gov.uk'; 'John.Hinett@tewkesbury.gov.uk'; WALKER, Brian; 'RobW@whitepeakplanning.co.uk'; 'RobW@whitepeakplanning.co.uk'; LAWSON-SMITH, Amanda

Subject: RE: Elms Park - Traffic Modelling

Rachel,

Thank you for your email and the update. We will happily await your response next week.

We will obviously have to review your comments regarding M5 J10, but we understood that the position regarding M5 J10 was quite clear in that:

- Before the inclusion of West Cheltenham in the proposed JCS allocations, HE had repeatedly stated that their position was that there was no justification for conversion of J10 to all-moves;
- Those comments were repeated at the previous EiP sessions in 2016 and are on record as such;
- The footnote in our Tech Note was simply a direct quote from your position statement, noting that the 'conversion of Junction 10 to all movements is necessitated by the West Cheltenham Strategic Allocation'; and
- At no point during the JCS process or the Elms Park application consultation period has any evidence been presented by any party that M5 J10 all-moves is any way linked to Elms Park.

We fully understand that M5 J10 all-moves does now feature in DS7 and we will certainly model it as such, but all the evidence presented thus far is that this infrastructure scheme is required solely to provide direct access to West Cheltenham.

Subject to your response on our modelling scenarios, it may be best to continue these discussions in a meeting. I know that GCC are currently struggling with resources and their response is likely to follow yours, so it may be best to arrange that meeting once we have both responses in.


Regards,

Nigel

Nigel Millington
Phil Jones Associates

www.philjonesassociates.co.uk

Seven House, High Street, Longbridge, Birmingham, B31 2UQ



From: Sandy, Rachel [<mailto:Rachel.Sandy@highwaysengland.co.uk>]
Sent: 17 August 2017 09:39
To: 'MATTOCK, Jamie' <Jamie.Mattock@gloucestershire.gov.uk>; Nigel Millington <nigel@philjonesassociates.co.uk>
Cc: SIMMONS, Dave <Dave.Simmons@gloucestershire.gov.uk>; 'Tracey.Crews@cheltenham.gov.uk' <Tracey.Crews@cheltenham.gov.uk>; 'Paul.Skelton@tewkesbury.gov.uk' <Paul.Skelton@tewkesbury.gov.uk>; 'owenjones@lrmpplanning.com' <owenjones@lrmpplanning.com>; Chris Stack <chris@philjonesassociates.co.uk>; WATTS, Ben <Ben.Watts@gloucestershire.gov.uk>; 'craig.hemphill@cheltenham.gov.uk' <craig.hemphill@cheltenham.gov.uk>; 'John.Hinett@tewkesbury.gov.uk' <John.Hinett@tewkesbury.gov.uk>; WALKER, Brian <Brian.WALKER@gloucestershire.gov.uk>; 'RobW@whitepeakplanning.co.uk' <RobW@whitepeakplanning.co.uk>; 'RobW@whitepeakplanning.co.uk' <RobW@whitepeakplanning.co.uk>; 'RobW@whitepeakplanning.co.uk' <RobW@whitepeakplanning.co.uk>; LAWSON-SMITH, Amanda <Amanda.LAWSON-SMITH@gloucestershire.gov.uk>
Subject: RE: Elms Park - Traffic Modelling

Nigel/Jamie

We are currently drafting our response to the tech note which should be with PJA early next week. The absence of a response from us before the 18th should not be misconstrued as acceptance of the content of the tech note. In particular, footnote 1 on page 5 is a misinterpretation of Highways England's position, whereby we consider the cumulative impact of JCS growth to necessitate the need for a substantial upgrade to M5 J10 of which the NW Cheltenham proposals are a part of that growth, along with West Cheltenham proposals. This will be clarified in our formal response and in the updated position statement we are to submit to the JCS EiP in the next few weeks.

Regards

Rachel

Rachel Sandy

Spatial Planning Manager – South West

Highways England | Brunel House | 930 Aztec West | Bristol | BS32 4SR



From: MATTOCK, Jamie [<mailto:Jamie.Mattock@gloucestershire.gov.uk>]
Sent: 17 August 2017 08:35
To: 'nigel@philjonesassociates.co.uk'
Cc: SIMMONS, Dave; 'Tracey.Crews@cheltenham.gov.uk'; 'Paul.Skelton@tewkesbury.gov.uk'; 'owenjones@lrmpplanning.com'; 'chris@philjonesassociates.co.uk'; WATTS, Ben; 'craig.hemphill@cheltenham.gov.uk'; 'John.Hinett@tewkesbury.gov.uk'; WALKER, Brian; 'RobW@whitepeakplanning.co.uk'; 'RobW@whitepeakplanning.co.uk'; LAWSON-SMITH, Amanda; Sandy, Rachel
Subject: FW: Elms Park - Traffic Modelling

Dear Nigel

Apologies for the delay in reply to your email below and I am sure that you are aware that we are experiencing some significant staffing issues at the present time and confirm that I will be the allocated officer for this development and am currently seeking external consultancy support with this development. Unfortunately I will need additional time to review this note due to current workloads and discuss with Brian Walker(who is currently on leave until the first week in September) and will be unable to meet the deadline of 18th August for response. I have not received a copy of any response from HE and if this is forthcoming in the next few days I would be grateful to receive a copy to ensure that a consistent approach is made by HE and LHA.

Kind regards, Jamie.

Jamie Mattock EngTech MIHE

Team Leader

Highways Development Management

Gloucestershire County Council, Shire Hall, Gloucester, GL1 2TH

To view a copy of our guidance manual 'Manual for Gloucestershire Streets' please click the link below:

http://secure-web.cisco.com/1C8Suab9nNzbOHfVnsTQLiu2nw5ktgc3vPP2Ha8iF0G0G6PvjMvILgB2sg5PteJNMscRETzae xcC24LrDDdVTsMZxdhLISuBCiDt8pBgyvbPg4S9h5j-PJGTgiD-tDSiMSUgh3yc6vR-XYeencuPMPfagiPS-uF0aUOF_0JDMcXD2bKe8VDV-eZ76NFWzDC1nmmkIAi9TS6InesM9qVbGCu_pICafuNHTcvOaxhnh0-Gx1VepCjzS5CTyHolgD2H0-ds0KQRuu-WoVs-cBmqPpKBD3z-snQU35coE7k8_x8PMn_SULFZJOuhPWH9_4PGF42hemylzKENq66SbpCUbazbLiK_Zck2RbX_CRo3ugmxW-uYYQwCHJW3Xz2Le9LUDglprk2mJwn14UFCY-I9TkhIF_9enMGK4S6MDxfZV8yuWhey0wW-Zr4xsHndGdElKxqpnzQYlbS6xhfHAYIYm8R1VHw3l_0giGONffxFx21Uw/http%3A%2F%2Fwww.gloucestershire.gov.uk%2Fgloucestershire-county-council%2Froads-parking-and-rights-of-way%2Fplans-policies-procedures-manuals%2Fmanual-for-gloucestershire-streets%2F

From: WHITELEY, Jess **On Behalf Of** Env - Development Coordination
Sent: 08 August 2017 11:54
To: MATTOCK, Jamie
Cc: SIMMONS, Dave
Subject: FW: Elms Park - Traffic Modelling

Hi all,

Please see email below.

Thanks

Jess

From: Nigel Millington [<mailto:nigel@philjonesassociates.co.uk>]
Sent: 08 August 2017 11:38
To: Env - Development Coordination
Subject: FW: Elms Park - Traffic Modelling

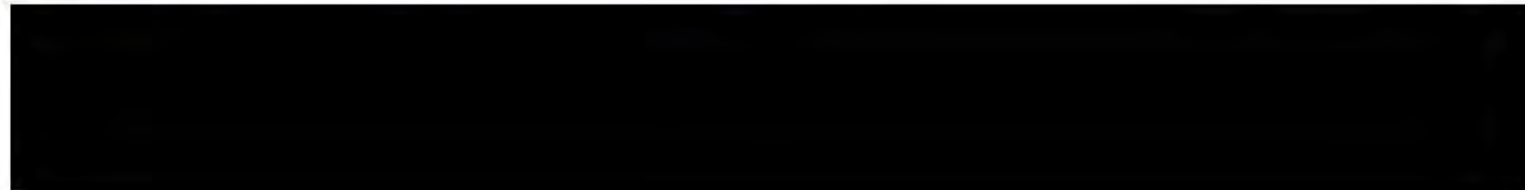
I would be grateful if you could advise who will review this in Neil's absence.

Regards,

Nigel

Nigel Millington
Phil Jones Associates

www.philjonesassociates.co.uk



From: Nigel Millington
Sent: 08 August 2017 11:20
To: 'TROUGHTON, Neil' <Neil.TROUGHTON@gloucestershire.gov.uk>; Gorski, Nigel/BHX <Nigel.Gorski@ch2m.com>
Cc: Tracey.Crews@cheltenham.gov.uk; Paul.Skelton@tewkesbury.gov.uk; 'Owen Jones' <owenjones@lrmpplanning.com>; Chris Stack <chris@philjonesassociates.co.uk>; WATTS, Ben <Ben.Watts@gloucestershire.gov.uk>; 'Craig.Hemphill@cheltenham.gov.uk' <Craig.Hemphill@cheltenham.gov.uk>; John.Hinett@tewkesbury.gov.uk; WALKER, Brian <Brian.WALKER@gloucestershire.gov.uk>; 'Rob White' <RobW@whitepeakplanning.co.uk>; amanda.lawson-smith@gloucestershire.gov.uk; 'Rachel.Sandy@highwaysengland.co.uk' <Rachel.Sandy@highwaysengland.co.uk>
Subject: Elms Park - Traffic Modelling

All,

Please find attached our Tech Note confirming the various modelling scenarios, including how we propose to treat West Cheltenham.

Can I please ask that any comments are received prior to 18th August, so that we can progress the SATURN modelling. If no comments are received, we will assume that the Note is taken as read.

Regards,

Nigel

Nigel Millington

Phil Jones Associates

www.philjonesassociates.co.uk

Seven House, High Street, Longbridge, Birmingham, B31 2UQ



Offices in Birmingham, London, Reading, Bristol and Exeter

Part of the PJA group of companies – [Multimodal](#) – [PJA Engineering](#)

From: TROUGHTON, Neil [<mailto:Neil.TROUGHTON@gloucestershire.gov.uk>]

Sent: 03 July 2017 13:02

To: Nigel Millington <nigel@philjonesassociates.co.uk>

Cc: Tracey.Crews@cheltenham.gov.uk; Paul.Skelton@tewkesbury.gov.uk; 'Owen Jones' <owenjones@lrmpplanning.com>; Chris Stack <chris@philjonesassociates.co.uk>; WATTS, Ben <Ben.Watts@gloucestershire.gov.uk>; 'Craig.Hemphill@cheltenham.gov.uk' <Craig.Hemphill@cheltenham.gov.uk>; John.Hinett@tewkesbury.gov.uk; WALKER, Brian <Brian.WALKER@gloucestershire.gov.uk>; 'Rob White' <RobW@whitepeakplanning.co.uk>

Subject: RE: Elms Park - Planning Application Liaison Meeting (2)

Nigel,

The release of the JCS files has already been agreed.

We have the following files:-

- CSV SATURN_JCS_Do Minimum_Model_June17
 - DM & DN Technical Report;
 - am and pm UFS and Matrix files;
- CSV SATURN_JCS_Do Nothing_Model_June17
 - am and pm UFS and Matrix files; and
- CSV SATURN_JCS_Do Something 7_Model_June17
 - DS7 Technical Report;
 - am and pm UFS and Matrix files.

Can you please confirm which you require.

Thanks,

Neil Troughton MCIHT, Manager

Highways Development Management

Gloucestershire Highway Authority

Gloucestershire County Council

Shire Hall,

Westgate Street,

Gloucester GL1 2TG

Email: neil.troughton@gloucestershire.gov.uk

Go to <http://secure-web.cisco.com/1V98ufG5woB18oI2v1JSddsPTgV3SxciDyiqiFV6HMB-iJnLgLWwNROzwwqtoTYwlryknARrq1A7cmRBP UA5GV4UN9Dulsg6eHwYydJ8ArsxZc482RcgtXTolWN4bxb>

[Zj4YtWr6fi-hbxAxxhCh1NH43Z0SJrorFUTA8lqc8Fs2sEw_2le40kGkzP1CKhlpqivB45xK6prMoV-DK7AvrGAXfGYrM7dSRzDdDaOsR8JEuIHx9lJmrayQ2sZ0XM5Zz5GiWjGaWH-Kh7owE2gDqg5XY7hhWG6uhSiFSlb7BG_yc42OiEVq5Bx9YExG_7Dvrhra60MvCFpNbLMTGK60RVtc7KfkvyknEiYJlOtgK1YERdOfGDtfVRFzwB_k-uwzAkPi6HFUDU_hs6j6yOlpyD07XgUKouDFAMw748zxvhwQ0teAVzqLWCks0mWPJgg-FqY33l5cwzHVT2rHBP5l-fb-HoLAUMcFDG9x2-fqQyo/http%3A%2F%2Fwww.gloucestershire.gov.uk](http://www.gloucestershire.gov.uk) to find information on any County Council service.

It couldn't be easier to find information instantly and in some cases apply for services online.

Further information can be found at: http://secure-web.cisco.com/1C8Suab9nNzbOHfVnsTQLiu2nw5ktgc3vPP2Ha8iF0G0G6PvjMvllG2sg5PteJNMscRETzae xcC24LrDDdVTsMZxdhLlSuBCiDt8pBgyvbPg4S9h5j-PJGTgiD-tDSiMSUgh3yc6vR-XYeencuPMPfagiPS-uF0aUOF_0JDMcXD2bKe8VDV-eZ76NFWzDC1nmmkIAi9TS6lnesM9qVbGCu_plCAfuNHTcvOaxhnh0-Gx1VepCjzS5CTyHolgD2H0-ds0KQRuu-WoVs-cBmqPpKBD3z-snQU35coE7k8_x8PMn_SULFZJOuhPWH9_4PGF42hemylzKENq66SbpCUbazbLiK_Zck2RbX_CRo3uqmxWuYYQwCHJW3Xz2Le9LUDglprk2mJwn14UFCY-I9TkhIF_9enMGK4S6MDxfZV8yuWhey0wW-Zr4xsHndGdElKxqpzQYlbS6xhfHAYIym8R1VHw3l_0giGONffYfx21Uw/http%3A%2F%2Fwww.gloucestershire.gov.uk%2Fgloucestershire-county-council%2Froads-parking-and-rights-of-way%2Fplans-policies-procedures-manuals%2Fmanual-for-gloucestershire-streets%2F

From: Nigel Millington [<mailto:nigel@philjonesassociates.co.uk>]

Sent: 03 July 2017 12:49

To: TROUGHTON, Neil; 'Rob White'

Cc: Tracey.Crews@cheltenham.gov.uk; Paul.Skelton@tewkesbury.gov.uk; 'Owen Jones'; Chris Stack; WATTS, Ben; 'Craig.Hemphill@cheltenham.gov.uk'; John.Hinett@tewkesbury.gov.uk; WALKER, Brian

Subject: RE: Elms Park - Planning Application Liaison Meeting (2)

Neil,

Thanks for your email, but to clarify, the model files we are missing are the 2031 JCS files.

You noted that these were not within GCC's power to release, therefore Tracey was due to confirm on behalf of the JCS team that these files could indeed be released to us.

We need the 2031 JCS model files to be released to us as a matter of urgency as we are now at the point whereby we cannot progress without them.

Tracey – could you please confirm that these model files can be released to us?

Regards,

Nigel

Nigel Millington
Phil Jones Associates

www.philjonesassociates.co.uk



From: TROUGHTON, Neil [<mailto:Neil.TROUGHTON@gloucestershire.gov.uk>]
Sent: 03 July 2017 11:37
To: 'Rob White' <RobW@whitepeakplanning.co.uk>
Cc: Tracey.Crews@cheltenham.gov.uk; Paul.Skelton@tewkesbury.gov.uk; 'Owen Jones' <owenjones@lrmpplanning.com>; Nigel Millington <nigel@philjonesassociates.co.uk>; Chris Stack <chris@philjonesassociates.co.uk>; WATTS, Ben <Ben.Watts@gloucestershire.gov.uk>; 'Craig.Hemphill@cheltenham.gov.uk' <Craig.Hemphill@cheltenham.gov.uk>; John.Hinett@tewkesbury.gov.uk; WALKER, Brian <Brian.WALKER@gloucestershire.gov.uk>
Subject: RE: Elms Park - Planning Application Liaison Meeting (2)

Rob,

We issued the requested JCS Saturn Model file to PJA on the 1st June (see attached emails). Can you please confirm what other Saturn files are being requested. In respect of the traffic signals information, I am struggling to obtain this. I have attached a draft report GCC commissioned in respect of a traffic signal study for Cheltenham which may provide some of the detail requested.

At the moment I have not decided which consultants I will use to review or audit the PT Vissim modelling (Amey or Aecom). This will depend on availability and cost. Since this work will be considered part of the statutory consultation in respect of a planning application, I am unable to charge for the service. I will seek to ensure that the proposed programme is met where possible.

Regards,

Neil Troughton MCIHT, Manager

Highways Development Management

Gloucestershire Highway Authority

Gloucestershire County Council

Shire Hall,

Westgate Street,

Gloucester GL1 2TG

Email: neil.troughton@gloucestershire.gov.uk

Go to http://secure-web.cisco.com/1V98ufG5woB18oi2v1JSddsPTgV3SxciDyiqiFV6HMB-iJnLgLWwNROzwvqtoTYwlyknARrq1A7cmRBPUA5GV4UN9Dulsg6eHwYydJ8ArsxZc482RcgtXTolWN4bxbZj4YtWr6fi-hbxAxxhCh1NH43Z0SJrorFUTA8lqc8Fs2sEw_2le40kGkzP1CKhlpqivB45xK6prMoV-DK7AvrGAXfGYyrM7dSRzDdDaOsR8JEUHXx9lJmrayQ2sZ0XM5Zz5GiWjGaWH-Kh7owE2gDqg5XY7hhWG6uhSiFSIb7BG_yc42OiEVq5Bx9YExG_7Dvrhra60MvCFpNbLMTGK60RVtc7KfkvyknEiYJI0tgK1YERdOfGDtfVRFzwB_k-uwzAkPi6HFUDU_hs6j6yOlpyD07XgUKouDFAMw748zxvhwQ0teAVzqLWCKs0mWPJgg-FqY33I5cwzHVT2rHBP5l-fb-HoLAUMcFDG9x2-fqQyo/http%3A%2F%2Fwww.gloucestershire.gov.uk to find information on any County Council service.

It couldn't be easier to find information instantly and in some cases apply for services online.

Further information can be found at: http://secure-web.cisco.com/1C8Suab9nNzbOHfVnsTQLiu2nw5ktgc3vPP2Ha8iF0G0G6PvjMvILgB2sg5PteJNMscRETzaexcC24LrDDdVTsMZxdhLISuBCiDt8pBgyvbPg4S9h5j-PJGTgiD-tDSiMSUgh3yc6vR-XYeencuPMPfagiPS-uF0aUOF_0JDMcXD2bKe8VDV-eZ76NFWzDC1nmkIAi9TS6InesM9qVbGCu_plCAfuNHTcvOaxhnh0-Gx1VepCjzS5CTyHolgD2H0-ds0KQRuu-WoVs-cBmqPpKBD3z-snQU35coE7k8_x8PMn_SULFZJOuhPWH9_4PGF42hemylzKENq66SbpCUBazbLiK_Zck2RbX_CRo3uqmxW_uYYQwCHJW3Xz2Le9LUDglprk2mJwn14UFCY-l9TkhIF_9enMGK4S6MDxfZV8yuWhey0wW-Zr4xsHndGdElKxqpnzQYIbS6xhfHAYIYm8R1VHw3l_0giGONffxFx21Uw/http%3A%2F%2Fwww.gloucestershire.gov.uk%2Fgloucestershire-county-council%2Froads-parking-and-rights-of-way%2Fplans-policies-procedures-manuals%2Fmanual-for-gloucestershire-streets%2F

From: Rob White [<mailto:RobW@whitepeakplanning.co.uk>]

Sent: 29 June 2017 11:43

To: 'Craig.Hemphill@cheltenham.gov.uk'; John.Hinett@tewkesbury.gov.uk

Cc: Tracey.Crews@cheltenham.gov.uk; Paul.Skelton@tewkesbury.gov.uk; 'Owen Jones'; TROUGHTON, Neil; Nigel Millington; Chris Stack (chris@philjonesassociates.co.uk); WATTS, Ben

Subject: Elms Park - Planning Application Liaison Meeting (2)

Importance: High

Craig & John,

In preparation for our meeting next Wednesday please see attached suggested Agenda, noting that whilst I have reduced the headings from last time there is a lot of detail to cover under item 1 (where we suggest the PS is used as a framework for discussions) and potentially under item 3. We also want to discuss preparations for forthcoming Design and Biodiversity meetings under item 6.

Tracey & Neil - in relation to matters listed under Item 2 the following actions are outstanding from yourselves and are in effect halting progress with our TA and the designs of SuperGroup's employment proposals:

- **Tracey** – we are still awaiting release of the JCS model files to Phil Jones Associates – please can this be expedited as a matter of priority as aside from moving our TA modelling forward we need it to inform designs for the employment details that are progressing on behalf of SuperGroup, otherwise these will grind to a halt next week?
- **Tracey** – we still do not have clarity on what to model for West of Cheltenham in terms of a realistic first phase (you promised this by 22nd May...). From a review of their recent public consultation material and some of what is in the 'TIS' it appears that there will be (unsurprisingly) interim phases of development accessed from the south, plus some development accessed from the north via Old Glos Road prior to the delivery of the new dual carriageway over the motorway. Hence can we have some direction on what the quantum of development will be that can be accessed from existing road infrastructure so we model that as an interim position – again modelling for SuperGroup employment or our TA cannot progress without this?
- **Neil** – I think we are still awaiting confirmation of commitment from GCC to instruction of sub-consultants to meet the review/audit timescales set out in Nigel's modelling programme – please can you update?
- **Neil** – Related to the above PJA are due to issue their 'Area of Influence' model run to you next week but as yet have not been provided with either a fee or programme for that to be reviewed by your sub-consultants – please can you advise?
- **Tracey** – we need the conflict with minerals policy resolving – no update as yet from Phil/GCC, please can you expedite

I trust the Agenda is acceptable and the above actions can be promptly progressed.

Regards

Rob

Rob White E: Robw@whitepeakplanning.co.uk

BSc (Hons)

MRTPI MIEMA CEnv

Director

W: www.whitepeakplanning.co.uk

Didsbury Business Centre, 137 Barlow Moor Road, Manchester M20 2PW



This email is sent for and on behalf of White Peak Planning Limited which is a private limited company, registered in England and Wales, registered number 08271631. Registered address 26 Parsonage Road, Manchester M20 4PE

This email and any attachments are confidential and intended solely for the use of the individual(s) to whom it is addressed. If you are not the intended recipient of this communication you should destroy it without copying, disclosing or otherwise using its contents. Please notify the sender immediately of the error. Internet communications are not necessarily secure and may be intercepted or changed after they are sent. We do not accept liability for any such changes. If you wish to confirm the origin or content of this communication, please contact the sender using an alternative means of communication. This communication does not create or modify any contract.

Think before you print - only print this email if absolutely necessary.

This email and any attachments are strictly confidential and intended for the addressee only.

If you are not the named addressee you must not disclose, copy or take any action in reliance of this transmission and you should notify us as soon as possible.

This email and any attachments are believed to be free from viruses but it is your responsibility to carry out all necessary virus checks and Gloucestershire County Council accepts no liability in connection therewith.

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you

are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful. This email has been scanned for viruses and malware.

Think before you print - only print this email if absolutely necessary.

This email and any attachments are strictly confidential and intended for the addressee only.

If you are not the named addressee you must not disclose, copy or take any action in reliance of this transmission and you should notify us as soon as possible.

This email and any attachments are believed to be free from viruses but it is your responsibility to carry out all necessary virus checks and Gloucestershire County Council accepts no liability in connection therewith.

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful. This email has been scanned for viruses and malware.

Think before you print - only print this email if absolutely necessary.

This email and any attachments are strictly confidential and intended for the addressee only.

If you are not the named addressee you must not disclose, copy or take any action in reliance of this transmission and you should notify us as soon as possible.

This email and any attachments are believed to be free from viruses but it is your responsibility to carry out all necessary virus checks and Gloucestershire County Council accepts no liability in connection therewith.

This email may contain information which is confidential and is intended only for use of the recipient/s named above. If you are not an intended recipient, you are hereby notified that any copying, distribution, disclosure, reliance upon or other use of the contents of this email is strictly prohibited. If you have received this email in error, please notify the sender and destroy it.

Highways England Company Limited | General enquiries: 0300 123 5000 | National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF | <https://www.gov.uk/government/organisations/highways-england> | info@highwaysengland.co.uk

Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ

Consider the environment. Please don't print this e-mail unless you really need to.

The information contained in this communication from the sender is confidential. It is intended solely for use by the recipient and others authorized to receive it. If you are not the recipient, you are hereby notified that any disclosure, copying, distribution or taking action in relation of the contents of this information is strictly prohibited and may be unlawful. This email has been scanned for viruses and malware.

This email may contain information which is confidential and is intended only for use of the recipient/s named above. If you are not an intended recipient, you are hereby notified that any copying, distribution, disclosure, reliance upon or other use of the contents of this email is strictly prohibited. If you have received this email in error, please notify the sender and destroy it.

Highways England Company Limited | General enquiries: 0300 123 5000 | National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF | <https://www.gov.uk/government/organisations/highways-england> | info@highwaysengland.co.uk

Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ

Consider the environment. Please don't print this e-mail unless you really need to.

This email may contain information which is confidential and is intended only for use of the recipient/s named above. If you are not an intended recipient, you are hereby notified that any copying, distribution, disclosure, reliance upon or other use of the contents of this email is strictly prohibited. If you have received this email in error, please notify the sender and destroy it.

Highways England Company Limited | General enquiries: 0300 123 5000 | National Traffic Operations Centre, 3 Ridgeway, Quinton Business Park, Birmingham B32 1AF | <https://www.gov.uk/government/organisations/highways-england> | info@highwaysengland.co.uk

Registered in England and Wales no 9346363 | Registered Office: Bridge House, 1 Walnut Tree Close, Guildford, Surrey GU1 4LZ

Consider the environment. Please don't print this e-mail unless you really need to.

This e-mail has been scanned for all viruses by Claranet. The service is powered by MessageLabs. For more information on a proactive anti-virus service working around the clock, around the globe, visit: <http://www.claranet.co.uk>

***** This e-mail is intended for the addressee only. It may contain information that is confidential, copyright material and/or subject to legal privilege. If you are not the intended addressee this e-mail has been sent to you in error and you must not copy, distribute or use it in any way whatsoever. Please inform the sender of the error immediately. This e-mail is believed to be free of viruses but it is your responsibility to carry out all necessary checks and the Council does not accept any liability in connection therewith.

***** This e-mail is intended for the addressee only. It may contain information that is confidential, copyright

material and/or subject to legal privilege. If you are not the intended addressee this e-mail has been sent to you in error and you must not copy, distribute or use it in any way whatsoever. Please inform the sender of the error immediately. This e-mail is believed to be free of viruses but it is your responsibility to carry out all necessary checks and the Council does not accept any liability in connection therewith.

APPENDIX 11

HOLDING OBJECTION OCTOBER 2018



Developments Affecting Trunk Roads and Special Roads

Highways England Planning Response (HEPR 16-01)

Formal Recommendation to an Application for Planning Permission

From: Regional Director
Operations Division
South West
planningsw@highwaysengland.co.uk

To: Mr John Hinett, Tewkesbury Borough Council

CC: transportplanning@dft.gsi.gov.uk
growthandplanning@highwaysengland.co.uk

Council's Reference: 16/02000/OUT

Referring to the notification of the Outline Planning Application validated on 07 October 2016, regarding M5 J10; M5 J11 and A40; and the proposals for up to 4115 new homes providing a range and choice of mix and tenure, including affordable housing (C3) and elderly persons accommodation (C2 up to 200 rooms), 24 ha of employment generating uses including 10 ha B1 business park (up to 40,000sqm), a hotel (C2 up to 100 rooms), and mixed use centres providing retail uses and community facilities (A1 - A5 up to 6,150sqm, D1/D2 up to 1,000sqm) A transport hub and public transport inter change, primary and secondary school education (D2), new areas of green infrastructure including areas of play sports hub, woodland planting, allotments and habitat at creation, creation of new means of access onto Tewkesbury Road and Manor Road, new footways and cycle ways, and drainage infrastructure at Elms Park, Tewkesbury Road, Cheltenham, Gloucestershire, notice is hereby given that Highways England's formal recommendation is that we:

~~a) offer no objection;~~

~~b) recommend that conditions should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions);~~

- c) recommend that planning permission not be granted for a specified period (see Annex A – further assessment required);
- d) ~~recommend that the application be refused (see Annex A – Reasons for recommending Refusal).~~

Highways Act Section 175B is not relevant to this application.¹

This represents Highways England formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

Should you disagree with this recommendation you should consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2015, via transportplanning@dft.gsi.gov.uk.

Signature: <i>Gemma Mckeown</i> Date: 22 nd October 2018
Name: Gemma Mckeown Position: Planning Manager
Highways England: Brunel House, 930 Aztec West, Bristol, BS32 4SR rachel.sandy@highwaysengland.co.uk

¹ Where relevant, further information will be provided within Annex A.

Annex A ~~Highways England recommended Planning Conditions /~~
~~Highways England recommended further assessment required /~~
~~Highways England recommended Refusal.~~

HIGHWAYS ENGLAND (“we”) has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

This response represents our formal recommendations with regard to the planning application (App Ref - 16/02000/OUT) and has been prepared by Rachel Sandy, the Highways Development Management Team Leader for Gloucestershire.

We have undertaken a review of the relevant documents supporting the planning application to ensure compliance with the current of the Secretary of State as set out in DfT Circular 02/2013 “The Strategic Road Network and the Delivery of Sustainable Development” and the DCLG National Planning Policy Framework (NPPF), being advised on this matter by our consultants, Jacobs.

Statement of Reasons

Highways England has previously provided formal advice in respect of the Elms Park planning application on a number of occasions, most recently being 27 April 2018, recommending that the Local Planning Authority ‘not to grant’ planning permission for a period of 6 months. This was to allow the applicant time to address Highways England’s outstanding concerns regarding SRN traffic impact, which have yet to be satisfactorily identified and addressed.

The NW Cheltenham (Elms Park) development is a sizable proposal and reaching an agreed position on SRN impact (largely focusing on M5 J10) will no doubt take time. At present, we have agreed trip generation and trip distribution parameters and are continuing discussions regarding the validation / calibration of the baseline and reference case VISSIM model for M5 J10 and A4109. Work is progressing, but at this time, the HEPR ‘holding position’ should be extended for a further 6 months as Highways England is not able to confirm the acceptability or otherwise of the traffic impact of the proposals on the SRN. It is on this basis that Highways England’s recommendation is set out below.

Recommendation:

Tewkesbury Borough Council shall not grant planning permission for the Elms Park development proposals (ref: 16/02000/OUT) for a further period of 6 months.

Reason:

To provide the applicant with sufficient time to address outstanding concerns regarding development traffic impact on the SRN.

APPENDIX 12

HOLDING OBJECTION OCTOBER 2019

Developments Affecting Trunk Roads and Special Roads

Highways England Planning Response (HEPR 16-01)

Formal Recommendation to an Application for Planning Permission

From: Divisional Director,
Operations Division: South West Region
Highways England
planningsw@highwaysengland.co.uk

To: Mr John Hinett, Tewkesbury Borough Council

CC: transportplanning@dft.gsi.gov.uk
growthandplanning@highwaysengland.co.uk

Council's Reference: 16/02000/OUT

Referring to the notification of the Outline Planning Application validated on 07 October 2016, regarding M5 J10; M5 J11 and A40; and the proposals for up to 4115 new homes providing a range and choice of mix and tenure, including affordable housing (C3) and elderly persons accommodation (C2 up to 200 rooms), 24 ha of employment generating uses including 10 ha B1 business park (up to 40,000sqm), a hotel (C2 up to 100 rooms), and mixed use centres providing retail uses and community facilities (A1 - A5 up to 6,150sqm, D1/D2 up to 1,000sqm) A transport hub and public transport inter change, primary and secondary school education (D2), new areas of green infrastructure including areas of play sports hub, woodland planting, allotments and habitat at creation, creation of new means of access onto Tewkesbury Road and Manor Road, new footways and cycle ways, and drainage infrastructure at Elms Park, Tewkesbury Road, Cheltenham, Gloucestershire, notice is hereby given that Highways England's formal recommendation is that we:

- ~~a) offer no objection;~~
- ~~b) recommend that conditions should be attached to any planning permission that may be granted (see Annex A – Highways England recommended Planning Conditions);~~
- c) recommend that planning permission not be granted for a specified period (see Annex A – further assessment required);

~~d) recommend that the application be refused (see Annex A – Reasons for recommending Refusal).~~

Highways Act Section 175B is not relevant to this application.¹

This represents Highways England formal recommendation and is copied to the Department for Transport as per the terms of our Licence.

Should you disagree with this recommendation you should consult the Secretary of State for Transport, as per the Town and Country Planning (Development Affecting Trunk Roads) Direction 2015, via transportplanning@dft.gsi.gov.uk.

Signature: 	Date: 21 st October 2019
Name: Rachel Sandy	Position: Highways Development Management Team Leader – South West
Highways England: Brunel House, 930 Aztec West, Bristol, BS32 4SR rachel.sandy@highwaysengland.co.uk	

¹ Where relevant, further information will be provided within Annex A.

Annex A ~~Highways England recommended Planning Conditions /~~
~~Highways England recommended further assessment required /~~
~~Highways England recommended Refusal.~~

HIGHWAYS ENGLAND (“we”) has been appointed by the Secretary of State for Transport as strategic highway company under the provisions of the Infrastructure Act 2015 and is the highway authority, traffic authority and street authority for the Strategic Road Network (SRN). The SRN is a critical national asset and as such we work to ensure that it operates and is managed in the public interest, both in respect of current activities and needs as well as in providing effective stewardship of its long-term operation and integrity.

This response represents our formal recommendations with regard to the planning application (App Ref – 16/02000/OUT) and has been prepared by Rachel Sandy, Team Leader (Highways Development Management Team – South West).

We have undertaken a review of the relevant documents supporting the planning application to ensure compliance with the current guidance of the Secretary of State as set out in DfT Circular 02/2013 “The Strategic Road Network and the Delivery of Sustainable Development” and the MHCLG National Planning Policy Framework (NPPF), being advised on this matter by our consultants, Jacobs.

Statement of Reasons

Highways England has previously issued a planning response to the Local Planning Authority (LPA) dated 23 April 2019, recommending that planning permission not be granted for a period of 6 months. This was to provide the applicant and its consultants with sufficient time to address Highways England’s concerns regarding SRN traffic impact.

Discussions are continuing with PJA regarding assessment parameters and scenarios to be tested, with trip generation and its distribution now agreed. However, we are continuing to work with the applicant in respect of development traffic assignment, capacity assessment and the identification of necessary mitigation. We are also working with the applicant to understand the likely phasing of development to ensure that it can be realised in a timely way with the delivery of necessary highway infrastructure. This work will utilise Highway’s England M5 J10 to J11 Paramics Model and Gloucestershire’s strategic transport model.

To allow this technical work to continue to progress, we are recommending a further temporary period of non-approval.

Recommendation

Tewkesbury Borough Council should not grant planning permission for the Elms Park proposals (Ref: 16/02000/OUT) for a period 6 months.

Reason: To provide the applicant with time to address Highways England’s outstanding concerning regarding the proposed development traffic impact on the SRN.

APPENDIX 13
START TO FINISH

TRIP

Targeted Research
& Intelligence Programme



Nathaniel Lichfield
& Partners

Planning. Design. Economics.

Start to Finish

How Quickly do Large-Scale Housing Sites Deliver?

November 2016

Executive Summary

There is a growing recognition that large-scale housing development can and should play a large role in meeting housing need. Garden towns and villages – planned correctly – can deliver sustainable new communities and take development pressure off less sustainable locations or forms of development.

However, what looks good on paper needs to deliver in practice. Plans putting forward large sites to meet need must have a justification for the assumptions they make about how quickly sites can start providing new homes, and be reasonable about the rate of development. That way, a local authority can decide how far it needs to complement its large-scale release with other sites – large or small – elsewhere in its district.

This research looks at the evidence on speed and rate of delivery of large-scale housing based on a large number of sites across England and Wales (outside London). We draw five conclusions:

1. If more homes are to be built, more land needs to be released and more planning permissions granted. There is no evidence to support the notion of systemic 'land banking' outside London: the commercial drivers of both house builders and land promoters incentivises rapid build out of permissions to secure returns on capital.
2. Planned housing trajectories should be realistic, accounting and responding to lapse rates, lead-in times and sensible build rates. This is likely to mean allocating more sites rather than less, with a good mix of types and sizes, and then being realistic about how fast they will deliver so that supply is maintained throughout the plan period. Because no one site is the same – and with significant variations from the average in terms of lead-in time and build rates – a sensible approach to evidence and justification is required.
3. Spatial strategies should reflect that building homes is a complex and risky business. Stronger local markets have higher annual delivery rates, and where there are variations within districts, this should be factored into spatial strategy choices. Further, although large sites can deliver more homes per year over a longer time period, they also have longer lead-in times.
4. Plans should reflect that – where viable – affordable housing supports higher rates of delivery. This principle is also likely to apply to other sectors that complement market housing for sale, such as build to rent and self-build (where there is demand for those products). This might mean some areas will want to consider spatial strategies that favour sites with greater prospects of affordable or other types of housing delivery.
5. For large-scale sites, it matters whether a site is brownfield or greenfield. The latter come forward more quickly.

In our conclusions we identify a check list of questions for consideration in exploring the justification for assumed timing and rates of delivery of large-scale sites.



The Research in Figures

70 number of large sites assessed

3.9 years the average lead in time for large sites prior to the submission of the first planning application

6.1 years the average planning approval period of schemes of 2,000+ dwellings. The average for all large sites is circa 5 years

161 the average annual build rate for a scheme of 2,000+ dwellings

321 the highest average annual build rate of the schemes assessed, but the site has only delivered for three years

40% approximate increase in the annual build rate for large sites delivering 30%+ affordable housing compared to those delivering 10%-19%

50% more homes per annum are delivered on average on large greenfield sites than large brownfield sites



Introduction

When it comes to housing, Government wants planning to think big. With its Garden Towns and Villages agenda and consultation on proposed changes to the National Planning Policy Framework (NPPF) to encourage new settlements, planning authorities and developers are being encouraged to bring forward large-scale housing development projects, many of them freestanding. And there is no doubt that such projects will be necessary if England is to boost supply and then consistently deliver the 300,000 new homes required each year¹.

Large-scale sites can be an attractive proposition for plan-makers. With just one allocation of several thousand homes, a district can – at least on paper – meet a significant proportion of its housing requirement over a sustained period. Their scale means delivery of the infrastructure and local employment opportunities needed to sustain mixed communities.

But large-scale sites are not a silver bullet. Their scale, complexity and (in some cases) up-front infrastructure costs means they are not always easy to kick start. And once up and running, there is a need to be realistic about how quickly they can deliver new homes. Past decades have seen too many large-scale developments failing to deliver as quickly as expected, and gaps in housing land supply have opened up as a result.

So, if Local Plans and five year land supply assessments are to place greater reliance on large-scale developments – including Garden Towns and Villages – to meet housing needs, the assumptions they use about when and how quickly such sites will deliver new homes will need to be properly justified.

“Local planning authorities should take a proactive approach to planning for new settlements where they can meet the sustainable development objectives of national policy, including taking account of the need to provide an adequate supply of new homes. In doing so local planning authorities should work proactively with developers coming forward with proposals for new settlements in their area.”

DCLG consultation on proposed changes to national planning policy (December 2015)

The Planning Practice Guidance (PPG) offers little guidance other than identifying that timescales and rates of development in land availability assessments should be based on information that “*may include indicative lead-in times and build-out rates for the development of different scales of sites. On the largest sites allowance should be made for several developers to be involved. The advice of developers and local agents will be important in assessing lead-in times and build-out rates by year*”². It also requires housing land availability assessments to include: “a reasonable estimate of build out rates, setting out how any barriers to delivery could be overcome.”³

This research provides insights to this topic – which has become a perennial discussion at Local Plan examinations and Section 78 appeals in recent years – by focusing on two key questions:

1. what are realistic lead-in times for large-scale housing developments?; and
2. once the scheme starts delivering, what is a realistic annual build rate?

NLP has carried out a desk-based investigation of the lead-in times and build-out rates on 70 different strategic housing sites (“large sites”) delivering 500 or more homes to understand what factors might influence delivery. For contrast 83 “small sites” delivering between 50 and 499 homes have been researched to provide further analysis of trends in lead in times and build rates at varying scales.

As well as identifying some of the common factors at play during the promotion and delivery of these sites it also highlights that every scheme has its own unique factors influencing its progress: there can be significant variations between otherwise comparable developments, and there is no one ‘typical scheme’. This emphasises the importance of good quality evidence to support the position adopted on individual projects.

¹ House of Lords Select Committee on Economic Affairs (2016) Building more homes: 1st Report of Session 2016-17 - HL Paper 20

² PPG ID: 3-023-20140306

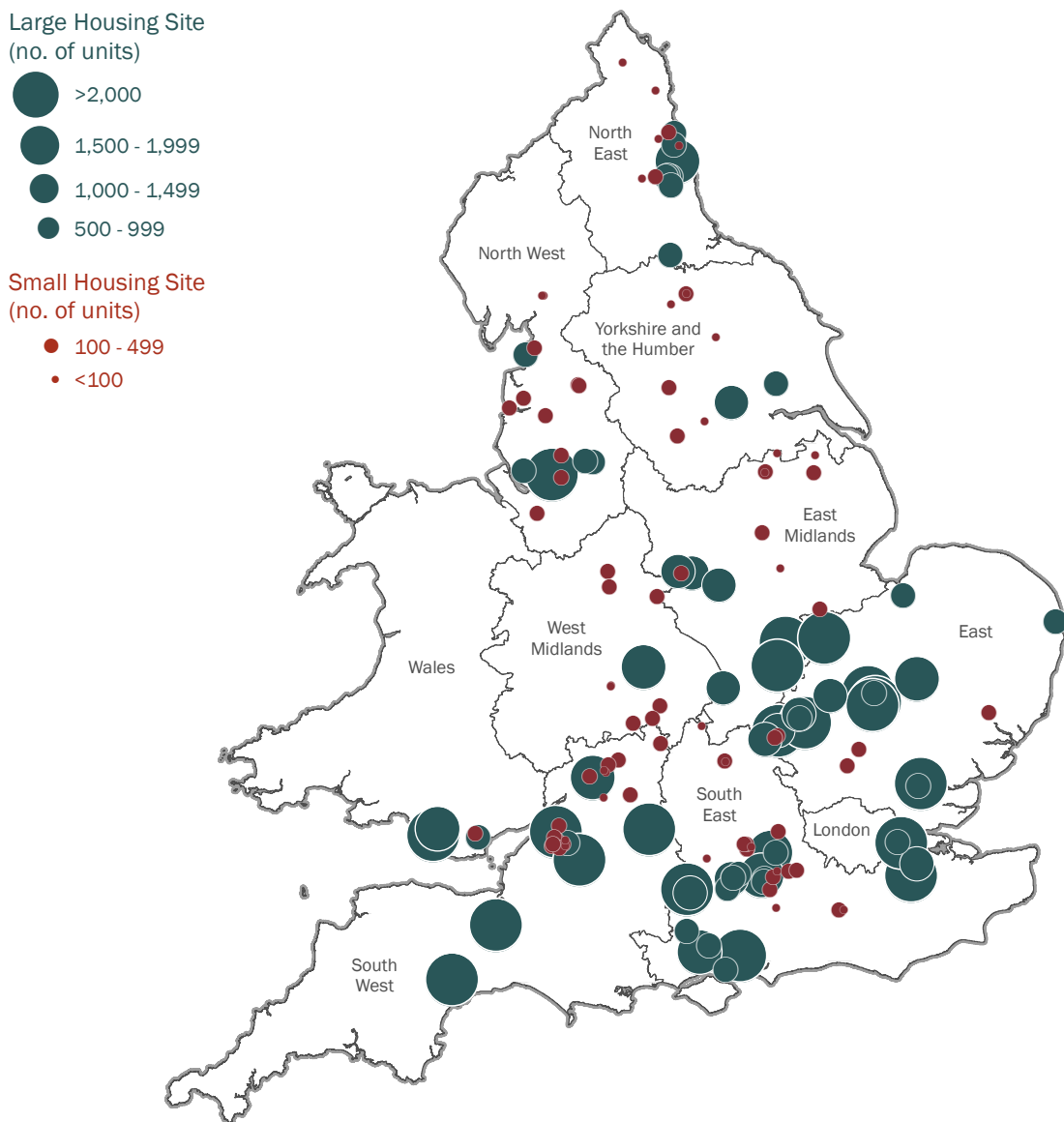
³ PPG ID: 3-028-20140306

Data Sources and Methodology

In total NLP reviewed 70 strategic sites (“large sites”) which have delivered, or will deliver, in excess of 500 dwellings. The sites range in size from 504 to 15,000 dwellings. The geographic distribution of the 70 large sites and comparator small sites is set out below in Figure 1. A full list of the large sites can be found in Appendix 1 and the small sites in Appendix 2. NLP focused on sites outside London, due to the distinctive market and delivery factors applicable in the capital.

Efforts were made to secure a range of locations and site sizes in the sample, but it may not be representative of the housing market in England and Wales as a whole and thus conclusions may not be applicable in all areas or on all sites.

Figure 1: Geographic Distribution of the 70 Large Sites and 83 Small Sites Assessed



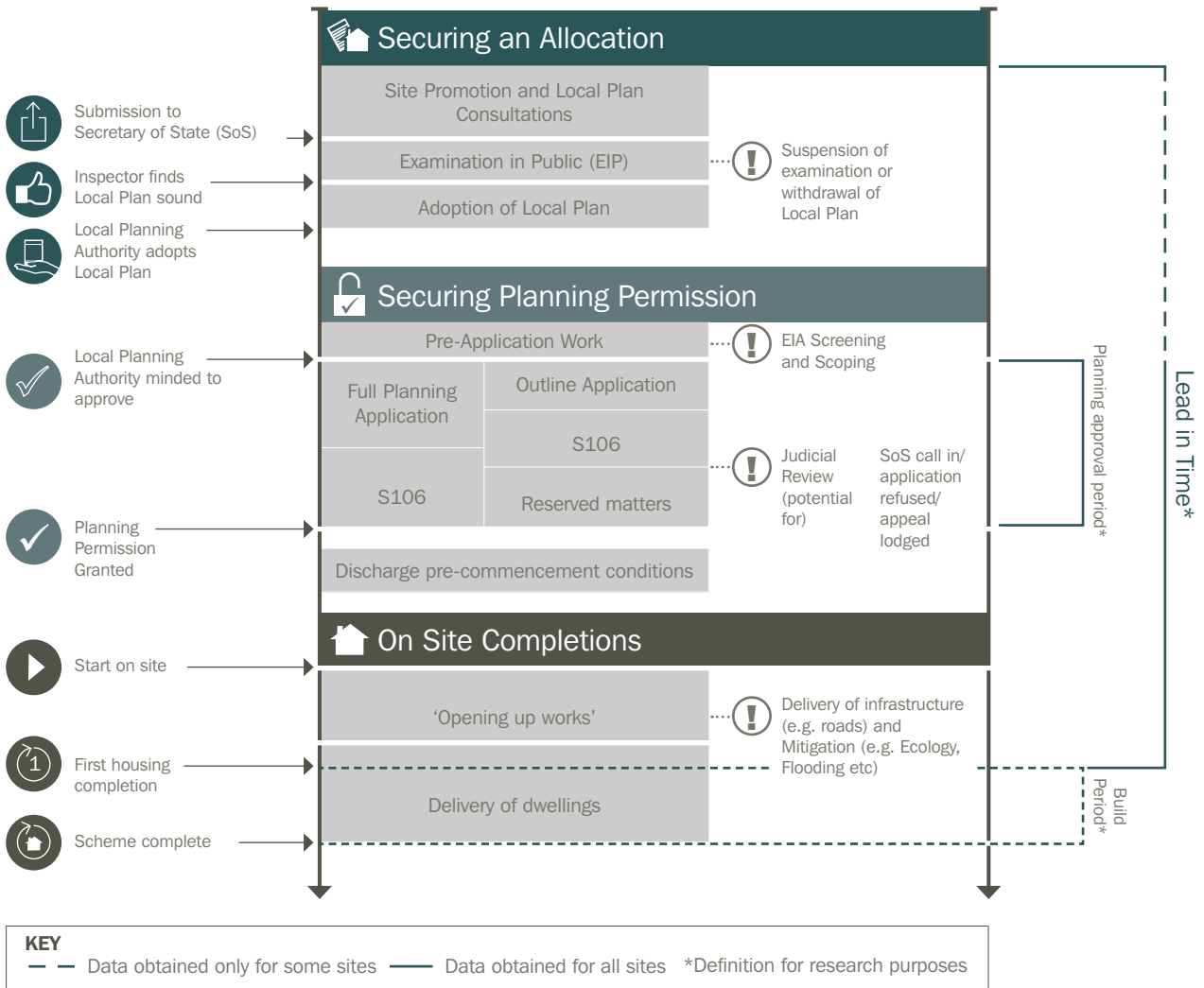
Source: NLP analysis

Methodology

The research aims to cover the full extent of the planning and delivery period. So, wherever the information was available, the data collected on each of the 70 sites covers the stages associated with the total lead-in time of the development (including the process of securing a development plan allocation), the total planning approval period, starting works on site, delivery of the first dwelling and the annualised build rates recorded for the development up until to the latest year where data is available (2014/15). To structure the research and provide a basis for standardised measurement and comparison, these various stages (some of them overlapping) have been codified.

Figure 2 sets out the stages and the milestones used to measure them. These are assumed to fall under what are defined as 'lead-in times', 'planning approval periods' and 'build periods', with 'first housing completion' denoting the end of the lead-in time and start of the build period. Not every site assessed will necessarily have gone through each component of the identified stages sequentially, or indeed at all (for example, some sites secure planning permission without first being allocated).

Figure 2: Timeline for the Delivery of a Strategic Housing Site



Source: NLP

Start to Finish

The approach to defining these stages for the purposes of this research is set out below:

- The **'lead-in time'** – this measures the period up to the first housing completion on site from either a) the date of the first formal identification of the site as a potential housing allocation (e.g. in a LPA policy document) or where not applicable, available or readily discernible – b) the validation date of the first planning application made for the scheme.
- The **'planning approval period'** is measured from the validation date of the first application for the proposed development (be that an outline, full or hybrid application). The end date is the decision date of the first detailed application which permits the development of dwellings on site (this may be a full or hybrid application or the first reserved matters approval which includes details for housing). The discharge of any pre-commencement and other conditions obviously follows this, but from a research perspective, a measurement based on a detailed 'consent' was considered reasonable and proportionate milestone for 'planning' in the context of this research.
- The date of the **'first housing completion'** on site (the month and year) is used where the data is available. However, in most instances the monitoring year of the first completion is all that is available and in these cases a mid-point of the monitoring period (1st October, falling halfway between 1st April and the following 31st March) is used.
- The **'annual build rate'** falls within the overall 'build period'. The annual build rate of each site is taken or inferred from the relevant Local Planning Authority's Annual Monitoring Reports (AMR) or other evidence based documents where available. In some instances this was confirmed – or additional data provided – by the Local Planning Authority or County Council.

Due to the varying ages of the assessed sites, the implementation of some schemes was more advanced than others and, as a function of the desk-based nature of the research and the vintage of some of the sites assessed, there have been some data limitations, which means there is not a complete data set for every assessed site. For example, lead-in time information prior to submission of planning applications is not available for all sites. And because not all of the sites assessed have commenced housing delivery, annual build rate information is not universal. The results are presented accordingly.



Getting Started: What are Realistic Lead-in Times?

How long does it take for large-scale sites to get up and running? This can be hard to estimate. Understandably, those promoting sites are positive about how quickly they can deliver, and local authorities choosing to allocate large-scale sites in their plans are similarly keen for these sites to begin making a contribution to housing supply. This leads some local housing trajectories to assume that sites can be allocated in Local Plans and all detailed planning approvals secured in double-quick time. However, the reality can prove different.

Our main focus here is on the average 'planning approval period' and the subsequent period from receiving a detailed planning approval to delivery of the first house on site. However, another important metric is how long it takes from the site being first identified by the local authority for housing delivery to getting started on site. Unfortunately, getting accurate data for this on some of the historic sites is difficult, so this analysis is focused on a just 18 of the sample sites where information was available.

Lead-in Times

The lead-in time prior to the submission of a planning application is an important factor, because many planning issues are flushed out in advance of planning applications being submitted, not least in terms of local plan allocations establishing the principle of an allocation. In a plan-led system, many large-scale sites will rely on the certainty provided by Local plans, and in this regard, the slow pace of plan-making in the period since the NPPF⁴ is a cause for concern.

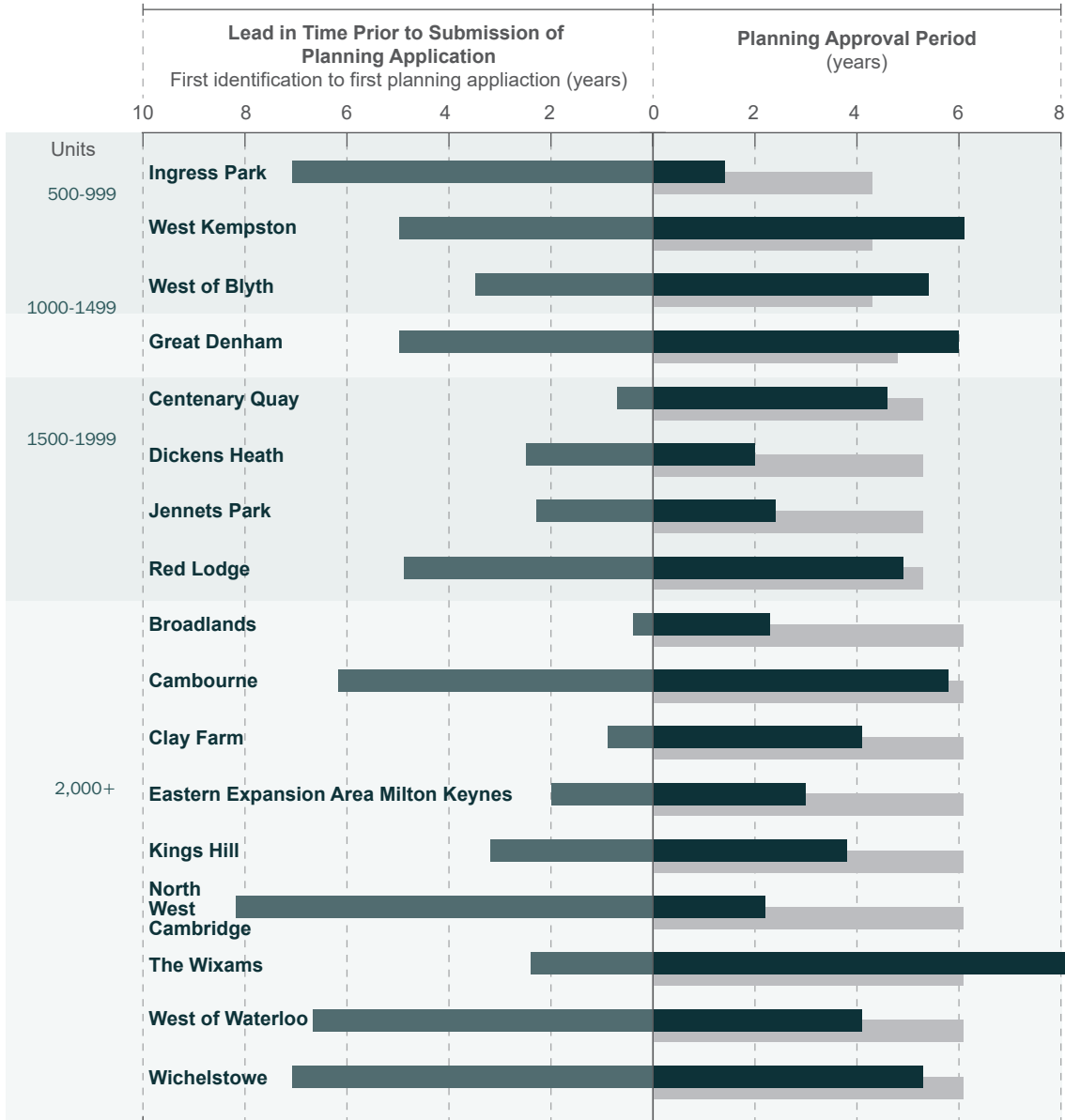
If the lead-in time prior to submission of an application is able to focus on addressing key planning issues, it can theoretically help ensure that an application – once submitted – is determined more quickly. Our sample of sites that has lead-in time information available is too small to make conclusions on this theory. However, there is significant variation within these sites highlighting the complexity of delivering homes on sites of different sizes. Of this sample of sites: on average it was 3.9 years from first identification of the site for housing to the submission of the initial planning application.

Moreover, a substantial lead-in time does not guarantee a prompt permission: 4 of the 18 sites that took longer to gain planning permission than the average for sites of comparable size and also had lead-in times prior to submission of a planning application of several years⁵.

⁴ As at September 2016, just 34% of Local Authorities outside London have an up-to-date post-NPPF strategic-level Local Plan. Source: PINS / NLP analysis.

⁵ The sites in question were The Wixams, West Kempton, West of Blyth, and Great Denham.

Figure 3: Average lead-in time of sites prior to submission of the first planning application



KEY
 Lead in time prior to submission of planning application
 Planning approval period
 Average planning application period for site of that size

Source: NLP analysis

The Planning Approval Period: Size Matters

The term ‘planning approval period’ in this report measures the period from the validation date of the first planning application for the scheme to the decision date of the first application which permits development of dwellings on site (this could be a full, hybrid or reserved matters application). Clearly, in many cases, this approval will also need to be followed by discharge of pre-commencement conditions (a focus of the Government’s Neighbourhood Planning Bill) but these were not reviewed in this research as a detailed approval was considered an appropriate milestone in this context.

The analysis considers the length of planning approval period for different sizes of site, including comparing large-scale sites with small sites. Figure 4 shows that the greater the number of homes on a site, the longer the planning approval period becomes. There is a big step-up in time for sites of in-excess of 500 units.

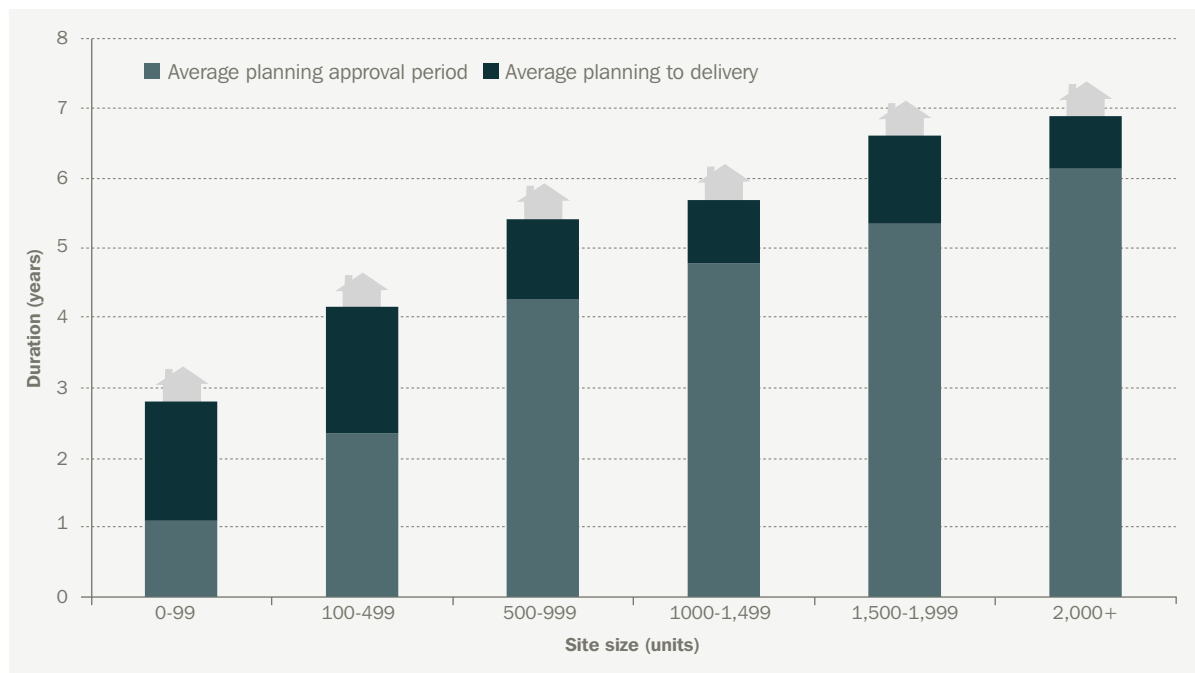
Time Taken for First Housing Completion after Planning Approval

Figure 4 also shows the time between the approval of the first application to permit development of dwellings on site and the delivery of the first dwelling (during which time any pre-commencement conditions would also be discharged), in this analysis this is the latter part of the lead in time period. This reveals that the timescale to open up a site following the detailed approval is relatively similar for large sites.

Interestingly, our analysis points to smaller sites taking longer to deliver the first home after planning approval. This period of development takes just over 18 months for small sites of under 500 units, but is significantly quicker on the assessed large-scale sites; in particular, on the largest 2,000+ dwelling sites the period from receiving planning approval to first housing completion was 0.8 years.

In combination, the planning approval period and subsequent time to first housing delivery reveals the total period increases with larger sites, with the total period being in the order of 5.3 – 6.9 years. Large sites are typically not quick to deliver; in the absence of a live planning application, they are, on average, unlikely to be contributing to five year housing land supply calculations.

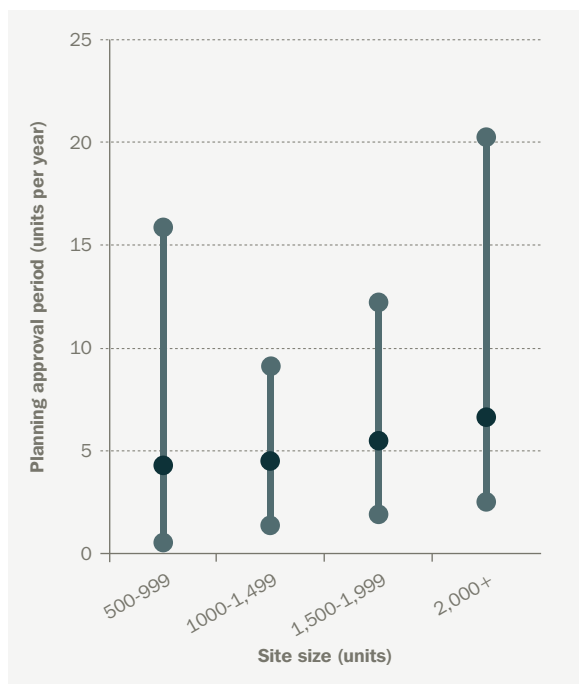
Figure 4: Average planning approval period and delivery of first dwelling analysis by site size



Source: NLP analysis

Of course, these are average figures, and there are significant variations from the mean. Figure 5 below shows the minimum and maximum planning approval periods for sites in each of the large size categories. This shows even some of the largest sites coming forward in under two years, but also some examples taking upwards of 15-20 years. Clearly, circumstances will vary markedly from site to site.

Figure 5: Site size and duration of planning



Source: NLP analysis

Case Studies

If some sites are coming forward more quickly than the average for sites of that size, what is it that is driving their rapid progress? We explored this with some case studies. These suggest that when schemes are granted planning permission significantly faster than the above averages, it is typically due to specific factors in the lead-in time prior to the submission of a planning application.

Gateshead – St James Village (518 dwellings): Planning approval period 0.3 years⁶

This site was allocated as a brownfield site in the Gateshead UDP (2000) prior to the submission of a planning application for the regeneration scheme. A Regeneration Strategy for East Gateshead covered this site and as at 1999 had already delivered high profile flagship schemes on the water front. Llewelyn Davis were commissioned by the Council and English Partnerships to prepare a masterplan and implementation strategy for the site which was published in June 1999. Persimmon Homes then acquired the site and it was agreed in autumn 1999 that they should continue the preparation of the masterplan. East Gateshead Partnership considered the masterplan on the 08th March 2000 and recommended approval. Subsequently, the outline application (587/00) with full details for phase 1 was validated on the 6th September 2000 and a decision issued on the 9th January 2001.

It is clear that although it only took 0.3 years for the planning application to be submitted and granted for a scheme of more than 500 units, the lead in time to the submission of the application was significant, including an UDP allocation and a published masterplan 18 months ahead of permission being granted. By the time the planning application was submitted most of the site specific issues had been resolved.

⁶ St James Village is excluded from the lead-in time analysis because it is unclear on what date the site was first identified within the regeneration area

Dartford – Ingress Park (950 dwellings): Planning approval period 1.4 years

This site was initially identified in a draft Local Plan in 1991 and finally allocated when this was adopted in April 1995. The Ingress Park and Empire Mill Planning Brief was completed in three years later (November 1998).

The submission of the first planning application for this scheme predated the completion of the Planning Brief by a few months, but the Council had already established that they supported the site. By the time the first application for this scheme was submitted, the site had been identified for development for circa seven years.

The outline application (98/00664/OUT) was validated on the 10th August 1998 and permission granted on the 21st Nov 2000, a determination period of 1 year and 3 months). A full application for the First Phase for 52 dwellings (99/00756/FUL) was validated and approved in just two months, prior to approval of the outline. Clearly, large-scale outline permissions have to wrap up a wide range of other issues, but having first phase full applications running in parallel can enable swifter delivery, in situations where a 'bite sized' first phase can be implemented without triggering complex issues associated with the wider site.

Cambridge and South Cambridgeshire – North West Cambridge (3,000 dwellings and 2,000 student bed spaces): Planning approval period 2.2 years

Cambridge University identified this area as its only option to address its long-term development needs, and the Cambridgeshire and Peterborough Structure Plan 2003 identified the location for release from the Green Belt. The site was allocated in the 2006 Cambridge Local Plan, and the North West Cambridge Area Action Plan was adopted in October 2009. The Area Action Plan established an overall vision and set out policies and proposals to guide the development as a whole.

As such, by the time the first application for this scheme was submitted, there had already been circa eight years of 'pre-application' planning initially concerning the site's release from the Green Belt, but then producing the Area Action Plan which set out very specific requirements.. This 'front-loaded' consideration of issues that might otherwise have been left to a planning application.

The outline application (11/1114/OUT – Cambridge City Council reference) for delivery of up to 3,000 dwellings, up to 2,000 student bed spaces and 100,000 sqm of employment floorspace was validated on the 21st September 2011 and approved on the 22nd of February 2013. The first reserved matters application for housing (13/1400/REM) was validated on the 20th September 2013 and approved on the 19th December 2013. Some ten years from the concept being established in the Structure Plan.

Summary on Lead-in Times

1. On average, larger sites take longer to complete the planning application and lead-in processes than do smaller sites. This is because they inevitably give rise to complex planning issues related to both the principle of development and the detail of implementation.
2. Consideration of whether and how to implement development schemes is necessary for any scheme, and the evidence suggests that where planning applications are determined more quickly than average, this is because such matters were substantially addressed prior to the application being submitted, through plan-making, development briefs and/or master planning. There is rarely a way to short-circuit planning.
3. Commencement on large sites can be accelerated if it is possible to 'carve-out' a coherent first phase and fast track its implementation through a focused first phase planning application, in parallel with consideration of the wider scheme through a Local Plan or wider outline application.
4. After receiving permission, on average smaller sites take longer to deliver their first dwelling than do the largest sites (1.7-1.8 years compared to 0.8 years for sites on 2,000+ units).

Lapse Rates: What Happens to Permissions?

Not every planning permission granted will translate into the development of homes. This could mean an entire site does not come forward, or delivery on a site can be slower than originally envisaged. It is thus not realistic to assume 100% of planning permission granted in any given location will deliver homes. Planning permissions can lapse for a number of reasons:

1. The landowner cannot get the price for the site that they want;
2. A developer cannot secure finance or meet the terms of an option;
3. The development approved is not considered to be financially worthwhile;
4. Pre-commencement conditions take longer than anticipated to discharge;
5. There are supply chain constraints hindering a start; or
6. An alternative permission is sought for the scheme after approval, perhaps when a housebuilder seeks to implement a scheme where the first permission was secured by a land promoter.

These factors reflect that land promotion and housebuilding is not without its risks.

At the national level, the Department for Communities and Local Government has identified a 30-40% gap between planning permissions granted for housing and housing starts on site⁷. DCLG analysis suggested that 10-20% of permissions do not materialise into a start on site at all and in addition, an estimated 15-20% of permissions are re-engineered through a fresh application, which would have the effect of pushing back delivery and/or changing the number of dwellings delivered.

This issue often gives rise to claims of 'land banking' but the evidence for this is circumstantial at best, particularly outside London. The business models of house builders are generally driven by Return on Capital Employed (ROCE) which incentivises a quick return on capital after a site is acquired. This means building and selling homes as quickly as possible, at sales values consistent with the price paid for the land. Land promoters (who often partner with landowners using promotion agreements) are similarly incentivised to dispose of their site to a house builder to unlock their promotion fee. Outside London, the scale of residential land prices has not been showing any significant growth in recent years⁸ and indeed for UK greenfield and urban land, is still below levels last seen at least 2003⁹. There is thus little to incentivise hoarding land with permission.

The LGA has identified circa 400-500,000 units of 'unimplemented' permissions¹⁰, but even if this figure was accurate, this is equivalent to just two years of pipeline supply. More significantly, the data has been interpreted by LGA to significantly overstate the number of unimplemented permissions because 'unimplemented' refers to units on sites where either the entire site has not been fully developed or the planning permission has lapsed¹¹. It therefore represents a stock-flow analysis in which the outflow (homes built) has been ignored.

Insofar as 'landbanking' may exist, the issue appears principally to be a London – rather than a national – malaise, perhaps reflecting that land values in the capital – particularly in 'prime' markets – have increased by a third since the previous peak of 2007. The London Mayor's 'Barriers to Housing Delivery – Update' of July 2014 looked at sites of 20 dwellings or more and reported that only about half of the total number of dwellings granted planning permission every year are built (Table 3); a lapse rate of circa 50% across London.

Clearly, the perceived problem of landbanking is seeing policy attention from Government, but caution is needed that any changes do not result in unintended consequences or act as a disincentive to secure planning permissions.

A more practical issue is that Plans and housing land trajectories must adopt sensible assumptions, based on national benchmarks, or – where the data exists – local circumstances, to understand the scale of natural non-implementation.

⁷ DCLG Presentations to the HBF Planning Conference (September 2015)

⁸ Knight Frank Residential Development Land Index Q1 2016 <http://content.knightfrank.com/research/161/documents/en/q1-2016-3844.pdf>

⁹ Savills Development Land Index <http://www.savills.co.uk/research/uk/residential-research/land-indices/development-land-index.aspx>

¹⁰ Glenigan data as referenced by Local Government Association in its January 2016 media release (a full report is not published) http://www.local.gov.uk/web/guest/media-releases/-/journal_content/56/10180/7632945/NEWS

¹¹ This would mean that a site which has built 99% of homes will still show up as 100% of units being 'unimplemented'

Size Matters

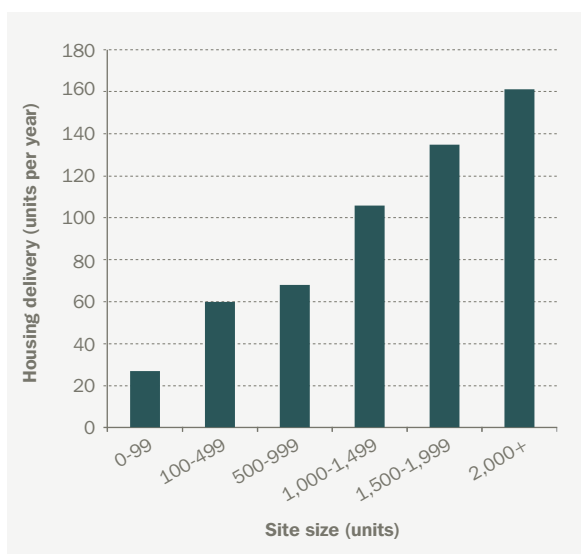
A key metric for build rates on sites is the number of sales outlets. Different housebuilders will differentiate through types or size of accommodation and their brands and pricing, appealing to different customer types. In this regard, it is widely recognised that a site may increase its absorption rate through an increased number of outlets.

Unfortunately, data limitations mean that the number of outlets is not readily available for the large sites surveyed within this research, and certainly not on any longitudinal basis which is relevant because the number of outlets on a site may vary across phases.

However, it is reasonable to assume that larger sites are likely to feature more sales outlets and thus have greater scope to increase build rates. This may relate to the site being more geographically extensive: with more access points or development ‘fronts’ from which sales outlets can be driven. A large urban extension might be designed and phased to extend out from a number of different local neighbourhoods within an existing town or city, with greater diversity and demand from multiple local markets.

Our analysis supports this concept: larger sites deliver more homes each year, but even the biggest schemes (those with capacity for 2,000 units) will, on average, deliver fewer than 200 dwellings per annum, albeit their average rate – 161 units per annum – is six times that of sites of less than 100 units (27 units per annum).

Figure 7: Average annual build rate by site size



Start to Finish

14 Source: NLP analysis

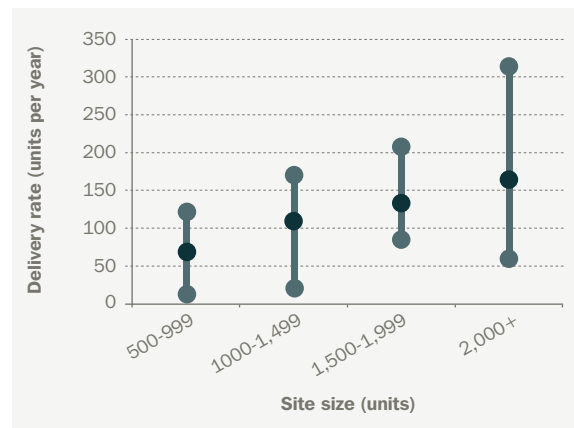
Of course, these are average figures. Some sites will see build rates exceeding this average in particular years, and there were variations from the mean across all categories (see Figure 8), suggesting that higher or lower rates than this average may well be possible, if circumstances support it.

Nevertheless, it is striking that annual average delivery on sites of up to 1,499 units barely exceeds 100 units per annum, and there were no examples in this category that reached a rate of 200 per annum. The highest rate – of 321 units per annum – is for the Cranbrook site, but this is a short term average. A rate of 268 per annum was achieved over a longer period at the Eastern Expansion Area (Broughton Gate & Brooklands) site in Milton Keynes. The specific circumstance surrounding the build rates in both these examples are explored as case studies opposite. It is quite possible that these examples might not represent the highest rate of delivery possible on large-scale sites in future, as other factors on future sites might support even faster rates.

Our analysis also identifies that, on average, a site of 2,000 or more dwellings does not deliver four times more dwellings than a site delivering between 100 and 499 homes, despite being at least four times the size. In fact it only delivers an average of 2.5 times more houses. This is likely to reflect that:

- it will not always be possible to increase the number of outlets in direct proportion to the size of site – for example due to physical obstacles (such as site access arrangements) to doing so; and
- overall market absorption rates means the number of outlets is unlikely to be a fixed multiplier in terms of number of homes delivered.

Figure 8: Average annual build-out rate by site size, including the minimum and maximum averages within each site size



Source: NLP analysis

Cranbrook: East Devon

The highest average annual build out rates recorded in this analysis comes from the Cranbrook site in East Devon where an average of 321 dwellings per annum were delivered between 2012/13 and 2014/15. Delivery of housing only started on this site in 2012/13, with peak delivery in 2013/14 of 419 dwellings.

Cranbrook is the first new standalone settlement in Devon for centuries and reportedly – according to East Devon Council – the result of over 40 years of planning (this claim has not been substantiated in this research). It is the circumstances surrounding its high annual delivery rate which is of most interest, however.

Phase 1 of the development was supported by a £12 million repayable grant from a revolving infrastructure fund managed by the Homes and Communities Agency. The government also intervened again in the delivery of this site by investing £20 million for schools and infrastructure to ensure continuity of the scheme, securing the delivery of phase 2. The government set out that the investment would give local partners the confidence and resources to drive forward its completion.

The Consortium partnership for Cranbrook (including Hallam Land, Persimmon Homes (and Charles Church) and Taylor Wimpey) stated the following subsequent to the receipt of the government funding¹⁵.

“Without this phase 2 Cranbrook would have been delayed at the end of phase 1, instead, we have certainty in the delivery of phase 2, we can move ahead now and commit with confidence to the next key stages of the project and delivering further community infrastructure and bringing forward much needed private and affordable homes”.

Clearly, the public sector played a significant role in supporting delivery. The precise relationship between this and the build rate is unclear, but funding helped continuity across phases one and two of the scheme. More particularly, the rate of delivery so far achieved relates just to the first three years, and there is no certainty that this high build-out rate will be maintained across the remainder of the scheme.

Eastern Expansion Area (Broughton Gate & Brooklands): Milton Keynes

The second highest average build out rates recorded in this analysis comes from the Eastern Expansion Area (Broughton Gate & Brooklands) site in Milton Keynes where an average of 268 dwellings per annum were delivered between 2008/09 and 2013/14. As is widely recognised, the planning and delivery of housing in Milton Keynes is distinct from almost all the sites considered in this research.

Serviced parcels with the roads already provided were delivered as part of the Milton Keynes model and house builders are able to proceed straight onto the site and commence delivery. This limited the upfront site works required and boosted annual build rates. Furthermore, there were multiple outlets building-out on different serviced parcels, with monitoring data from Milton Keynes Council suggesting an average of c.12 parcels were active across the build period. This helped to optimise the build rate.

¹⁵ <https://www.gov.uk/government/news/government-funding-to-unlock-delivery-of-12-000-new-homes>

Peak Years of Housing Delivery

Of course, rates of development on sites will ebb and flow. The top five peak annual build-out rates achieved across every site assessed are set out in Table 1 below. Four of the top five sites with the highest annual peak delivery rates are also the sites with the highest annual average build out rates (with the exception of Broughton & Atterbury). Peak build rates might occur in years when there is an overlap of multiple outlets on phases, or where a particular phase might include a large number of affordable or apartment completions. It is important not to overstress these individual years in gauging build rates over the whole life of a site.

Table 1: Peak annual build-out rates compared against average annual delivery rates on those sites

Scheme	Peak Annual Build-Out Rate	Annual Average Build-Out Rate
Cambourne	620	239
Hamptons	548	224
Eastern Expansion Area	473	268
Cranbrook	419	321
Broughton	409	171

Source: NLP analysis and various AMRs

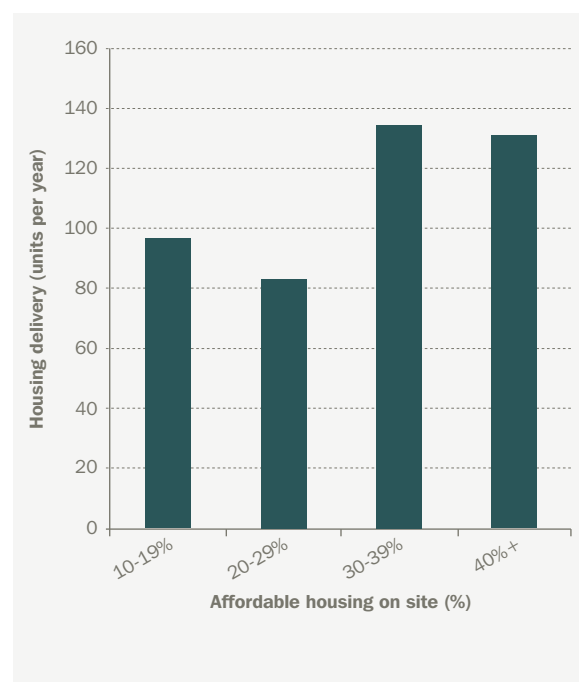
Affordable Housing Provision

Housing sites with a larger proportion of affordable homes (meeting the definition in the NPPF) deliver more quickly, where viable. The relationship appears to be slightly stronger on large-scale sites (500 units or more) than on smaller sites (less than 500 units), but there is a clear positive correlation (Figure 9). For both large and small-scale sites, developments with 40% or more affordable housing have a build rate that is around 40% higher compared to developments with 10-19% affordable housing obligation.

The relationship between housing delivery and affordable (subsidised) housing is multi-dimensional, resting on the viability, the grant or subsidy available and the confidence of a housing association or registered provider to build or purchase the property for management. While worth less per unit than a full-market property, affordable housing clearly taps into a different segment of demand (not displacing market demand), and having an immediate purchaser of multiple properties can support cash flow and risk sharing in joint ventures. However, there is potential that starter homes provided in lieu of other forms of affordable housing may not deliver the same kind of benefits to speed of delivery, albeit they may support viability overall.

This principle – of a product targeting a different segment of demand helping boost rates of development – may similarly apply to the emergent sectors such as ‘build-to-rent’ or ‘self build’ in locations where there is a clear market for those products. Conversely, the potential for starter homes to be provided in lieu of other forms of affordable housing may overlap with demand for market housing on some sites, and will not deliver the kind of cash flow / risk sharing benefits that comes from disposal of properties to a Registered Provider.

Figure 9: Affordable housing provision and housing output



Source: NLP analysis

The Timeline of the Build-out Period

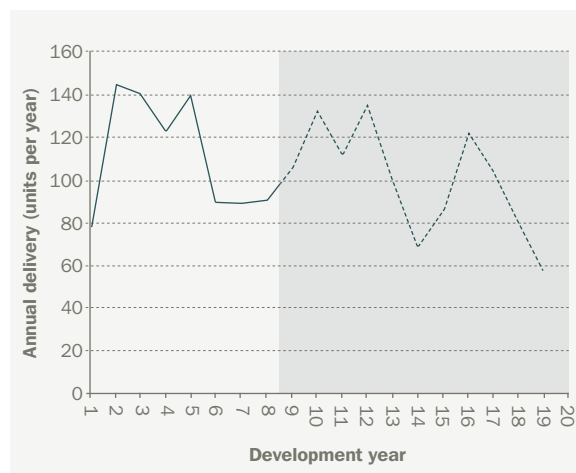
Many planners’ housing trajectories show large sites gradually increasing their output and then remaining steady, before tailing off at the end. In fact, delivery rates are not steady. Looking at the first eight years of development – where the sample size of large sites is sufficiently high – NLP’s research showed that annual completions tended to be higher early in the build-out period before dipping (Figure 10).

For sites with even longer build out periods, this pattern of peaks and troughs is potentially repeated again (subject to data confidence issues set out below). This surge in early completions could reflect the drive for

rapid returns on capital in the initial phase, and/or early delivery of affordable housing, with the average build rate year by year reducing thereafter to reflect the optimum price points for the prevailing market demand. Additionally, the longer the site is being developed, the higher the probability of coinciding with an economic downturn – obviously a key factor for sites coming forward over the past decade – which will lead to a reduction in output for a period.

Our sample of sites where the development lasted for more than eight years is too small to draw concrete findings, but it does flag a few other points. On extremely large sites that need to span more than a decade, the development will most likely happen in phases. The timing and rate of these phases will be determined by a range of factors including: the physical layout of the site, the ability to sell the homes; trigger points for payment for key social and transport infrastructure obligations; the economic cycle; and local market issues. Predicting how these factors combine over a plan period is self-evidently difficult, but plan makers should recognise the uncertainty and build in flexibility to their housing trajectories to ensure they can maintain housing supply wherever possible.

Figure 10: Average annual build-out rate per year of the build period



Source: NLP analysis

Summary

1. There is a positive correlation between the strength of the market (as measured by residential land values) and the average annual build rates achieved.
2. The annual average build-rate for the largest sites (of 2,000 or more units) is circa 161 dwellings per annum
3. The rate of delivery increases for larger schemes, reflecting the increased number of sales outlets possible on large sites. However, this is not a straight line relationship: on average, a site of 2,000 units will not, deliver four times as fast as a site of 500. This reflects the limits to number of sales outlets possible on a site, and overall market absorption rates.
4. There is significant variation from the average, which means some sites can be expected to deliver more (or less) than this average. However, the highest average build-out rate of all the assessed sites is 321 dwellings per annum in Cranbrook. But this relates to just three years of data, and the scheme benefitted from significant government funding to help secure progress and infrastructure. Such factors are not present in all schemes, and indeed, the data suggests sites tend to build at a higher rate in initial years, before slowing down in later phases.
5. Build rates on sites fluctuate over their life. The highest build rate recorded in a single year is 620 units at Camborne, but for the duration of the development period the average annual build rate is 239 dwellings.
6. There is a positive correlation between the percentage of affordable homes built on site and the average annual delivery of homes with sites delivering 30% or more affordable housing having greater annual average build rates than sites with lower affordable housing provision. The introduction of different tenures taps into different market segments, so a build to rent product may similarly boost rates of delivery – where there is a market for it – but starter homes may have the opposite effect if they are provided in lieu of other forms of affordable homes, and displace demand for cheaper market homes.

A Brownfield Land Solution?

The NPPF encourages the effective use of previously-developed land, and recent Government announcements suggest increased prioritisation of development for brownfield sites. Efforts to streamline the planning process for brownfield sites may also speed up their delivery. But, is there a difference in how quickly brownfield sites can come forward compared to greenfield sites?

Research produced by CPRE and Glenigan in March 2016¹⁶ suggested that the time between planning permission being granted and construction work starting is generally the same for brownfield and greenfield sites, but suggested that work on brownfield sites is completed more than six months quicker. However, it was not clear if this finding was because the greenfield sites were larger than the equivalent brownfield sites surveyed in that study. We therefore looked at how lead in times and build rates compared for large-scale sites of 500+ dwellings on greenfield and brownfield sites.

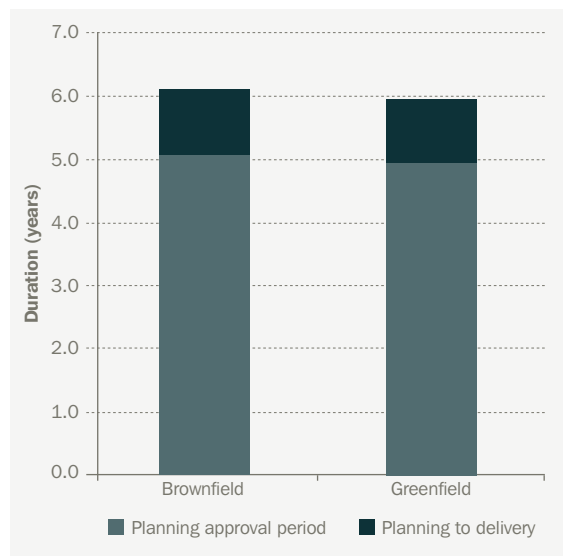
The Planning Approval Period

Whether land is brownfield or greenfield does not impact on the planning approval period. On average, for all sites, the planning approval period for the sites delivering 500 dwellings or more is almost identical at 5.1 years for brownfield and 5.0 years for greenfield – see Figure 11, although this is skewed by the very largest sites of 2,000+ units (see Table 2), with brownfield sites in the smaller-size bands being on average slightly quicker than their greenfield counterparts (albeit caution is required given the small sample size for some size bandings).

What the analysis tends to show is that it is the scale of development – rather than the type of land – which has the greatest impact on the length of planning process, and that despite government prioritisation on brownfield land in the NPPF, this is unlikely to result in significant further improvements in timescales for delivery.

The time period between gaining a planning approval and the first delivery of a dwelling is also similar overall.

Figure 11: Previous land use and duration of planning



Source: NLP analysis

Table 2: Previous land use and duration of planning approval period

	Site Size (dwellings)	Number of sites in this group	Average Planning Approval Period
Greenfield Sites	500-999	14	4.5
	1,000-1,499	9	5.3
	1,500-1,999	7	5.5
	2,000+	13	5.0
	Total/Average	43	5.0
Brownfield Sites	500-999	16	4.1
	1,000-1,499	3	3.3
	1,500-1,999	1	4.6
	2,000+	7	8.6
	Total/Average	27	5.1

Source: NLP analysis

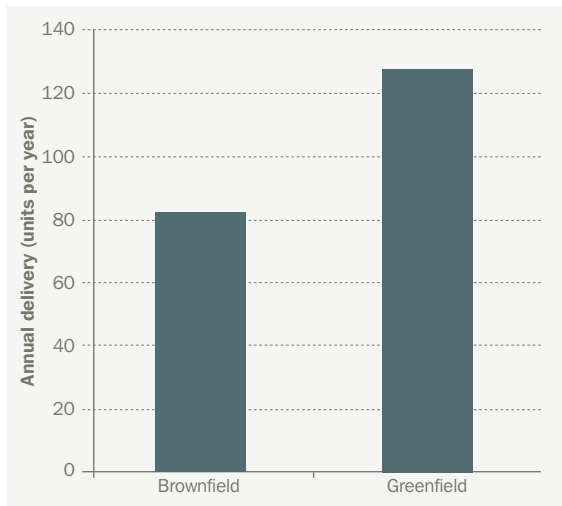
¹⁶ Brownfield comes first: why brownfield development works CPRE, March 2016

Build-out Rates

There is a more discernible difference between brownfield and greenfield sites when it comes to the annual build out rates they achieve, with the analysis in Figure 12 suggesting that brownfield sites on average deliver at lower rates than their greenfield counterparts, both overall and across the different size bandings (see Table 3) albeit recognising the small sample size for some sizes of site. On average, the annual build-out rate of a greenfield site is 128 dwellings per annum, around 50% higher than the 83 per annum average for brownfield sites.

This may reflect that brownfield sites carry extra costs (e.g. for remediation) which reduces the scale of contribution they make to infrastructure and affordable housing provision (which as shown can boost rates of delivery).

Figure 12: Previous land use and housing delivery



Source: NLP analysis

Table 3: Previous land use by size and average annual build out rate

	Site Size (dwellings)	Number of sites in this group	Average Annual Build-out Rate
Greenfield Sites	500-999	14	86
	1,000-1,499	9	122
	1,500-1,999	7	142
	2,000+	13	171
	Total/Average	43	128
Brownfield Sites	500-999	16	52
	1,000-1,499	3	73
	1,500-1,999	1	84
	2,000+	7	148
	Total/Average	27	83

Source: NLP analysis

Summary

1. Brownfield and greenfield sites come forward at broadly similar rates, although at the smaller end of the scale, there does appear to be some 'bonus' in speed of decisions for previously-developed land. For the largest sites (of 2,000+ units) the sample of brownfield sites suggests an extended time period (3.6 years longer) compared to their equivalent greenfield sites;
2. Once started, large-scale greenfield sites do deliver homes at a more rapid rate than their brownfield equivalents, on average 50% quicker.

Conclusion

There is a growing recognition that large-scale housing development can and should play a large role in meeting housing need. Garden towns and villages – planned correctly – can deliver sustainable new communities and take development pressure off less sustainable locations or forms of development.

However, if planners are serious about wanting to see more homes built each year and achieve the government’s target of one million by 2020 (or indeed, deliver the 300,000 per annum that are needed), simply allocating a site or granting a permission is not enough. The Government recognises this: the Minister for Planning has been quoted as saying that “*you cannot live in a planning permission*”.

Part of the debate has focused on perceptions of ‘land banking’ – the concept that developers are hoarding land or slowing down development. Equally, suggestions have been made that proposals for large-scale development should be ‘protected’ from competition from smaller sites or from challenge under five year land supply grounds. The evidence supporting these propositions appears limited.

In our view the real concern – outside London, at any rate – is ensuring planning decisions (including in plan-making) are driven by realistic and flexible housing trajectories in the first place, based on evidence and the specific characteristics of individual sites and local markets.

Based on the research in this document, we draw five conclusions on what is required:

1. If more homes are to be built, more land needs to be released and more planning permissions granted. Confidence in the planning system relies on this being achieved through local plans that must be sufficiently ambitious and robust to meet housing needs across their housing market areas. But where plans are not coming forward as they should, there needs to be a fall-back mechanism that can release land for development when it is required.
2. Planned housing trajectories should be realistic, accounting and responding to lapse rates, lead-in times and sensible build rates. This is likely to mean allocating more sites rather than less, with a good mix of types and sizes, and then being realistic about how fast they will deliver so that supply is maintained throughout the plan period. Because no one site is the same – and with significant variations from the average in terms of lead-in time and build rates – a sensible approach to evidence and justification is required.
3. Spatial strategies should reflect that building homes is a complex and risky business. Stronger local markets have higher annual delivery rates, and where there are variations within districts, this should be factored into spatial strategy choices. Further, although large sites can deliver more homes per year over a longer time period, they also have longer lead-in times. To secure short-term immediate boosts in supply – as is required in many areas – a good mix of smaller sites will be necessary.
4. Plans should reflect that – where viable – affordable housing supports higher rates of delivery. This principle is also likely to apply to other sectors that complement market housing for sale, such as build to rent and self-build (where there is demand for those products). Trajectories will thus need to differentiate expected rates of delivery to respond to affordable housing levels or inclusion of other market products. This might mean some areas will want to consider spatial strategies that favour sites with greater prospects of affordable or other types of housing delivery. This plays into the wider debate about support for direct housing delivery for rent by local government and housing associations and ensuring a sufficient product mix on sites.
5. Finally, in considering the pace of delivery, large-scale brownfield sites deliver at a slower rate than do equivalent greenfield sites. The very largest brownfield sites have also seen very long planning approval periods. Self-evidently, many brownfield sites also face barriers to implementation that mean they do not get promoted in the first place. In most locations outside our biggest cities, a good mix of types of site will be required.

A Checklist for Understanding Large-scale Site Delivery

In setting or assessing reasonable housing trajectories for local plans or five year housing land supply, the lead-in times and average rates of housing delivery identified in this research can represent helpful benchmarks or rules of thumb, particularly in situations where there is limited local evidence.

However, these rules of thumb are not definitive. It is clear from our analysis that some sites start and deliver more quickly than this average, whilst others have delivered much more slowly. Every site is different.

In considering the evidence justifying the estimated time and rate of delivery, the questions listed in Table 4 below represent a checklist of questions that are likely to be relevant:

Table 4: Questions to consider on the speed of housing delivery on large-scale sites

Lead-in times to getting started on site	Factors affecting the speed of build out rate
<input checked="" type="checkbox"/> Is the land in existing use?	<input checked="" type="checkbox"/> How large is the site?
<input checked="" type="checkbox"/> Has the land been fully assembled?	<input checked="" type="checkbox"/> Will the scale, configuration and delivery model for the site support more sales outlets?
<input checked="" type="checkbox"/> If in multiple ownership/control, are the interests of all parties aligned?	<input checked="" type="checkbox"/> How strong is the local market?
<input checked="" type="checkbox"/> To what extent is there any challenge to the principle of development?	<input checked="" type="checkbox"/> Does the site tap into local demand from one or more existing neighbourhoods?
<input checked="" type="checkbox"/> Is the site already allocated for development? Does it need to be in order for release?	<input checked="" type="checkbox"/> Is the density and mix of housing to be provided consistent with higher rates of delivery?
<input checked="" type="checkbox"/> Does an SPD, masterplan or development brief help resolve key planning issues?	<input checked="" type="checkbox"/> What proportion of affordable housing is being delivered?
<input checked="" type="checkbox"/> Is the masterplan/development brief consistent with what the developer will deliver?	<input checked="" type="checkbox"/> Are there other forms of housing – such as build to rent – included?
<input checked="" type="checkbox"/> Is there an extant planning application or permission?	<input checked="" type="checkbox"/> When will new infrastructure – such as schools – be provided to support the new community?
<input checked="" type="checkbox"/> Are there significant objections to the proposal from local residents?	<input checked="" type="checkbox"/> Are there trigger points or phasing issues that may affect the build rate achievable in different phases?
<input checked="" type="checkbox"/> Are there material objections to the proposal from statutory bodies?	
<input checked="" type="checkbox"/> Are there infrastructure requirements – such as access – that need to be in place before new homes can be built?	
<input checked="" type="checkbox"/> Are there infrastructure costs or other factors that may make the site unviable?	
<input checked="" type="checkbox"/> Does the proposal rely on access to public resources?	
<input checked="" type="checkbox"/> If planning permission is secured, is reserved matters approval required?	
<input checked="" type="checkbox"/> Does the scheme have pre-commencement conditions?	
<input checked="" type="checkbox"/> Is the scheme being promoted by a developer who will need time to dispose of the site to a house builder?	

Appendix 1: Large Sites Reviewed

~ = No Data

Site Name	Local Planning Authority	Site	Previous Use	Year of first housing completion	Build Rates																		
					Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19
Land at Siston Hill	South Gloucestershire	504	Greenfield	2006/07	77	211	96	63	57														
University Campus Chelmsford	Chelmsford	507	Brownfield	N/A																			
St. James Village	Gateshead	518	Brownfield	2000/01					406														
Thingwall Lane	Knowlsey	525	Brownfield	2013/14	79	~																	
Pamona Docks	Trafford	546	Brownfield	N/A																			
Velmead Farm	Hart	550	Greenfield	1989/90	1	104	193	89	101	52	101	101	113	130	74	102	48	4					
Land adjoining Manchester Ship Canal	Trafford	550	Greenfield	N/A																			
Ochre Yards	Gateshead	606	Brownfield	2001/02					424							~	46	4	52				
Former Pontins Holiday Camp	Lancaster	626	Brownfield	2006/07	16	22	4	5	~														
Land south of Wansbeck General Hospital	Northumberland	644	Greenfield	2005/06					209														
Staiths South Bank	Gateshead	667	Brownfield	2003/04	24	58	~	44	~	48	~												
Rowner Renewal Project	Gosport	700	Brownfield	2010/11	4	100	70	16	0														
South Bradwell (Phase 1)	Great Yarmouth	700	Greenfield	N/A																			
Land at West Blyth	Northumberland	705	Greenfield	2008/09					164														
Northside	Gateshead	718	Brownfield	1996/97																			
Hungate	York	720	Brownfield	2008/09					168														
The Parks	Bracknell Forest	730	Brownfield	2007/08	104	88	101	54	47	72	59	94											
West of Kempston	Bedford	730	Greenfield	2010/11	43	102	144	167	124														
Land at Popley Fields	Basingstoke & Deane	750	Greenfield	2006/07	105	172	118	186	126	44													
Dowds Farm	Eastleigh	765	Greenfield	2006/07	54	189	187	44	102	47	66	76	~										
Abbotswood	Test Valley	800	Greenfield	2011/12	30	190	157	102															
Kempshott Park	Basingstoke & Deane	800	Greenfield	2000/01	78	310	229	213	281	84	33	24											
Prospect Place	Cardiff	826	Brownfield	2007/08	135	48																	
Taylor's Farm/Sheffield Park	Basingstoke & Deane	850	Greenfield	2004/05	56	79	81	86	88	50	100	141	88	91	75								

~ = No Data

Site Name	Local Planning Authority	Site	Previous Use	Year of first housing completion	Build Rates																		
					Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Yr 8	Yr 9	Yr 10	Yr 11	Yr 12	Yr 13	Yr 14	Yr 15	Yr 16	Yr 17	Yr 18	Yr 19
Elvetham Heath	Hart	1,869	Greenfield	2000/01	492	300	297	307	287	238	103	139	6										
Charlton Hayes	South Gloucestershire	2,200	Brownfield	2010/11	83	87	163	331	281														
Chapelord Urban Village	Warrington	2,200	Brownfield	2004/05	211	214	166	262	224	141	180	183	247	60	160								
Western Riverside	Bath and North East Somerset	2,281	Brownfield	2011/12	59	147	93	~															
Clay Farm/ Showground Site	Cambridge	2,300	Greenfield	2012/13	16	272	~																
Broadlands	Bridgend	2,309	Greenfield	1999/00	288	331	307	193	204	156	64	104	91	28	81	50	147	1.1					
Land East Ickfield Way	Test Valley	2,500	Greenfield	2009/10	184	257	103	181	135	~													
Kings Hill	Tonbridge and Malling	2,800	Brownfield	1996/97		698				126	219	104	237	166	281	300	224	93	55	90	84	108	91
Cranbrook	East Devon	2,900	Greenfield	2012/13	187	419	356																
West of Waterloo	Havant and Winchester	3,000	Greenfield	2009/10	38	71	30	82	112	193													
North West Cambridge	Cambridge and South Cambridgeshire	3,000	Greenfield	N/A																			
Beaulieu Park	Chelmsford	3,600	Greenfield	N/A																			
Eastern Expansion Area (Broughton Gate & Brooklands)	Milton Keynes	4,000	Greenfield	2008/09	154	359	371	114	473	138	~												
Cambourne	South Cambridgeshire	4,343	Greenfield	1999/00	42	361	213	337	620	151	377	267	219	190	162	206	154	151	129	240			
Wichelstowe	Swindon	4,500	Greenfield	2008/09	158	93	195	64	100	61	44												
The Wixams	Bedford	4,500	Brownfield	2008/09	8	190	160	138	113	109	109												
Monkton Heathfield	Tauton Deane	4,500	Greenfield	2013/14	120	265																	
Priors Hall	Corby	5,200	Greenfield	2013/14	59	46																	
East of Kettering	Kettering	5,500	Greenfield	N/A																			
The Hamptons	Peterborough	6,320	Brownfield	1997/98					1684														102
Ebbsfleet	Gravesham/ Dartford	15,000	Brownfield	2009/10	127	79	55	50	87														

Appendix 2: Small Sites Reviewed

Site Name	Local Planning Authority	Site Size
Holme Farm, Carleton Road, Pontefract	Wakefield	50
Part Sr3 Site, Off Elizabeth Close, Scotter	West Lindsey	50
Former Downend Lower School, North View, Staple Hill	South Gloucestershire	52
Fenton Grange, Wooler	Northumberland	54
Land at the Beacon, Tilford Road, Hindhead	Waverley	59
Land To Rear Of 28 - 34 Bedale Road, Aiskew	Hambleton	59
Hanwell Fields Development, Banbury	Cherwell	59
Land at Prudhoe Hospital, Prudhoe	Northumberland	60
Oxfordshire County Council Highways Depot	Cherwell	60
Clewborough House School, St Catherines Road	Cherwell	60
Land south of Pinchington Lane	West Berkshire	64
Land Off Cirencester Rd	Stroud	66
Springfield Road Caunt Road	South Kesteven	67
Land off Crown Lane	Wychavon	68
Former Wensleydale School, Dent Street, Blyth	Northumberland	68
Land at Lintham Drive, Kingswood	South Gloucestershire	68
Hawthorn Croft (Off Hawthorn Avenue Old Slaughterhouse Site), Gainsborough	West Lindsey	69
Land to the North of Walk Mill Drive	Wychavon	71
Watermead, Land At Kennel Lane, Brockworth	Tewkesbury	72
North East Area Professional Centre, Furnace Drive, Furnace Green	Crawley	76
Land at Willoughbys Bank, Clayport Bank, Alnwick	Northumberland	76
The Kylins, Loansdean, Morpeth	Northumberland	88
MR10 Site, Caistor Road, Market Rasen	West Lindsey	89
OS Field 9972 York Road Easingwold	Hambleton	93
Land At Green Road - Reading College	Reading	93
North East Sandylands	South Lakeland	94
Auction Mart	South Lakeland	94
Parcel 4, Gloucester Business Park, Brockworth	Tewkesbury	94
Former York Trailers Yafforth Road Northallerton Scheme 1/2	Hambleton	96
Poppy Meadow	Stratford-on-Avon	106
Weeton Road/Fleetwood Road	Fylde	106
Land South of Station Road	East Hertfordshire	111
Former Bewbush Leisure Centre Site, Breezehurst Drive, Bewbush	Crawley	112
Land West Of Birchwood Road, Latimer Close	Bristol, City of	119
Land Between Godsey Lane And Towngate East	South Kesteven	120
Bibby Scientific Ltd	Stafford	120
Kennet Island Phase 1B - E, F, O & Q, Manor Farm Road	Reading	125
Primrose Mill Site	Ribble Valley	126
Land Rear Of Mount Pleasant	Cheshire West and Chester	127
Land to the east of Efflinch Lane	East Staffordshire	130
North of Douglas Road, Kingswood	South Gloucestershire	131
Land at Farnham Hospital, Hale Road, Farnham	Waverley	134
Bracken Park, Land At Corringham Road, Gainsborough	West Lindsey	141
Doxey Road	Stafford	145
Former York Trailers Yafforth Road Northallerton Scheme 2/2	Hambleton	145

Site Name	Local Planning Authority	Site Size
London Road/ Adj. St Francis Close	East Hertfordshire	149
MR4 Site, Land off Gallamore Lane, Market Rasen	West Lindsey	149
Queen Mary School	Fylde	169
Sellars Farm, Sellars Road	Stroud	176
Land South of Inervet Campus Off Brickhill Street, Walton	Milton Keynes	176
Notcutts Nursery, 150 - 152 London Road	Cherwell	182
Hoval Ltd North Gate	Newark and Sherwood	196
Hewlett Packard (Land Adjacent To Romney House), Romney Avenue	Bristol, City of	242
128-134 Bridge Road And Nos 1 - 4 Oldfield Road	Windsor and Maidenhead	242
GCHQ Oakley - Phase 1	Cheltenham	262
Land off Henthorn Road	Ribble Valley	270
Land Between A419 And A417, Kingshill North, Cirencester	Cotswold	270
Hortham Hospital, Hortham Lane, Almondsbury	South Gloucestershire	270
Land At Canons Marsh, Anchor Road	Bristol, City of	272
M & G Sports Ground, Golden Yolk and Middle Farm, Badgeworth	Tewkesbury	273
Long Marston Storage Depot Phase 1	Stratford-on-Avon	284
Land at Brookwood Farm, Bagshot Road	Woking	297
Land at, Badsey Road	Wychavon	298
Land At Fire Service College, London Road, Moreton in Marsh	Cotswold	299
Land At Dorian Road	Bristol, City of	300
Kennet Island Phase 1 - H, M, T, U1, U2 Manor Farm Road	Reading	303
Chatham Street Car Park Complex	Reading	307
Former NCB Workshops, Ellington Rd, Ashington (aka Portland Park)	Northumberland	357
Former Masons Cerement Works and Adjoining Ministry of Defence Land, Gipping Road, Great Blakenham	Mid Suffolk	365
Woolley Edge Park Site	Wakefield	375
Luneside West	Lancaster	403
Radyr Sidings	Cardiff	421
New World House, Thelwall Lane	Warrington	426
Land at former Battle Hospital, 344 Oxford Road	Reading Borough Council	434
New Central (Land at Guildford Road and Bradfield Close including Network House, Merrion House, Bradford House and Coronation House	Woking Borough Council	445
Kingsmead South	Milton Keynes Council	450
Bleach Green, Winlaton	Gateshead	456
Farington Park, East of Wheelton Lane	South Ribble	468
Bickershaw Colliery, Plank Lane, Leigh	Wigan	471
Farnborough Business Park	Rushmoor	476
Horfield Estate, Filton Avenue, Horfield	Bristol City Council	485
Stenson Fields	South Derbyshire	487
Cookridge Hospital	Leeds	495

About NLP

Nathaniel Lichfield & Partners (NLP) is an independent planning, economics and urban design consultancy, with offices in Bristol, Cardiff, Edinburgh, Leeds, London, Manchester, Newcastle and Thames Valley.

We are one of the largest independent planning consultancies in the UK and we offer the broadest range of skills of any specialist planning firm. This includes services in economics, spatial analytics, heritage, sustainability, urban design, graphics and sunlight and daylight, as well as a full range of planning skills. NLP was RTPI Planning Consultancy of the Year for three years running to 2014.

We prepare accessible and clear reports, underpinned by robust analysis and stakeholder engagement, and provide expert witness evidence to public inquiries and examinations.

Our targeted research reports explore current planning / economic issues and seek to offer practical ways forward.

Read More

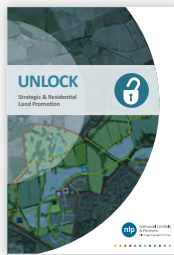
You can find out more information on NLP and download copies of this report and the below documents at:

www.nlplanning.com

How NLP Can Help



Evidencing Economic Benefits



Strategic & Residential Land Promotion



Objective Assessments of Local Housing Needs



Assessing five year housing land supply positions



Evidencing Development Capacity

Contacts

For more information, please contact us:

Bristol	Andy Cockett	0117 403 1980	acockett@nlplanning.com
Cardiff	Gareth Williams	0292 043 5880	gwilliams@nlplanning.com
Edinburgh	Nicola Woodward	0131 285 0670	nwoodward@nlplanning.com
Leeds	Justin Gartland	0113 397 1397	jgartland@nlplanning.com
London	Matthew Spry	0207 837 4477	mspry@nlplanning.com
Manchester	Michael Watts	0161 837 6130	mwatts@nlplanning.com
Newcastle	Michael Hepburn	0191 261 5685	mhepburn@nlplanning.com
Thames Valley	Daniel Lampard	0118 334 1920	dlampard@nlplanning.com

This publication has been written in general terms and cannot be relied on to cover specific situations. We recommend that you obtain professional advice before acting or refraining from acting on any of the contents of this publication. NLP accepts no duty of care or liability for any loss occasioned to any person acting or refraining from acting as a result of any material in this publication.

Nathaniel Lichfield & Partners is the trading name of Nathaniel Lichfield & Partners Limited. Registered in England, no.2778116.

Registered office: 14 Regent's Wharf, All Saints Street, London N1 9RL

© Nathaniel Lichfield & Partners Ltd 2016. All rights reserved.















Planning
Consultancy
of the Year



Nathaniel Lichfield
& Partners
Planning, Design, Economics.

TRIP
Targeted Research
& Intelligence Programme

nlplanning.com

-  Applications & Appeals
-  Climate Change & Sustainability
-  Community Engagement
-  Daylight & Sunlight
-  Economics & Regeneration
-  Environmental Assessment
-  Expert Evidence
-  GIS & Spatial Analytics
-  Graphic Design
-  Heritage
-  Property Economics
-  Site Finding & Land Assembly
-  Strategy & Appraisal
-  Urban Design

APPENDIX 14

FUTURE FIVE-YEAR LAND SUPPLY POSITIONS

A14.1 This Appendix firstly calculates the future five-year land supply positions which were anticipated to arise in Cheltenham Borough based on the trajectory presented within the JCS in Tables A14.1 to A14.5 and then updates this to take account of the current trajectory of the Council in Tables A14.6 to A14.10.

A14.2 The planned cumulative shortfalls/surpluses which arise from the JCS trajectory are calculated in Table A14.1 below.

Table A14.1 – planned shortfalls/surpluses

	A	B = sum of A from 2011 onwards	C (page 111 of the JCS)	D = sum of C from 2011 onwards	E = D-B for preceding row
	Annualised housing requirement	Cumulative housing requirement	Housing trajectory	Cumulative trajectory	Cumulative shortfall/surplus
2011/12	450	450	33	33	0
2012/13	450	900	268	301	-417
2013/14	450	1,350	413	714	-599
2014/15	450	1,800	316	1,030	-636
2015/16	450	2,250	397	1,427	-770
2016/17	450	2,700	297	1,724	-823
2017/18	450	3,150	448	2,172	-976
2018/19	450	3,600	724	2,896	-978
2019/20	450	4,050	893	3,789	-704
2020/21	450	4,500	790	4,579	-261
2021/22	450	4,950	753	5,332	+79
2022/23	663	5,613	674	6,006	+382
2023/24	663	6,276	673	6,679	+393
2024/25	663	6,939	728	7,407	+403
2025/26	663	7,602	768	8,175	+468
2026/27	663	8,265	720	8,895	+573
2027/28	663	8,928	663	9,558	+630
2028/29	663	9,591	603	10,161	+630
2029/30	663	10,254	459	10,620	+570
2030/31	663	10,917	472	11,092	+366

A14.3 The Liverpool approach is applied in accordance with the findings of the JCS Inspector. This means that any shortfall should be addressed over the remaining years of the plan period. For the purposes of this analysis, a similar approach is

adopted where there is a surplus¹. The shortfall/surplus to be addressed in each five-year period is calculated in Table A14.2 below.

Table A14.2 – planned shortfall/surplus to be addressed within five-years

	A = Column E in Table A14.1 above	B	C = A/B x 5
	Cumulative shortfall/surplus	Number of years of plan period remaining	Shortfall to be addressed within five-years ²
2011/12	0	20	0
2012/13	-417	19	-110
2013/14	-599	18	-166
2014/15	-636	17	-187
2015/16	-770	16	-241
2016/17	-823	15	-274
2017/18	-976	14	-349
2018/19	-978	13	-376
2019/20	-704	12	-293
2020/21	-261	11	-119
2021/22	79	10	40
2022/23	382	9	212
2023/24	393	8	246
2024/25	403	7	288
2025/26	468	6	390
2026/27	573	5	573
2027/28	630	4	630
2028/29	630	3	630
2029/30	570	2	570
2030/31	366	1	366

A14.4 This shortfall is then added to the stepped requirement for the appropriate five-year period as presented in Table A14.3 below.

¹ The Secretary of State has disagreed with this approach in Tewkesbury in the recent Highnam recovered appeal decision. Had the approach of the Secretary of State been adopted in this analysis the Council's five-year land supply position would be lower.

² Except in the final five-years where the residual shortfall/surplus should be addressed in its entirety.

Table A14.3 – planned base-five-year requirement

	A	B = sum of A for subsequent 5 years	C = Column C of Table A14.2 above	D = B-C
	Annualised housing requirement	Base five-year requirement	Shortfall to be addressed within five-years	Base five-year requirement including shortfall
2011/12	450	2,250	0	2,250
2012/13	450	2,250	-110	2,360
2013/14	450	2,250	-166	2,416
2014/15	450	2,250	-187	2,437
2015/16	450	2,250	-241	2,491
2016/17	450	2,250	-274	2,524
2017/18	450	2,250	-349	2,599
2018/19	450	2,463	-376	2,839
2019/20	450	2,676	-293	2,969
2020/21	450	2,889	-119	3,008
2021/22	450	3,102	40	3,063
2022/23	663	3,315	212	3,103
2023/24	663	3,315	246	3,069
2024/25	663	3,315	288	3,027
2025/26	663	3,315	390	2,925
2026/27	663	3,315	573	2,742
2027/28	663	Cannot calculate as the housing requirement is unknown post 2031	630	Cannot calculate as the housing requirement is unknown post 2031
2028/29	663		630	
2029/30	663		570	
2030/31	663		366	

A14.5 It is optimistically assumed that a 5% buffer would apply from 2019 onwards given that the annual requirement was expected to have been exceeded in 2018/19. The resultant five-year requirement is calculated in Table A14.4 below. This is calculated for the period 2017 to 2026 only, as it is not known which buffer would apply prior to 2017 and the housing requirement post-2031 is not known which would be necessary to calculate the five-year requirement for the period 2027-32.

Table A14.4 – planned five-year requirement

	A = Column D of Table A14.3 above	B	C = A x (1+B)
	Base five-year requirement including shortfall	Buffer	Five-year requirement
2017/18	2,599	20%	3,118
2018/19	2,839	20%	3,407
2019/20	2,969	5%	3,118
2020/21	3,008	5%	3,158
2021/22	3,063	5%	3,216
2022/23	3,103	5%	3,258
2023/24	3,069	5%	3,223
2024/25	3,027	5%	3,179
2025/26	2,925	5%	3,071
2026/27	2,742	5%	2,879

A14.6 The anticipated deliverable supply for the period 2017-2031 can then be compared with these five-year requirements to calculate the anticipated five-year land supply position throughout the plan period as presented in Table A14.5 below.

Table A14.5 – planned five-year land supply position

	A (page 111 of the JCS)	B = sum of A for forthcoming 5 years	C = Column C of Table A14.4 above	D = B/C x 5
	Housing trajectory	Deliverable supply	Five-year requirement	Five-year land supply position
2017/18	448	3,608	3,118	5.79
2018/19	724	3,834	3,407	5.63
2019/20	893	3,783	3,118	6.07
2020/21	790	3,618	3,158	5.73
2021/22	753	3,596	3,216	5.59
2022/23	674	3,563	3,258	5.47
2023/24	673	3,552	3,223	5.51
2024/25	728	3,482	3,179	5.48
2025/26	768	3,213	3,071	5.23
2026/27	720	2,917	2,879	5.07
2027/28	663	Cannot be calculated as the trajectory and the requirement post-2031 are unknown		
2028/29	603			
2029/30	459			
2030/31	472			

A14.7 This Appendix proceeds to calculate the future five-year land supply positions based on the current trajectory of the Council in Tables A14.6 to A14.10. It should be noted that I consider that the Council’s trajectory is unrealistic and accordingly, I consider that the future five-year land supply position will be lower than that identified in the following analysis.

Table A14.6 – current anticipated shortfalls/surpluses of the Council

	A	B = sum of A from 2011 onwards	C (page 111 of the JCS)	D = sum of C from 2011 onwards	E = D-B for preceding row
	Annualised housing requirement	Cumulative housing requirement	Housing trajectory	Cumulative trajectory	Cumulative shortfall/surplus
2011/12	450	450	33	33	0
2012/13	450	900	268	301	-417
2013/14	450	1,350	413	714	-599
2014/15	450	1,800	315	1,029	-636
2015/16	450	2,250	397	1,426	-771
2016/17	450	2,700	297	1,723	-824
2017/18	450	3,150	594	2,317	-977
2018/19	450	3,600	776	3,093	-833
2019/20	450	4,050	438	3,531	-507
2020/21	450	4,500	425	3,956	-519
2021/22	450	4,950	380	4,336	-544
2022/23	663	5,613	508	4,844	-614
2023/24	663	6,276	610	5,454	-769
2024/25	663	6,939	668	6,122	-822
2025/26	663	7,602	688	6,810	-817
2026/27	663	8,265	622	7,432	-792
2027/28	663	8,928	623	8,055	-833
2028/29	663	9,591	566	8,621	-873
2029/30	663	10,254	548	9,169	-970
2030/31	663	10,917	558	9,727	-1,085

Table A14.7 – current anticipated shortfall/surplus of the Council to be addressed within five-years

	A = Column E in Table A14.6 above	B	C = A/B x 5
	Cumulative shortfall/surplus	Number of years of plan period remaining	Shortfall to be addressed within five-years ³
2011/12	0	20	0
2012/13	-417	19	-110
2013/14	-599	18	-166
2014/15	-636	17	-187
2015/16	-771	16	-241
2016/17	-824	15	-275
2017/18	-977	14	-349
2018/19	-833	13	-320
2019/20	-507	12	-211
2020/21	-519	11	-236
2021/22	-544	10	-272
2022/23	-614	9	-341
2023/24	-769	8	-481
2024/25	-822	7	-587
2025/26	-817	6	-681
2026/27	-792	5	-792
2027/28	-833	4	-833
2028/29	-873	3	-873
2029/30	-970	2	-970
2030/31	-1,085	1	-1,085

³ Except in the final five-years where the residual shortfall/surplus should be addressed in its entirety.

Table A14.8 - current anticipated base-five-year requirement of the Council

	A	B = sum of A for subsequent 5 years	C = Column C of Table A14.7 above	D = B-C
	Annualised housing requirement	Base five-year requirement	Shortfall to be addressed within five-years	Base five-year requirement including shortfall
2011/12	450	2,250	0	2,250
2012/13	450	2,250	-110	2,360
2013/14	450	2,250	-166	2,416
2014/15	450	2,250	-187	2,437
2015/16	450	2,250	-241	2,491
2016/17	450	2,250	-275	2,525
2017/18	450	2,250	-349	2,599
2018/19	450	2,463	-320	2,783
2019/20	450	2,676	-211	2,887
2020/21	450	2,889	-236	3,125
2021/22	450	3,102	-272	3,374
2022/23	663	3,315	-341	3,656
2023/24	663	3,315	-481	3,796
2024/25	663	3,315	-587	3,902
2025/26	663	3,315	-681	3,996
2026/27	663	3,315	-792	4,107
2027/28	663	Cannot calculate as the housing requirement is unknown post 2031	-833	Cannot calculate as the housing requirement is unknown post 2031
2028/29	663		-873	
2029/30	663		-970	
2030/31	663		-1,085	

A14.1 The buffer is determined by the Housing Delivery Test under the current NPPF. The Housing Delivery Test is calculated using the standard method which will apply at the time. Given that it is not possible to calculate a future need using the standard method, the future Housing Delivery Test results cannot be accurately estimated. Therefore, for the purposes of this analysis, it is assumed that Cheltenham Borough Council will continue to be subject to a 5% buffer although it should be acknowledged that this provides the best-case scenario for the Council. If throughout the remainder of the plan period it becomes evident that it is necessary to apply a 20% buffer, this will negatively affect the resultant five-year land supply position.

Table A14.9 – current anticipated five-year requirement of the Council

	A = Column D of Table A14.8 above	B	C = A x (1+B)
	Base five-year requirement including shortfall	Buffer	Five-year requirement
2017/18	2,599	20%	3,119
2018/19	2,783	20%	3,340
2019/20	2,887	5%	3,032
2020/21	3,125	5%	3,281
2021/22	3,374	5%	3,543
2022/23	3,656	5%	3,839
2023/24	3,796	5%	3,985
2024/25	3,902	5%	4,097
2025/26	3,996	5%	4,196
2026/27	4,107	5%	4,312

Table A14.10 – current anticipated five-year land supply position of the Council

	A (Figure 5 of Appendix 2)	B = sum of A for forthcoming 5 years	C = Column C of Table A14.9 above	D = B/C x 5
	Housing trajectory	Deliverable supply	Five-year requirement	Five-year land supply position
2017/18	594	2,613	3,119	4.19
2018/19	776	2,527	3,340	3.78
2019/20	438	2,361	3,032	3.89
2020/21	425	2,591	3,281	3.95
2021/22	380	2,854	3,543	4.03
2022/23	508	3,096	3,839	4.03
2023/24	610	3,211	3,985	4.03
2024/25	668	3,167	4,097	3.86
2025/26	688	3,047	4,196	3.63
2026/27	622	2,917	4,312	3.38
2027/28	623	Cannot be calculated as the trajectory and the requirement post-2031 are unknown		
2028/29	566			
2029/30	548			
2030/31	558			

APPENDIX 15

EXTRACT OF HOUSING IMPLEMENTATION STRATEGY

		2011-12 Net Delivery	2012-13 Net Delivery	2013-14 Net Delivery	2014-15 Net Delivery	2015-16 Net Delivery	2016-17 Net Delivery	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	Total
Total Supply CBC																						
Small Site Completed and Under Construction	1.11, 1.21	66	56	72	64	83	35	14	12	6	0	0	0	0	0	0	0	0	0	0	0	408
Small Site Extant Permissions	1.31	0	0	0	-1	0	1	59	39	33	0	0	0	0	0	0	0	0	0	0	0	131
Small Site Windfall Allowance	5	0	0	0	0	0	0	0	0	36	68	68	68	68	68	68	68	68	68	68	68	784
Large Site Completed and Under Construction	1.12, 1.22	-33	212	341	253	314	259	202	236	128	100	100	63	25	0	0	0	0	0	0	0	2200
Large Site Extant Permissions	1.32	0	0	0	0	0	2	143	191	195	103	50	50	50	50	52	0	0	0	0	0	886
Existing Allocations	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10
Cheltenham Plan Potential	3.42 and 4.42	0	0	0	0	0	0	30	50	110	189	175	75	120	75	50	72	15	25	11	14	1011
Cheltenham Plan Consented	3.32	0	0	0	0	0	0	0	36	20	20	25	58	50	50	18	0	0	0	0	0	277
Urban Extensions within and adjacent to CBC	6.1	0	0	0	0	0	0	0	160	365	310	335	360	360	485	580	580	580	510	380	380	5385
CBC Total Delivery (without lapses)		33	268	413	316	397	297	448	724	893	790	753	674	673	728	768	720	663	603	459	472	11092
Annual Requirement		450	450	450	450	450	450	450	450	450	450	450	663	663	663	663	663	663	663	663	663	10917

APPENDIX 16

CHELTENHAM BOROUGH LOCAL DEVELOPMENT SCHEME OCTOBER 2017



CHELTENHAM
BOROUGH COUNCIL

Cheltenham Borough Local Development Scheme

October 2017

**The preparation timetable for
Development Plan Documents
in Cheltenham Borough**

1. Introduction

- 1.1. The Planning and Compulsory Purchase Act 2004 (as amended by the Localism Act 2011 and Neighbourhood Planning Act 2017) introduced the requirement for local planning authorities to prepare and maintain a Local Development Scheme (LDS).
- 1.2. This LDS was adopted by the Council at its Cabinet meeting on 10 October 2017 and came into effect from this date.
- 1.3. The LDS for Cheltenham Borough identifies the timetable for the preparation of Development Plan Documents (DPDs) which together constitute the 'Local Plan' for the area. For Cheltenham this includes the Cheltenham, Gloucester and Tewkesbury Joint Core Strategy (JCS) and the Cheltenham Plan. This LDS sets out the work programme for their production over the next 2-3 years up to 2020.
- 1.4. The Development Plan is also made up any Neighbourhood Development Plans (NDP) that are 'made'. NDPs are developed by local communities (with assistance from Borough Council). Therefore, these plans are not directly progressed by the Borough Council and the timescales for their development are largely dependent on local communities. As such, the LDS does not contain detail on the timetables for any emerging neighbourhood development plans. Cheltenham Borough Council does not have any 'made' NDPs or any at examination at the time of this LDS.
- 1.5. The Local Plan also consists of the Waste Core Strategy and the Minerals Local Plan which are also DPDs. However, these are maintained by Gloucestershire County Council and subject to a separate LDS and are not dealt with in this document.
- 1.6. The Council may decide in the future to update its Supplementary Planning Documents (SPDs) or develop additional SPDs to provide further guidance to support the Local Plan. However, these are not Development Plan Documents and therefore their production is not subject of the LDS.

2. Cheltenham, Gloucester and Tewkesbury Joint Core Strategy (JCS)

- 2.1. Cheltenham Borough Council, along with Tewkesbury Borough Council and Gloucester City Council, are preparing an overarching strategic plan for the wider area covered by the three councils. This document is called the Joint Core Strategy (JCS). The JCS sets out a spatial vision and identifies a set of strategic objectives and strategic site allocations for the respective local authority areas. It is being prepared in the context of national planning policy and guidance alongside strategies and plans prepared locally. The JCS is the strategic part of the planning framework which deals with key strategic issues including; green belt; flooding; transport; housing/employment and the direction, timing and location of growth.
- 2.2. The JCS was submitted to the Secretary of State for its Examination in Public in November 2014. Examination hearing sessions commenced in May 2015 and continued through to July 2017 with the conclusion of sessions dealing with Main Modifications to the plan. The JCS authorities now await the Inspector's Final Report before progressing towards adoption.
For the latest information on the progress of the JCS please see: www.gct-jcs.org

2.3. The estimated timetable for the JCS to adoption is therefore:

- **Inspector's Final Report – Autumn 2017**

- **Adoption – late 2017/ early 2018**

Following adoption of the JCS the JCS shall be subject to an immediate review on its “retail and city/town centres” policy. This review will take approximately two years to complete. There will also be a partial review of the housing supply for Gloucester and Tewkesbury commencing immediately upon adoption of the JCS.

3. Cheltenham Plan

- 3.1. The Cheltenham Plan sits underneath the strategic-level of the JCS and provides the local-level growth strategy for the Borough. The Cheltenham Plan will help to meet the level of growth set out in the JCS by providing specific policy guidance for new development in the area and make smaller-scale local allocations. The policies that will be established through the Cheltenham Plan will set out specific requirements for new development and provide more detail on local issues than the policies in the JCS.

The latest information on the Cheltenham Plan can be found at:

https://www.cheltenham.gov.uk/info/46/planning_policy/1034/the_cheltenham_plan

- 3.2. We have carried out three public consultations on the Cheltenham Plan to date.

Cheltenham Plan scoping consultation

This was an eight week consultation was carried out in September 2013. It sought to determine the focus of the Cheltenham Plan. In total we received 52 responses from a range of interest groups, public and private sector bodies, and individuals. The full responses and a summary of responses are available at the link above, as are the other reports mentioned in this section.

Cheltenham Plan (part one): Issues and options consultation

In 2015 we published the 'Cheltenham Plan (part one) issues and options' document for a six week public consultation. Businesses, residents and visitors to Cheltenham were invited to submit comments online. A copy of these consultation documents, questionnaires, maps and supporting evidence can be found on our online consultation system. A consultation statement is also available to download.

Cheltenham Plan (Part One): Preferred Options consultation

This consultation built on the previous scoping and "Issues and options" consultations that provided key information about the future plan. It looked at issues (current and future) affecting Cheltenham and identifies planning approaches and options that can help solve or ease these issues.

The consultation ran for six weeks from 6 February till 20 March 2017 with a focus on three policy areas: 1.economic strategy, 2.potential local green space designations, 3.potential development allocations (sites for development)A copy of these consultation documents, questionnaires, maps and supporting evidence can be found on our online consultation system. A consultation statement is also available to download.

Following responses to this consultation and progress on the JCS, we have merged the preparation of the part 1 and part 2 Cheltenham Plan documents together. We are therefore currently working on one development plan document called the 'Cheltenham Plan'.

3.3. The estimated timetable for the Cheltenham Plan to adoption is:

- **Pre-Submission Consultation – Late 2017**
- **Submission to Secretary of State – Early 2018**
- **Examination in Public – Mid 2018**
- **Adoption – Late 2018**